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# Editorial

I

# THE ECONOMICS OF INVESTING IN SWACHHTA

Arun Jaitley

The entire nation rallied behind the Mahatma's call and India achieved her independence setting an example for the world. It was an idea whose time had come. Likewise, the Prime Minister's call for a Swachh Bharat with universal sanitation by 2<sup>nd</sup> October 2019, at a time when India leads the infamous list of countries with the highest number of people practicing open defecation, is an idea whose time has come.

As they say, no one can stop an idea whose time has come! Amidst the backdrop of a bloody world war, when violence was the order of the time, India achieved independence through non-violent civil disobedience, through Satyagraha. The entire nation rallied behind the Mahatma's call and India achieved her independence setting an example for the world. It was an idea whose time had come. Likewise, the Prime Minister's call for a Swachh Bharat with universal sanitation by 2<sup>nd</sup> October 2019, at a time when India leads the infamous list of countries with the highest number of people practicing open defecation, is an idea whose time has come.

Open defecation dates back to the beginning of human civilization. It has been a way of life for millions of people in India for centuries. Successive governments have been running national sanitation programmes since the 1980s, but till 2014, only 39 per cent of Indians had access to safe sanitation

facilities. This is because access to sanitation is not an infrastructure problem, there is a deeper behavioural and socio-cultural context at play. Influencing a change in behaviour for 60 crore people is a challenge that has probably never been undertaken by anyone in the world. This could only be achieved through an intensive, time-bound intervention, spearheaded from the highest level, and involving all sections of society and government alike. The Swachh Bharat Mission's (SBM) Swachhagraha has caught the nation's imagination just the way the Mahatma's Satyagraha had, many years ago!

The importance of sanitation is well documented, with its effect on child mortality due to diarrhoeal diseases, and the safety, security and dignity of women being clearly established. But the underlying costs of the lack of sanitation are a lot more than meets the eye. A study by the World Bank estimates that nearly 40 per cent of India's children





are physically and cognitively stunted, primarily because of the lack of sanitation. Such a large proportion of our future workforce not being able to reach their full productive capacity poses a serious threat to our biggest strength – our demographic dividend. Solving this problem is at the core of our developmental agenda and to our potential at becoming a global economic superpower. The World Bank also estimated that the lack of sanitation costs India over 6 per cent of our GDP.

A recent study by UNICEF on the economic impact of sanitation has estimated that in an open defecation free village, each family saves over Rs.50,000 per year on account of avoided medical costs, time savings and lives saved. Additionally, there is a huge potential of generating wealth from waste through good solid and liquid resource management. The study also concluded that the economic benefits of sanitation per household outweigh the cumulative investment (government spend plus other modes of financing including household contribution) by 4.7 times over a 10 year period. There is clearly an overwhelming case for investments in improving sanitation access.

The SBM has a budget of more than \$20 billion over five years from central and state governments. Additional investments have been coming in from the private sector, developmental agencies, faith based institutions and citizens. The Swachh Bharat Kosh has already collected and released over Rs.660 crores for specific sanitation projects. These funds have been raised through private contributions by individuals, companies and institutions, with the single highest contribution of Rs.100 crore coming from a faith leader, Mata Amritanandamayi.

Several private companies have worked especially for sanitation in schools through their CSR funds. But there is still a large potential to leverage the private sector's creativity and innovation for the SBM. All the Ministries and Departments of the Government of India are attempting to mainstream sanitation in their respective sectors, and they have also committed a specific budget for sanitation and cleanliness, totalling to over Rs.12,000 crores for FY 2017-18.

The SBM is fast becoming a mass movement, or in the words of the Prime Minister – a Jan Andolan. It has already successfully brought down the number of people defecating in the open in India to a little over 30 crore, with over 68 per cent Indians now having access to safe sanitation. But there is still a long way to go. To further intensify this momentum, the government has initiated the **Swachhata Hi Seva** fortnight between 15<sup>th</sup> September and 2<sup>nd</sup> October. During this fortnight, all sections of society – Ministries, Parliamentarians, central and state government officials, celebrities, organizations, corporates, local leaders and citizens will dedicate themselves to Swachhata by offering *shramdaan*, thus, spreading the infectious energy of the SBM far and wide.

It's time for everyone to roll-up their sleeves and play their part in creating a Swachh Bharat, an India that the Mahatma had dreamed of. If you're reading this, go ahead and do your bit.

**(The author is Union Minister of Finance and Corporate Affairs. Email: [office@arunjaitley.com](mailto:office@arunjaitley.com))**

## PM Performs Swachhta Shramdaan Under Swachhta Hi Seva Initiative

The Prime Minister, Shri Narendra Modi performed *Shramdaan* for the construction of a twin pit toilet at Shahanshahpur village in Varanasi. He interacted with the people, who have resolved to make the village open-defecation-free. He appreciated their initiative of naming the toilet "Izzat Ghar" (Dignity Home).

The Prime Minister visited a *Pashudhan Arogya Mela* (Animal Wellness Fair) organised at the village. He was briefed on various health and medical activities being performed at the premises. These included surgeries on cattle, ultrasonography etc. He said, this is a new effort which would benefit the animal husbandry sector in the State and increase in milk productivity will lead to economic benefit for the people. He said cooperatives can help consolidate the gains in the dairy sector, as has been the case in other parts of the country.



The Prime Minister, Shri Narendra Modi interacting with the people at Shahanshahpur, Varanasi, Uttar Pradesh on September 23, 2017.

Describing the well-being of people as the priority for governance, the Prime Minister reiterated the pledge to double farm incomes by 2022. He noted that soil health cards are benefiting farmers significantly. He said each one of us should resolve to make a positive contribution by 2022, to achieve the India that our freedom fighters dreamt of.

The Prime Minister said that the feeling of "cleanliness being our responsibility", needs to be inculcated among all. He said this would go a long way towards ensuring wellness, and protecting the health of the poor. He said Swachhta is like a prayer for him, and cleanliness is a way to serve the poor.

## Mann Ki Baat (Excerpts) : 24 Sept, 2017

- ❖ My dear countrymen, we had taken a resolve in last month's Mann Ki Baat and had decided to observe a 15-day Cleanliness Festival before Gandhi Jayanti.
- ❖ Our Honourable President inaugurated this programme ... Every section of society has taken this as its own campaign, everyone has got connected to this.
- ❖ A kind of a pressure has been created in public places and now people resist if someone tries to spoil or to make a public place dirty in any way and even those spoiling public places are also feeling this pressure.
- ❖ It is a good thing and I am pleased to know that just in the first four days of "Swachhata Hi Sewa Abhiyan" more than 75 lakh people joined these activities with more than 40 thousand initiatives..
- ❖ Whenever there is a reference to cleanliness, I do not forget to express my gratitude to media persons. They have taken this campaign in a religious manner. They have made a big contribution in creating a positive environment and are leading the Cleanliness Campaign in their own ways.
- ❖ The month of October is a month to remember so many of our titans. From Mahatma Gandhi to Sardar Patel, there are many great leaders who gave us the direction towards the 20th and 21st century, led us, guided us and faced so many hardships for the country. 2nd October is the birth anniversary of Mahatma Gandhi and Lal Bahadur Shastri, 11th October is the birth anniversary of Jai Prakash Narain and Nanaji Deshmukh and Pandit Deen Dayal Upadhyay's birth anniversary falls on 25th September.
- ❖ And, what was the main focus of all these great men? One thing was common and that was to live for the country, do something for the nation; they led the people not by mere sermons but by their actions.

# CREATING A CLEAN INDIA

Parmeswaran Iyer

The SBM has become an even stronger force through out the country and is inspiring people to play their part in this transformational journey. It has captured the imagination of the country and is being owned by one and all. Lying dormant for seventy years after independence, Gandhiji's dream of a clean India is finally becoming a reality. It took courage and conviction for the Prime Minister to publically commit to make India open defecation free in a span of five years, a goal which many thought was impossible to achieve. There is still a fair way to go but, given the progress made so far, the acceleration expected over the coming 12-15 months and the active engagement of millions of people, the goal is definitely achievable.

**O**n August 15, 2014, the Hon'ble Prime Minister gave a clarion call to the nation from the ramparts of the Red Fort to wage a war against filth and open defecation, and achieve a clean and open defecation free India as Mahatma Gandhi had dreamed of, by October 2, 2019, the 150<sup>th</sup> birth anniversary of Gandhiji.

This was arguably the most ambitious and bold declaration by a head of state towards cleanliness and sanitation in the world. From the highest level, the discussion on sanitation was removed from the closet and put in the forefront of national policy and development. The age old practice of open defecation causes over 1 lakh preventable child deaths every year through diarrhoeal infections. A study by the World Bank estimates that nearly 40 per cent of India's children are stunted, primarily because of lack of sanitation. This has an adverse impact on their economic potential, and is estimated to cost India over 6 per cent of our GDP. Women's safety and dignity are often comprised due to open defecation. Our Prime Minister saw that there is a strong need for affirmative action on this, and that

the issue needed to be addressed in a time bound manner in a mission mode. A 21<sup>st</sup> century India on the path to becoming a global economic super power should have no place for filth and open defecation. He decided to put his political capital behind sanitation and cleanliness and make it a national priority!

## The Progress of SBM:

The Swachh Bharat Mission (SBM) has almost completed three years. Overall, progress is very good, with some States performing better than others. Rural sanitation coverage has gone up from 39 per cent at the start of the mission to the current figure of 68 per cent. Over 230 million people in rural India have stopped defecating in the open, 193 districts and about 235,000 villages across the country have been declared as open defecation free (ODF). Five States – Sikkim, Himachal Pradesh, Kerala, Haryana and Uttarakhand have become ODF. One of the biggest achievement has been that all the 4000+ villages on the banks of the holy Ganga have become ODF!



## How is SBM unique:

The SBM is a globally unique programme, different in scope and scale from any other sanitation initiative in the world. Bringing 550 million rural Indians out of open defecation is unparalleled and carries a high degree of difficulty. It is one thing to build physical infrastructure like roads, bridges and power plants. Changing habits and getting millions of people

to voluntarily engage in a *Jan Andolan* to fight the centuries-old practice of open defecation is quite another! SBM is about bringing changes in people's minds and not about creating infrastructure, and that's what makes it different from earlier sanitation programmes in many significant ways.

The first key differentiator is the genuine focus on behavior change through Information, Education and Communication (IEC), and shifting the focus from outputs (number of toilets built) to outcomes (ODF villages). The community is at the centre of the entire process. They are leading the Swachhta revolution. Children, women, senior citizens and specially-abled citizens have emerged as the biggest Swachhta Champions. They are inspiring their communities to come together and fight the menace of open defecation together. The Hon'ble Prime Minister awarded 10 such inspirational women Swachhta Champions at a special event for nearly 6000 women Sarpanches on International Women's Day.

Lakhs of sanitation motivators, called Swachhagrahis, are being trained in community approaches to sanitation. Virtual Classrooms are being run by the Ministry of Drinking Water and Sanitation (MDWS) to scale these trainings up where a central trainer interacts with trainees across multiple locations on tools for effective community mobilization and behaviour change triggering. They work under an incentive-based system at village level to explain the importance of sanitation and trigger behaviour change by stimulating community-level demand for toilets. Currently, there are over 150,000 Swachhagrahis across the country and this number is rapidly increasing. The SBM aims to have at least one Swachhagrahi per village in India.

The MDWS and States are attempting to involve locally elected representatives, grassroots-level organizations, NGOs, youth organizations, school students, corporates and civil society organizations in making the SBM a *jan andolan*. Electronic and print mass media is being used to



*Women Swachhta Champions getting felicitated by Hon'ble Prime Minister Shri Narendra Modi during the Swachh Shakti 2017 event.*

reinforce the sanitation messages and broaden its appeal. Bollywood stars and cricketers are also getting involved. Superstar Amitabh Bachchan is leading a "Darwaza Bandh" (on open defecation) campaign on TV, radio and outdoor hoardings across the country. Akshay Kumar has made a blockbuster Bollywood movie on the subject of open defecation – *Toilet- Ek Prem Katha* which has been the biggest hit of this year.

Once a village declares itself as ODF at a Gram Sabha, verification of the latter status becomes the key. Currently, verification of ODF villages stands at around 60 per cent, up from only 25 per cent a few months ago. The SBM-G guidelines provide for a 90-day window for third party verification of a village's self-declared ODF status. Any gaps found need to be immediately identified and addressed by the community during verification. This focus on timely verification of ODF status is the second big difference between the SBM and previous sanitation programmes.

The programme also has a fairly robust system of verification at district and state level. At the national level, the MDWS, carries out separate checks as well as also third party sample surveys by independent organizations. The most recent one, a national 140,000 household survey, carried out by the Quality Council of India during May-June 2017, found that usage of toilets across the country was an encouraging 91 per cent.

There have been instances in previous programmes where ODF declared villages witnessed some “slip back” into open defecation, as old habits are hard to break out of. Sustaining of ODF is no easy task and states, districts and villages will need to continue the focus on IEC to ensure that they remain ODF. Incentive mechanisms are being developed for sustaining ODF, including prioritizing ODF villages for centrally sponsored schemes like piped water supply. The MDWS has also issued sustainability guidelines to states and provided a financial incentive framework to them for sustaining the ODF. Districts are also being ranked under *Swachhta Darpan* based on their performance, sustainability and transparency on SBM-G, spurring healthy competition between districts.

Another very important differentiator between the SBM-G and previous sanitation programs is the inclusive focus cleanliness through management of solid and liquid waste. In fact, waste is now being viewed as a resource, and the name has been re-christened to Solid and Liquid Resource Management (SLRM). Villages are self-ranking themselves on the Village Swachhta Index, with nearly 1.5 lakh villages having already completed this process. This helps them benchmark their present Swachhta levels with the desired state that they aspire to reach. Villages which are ODF and also have adequate SLRM are called ODF+.

### **SBM is Everyone’s Business:**

As the Prime Minister has re-iterated time and again, sanitation must become everyone’s business and not the responsibility of one Ministry or Department alone. A major step in this direction was taken when initiatives like the Swachh Iconic Places (SIP) and Swachhta Action Plans (SAP) were launched. The SIP has seen identification of 20 iconic places of historical and cultural significance and work is going on in full swing to make them islands of excellence with respect to Swachhta, a gold standard for other sites to aspire to achieve. 80 more sites will be taken up in subsequent phases. The SAP has successfully gotten all Ministries and Departments of the Government of India to pledge to take up Swachhta and sanitation related activities in their respective sectors, and have pledged a total of Rs. 12,000 crores for FY 17-

### **SWACHH BHARAT MISSION–GRAMIN: ACHIEVEMENTS SO FAR:**

- 4.9 crores household toilets and over 4 lakh school toilets (mainly funded by PSUs) constructed.
- States of Sikkim, Himachal Pradesh, Kerala, Haryana and Uttarakhand have been declared Open Defecation Free (ODF).
- 1.5 lakh villages ranked on SLWM and Village Swachhta Index.
- Sanitation Coverage gone up from 39 per cent to 67.5 per cent since the launch of Mission.
- 2,47,939 villages and 203 districts have been declared ODF.
- 10 States to be ODF by March 2018, on track for ODF India by October 2019.

18 from their existing budgets for these tasks. The SBM is probably the only government program which is being integrated with the works of the entire government machinery.

Even the private sector has been inspired to contribute to the SBM, not only by contributing money under CSR, but also leveraging their human and managerial resources to help in direct implementation of SBM. One of the biggest contributions has come from the Tata Trusts who have hired and are sponsoring 600 young professionals to work in each district of India with the district administration, tasked singularly with taking their district towards ODF and good SLWM. These professionals, called the Zila Swachh Bharat Preraks, have infused the exuberance of youth into the implementation of the SBM-G and have been thoroughly appreciated by all State governments.

### **SBM becoming a Jan Andolan:**

As the SBM nears its third anniversary, we are at a tipping point from where the mission can spiral into a massive jan andolan provided its is given some higher impetus. Inspired by the Hon’ble Prime Minister’s call of ushering in a New India, the SBM-G has launched a slew of new initiatives to engage the general public with the Swachhta revolution in India. The first of these is the *Swachhathon – the Swachh*





Minister during his Mann Ki Baat address on August 27, where he made an appeal to the nation to get involved with a time-bound, nation-wide mass mobilization campaign to construct twin-pit toilets, clean-up public spots and spread awareness about the SBM through *shramdaan* between September 15 and October 2, 2017. He named this initiative **Swachhta Hi Seva**. The MDWS is engaging government leaders, PRI representatives,

*Bharat Hackathon* which invites innovative technology based solutions to some of the most challenging questions being faced by SBM-G. The questions being answered include how to measure usage of toilets in a non-intrusive manner at scale, how to leverage technology to spark behaviour change at scale, frugal toilet technology designs for difficult terrains, ways to leverage technology to promote maintenance of school toilets, technological solutions for safe disposal of menstrual waste and technologies for early/instant decomposition of faecal matter. The Swachhathon has received over 3000 entries from across the country, and has contributed many innovative ideas which will help further the goals of the SBM-G.

Inspired by the Hon'ble Prime Minister's **Sankalp Se Siddhi** initiative, the SBM-G has launched the **Swachh Sankalp se Swachh Siddhi** Film, Essay and Painting Competition across India as another major step in making Swachhta a *jan aandolan*. Various groups like school children, armed forces, youth organizations and the public at large are being engaged to participate in huge numbers and pen down through an essay or video record through a film, their experiences with and plans for Swachhta. We expect to get over 1 crore essays and over 50,000 films on Swachh Bharat, thereby integrating Swachhta into the consciousness of millions of citizens and generating even more public enthusiasm towards the Swachh Bharat Mission.

Probably the most ambitious of these initiatives was announced by the Hon'ble Prime

community organizations, youth groups, armed forces, corporates and citizens to get involved with this initiative. The Hon'ble President of India initiated the fortnight on 15<sup>th</sup> September at an event in Uttar Pradesh, with Swachh Bharat National Awards and Swachh Sankalp Se Swachh Siddhi Awards being presented on October 2, 2017.

With all of these initiatives picking up steam, the SBM has become an even stronger force through out the country and is inspiring people to play their part in this transformational journey. It has captured the imagination of the country and is being owned by one and all. Lying dormant for seventy years after independence, Gandhiji's dream of a clean India is finally becoming a reality. It took courage and conviction for the Prime Minister to publically commit to make India open defecation free in a span of five years, a goal which many thought was impossible to achieve. There is still a fair way to go but, given the progress made so far, the acceleration expected over the coming 12-15 months and the active engagement of millions of people, the goal is definitely achievable.

***(The author is Secretary, Ministry of Drinking Water and Sanitation, Government of India. He has vast experience in the area of sanitation. He was earlier programme leader and lead water and sanitation specialist in the World Bank. Email: param.iyer@gov.in)***

# SWACHHTA HI SEVA CAMPAIGN

V. Srinivas

Swachh Bharat Mission sought to reform the sanitation sector with the primary focus being on behavioral changes as the fundamental tool for achievement of Open Defecation Free outcomes. Inclusiveness under the Swachh Bharat Mission was achieved by designing public and community toilets keeping in mind the special needs of menstruating women, the elderly, the specially-abled and small children. Further, the Mission sought to promote gender sensitive information, education and communication/ behavioral changes.

On September 15, 2017, the President of India launched a nationwide sanitation campaign “Swachhta Hi Seva” at Iswarigunj village in Kanpur. The President administered the Swachhta Hi Seva Pledge whereby the Nation resolved to create a clean healthy and new India. Addressing the gathering the President said “India is fighting a decisive battle for cleanliness and hygiene. Cleanliness is not the responsibility of only sanitation personnel and government departments; it is a multi-stakeholder national movement.”

Mahatma Gandhi had once famously said “Sanitation is more important than political freedom.” This statement underscored the criticality of sanitation in society. Inspired by these words, on August 15, 2014, the Prime Minister gave a clarion call to the Nation from the ramparts of Red Fort to fight filth and open defecation, change old habits and achieve a Swachh Bharat by 2019, to mark the 150<sup>th</sup> birth anniversary of Mahatma Gandhi. He further said that “women’s pride is an important issue in our villages today. The practice of open defecation must be stopped. Toilets must be built and used.”

The aim of the Swachh Bharat Mission is to achieve a clean and open defecation free India by October 2, 2019. The objectives are generating demand for toilets leading to their construction and sustained use by all household members, promoting better hygiene behavior amongst the population and improving cleanliness by initiating solid and liquid waste management projects. The financial allocations under the Swachh Bharat Mission increased from Rs.2850 crores in 2014-15 to Rs.6525 crores in 2015-16, to Rs.10,500 crores in 2016-17, to Rs. 14000 crores in 2017-18. In the last 3 years, under

the Swachh Bharat Mission, 48,264,304 toilets were constructed. Open Defecation Free Villages reached 2,38,966. Individual toilet coverage increased from 42 percent in 2014 to 64 percent in 2017. 5 States have declared themselves open defecation free. The Ministry of Drinking Water and Sanitation has said that the progress achieved is encouraging to reach the goal of an Open Defecation Free India by October 2, 2019.

Swachh Bharat Mission sought to reform the sanitation sector with the primary focus being on behavioral changes as the fundamental tool for achievement of Open Defecation Free outcomes. Inclusiveness under the Swachh Bharat Mission was achieved by designing public and community toilets keeping in mind the special needs of menstruating women, the elderly, the specially-abled and small





*The Union Minister for Textiles and Information & Broadcasting, Smt. Smriti Zubin Irani participating in the cleanliness drive at the 'Swachhta Hi Sewa' campaign at Village Kendri, District Raipur on September 17, 2017.*

children. Further, the Mission sought to promote gender sensitive information, education and communication/ behavioral changes. The Mission issued Gender guidelines in 2017 and Menstrual Management Guidelines in 2015.

An innovative monitoring and evaluation system was put in place. The Swachh Sarvekshan was conducted for rural India and revealed that Mandi (Himachal Pradesh) and Sidhudurg (Maharashtra) were the cleanest districts in India. The Swachh Sarvekshan assessed 22 Hill districts and 53 Plain areas. National level monitors were hired to carry out sample-based checks of sanitation coverage and open defecation free status across the country.

A massive survey covering 92,000 households in 4626 villages across the country is being conducted. An additional 200 villages located on the banks of Ganga are being surveyed. Eminent personalities like Amitabh Bacchan was nominated as the Brand Ambassador for Swachh Bharat Mission and celebrities like Sachin Tendulkar and Akshay Kumar attended champion collector conclaves for motivational purposes. The Swachh Bharat Mission maintained a significant social media engagement for enhancing awareness levels and a newsletter Swachhta Samachar Patrika was published on a regular basis. A recent Bollywood film titled "Toilet – Ek Prem Katha" based on the Swachh Bharat Mission witnessed considerable box office success.

The Swachh Bharat Mission represents a national movement with diverse stakeholders comprising of Central Ministries, State Governments, local institutions, non-government and semi-government agencies, corporates, NGO's, faith organizations and media. This approach is based on the Prime Minister's call that Swachhta has to be everyone's business and not only that of the sanitation departments.

A host of special initiatives and projects have come out in quick time. The Inter-Ministerial Projects included Swachhta Pakhwadas, Namami Gange, Swachhta Action Plan, Swachh Swasth Sarvatra campaign, School Sanitation drives, Anganwadi Sanitation drives, Railway Sanitation etc. The inter-sectoral collaborations included Swachh Iconic Places, Corporate Partnership, Inter Faith Cooperation, Media engagement and Parliament engagement. Swachhta Action Plans were developed by 76 union ministries and departments and web based portal was developed to monitor progress and highlight implementation status. Women Swachhagrahis were appointed and Swachh Shakti Awards were instituted to further enhance women involvement with the program. The Swachh Bharat success stories said that accessible and secure toilets had made a big difference to the lives of village communities, as they did not have to travel distances in the dark to relieve themselves. Further the health risks of open defecation were greatly reduced by having a toilet in the house.

The Vice President of India said that Swachh Bharat Mission is at a tipping point from where a major is expected to spiral it into a massive Jan Andolan – a people's movement. The Swachhta Hi Seva Campaign seeks to mobilize people to come out and get directly involved with the Swachh Bharat Mission by offering shramdaan for swachhta in the fortnight leading upto Gandhi Jayanti. Come join the Swachhta Hi Seva Campaign.

***(The author is an IAS officer of 1989 batch and is currently posted as Chairman of the Rajasthan Tax Board. Email: svoruganti@outlook.com)***



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# SBM: EFFECTIVE COMMUNICATION STRATEGY FOR BEHAVIOUR CHANGE

Padma Kant Jha, Yogesh Kumar Singh

On 23rd of September, 2017, Prime Minister did Shramdaan and contributed to build a twin pit toilet in Varanasi. His repeated personal contribution shows his commitment to cleanliness. He also praised for naming Shouchalaya as Izzat Ghar. During his 'Mann ki Baat' address on 27th of August 2017, he called upon the nation to undertake a campaign, 'Swachhta Hi Sewa (Cleanliness is Service)', from September 15, 2017 to Gandhi Jayanti. These types of gestures will definitely help in making Swachhata a Jan Andolan (Peoples Movement).

According to Census 2011, India's 68.84 per cent population lived in villages. The revelation from Census that only 32.70 per cent households had access to toilets in rural areas, which implied that two-thirds of rural households did not have access to toilets, stunned the Government and development activists. Open defecation is not only a health hazard, but also a cause of threat to women residing in rural areas of the country. Women, who do not have access to toilets in rural areas, mostly relieve themselves under the cover of darkness, i.e. before the dawn or in the evening after sun-set.

A UNICEF report also reveals that India has the highest number of stunting cases and the stunting is not the only hazard which comes up with open defecation but there are others too. Water and sanitation related diseases remain among the major causes of death in children under five and in India, under-five mortality rate is 53 per thousand live births. Using unimproved sanitation facilities leads to contamination of ground water and pathogen contamination leads to diarrhoeal diseases. Each episode of Diarrhoea leads to loss of nutrients from the body which is connected to malnutrition, stunting and sometimes death.

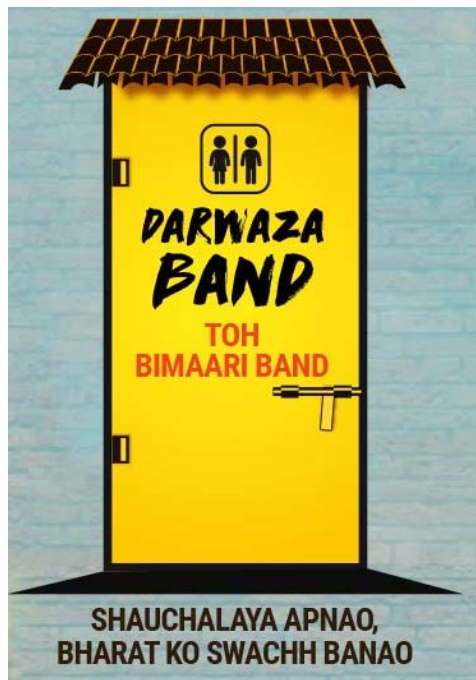
India is a low-income category country; the diseases due to open defecation put added financial burden on poor families due to poor hygiene and leave them in the vulnerable situation. Access to clean water and sanitation reduces exposure to pathogens and transmission to pathogens which further results in the reduction in Diarrhoea, improvements in anthropometric indexes of children and reductions in total mortality.

The coverage of households with toilets was 32.70 per cent in rural areas according to Census 2011 shows that the toilet was the least priority for the households residing in rural areas. Swachh Bharat Mission (SBM) which was launched on 2<sup>nd</sup> October, 2014 targeted to make country open defecation free by 2<sup>nd</sup> October 2019, but eliminating open defecation and motivating people for constructing the toilets and using them, taboo regarding disposal of fecal waste generated from the septic tank have been observed as the major challenges.

The government could take up the construction of the toilets but with the construction of toilets, there was dire need to change the behavior of the citizens towards sanitation and hygiene. In absence of effective Behaviour Change Communication (BCC) and Information Education and Communication (IEC), the earlier sanitation programmes showed a little improvement in terms of coverage of households with toilets and resulted in short-term usage of the toilets. In rural areas, the people follow their own understanding of personal hygiene and cleanliness, but by not connecting the toilets with the sense of



impurity & pollution and stubborn habit for open defecation have been the reasons for not using the toilets or constructing the toilets inside the houses. Even in some cases, if the toilet is provided to a rural household, the men of the households preferred to go for open defecation as it has been the most convenient for them to take a walk in the morning in open air to their agricultural field and open defecation has synchronized with their daily life in such a way that barred their motivation to use toilets. On the other hand, people residing in the rural areas are mostly dependent on agriculture for their livelihood and they generally borrow the money for farm practices. So, to borrow money to construct toilet is considered as an additional financial burden on them which bar them from owing toilets.



Viewing the earlier performance of the sanitation programmes, a Sub-group of Chief Ministers on Swachh Bharat Abhiyaan was formed and the Sub-group was asked to analyze the size of the problem of open defecation and suggest recommendations on making the country clean; the first set of recommendations was on Behaviour Change which was thought to be foremost for the success of the Mission. The Sub-group recommendations emphasized on higher allocation towards Behaviour Change Component, involving political and social/thought leaders, celebrities and media houses, and positive/ dignified outlook toward cleaning occupation. The Sub-group also recommended using education as a strategy for the Mission by making Sanitation as a part of School syllabus and harnessing the potential of children as change agents. To form a group of students which may further lead to sanitation in their respective areas is the key to bring positive change of mind-set towards sanitation.

Behavior Change Communication (BCC) is of immense importance as it may serve as a platform for informing, educating and persuading people to realize their roles, responsibilities, and benefits

accruing from investing in correct sanitation practices. As the people are on the center of the Mission, the Government started quoting the mission as 'People's Movement'. The best way to create impact has been to follow a holistic approach that empowers communities through participatory methodologies, which 'trigger' the minds of the community to take informed decisions regarding their sanitation status. The communication at the community level can be supplemented by a mass media initiative, which focuses on changing social and cultural norms regarding open defecation and maintaining a

clean environment through environment building and reminder services.

Regular cleanliness Campaigns are being organized by Ministry of Drinking Water and Sanitation (MDWS). The Prime Minister, Union Ministers and the States have taken immense interest in Swachh Bharat Mission and conducting Behaviour Change Campaign. Massive media campaigns have been organized at the national level using Audio Visual (TV) and Audio (Radio). Amitabh Bachchan, VidyaBalan, ShilpaShetty, Anushka Sharma, Akshay Kumar, and Sachin Tendulkar have been roped into the campaign besides other celebrities and icons from various walks of life. Social media is being used extensively. There is a national Swachh Bharat Group on Hike App, with representatives from all the States and selected districts. Happenings on the field across the country are shared on a daily basis. The Ministry also actively uses the twitter handle (@swachbharat) and Facebook (Swachh Bharat Mission). The website of the Ministry ([www.mdws.gov.in](http://www.mdws.gov.in)) has also been upgraded as a medium for real-time cross sharing of best practices. Through a national IEC Consultation and other workshops, efforts have been made to maximize the benefits from IEC interventions and the funds meant for this purpose. Corporates, civil society organisations and other Ministries and departments have joined in SBM awareness efforts in good measure. Ministry of Housing and Urban

Affairs launched a media campaign at Central level, which includes a film captioned “Yahi hai asli tarakki”, publishing of Amar Chitra Katha on Sanitation in English and Hindi and launched an e-learning portal to expand the training of ULBs’ officials.

In September 2017, the Ministry of Drinking water and Sanitation organized Swachhathon 1.0- the Swachh Bharat Hackathon, to crowd source solutions for the pressing issues pertaining to Sanitation. The Primary target of the Ministry was youth from rural areas who could come up with innovative solutions to problems in the following categories:

- (a) Innovative, Sustainable, Environmental-friendly and affordable toilet technology for hilly, dry, flood-prone and remote areas.
- (b) Technological solutions to monitor the usage of toilets.
- (c) Technological solutions for bringing behavioral change for toilet usage and hygiene.
- (d) Innovative models and methods to improve the operation and maintenance of school toilets
- (e) Innovative solutions for Menstrual Health Management.
- (f) Innovative solutions for early decomposition of faecal matter.

Further, in response to the Prime Minister’s call to the nation to Quit Filth, it was announced by the Minister, MDWS that the SBM (Gramin) will celebrate the week leading up to the 70<sup>th</sup> Independence Day as “Khule Mein Shauch Se Azaadi” saptaah. During the week:

- (1) More than 24 States prepared their Swachhta Action Plan for the week to reinforce their swachhta efforts by innovative methods and with community engagement.
- (2) On August 12, 2017, MDWS and Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD&GR) jointly announced 24 Ganga Grams from five States, Uttarakhand, UP, Bihar, Jharkhand and West Bengal to make them Aadarsh Ganga Gram.
- (3) 30 Swachhta Rathes launched at Allahabad, Uttar Pradesh on August 12, 2017, in the presence of the Chief Minister of Uttar Pradesh, Union Minister, MoWR, RD & GR and Minister, MDWS.

- (4) It was thought to launch Swachhta Rathes in other parts of the country.

Swachhta Rathes are mobile vans equipped with LED panels for screening Swachhta Films and also a Nukkad Natak Team for community engagement in villages. The Rathes would tour the entire state and create mass awareness and would help in triggering behaviour change among the community members.

All 4480 villages on the bank of River Ganga in 52 districts and 5 states (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal) were declared Open Defecation Free (ODF) under Namami Gange. Ganga Gram is a joint initiative of MDWS and MoWR, RD&GR to make the villages Aadarsh Gram. The Gram Pradhans of these villages were administered the oath for achieving the goal of Aadarsh Ganga Gram. The Ganga Gram initiative would focus on better cleanliness and infrastructure facilities like Solid and Liquid Waste Management (SLWM), rejuvenation of ponds and water sources, water conservation projects, organic farming, crematorium and overall convergence with other government departments and projects.

In an event organised in Uttarakhand at village Veerpur Khurd on the bank of River Ganga, Union Minister for Drinking Water and Sanitation commissioned two Ganga Grams in the presence of various faith leaders led by Swami Chidanand Saraswati, co-founder of Global Interfaith WASH Alliance (GIWA). Two villages on the bank of River Ganga, Veerpur Khurd in Dehradun and Mala in Pauri Garhwal have been taken by the MDWS to make them model Ganga villages, in collaboration with Global Interfaith WASH Alliance (GIWA).

Union Minister, MDWS and eminent film personality, Akshay Kumar, undertook a toilet pit emptying exercise in Reghwan village, in Khargone district of Madhya Pradesh for eliminating the taboo of villagers from cleaning the toilet pits. The Minister and Shri Kumar personally led a team of senior officers of State and Central government to a household in the village that has adopted a twin pit toilet model in their toilet, and proceeded to empty the filled pit of the toilet and held up the compost found in the toilet in their hands to demonstrate that the exercise is perfectly safe and that there should be no stigma attached to it.

For the promotion of toilet usage across the country's villages, the Ministry of Drinking Water and Sanitation has come out with an aggressive new campaign called Darwaza Band started from May 30, 2017. The campaign produced by the MDWS under Swachh Bharat Mission was launched in the presence of iconic actor, Amitabh Bachchan, Union Minister for Drinking Water and Sanitation, Chief Minister of Maharashtra, Secretary, MDWS and other Centre and State dignitaries in Mumbai. The campaign has been supported by the World Bank and is being rolled out countrywide immediately after the launch. It is designed to encourage behaviour change in men who have toilets but are not using them. The campaign also features actor, Anushka Sharma, who will be seen encouraging women to stand up for this issue in their villages and assume a leadership role.

Under Swachh Bharat Mission (Gramin), the Ministry of Drinking Water and Sanitation also organized a two-day Collectors' Conference at Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie on June 29th and 30th, 2017. This was also a part of the Swachhta Pakhwada celebrations of the Department of Personnel and Training, under which the LBSNAA has been rechristened the Swachh Bharat Academy for the duration of the fortnight.

Union Minister, MDWS also announced that in the run-up to completion of three years of Swachh Bharat Mission, MDWS has planned various Swachhta events across the country from 25<sup>th</sup> September to 2<sup>nd</sup> October 2017. During this week, National Swachhta Awards were to be given to grass root level swachhta champions, district officers, best Pakhwada Ministries, outstanding contributions by Ministries, PSU sponsors for Swachh Iconic Places and Swachhta Action Plan.

As the Swachh Bharat Mission approaches the third anniversary of its launch by the Prime Minister, the Ministry of Drinking Water and Sanitation launched a third party verification survey report to take stock of the progress already made by the Mission in rural India. The Quality Council of India (QCI) conducted a transparent third-party assessment of the present status of rural sanitation in all States and UTs, called Swachh Survekshan Gramin 2017.

Under the Swachh Survekshan Gramin 2017, QCI surveyed 1.4 lakh rural households across 4626 villages and found the overall toilet coverage to be

62.45 per cent. At the time of the survey, i.e. May-June 2017, the Swachh Bharat Mission (Gramin) Integrated Management Information System (IMIS) reported the coverage to be 63.73 per cent. The survey also observed that 91.29 per cent of the people having access to a toilet use it. The intense Behaviour Change Communication strategy adopted by the Government could be a reason for this high percentage of usage of toilets in rural India.

To encourage States and districts to improve their Sanitation coverage and Solid Liquid Waste Management (SLWM), the MDWS has decided to begin ranking all districts in India based on the data available on the SBM-G IMIS quarterly. The ranking will be done based on parameters of Performance, Sustainability, and Transparency, and the first ranking will be announced on 2<sup>nd</sup> October, 2017 for the quarter July-September 2017.

The Mission has been successful in terms of covering the rural households with the toilet as the country has achieved the coverage of 69 per cent at the national level in terms of households covered with the toilets which were 39 per cent at the launch of the Mission. In the month of September 2017, the country has around 5.20 crore households without toilets. Out of 5.20 crore households around 2.70 crore households without toilets are in the States of Uttar Pradesh and Bihar. The Ministry should come up with the special strategy for these two states to turn the dream of Open Defecation Free India into reality.

On 23<sup>rd</sup> of September, 2017, Prime Minister did *Shramdaan* and contributed to build a twin pit toilet in Varanasi. His repeated personal contribution shows his commitment to cleanliness. He also praised for naming *Shouchalaya* as *Izzat Ghar*. During his 'Mann ki Baat' address on 27<sup>th</sup> of August 2017, he called upon the nation to undertake a campaign, '*Swachhta Hi Sewa* (Cleanliness is Service)', from September 15, 2017 to Gandhi Jayanti. These types of gestures will definitely help in making Swachhata a *Jan Andolan* (Peoples Movement).

***(Padma Kant Jha is Dy. Adviser (Drinking Water and Sanitation), NITI Aayog, Gol and looking after Swachh Bharat Mission in NITI Aayog, since launch of the Mission and also supported the Sub-Group of Chief Ministers on Swachh Bharat Abhiyaan. Yogesh Kumar Singh is Young Professional, NITI Aayog. Email: jha.pk@gov.in. Views expressed are personal)***



## Swachh Sankalp se Swachh Siddhi

The nationwide mega campaign **Swachhta Hi Seva** was preceded by another countrywide campaign **Swachh Sankalp se Swachh Siddhi** in which Essay, Short Films and Painting competitions were organised for general public, with a special focus on school children, from 16<sup>th</sup> August to 8<sup>th</sup> September, 2017.

**Short Film Competition:** To help implement the his vision, Swachh Sankalp se Swachh Siddhi, Short Film Competition is being organized as another major step in making Swachhta a Jan Aandolan. Individuals are requested to make 2 to 3 minute films on the theme of Swachhta and show how they can contribute to the Swachh Bharat Mission. The Topic for the Film is 'My Contribution towards Making India Clean'. In case of a silent film please use #silent. Individuals can uploaded their short film on [www.youtube.com](http://www.youtube.com) and the link to the same must be shared on [www.mygov.in](http://www.mygov.in). The awards will be provided under the two categories of Age : 0-18 years #below18 and, 18 and above #above18. Three winners from each category will be awarded at the National Level. and also at the State and District levels.



**Essay Competition:** To help implement the Honourable Prime Minister's vision, Swachh Sankalp se Swachh Siddhi, Essay Competition was organized as another major step in making Swachhta a Jan Aandolan. Individuals were invited to write essays of not more than 250 words on the theme of Swachhta and describe how they can personally contribute to the Swachh Bharat Mission. The Topic for the Essay was 'What can I do for a Clean India?' Three winners were awarded at the national level, State and District levels. Senior citizens were given special recognition at the national awards.

**Painting Competition:** A Painting Competition was another major step in making Swachhta a Jan Aandolan. The Topic for the Painting Competition was "Clean India of my dreams". This competition was only for Class 1 to 5 Schools students for which the Ministry received a total of 2.46 crore entries.



# TWIN PIT POUR FLUSH WATER SEAL TOILET

Yugal Joshi, Neeraj Tiwari

The largest number of people defecating in the open live in India. To tackle the challenge of open defecation, Swachh Bharat Mission has triggered a jan andolanin behaviour change that has resulted in crores of people changing their habits and using toilets for defecation. However, we still face the challenge of best suited toilet technology for sustainable and complete disposal of human excreta. In this context, Twin-Pit toilets are the most suitable on-site sanitation measures for houses.

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Therefore, toilets with twin pits, suggested as a self sustaining and complete human waste disposal system are advocated by the Ministry of Drinking Water and Sanitation.

Recently, Prime Minister Shri Narendra Modi at village Aarjiline, Shahanshapur in Varanasi district helped in shramdaan to build a Twin Pit toilet for a poor family. Entire country saw the Prime Minister laying bricks in the honeycomb structure of the pit.

In this article, we are discussing about the twin pit toilet and also why it is a complete on-site sanitation measure at household level that, on one hand fulfills all the sanitary requirements of a toilet,



Picture 1: Construction of a Twin Pit Toilet. Both pits should be one meter apart.

and on the other hand, provides continuous use of a toilet with minimal maintenance.

The main components of such a toilet, technically called Twin Pit Pour Flush Water Seal Toilet (TPPFWST) are the two pits used alternately, a pan, water seal / trap, squatting platform, junction chamber and a superstructure.

There are two pits, which are used alternately. Both the pits are connected with a junction chamber at one end. Pit walls have honeycombed structure. Bottom of the pit is not plastered and is earthen. Depending on the number of users of toilet, size of the pit varies. Capacity of each pit is normally kept for 3 years. First pit, after it gets filled up in about 3 years is blocked at the junction chamber and second pit is put in operation. Water part of excreta percolates in soil through honey combs. After 2 years of blocking of the first pit, its contents degrade completely and turn to solid, odourless, pathogen free manure. It is dug out by beneficiaries and used for agriculture and horticulture purposes. After the second pit is filled, it is similarly blocked and the first pit is put in use again. Thus, alternate use of both the pits continues.

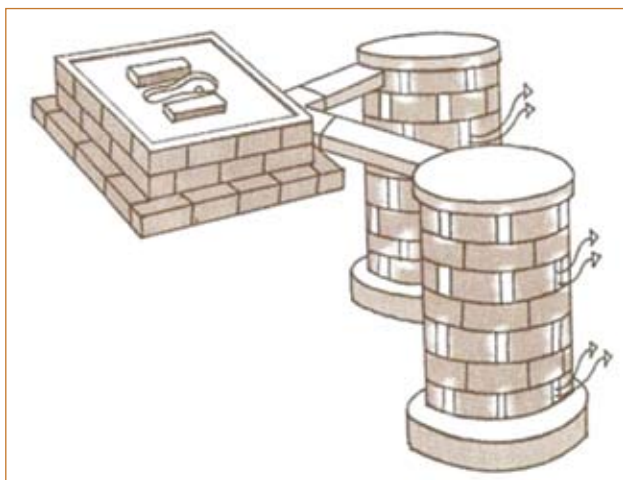
Pit toilet is not suitable for high water table and rocky areas. In high water table areas, there is chance of ground water contamination. In coastal areas also these toilets are not suitable at all. Further, due to high water table, adjoining soil of the pit becomes saturated and further percolation from pit reduces significantly causing frequent filling of the pits.

In case of rocky areas, there is no chance of percolation of water from pits. Consequently, pit gets filled in frequently. Due to unavailability of mechanical devices to clean the pits, it is not acceptable by the beneficiaries.

For coastal and other areas having high water table and also for rocky areas the Technologies like, (a) Ecosan Toilet, (b) Bio toilet and (c) Septic tank toilet. The designs of these toilets are available in the Handbook on Technology Options for on-site sanitation of the Ministry which is also available in MDWS website.

### **Twin-pit Pour-flush Water Seal Toilet:**

The Twin-pit Pour-flush Water Seal Toilet is an on-site sanitation measure for houses where



the water table is sufficiently low to avoid ground water pollution. On one hand it fulfills all sanitary requirements of a toilet, and on the other it provides continuous use with minimal maintenance. The main components of such a toilet are the two pits used alternately, a pan, water seal / trap, squatting platform, a junction chamber and a superstructure.

The two pits are connected with a junction chamber at one end. Pit walls have a honeycomb structure. The bottom of the pit is not plastered and is earthen. Depending on the number of users of toilet, size of the pit varies. Capacity of each pit is normally kept for three years. After the first pit fills up in about three years, it is blocked at the junction chamber and the second pit is put in operation. The watery part of excreta percolates in soil through the honey comb structure. After two years of blockage, its contents degrade completely and turn to solid, odourless, pathogen free manure. It is dug out by beneficiaries and can be used for agriculture and horticulture. After the second pit is filled, it is similarly blocked and the first pit is put in use. The alternate use of both the pits continues. Picture below shows

Akshay Kumar emptying a pit to remove manure at Khargone district in Madhya Pradesh.

### **Pan and Trap / Water Seal:**

The pan used in the pit toilet has a steep slope of 25°–29°. It may be made of ceramic, mosaic or fiber. Mosaic pans usually are difficult to clean and are not preferred. The fibre pan is cheaper, lighter and easier to handle, but it often develops a yellowish tinge after a while, making it not aesthetically appealing. Ceramic pans are used mostly as they are easily available in the markets. They are aesthetically appealing; require about 1.5 to 2 liters of water to clean.

### **Trap/ Water seal:**

Water seal in pans should be of 20 mm only because they are suitable for water scarce areas. Seals more than the stipulated measurement require more water and reduce the life of leach pit. The trap should be approximately seven cms in diameter. Such a trap / trap with pan with a steep slope, as mentioned above, requires only 1.5–2 liters of water to flush out excrement. Such water seals can be made of ceramics, mosaic or made of fiber.

### **Foot Rests:**

These can be of ceramic, cement concrete, cement mosaics or brick plastered. The top of the footrest should be about 20 mm above floor level and inclined slightly outwards in the front.

### **Pit Lining:**

The pits should be lined to avoid collapse. Bricks joined in a 1:6 cement mortar ratio are most commonly used for lining. Locally manufactured bricks should be used wherever available. Stones or laterite bricks and cement concrete rings could be used depending upon their availability and cost. However, for ease of construction, using concrete rings will be advantageous where subsoil water level is above the pit bottom.

The lining in brick work should be 115 mm thick (half brick) with honey combing up to the invert level of incoming pipe or drain; the size of holes should be about 50 mm wide up to the height of the brick course. For ease of construction, holes should be provided in alternate brick courses. In case the soil is sandy and a sand envelope is provided, the width of openings should be reduced to 12–15 mm.

Where foundation of building is close to the pit, no holes should be provided in the portion of lining facing the foundation and in rest of the lining 12–15 mm wide holes should be provided. The lining above the invert level of pipe or drain up to the bottom of pit's cover should be in solid brick work, i.e., with no openings.

#### Pit Bottom:

Except where precautions are to be taken to prevent pollution of water sources, the pit bottom should be left in a natural condition.

#### Pit Cover:

Usually RCC slabs are used for covering the pits, but depending upon the availability and cost, flagstones can also be used. The RCC Slab may be centrally cast in pieces for convenience of handling.

#### Location of Pits:

The ideal position for locating the pits is that they be placed symmetrically at the back of the pan. The pits may be located within the premises, under a footpath, narrow lanes, or under the road. The minimum space between two pits should be equivalent to at least the effective depth (distance between the bottom of the pit and inverted level of pipe or drain. Providing an impervious barrier like cut off screen or puddle wall can reduce spacing.

The safe distance of the leach pits from the foundations of existing buildings, depends on the soil characteristics, depth as well as type of foundation of the structure, depth of the leaching pits etc., and varies from 0.2–1.3 m.

However, in cases where the leach pits are quite close to the existing building foundation, the opening in the brick work lining of the leach pit may be reduced to 12–15 mm.

#### Requirement of a Vent Pipe:

A pit toilet does not require a vent pipe. Gases produced in the pit are diffused in soil through honeycomb structures. The gases are mainly Carbon dioxide (CO<sub>2</sub>) and Methane (CH<sub>4</sub>). The system also helps in reducing air pollution from these Green House Gases.

#### Advantages of Twin Pit Pour Flush Toilets:

- i) It is a permanent solution for on-site household human waste disposal



- ii) It requires only 1.5 to 2 liters of water per use of toilet
- iii) Digested human wastes, when taken out of the pit after two years is semi solid, free from odour and pathogens, that can be easily dug out by beneficiaries.
- iv) Degraded sludge has good percentage of plant nutrients and can be used for agriculture and horticulture purposes.
- v) It does not require manual labour to clean the pits.
- vi) It can be easily upgraded and connected to sewer whenever such facility is available in future.
- vii) Its maintenance is easy.

#### Limitations of Two-Pit Pour Flush Toilet:

Leach-pit toilet is not suitable for high water table and rocky areas. In high water table areas, there is chance of ground water contamination. In coastal areas these toilets are not suitable at all. Further, due to high water table, adjoining soil of the pit becomes saturated and further percolation from pit reduces significantly, causing frequent filling of the pits.

In case of rocky areas, there is no chance of percolation of water from pits. Consequently, pit fills up frequently. Due to unavailability of mechanical devices to clean the pits, it is not acceptable to beneficiaries. Moreover, even after the pit is emptied, it is quite difficult to dispose the sludge safely.

**Applicability:** Twin leach pit toilet is applicable in any area except high ground water and in rocky areas.

*(The Authors are Director, in Ministry of Drinking Water and Sanitation Government of India. Email: hiyugal@gmail.com)*

# SWACHHATHON: HARNESSING THE CREATIVITY OF MILLIONS FOR SWACHH BHARAT

Reny Wilfred

“Swachhathon 1.0- A Swachhata Hackathon was organized by the Ministry of Drinking Water and Sanitation to crowdsource innovative ideas to solve the sanitation related problems (including hygiene) being faced by the country and also to incubate the ideas to develop sustainable solutions. The initiative saw massive participation; over 3000 entries (including international entries) were received under 6 categories that included ‘Operation and Maintenance of School Toilets’, ‘Behavior Change Communication’, and often forgotten issues of ‘MHM’. In the spirit of a Janandolan both Public and Private sector came together- students from schools and colleges, professionals, organizations, startups, NGOs, State Governments proposed exciting, innovative, novel and viable solutions.”

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## Introduction:

The Swachh Bharat Mission’s (SBM) over the past three years has been addressing burgeoning problem of Sanitation. Over 2,35,000 villages, 1300 cities, 200 districts and 5 states have been declared open defecation free (ODF). All villages along the banks of the Ganga have been declared ODF. Over 50 per cent of urban wards have door to door collection of municipal solid waste. Almost 5 crore toilets have been constructed in rural and urban areas.

Swachhathon (Swachh Bharat Hackathon) was conceptualized as an attempt to crowd source solutions and to engage the general public with the Swachhta revolution in India. It invited innovative technology based solutions to some of the most

challenging questions being faced by SBM: how to measure usage of toilets in a non-intrusive manner at scale, how to leverage technology to spark behaviour change at scale; frugal toilet technology designs for difficult terrains; ways to leverage technology to promote maintenance of school toilets; technological solutions for safe disposal of menstrual waste and technologies for early/instant decomposition of faecal matter.

## Swachhathon 1.0

**What:** An attempt to crowd source solutions for some of the pressing problems faced by the country in Sanitation and Hygiene. Students from schools and colleges, professionals, organizations, startups and others were invited to come up with exciting, innovative, novel and viable solutions for:

- Monitoring usage of Toilets.
- Triggering Behaviour Change.
- Toilet Technologies in Difficult terrains.



- Working solutions for maintenance and operations of school toilets.
- Technological solutions for safe disposal of Menstrual Waste.
- Solution for Early Decomposition of Faecal Matter.

**Why:** It was envisaged to address real problems being faced by the people in attaining complete sanitation. The problems ranged from implementation challenges, to those arising due to diversity in cultural and geographical context. It was thought that such problems from ground level can only be addressed through innovations, ground level up. And then only then can be termed as real and sustainable solutions to real problems.

### Monitoring Usage of Toilets:

Usage of toilets is the key goal of the Swachh Bharat Mission Gramin. Toilet usage is presently measured on a sample basis through household surveys. There is however no technological solution available to measure and confirm usage of toilets. The ability to easily measure usage of toilets would allow the Swachh Bharat Mission to take immediate and responsive steps to promote usage.

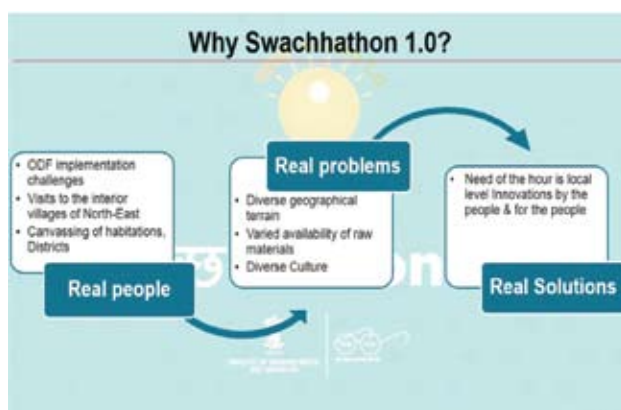
So, technological solutions were invited: adaptable for rural areas to effectively measure usage of toilets and ingrained with following features:

- Affordable.
- Scalable.
- Socially acceptable.
- Easy to use.
- Accurate.

The solution could be either a technology or a technique or a combination of the two to monitor usage.

### Triggering Behaviour Change:

Behaviour change is fundamental to the Swachh Bharat Mission. Several inter-personal techniques through community approaches to sanitation are being used across the country to trigger behaviour change. But old habits die hard and behaviour change takes time. Some people continue to defecate in the open even after having a household toilet.



The Swachh Bharat Mission invited innovative solutions to trigger and motivate people to stop open defecation and use toilets, at scale. The solutions were expected to be:

- Scalable.
- Non-coercive.
- Socially acceptable.
- Yield instant or immediate shift in behavior.

Again, the solution could have been in form of a technology, demonstration, technique, pictures, combination of things and others.

### Early Decomposition of Faecal Matter:

In large parts of rural India, on-site drainage is preferable over networked drainage owing to the ease of implementation and cost-effectiveness. Any solution which helps decompose faecal matter quickly will enable easy and safe emptying of the toilet pit/septic tank. This will also reduce the turn-around time for re-use of the pit/septic tank and will lead to sustained use of the toilets.

As part of Swachhathon, solutions were invited to expedite the process of decomposition of faecal material. The proposed technology was supposed to decompose the faecal material in the shortest possible time, and had to be cost-effective, scalable, easy to implement, weather proof and environmental-friendly.

Technological solutions for Safe Disposal of Menstrual Waste:

With increase in education and awareness levels around Menstrual Health and Hygiene, more and more women and adolescent girls in the country are switching to safe sanitary options to manage their menstrual cycles. However,

there is still no formal waste management system of sanitary waste. Often these are disposed off in fields, water bodies, flushed in toilets or dumped along with the regular solid waste.

In this category, technological solutions were invited to manage and to dispose off sanitary waste.

- Safe for the environment, and not cause any air, water or soil pollution.
- Cost-effective.
- Scalable across villages and institutions such as schools, colleges, etc.

### Operation and Maintenance of School Toilets:

All government schools in India have been provided with toilets under the Swachh Vidyalaya initiative. However, due to the lack of human and monetary resources across many schools, continuous maintenance of these toilets is challenging. There are also other problems in certain areas like lack of adequate water.

To handle this festering problem, solutions were sought to:

- Ensure effective maintenance of school toilets.
- Reduce the time needed/spent on maintenance.
- Reduce the cost of maintenance of school toilets.

The solutions had to be affordable by schools in rural India (which have very slim budgets), scalable, socially acceptable, equitable and adaptable to varying sizes of school toilets.

### Toilet Technology:

The Swachh Bharat Mission wants to promote affordable, sustainable and environmentally friendly toilet technologies across the nation. However, in certain parts of the country, these available technologies have not been successful in being robust and cost-effective. This is especially true for areas which are flood-prone, areas which have a hard rock surface, and areas which are



remote and poorly connected with transportation infrastructure.

In Swachhathon, the Swachh Bharat Mission-Gramin invited solutions for innovative toilet technologies from the participants for the following areas:

- Remote and poorly connected areas or/and;
- Hard rock areas or/and;
- Flood Prone areas.

Additionally, suggestions were sought for improvement/upgradation of the current technology being adopted by the ministry that is, the twin pit system.

All the proposed options had to be cost-effective, sustainable, reliable and durable, user-friendly, weather proof, environmental-friendly, and preferably using locally available material (locally implied the area for which the technology was built for).

**How:** The Hackathon was designed as an open for all (including international entries, all age groups and team/individual participation) process through which anybody and everybody could contribute towards 'Clean India'.

On August 2 2017, an Open call was made to Citizens to submit their entries in the respective categories in MyGov portal. The Swachhathon cause was popularized using social media, celebrities, print and electronic Media. The state governments actively participated organizing curtain raiser events at state level to reach out the potential participants. Last date for submission of entries is August 31st, 2017.

A panel of experts consisting of Administrators working in SBM, Sector Experts with support of Knowledge partners shortlisted entries for semi-finals in Delhi.

57 shortlisted participants were invited Delhi for Round 2 starting from September 7, 2017, where they presented their idea/solution in form of a prototype in front of an External Jury, consisting of Experts of eminence the field of Swachhta. This round started with an Innovation and Incubation Support session by NITI Ayog. The evaluation panel will comprise of stalwarts from Professional and Domain experts. Participants will be evaluated on the originality of the solution, utility, cost-effectiveness, ease of maintenance, sustainability, scalability and environment-friendliness.

The final list of selected participants had to give a short presentation along with showcasing their prototype/ strategy before a grand jury consisting of panel of experts. There winners were selected in each category with 1<sup>st</sup> Prize having 3 Lakh as award money. The finals were conducted in AICTE, Delhi.

### Glimpses of Few Innovations:

Mr. Ram Prakash Tiwari from PHED department, Arunachal Pradesh came up with an innovation where instead of bricks bamboo with plastic lining could be used in the twin pit toilet technology. Arunachal Pradesh is a difficult geographical terrain with very less motor-able roads. Masons and raw material for constructing the toilet comes from Assam which increases the cost of construction. This innovation uses local material and expertise of locals of Arunachal. It also makes use of waste plastic.

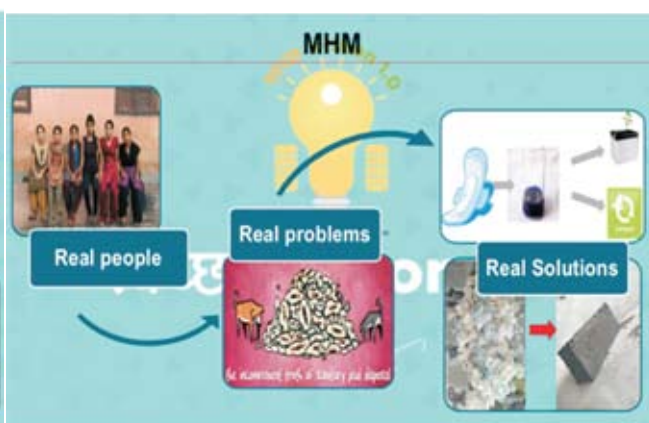


Mr. S. Sasikumar from Puducherry came up with low cost, easy to operate motorized cleaning tool. School students from Tamil Nadu innovated with plastic cans to make low-cost urinals. This was successfully implemented in Koppal district in Karnataka.

Technological solution for safe disposal of menstrual waste received very interesting innovations. Aishwarya from Kerala came up with treating the used sanitary pads with a chemical solution and residue of which could be used for fertilizers and making grow bags. Elakiya from Tamil Nadu gave a solution to reuse the treated used sanitary pads for making paver bricks. Mr. Subhankar Bhattacharya from West Bengal made a zero emission incinerator.

### Swachhathon: A First of its Kind Attempt:

The approach of crowd sourcing innovative ideas has not been designed as a one-time intervention, it has a grand vision of looking behind the contest itself and crowd source ideas/ solutions/innovations that would bring a sustainable change in the country. Ministry of





Drinking Water and Sanitation, Ministry of Human Resource Development, Ministry of Information and Broadcasting, NITI Ayog, AICTE, Tata Trust, Rotary, UNICEF, Accenture, HPCL, ORF, BMGF, KPMG, India Sanitation Coalition and state governments of Maharashtra, Tamil Nadu, Karnataka, Telengana, Bihar, Gujarat, Uttar Pradesh, Assam, Manipur, Punjab joined hands together. And it is hoped that, more state governments and private entities soon join this Swachhagraha.

The contest is not an end in itself, it has created a sustainable ecosystem for innovation in *Swachhta*. The viable solutions arising from the process will be listed out and documented as an e-book, and solutions with potential for scale-up shall be piloted with the help of incubators and partners. Startup support to ideas through private partners and linking all stakeholders in the area cleanliness under a framework of knowledge networks are the expected outcomes of this initiative.

#### Way Forward:

Swachhathon is not the answer to all the problems but sure is a stepping stone to the change that's needed. It is hope that the ideas that have evolved by harnessing creativity of bright young minds will sure bring sustainable solutions to real time challenges faced by the nation, especially the last mile. The uniqueness of this initiative lies in its scale and reach, innovations proposed ranged from students to officials to practitioners to scientists.

The final event on 8<sup>th</sup> September, 2017 has actually kick started the Swachhathon process that goes far beyond to benefit the participants and the Country as a whole. The participants are given

mentoring by Atal Innovation Mission (AIM). The incubation support is the next logical step proposed by AIM. AICTE has expressed their interest to support the innovators, both in form of mentoring under senior professors and incubation support. The private sector partners have also expressed their interest in helping the innovators to conduct field study of the innovations in rural areas. The innovators have been linked with national and international organizations working in the field of sanitation. The biggest acknowledgement to innovators is that the winners will be felicitated by Hon'ble Prime Minister, on October 2<sup>nd</sup>, 2017.

The Ministry of Drinking Water and Sanitation is planning to release a book on Swachhathon 1.0 Innovation on October 2<sup>nd</sup>, 2017. Apart from that, publication of an e-book and Video book of innovations is also part of the plan. The information of appropriate solutions are being circulated to the state SBM Mission Directors, for due consideration. The innovations are expected to act as a feedback mechanism for SBM policy formulation and also to act as catalyst to overcome implementation hurdles at last mile.

In the coming years, Idea crowd sourcing is expected to provide viable solutions to the Ministry, for a new set of challenges emerging especially that of Solid Liquid Waste Management in rural setting.

*(The author is an IAS officer currently working as Assistant Secretary, MoDWS. He was part of the team in MDWS that conducted Swachhathon 1.0. For the article, he was supported by Dr. Aparajita Suman, KM Specialist (PMC), SBM (G) Email: renywilfred@gmail.com)*

#### Biggest Toilet in the world being built in India: Bindeshwar Pathak

According to the Founder of Sulabh International, Dr Bindeshwar Pathak, the world's largest toilet is being built in India. This toilet in Pandarpur, near Pune border in Maharashtra has already reached the stage of its half construction, which is already being used by the people. The toilet has 2,858 seats. Before this feat, only China had a toilet with 1000 seats. He said that at present, two lakh people are using it every day. After the completion of its construction, 4 lakh people would be able to use it every day. Sulabh International has already been involved in constructing toilets in 15 lakh homes and 9000 public places. India needs 8 crore toilets more to promote sanitation.

# WASTE TO WEALTH: THE WASTE MANAGEMENT ALTERNATIVES

Dr. K. Baby

According to the data from the Ministry of Environment, Forest and Climate Change, the Government of India, only about 75–80% of the municipal waste gets collected and only 22–28% of this waste is processed and treated. With growing public awareness about sanitation, and with increasing pressure on the government and urban local bodies to manage waste more efficiently, the Indian waste to energy sector is poised to grow at a rapid pace in the years to come. The dual pressing needs of waste management and reliable renewable energy source are creating attractive opportunities for investors and project developers in the waste to energy sector.

Industrializations become very significant for developing countries like India having large number of population. Rapid increase in urbanization and per capita income lead to high rate of municipal solid waste generation. In recent times, E-waste and plastic waste also contribute considerably to total waste stream due to utilization of electronic and other items. These wastes may cause a potential hazard to human health or environment if any of the aspects of solid waste management is not managed effectively. Even today, large portion of solid waste is dumped indiscriminately on outskirts of towns or cities without any prior treatment. This leads to groundwater contamination and increase in air pollution due to leachate percolation and release of gases respectively. Improper waste segregation and other factors lead recycling sector to work on outdated technology.

## India – Waste Generation Scenario:

Every year, about 55 million tonnes of municipal solid waste (MSW) and 38 billion litres of sewage are generated in the urban areas of



## Waste to Wealth

India, which is the second most populous nation in the world, comprises 17.86% of the world's population. It is projected to be the world's most populous country by 2022. About 32.8% of its population is urban and with the urban population increasing at 3-3.5% per annum, the per capita waste generation is increasing by 1.3% per annum. At the present rate, waste generation is projected to increase from 62 million tonnes per year to about 165 million tonnes in 2030. According to the data from the Ministry of Environment, Forest and Climate Change, the Government of India, only about 75–80% of the municipal waste gets collected and only 22–28% of this waste is processed and treated. With growing public awareness about sanitation, and with increasing pressure on the government and urban local bodies to manage waste more efficiently, the Indian waste to energy sector is poised to grow at a rapid pace in the years to come. The dual pressing needs of waste management and reliable renewable energy source are creating attractive opportunities for investors and project developers in the waste to energy sector.

India. In addition, large quantities of solid and liquid wastes are generated by industries. Waste generation in India is expected to increase rapidly in the future. As more people migrate to urban areas and as incomes increase, consumption levels are likely to rise, as are rates of waste generation. It is estimated that the amount of waste generated in India will increase at a per capita rate of approximately 1-1.33 per cent annually. This has significant impacts on the amount of land that is and will be needed for disposal, economic costs of collecting and transporting waste, and the environmental consequences of increased MSW generation levels.

### Types of Waste:

Waste can be broadly classified into:-

- i. Urban Waste.
- ii. Industrial Waste.
- iii. Biomass Waste.
- iv. Biomedical Waste.

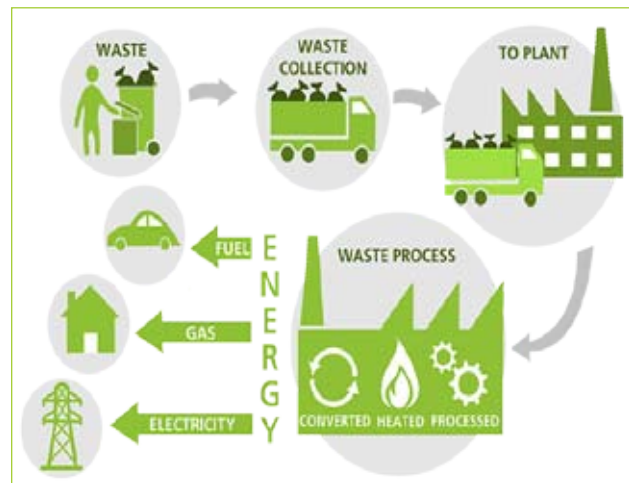
Urban waste includes Municipal Solid Waste, Sewage and Faecal Sludge, whereas industrial waste could be classified as Hazardous industrial waste and Non-hazardous industrial waste.

### Growth Drivers:

The quantum of industrial waste generation is also on a higher side. More than 8 million tonnes per annum is India's present hazardous waste generation. Maharashtra (22.84%), Gujarat (22.68%) and Telangana and Andhra Pradesh put together (13.75%) are the leading states in the country in hazardous waste generation, followed by Rajasthan, Tamil Nadu, Madhya Pradesh and Chhattisgarh. Just these seven states, contribute to nearly 82% of the hazardous waste generated in the country.

### Importance of Waste to Energy:

Most wastes that are generated, find their way into land and water bodies without proper treatment, causing severe water pollution. They also emit greenhouse gases like methane and carbon dioxide, and add to air pollution. Any organic waste from urban and rural areas and industries is a resource due to its ability to get degraded, resulting in energy generation. The problems caused by solid and liquid wastes can be significantly mitigated through the



adoption of environment-friendly waste-to-energy technologies that will allow treatment and processing of wastes before their disposal. These measures would reduce the quantity of wastes, generate a substantial quantity of energy from them, and greatly reduce environmental pollution. India's growing energy deficit is making the government central and state governments become keen on alternative and renewable energy sources. Waste to energy is one of these, and it is garnering increasing attention from both the central and state governments. While the Indian Government's own figures would suggest that the cost of waste to energy is somewhat higher than other renewable sources, it is still an attractive option, as it serves a dual role of waste disposal and energy production.

### Need For a New Energy Source:

The high volatility in fuel prices in the recent past and the resulting turbulence in energy markets has compelled many countries to look for alternate sources of energy, for both economic and environmental reasons. With growing public awareness about sanitation, and with increasing pressure on the government and urban local bodies to manage waste more efficiently, the Indian waste to energy sector is poised to grow at a rapid pace in the years to come. The dual pressing needs of waste management and reliable renewable energy source are creating attractive opportunities for investors and project developers in the waste to energy sector. In addition to energy generation, waste-to-energy can fetch significant monetary benefits. Some of the strategic and financial benefits from waste-to-energy business are:

- **Profitability:** If the right technology is employed with optimal processes and all components of waste are used to derive value, waste to energy could be a profitable business. When government incentives are factored in, the attractiveness of the business increases further.
- **Government Incentives:** The Government of India already provides significant incentives for waste to energy projects, in the form of capital subsidies and feed in tariffs.
- **Related Opportunities:** Success in municipal solid waste management could lead to opportunities in other waste such as sewage waste, industrial waste and hazardous waste. Depending on the technology/route used for energy recovery, eco-friendly and “green” co-products such as charcoal, compost, nutrient rich digestate (a fertilizer) or bio-oil can be obtained. These co-product opportunities will enable the enterprise to expand into these related products, demand for which are increasing all the time.
- **Emerging Opportunities:** With distributed waste management and waste to energy becoming important priorities, opportunities exist for companies to provide support services like turnkey solutions. In addition, waste to energy opportunities exist not just in India, but all over the world.

### India Waste to Energy Potential

According to the Ministry of New and Renewable Energy (MNRE), there exists a potential

of about 1700 MW from urban waste (1500 from MSW and 225 MW from sewage) and about 1300 MW from industrial waste. The ministry is also actively promoting the generation of energy from waste, by providing subsidies and incentives for the projects. Indian Renewable Energy Development Agency (IREDA) estimates indicate that India has so far realized only about 2% of its waste-to-energy potential.

### Technologies for the Generation of Energy from Waste:

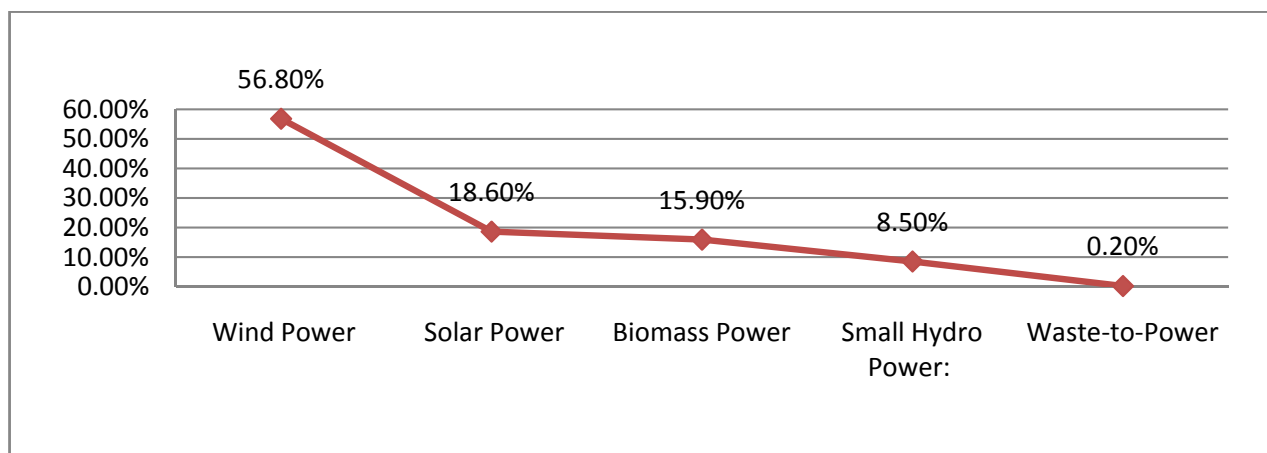
Energy can be recovered from the organic fraction of waste through thermal, thermo-chemical, biochemical and electrochemical methods.

- **Thermal Conversion:** The process involves thermal degradation of waste under high temperature. In this, complete oxidation of the waste occurs under high temperature. The major technological option under this category is incineration.
- **Thermo-chemical conversion:** This process entails high temperature driven decomposition of organic matter to produce either heat energy or fuel oil or gas. They are useful for wastes containing high percentage of organic non-biodegradable matter and low moisture content. The main technological options under this category include Pyrolysis and Gasification.

### Renewable Energy Overview and Targets

- **Bio-chemical Conversion:** This process is based on enzymatic decomposition of organic matter

### Renewable Energy: Overview in India



by microbial action to produce methane gas, and alcohol etc. This process, on the other hand, is preferred for wastes having high percentage of organic, bio-degradable matter and high level of moisture, which aids microbial activity.

- **Electrochemical Conversion:** Electrochemical conversion in the context of waste to energy refers typically to microbial fuel cells (MFC). These systems are developed to trap the energy from wastes, where the reduction-oxidation machinery of immobilized microbial cells is catalytically exploited, for the accelerated transfer of electrons from organic wastes, to generate electricity and bio-hydrogen gas.

### Waste to Energy: Government Efforts

The Indian Government has recognized waste to energy as a renewable technology and supports it through various subsidies and incentives. The Ministry of New and Renewable Energy is actively promoting all the technology options available for energy recovery from urban and industrial wastes. MNRE is also promoting the research on waste to energy by providing financial support for R&D projects on cost sharing basis in accordance with the R&D Policy of the MNRE. In

Installed Grid Interactive Renewable Power Capacity in India 2017		
Source	Total Installed Capacity (MW)	Target 2022 (MW)
Wind power	32279.77	60,000.00
Solar power	12288.83	100,000.00
Biomass power (Biomass & Gasification and Bagasse Cogeneration)	8182.00	10,000.00
Waste-to-Power	114.08	
Small hydropower	4379.85	5,000.00
Total	57244.23	175,000.00

Source: MNRE, 2017

addition to that, MNRE also provides financial support for projects involving applied R&D and studies on resource assessment, technology up-gradation and performance evaluation.

The figures above refer to newer and fast developing renewable energy sources and are managed by MNRE. In addition India had 50,017.97 MW of installed large hydro capacity, which comes under the ambit of Ministry of Power.

Off-grid power Capacities in MW	
Source	Total Installed Capacity (MW)
Biomass (non-bagasse) Cogeneration	651.91
SPV Systems	438.95
Biomass Gasifiers	186.88
Waste to Energy	164.45
Water mills / micro hydel	18.81
Aero-Generators / Hybrid systems	2.98
Total	1463.98

Source: MNRE Report 2017

In addition to grid connected renewable electricity and Off-grid renewable energy sources, India has 4.95 million of family biogas plants as of 28 February 2017.

According to MNRE, there is a potential to recover 1,300 MW of power from industrial wastes, which is projected to increase to 2,000 megawatt by 2017-18.

### Waste to Energy Tapped Potential

There exists an estimated potential of about 225 MW from all sewage (taking the conservative estimate from MNRE) and about 1460 MW of power from the MSW generated in India, thus a total of close to 1700 MW of power. Of this, only about 24 MW have been exploited. Thus, less than 1.5% of the total potential has been achieved.

### Potential of Energy Recovery from Urban and Industrial Wastes in India

State/Union Territory	From Liquid Wastes (MW)	From Solid Wastes (MW)	Total (MW)
Andhra Pradesh	16.0	107.0	123.0
Assam	2.0	6.0	8.0
Bihar	6.0	67.0	73.0
Chandigarh	1.0	5.0	6.0
Chhattisgarh	2.0	22.0	24.0
Delhi	20.0	111.0	131.0
Gujarat	14.0	98.0	112.0
Haryana	6.0	18.0	24.0
Himachal Pradesh	0.5	1.0	1.5
Jharkhand	2.0	8.0	10.0
Karnataka	26.0	125.0	151.0
Kerala	4.0	32.0	36.0
Madhya Pradesh	10.0	68.0	78.0
Maharashtra	37.0	250.0	287.0
Manipur	0.5	1.5	2.0
Meghalaya	0.5	1.5	2.0
Mizoram	0.5	1.0	1.5
Orissa	3.0	19.0	22.0
Pondicherry	0.5	2.0	2.5
Punjab	6.0	39.0	45.0
Rajasthan	9.0	53.0	62.0
Tamil Nadu	14.0	137.0	151.0
Tripura	0.5	1.0	1.5
Uttar Pradesh	22.0	154.0	176.0
Uttaranchal	1.0	4.0	5.0
West Bengal	22.0	126.0	148.0
<b>Total</b>	<b>226.0</b>	<b>1457.0</b>	<b>1683.0</b>

Source: MNRE, 2017

### Current Waste-to-Energy Installed Capacity in India:

Grid-Interactive Power	(Capacities in Mw)	Contribution (%)
<b>Waste to Power</b>		
Urban	20.20	27.4
Industrial	53.46	72.6
<b>Total</b>	<b>73.66</b>	
Off-Grid/ Captive Power	(Capacities in Mweq*)	Contribution (%)
<b>Waste to Energy</b>		
Urban	3.50	4.6
Industrial	72.30	95.4
<b>Total</b>	<b>75.8</b>	

Source: MNRE, 2017, \*MWEq: Megawatt Equivalent

#### Constraints Faced by Waste to Energy Sector:

The growth of this sector has been affected on account of the following constraints:

- Waste-to-Energy is still a new concept in the country. Most of the proven and commercial technologies in respect of urban wastes are required to be imported.
- The costs of the projects especially based on biomethanation technology are high as critical equipment for a project is required to be imported.
- In view of low level of compliance of MSW Rules 2000 by the Urban Local Bodies, segregated municipal solid waste is generally not available at the plant site, which may lead to non-availability of waste-to-energy plants.
- Lack of financial resources with Urban Local Bodies.
- Lack of conducive policy guidelines from State Governments in respect of allotment of land, supply of garbage and power purchase / evacuation facilities.

#### Conclusion:

Population growth and particularly the development of megacities is making SWM in India a major problem. The current situation is that India relies on inadequate waste infrastructure, the informal sector and waste dumping. There are major issues associated with public participation in waste management and there is generally a lack

of responsibility towards waste in the community. There is a need to cultivate community awareness and change the attitude of people towards waste, as this is fundamental to developing proper and sustainable waste management systems. Sustainable and economically viable waste management must ensure maximum resource extraction from waste, combined with safe disposal of residual waste through the development of engineered landfill and waste-to-energy facilities. Waste-to-energy (WTE) plants are among the most efficient ways to

convert garbage to electricity. WTE plants reduce the waste volume drastically in most eco-friendly manner, at the same time reducing the necessity of landfills. Garbage is very efficiently utilised, and much needed electricity is generated, bridging the gap for electricity requirement. It is time all cities pay attention to this source for power as an economical way to tackle the city waste.

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### **SWACHHTA Ranking 2017 of Higher Educational Institutions concluded**

‘SWACHHTA’ Ranking- 2017 of Higher Educational Institutions is an exercise to rank Higher Educational Institutions (HEIs) on the basis of cleanliness and hygiene has been undertaken and concluded. This exercise will generate peer pressure amongst institutions in the all important area of cleanliness. Parameters for a clean campus were formulated, like student/toilet ratio, kitchen hygiene, availability of running water, modernity of toilet and kitchen equipment, campus green cover, garbage disposal in hostels and academic buildings, disposal techniques, water supply systems and also, a certain weightage was also given as to whether the institutions have adopted any neighbouring locality or village to spread awareness and activities in Swachhta.

About 3500 HEIs responded to the online invitation, submitting all their details as per format. The top 174 institutions were shortlisted as per criteria and officials from UGC and AICTE inspected the premises of all 174 institutions. Finally, the top 25 institutions across various categories like Universities, Technical Institutions, Colleges and Government institutions were selected and they were awarded.

### **Bilal Dar – Inspiring story of an 18 year old boy from Srinagar**

By looks, Bilal Dar is like any other boy from Srinagar, but he has done something that won him PM Shri Narendra Modi’s praise. PM specially mentioned this boy’s efforts in keeping Wular lake clean.

In his Mann Ki Baat address on 24<sup>th</sup> Sept, 2017, PM said -

“Just a few days ago some one drew my attention towards Bilal Dar, a young man of 18 years from Srinagar. And you will be glad to know that Srinagar Municipal Corporation has made him their brand ambassador and when there is a talk of brand ambassador, there is a general feeling that he/she must be a Cine artist or a sports-personality. But not in this case. Bilal Dar got connected to the ‘Swachhata Abhiyan’ or Cleanliness Campaign since the age of 12-13 years and has been working for the last 5 to 6 years. He clears plastic, polythene, used bottles, dry or wet waste – every piece of dirt from Asia’s biggest lake near Srinagar. He also earns from this activity. His father had died of cancer at a very young age but he connected his livelihood with cleanliness. I congratulate Srinagar Municipal Corporation for taking this initiative towards sanitation and for their imagination to appoint an ambassador for this cause of cleanliness because Srinagar is a tourist destination and every Indian wants to go there; and if such attention is given to Cleanliness it is a very big achievement in itself. And I am glad that they have not only appointed Bilal as their ambassador but also given him a vehicle, and also a uniform and he goes to other areas and educates people about cleanliness and inspires them and keeps tracking them till results are achieved. Bilal is very young age wise but is a source of inspiration for all of us who are interested in cleanliness.

I congratulate Bilal Dar.”

We also congratulate Bilal and wish him all the best!



*Bilal Dar (Source: Express Photo by Shuaib Masoodi/File)*

# NATIONAL MISSION FOR CLEAN GANGA: THE CHALLENGES AHEAD

K.N. Pathak

**B**efore the advent of the National Mission for Clean Ganga (NMCG), Ganga, the most revered and national river of India, was facing the challenge of its existence due to discharge of increasing quantities of sewage, trade effluents and other pollutants on account of rapid urbanization and industrialization. The stretch of Ganga covers a length of 2525 kilometers across five states namely Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. It has a catchment area of 8,61,404 square km covering over a quarter of country's land area and sustaining 46 per cent of the total population of the country. It touches 118 towns and 1657 Gram Panchayats across 66 districts of 5 states of India.

The National Mission for Clean Ganga (NMCG), created in June, 2014, is being supported by State level Programme Management Groups (SPMGs) of Uttar Pradesh, Uttarakhand, Bihar, Jharkhand and West Bengal. The main activities undertaken under Namami Gange include sewage and effluent management including creation of new and rehabilitation of existing STPs, complete sanitation coverage of Gram Panchayats, development of model cremation/dhobi ghats, development of decision support system in GIS platform for efficient planning and monitoring and creation of an IT based monitoring centre with capabilities of real time alerts and prediction. For long term protection and rejuvenation, a provision has been made for 100 per cent funding for the entire life time cost of the treatment of assets created including O&M cost for 10 years. Due importance has also been accorded to bio diversity, conservation, maintenance of flow in the river and afforestation along river side with medicinal and native plant species along with conservation of aquatic species.

The expenditure incurred on Namami Gange in the first three years, (ie 2014-15 to 2016-17) is Rs 3673.00 crore. For the current year (2017-18), an amount of Rs 2300 crore has been allocated in the budget. It is however, observed that the pace

of utilization of fund under this programme has not been satisfactory. The slow implementation of project is attributed to delay in tendering, retendering, non availability of land, legal issues, natural calamities, delay in permission for road cutting, crossing, local festivals, higher fund requirement and pending approvals of state Cabinet etc. Regular monitoring meeting of NMCG with concerned state is expected to help in expediting the pace of the projects implementation and eliminating bottlenecks in making land available and clear the projects through tendering.

The Order issued through the Gazette of India on 7th October, 2016 constituting River Ganga (Rejuvenation, Protection and management) Authorities under the Environment (Protection) Act, 1986 lays down a new institutional structure for policy and implementation in a fast track manner and empowers NMCG to discharge its functions in an independent and accountable manner. The said Authority has its jurisdiction spread over 5 states along the main stem of Ganga and 5 states and Union territory of Delhi along the major tributaries of the river Ganga. The key principles identified for the Authority are:

- 1) Maintaining the continuity of the flow without altering the natural season variations.





- 2) Restoring and maintaining the integral relationship between the surface flow and subsurface water (ground water).
- 3) Restoration and maintenance of the property and quality of water in a time bound manner.
- 4) Regenerating and maintaining the lost natural vegetation in catchment area.
- 5) Regeneration and conservation of the aquatic and riparian biodiversity in river Ganga basin.
- 6) To keep the bank of river Ganga and its floodplains as construction free zone to reduce pollution sources and maintain its natural ground water recharge functions.
- 7) Making public participation an integral part of process of rejuvenation, protection and management of the river.

River surface cleaning work has been undertaken in major cities on the bank of River Ganga in collaboration with Corporate bodies and Public Sector undertakings. Under Rural Sanitation programme, NMCG has provided Rs 263 Crore to Ministry of Drinking Water & Sanitation for construction of toilets. About 11 lakh toilets have been constructed so far. For renovation/modernization and construction of crematoria based on standard design, initially, 2025 urban local bodies (ULBs) are being taken up with the target of developing 100 crematoria in a year's time. River front/ ghat development work has been taken up in 7 towns of Kedarnath, Haridwar, Delhi, Allahabad, Kanpur, Varanasi & Patna in addition to repair and modernization of existing ghats. Under medium term plan Effluents Management activity, real Time Effluent Monitoring stations have been installed in 508 out of 764 grossly polluting industries of distillery, pulp and paper, tanneries, textile and sugar. Regarding Zero Liquid Discharge, action plan has been under implementation for distilleries since the last quarter of 2016. Vigilance squad of Central Pollution Control Board is closely monitoring for improved compliance. Biodiversity Conservation is being implemented in association with Wildlife Institute of India to cover Golden Mahaseer, Dolphins, Crocodiles, Turtles and Otters etc under conservation programme. 30,000 Hectares of land is targeted to be covered under afforestation programme. For water quality monitoring, in addition to 57 Manual monitoring stations, 113 Realtime monitoring stations are being set up with display boards at

selected locations. Steps are being taken for public outreach. Resource materials such as posters, flyers, brochures, pamphlets, hoardings etc. have been circulated/displayed among stake holders.

Awareness activities are being taken up through Pad Yatras, cleanliness drives, painting competitions for children, shramdaan, talkshows and dialogues etc. Namami Gange song has been released and played on digital media and during public events. In addition to that featured articles and advertorials through audiovisual media have also been introduced. Regular updates are shared on Social Media platforms. Mass awareness campaigns, photo exhibitions are also being set up.

Pavilions/Stalls at national/ International events have also been organized. For involvement of public in monitoring of pollution entering into the river Ganga, BhuvanGanga Web App and mobile app have also been launched.

In view of multi stakeholder nature of the Ganga rejuvenation challenge, 7 Ministries of Govt of India are working together on an action plan since June 2014. Besides, MoU has also been signed between NMCG and 11 Ministries of the Govt of India to ensure convergence of their activities in protection and rejuvenation of river Ganga. MoU has also been signed with National Remote Sensing Centre, a department under Indian Space Research Organization ISRO.

For Pollution abatement and cleaning exercise in river Ganga, the policy making authorities at higher level have emphasized the need of close monitoring, focus on minimizing waste generation and disposal of waste in an ecofriendly manner and publicizing the use of electric crematoria for enhancing its acceptability among the masses. Uploading the monitoring reports in public domain has been recommended. A number of decisions taken recently indicate that the pace of project implementation has picked up momentum for pollution abatement and making the flow of river incessant. State Ganga Committees and District Ganga Committees have been formed to ensure effective implementation and Participation of people in protection and rejuvenation of Ganga.

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## Swachh Bharat Kosh

The Government had announced Swachh Bharat Kosh in 2014 to facilitate channelization of philanthropic contributions and Corporate Social Responsibility (CSR) funds from Corporate Sector and contributions from individuals and philanthropists to achieve the objective of Clean India (Swachh Bharat) by the year 2019, the 150th year of the birth anniversary of Mahatma Gandhi through Swachh Bharat Mission. The priority areas were improving cleanliness levels in rural and urban areas, including in schools and toilets for girls. The following broad activities are financed from the Swachh Bharat Kosh:

- Construction of community/individual toilets in rural areas, urban areas, in elementary, secondary and senior secondary government schools, aanganwaadis (Centres that provide support to children below 6 years and their mothers under the Integrated Child Development Scheme, Ministry of Women and Child Development);
- Renovation and repair of dysfunctional community/individual toilets in elementary, secondary and senior secondary government schools and aanganwadis;
- Construction activity for water supply to the constructed toilets;
- Training and skill development to facilitate maintenance of constructed toilets and to ensure its inter-linkages with education on hygiene;
- Other initiatives of improving sanitation and cleanliness in rural and urban areas including solid and liquid waste management;
- Any other activity to improve sanitation in the country as decided by the Governing Council.

Any RTI or other queries related to implementation and utilization of funds made available to them for activities under this fund are answered by the Finance Ministry. Donations to the “Swachh Bharat Kosh”, other than the sums spent for “Corporate Social Responsibility” under sub-section (5) of Section 135 of the Companies Act, 2013 are eligible for 100 per cent deduction under section 80G of the Income-tax Act, 1961. Around Rs. Rs.660 crores from the Corporate and the general public has been received since September, 2014.

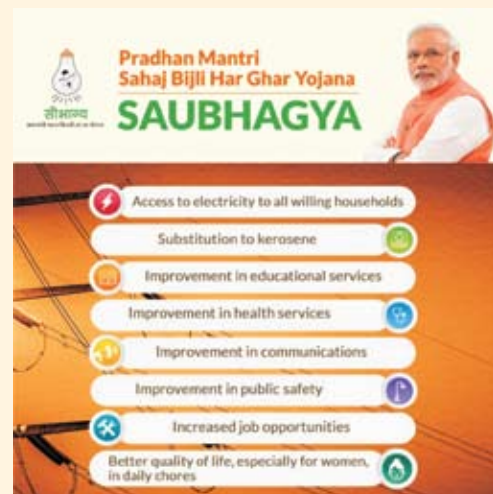
## Pradhan Mantri Saubhagya Yojana: Electricity connections to 4 crore poor

The Prime Minister, Shri Narendra Modi launched the **Pradhan Mantri Sahaj Bijli Har Ghar Yojana**, or **Saubhagya** on 25 Sept, 2017 at New Delhi. The aim of this scheme is to provide power to all homes.

In this context, he mentioned the *Pradhan Mantri Sahaj Bijli Har Ghar Yojana*, which would provide power connections to all the estimated four crore households which currently do not have a power connection. The outlay for this scheme would be over Rs. 16,000 crore. These connections would be provided free of cost to the poor.

The Prime Minister also spoke of an increase in renewable power installed capacity, towards the target of 175 GW by 2022. He mentioned how the power tariff in the case of renewable energy has been reduced significantly. A considerable increase has also been made in transmission lines.

The Prime Minister mentioned how UDAY scheme has brought down losses of power distribution companies, describing it as an example of cooperative, competitive federalism. Explaining the impact of economies of scale in the UJALA scheme, the Prime Minister said that the cost of LED bulbs has come down significantly. The Prime Minister also said that New India will require an energy framework that works on the principle of equity, efficiency and sustainability.



# GANDHIJI AND SANITATION

Sudarshan Iyengar

Gandhiji was of the strong opinion that sanitation education should be given from primary school onward. Only three R's were not enough, lessons in manners and sanitation and removal of untouchability were the indispensable preliminaries to the initiation of three R's (Reading, Writing and Arithmetic). Gandhiji firmly believed that sanitation and hygiene was everybody's business.

It is perhaps a rare occurrence in the history of Independent modern India that a Prime Minister has chosen to speak about sanitation in his address to the nation on Independence Day. The fifteenth Prime Minister of India, in his first Independence Day speech on 15 August, 2014, said the following from the ramparts of the Red Fort.

“Brothers and sisters, it will be 150<sup>th</sup> birth anniversary of Mahatma Gandhi in 2019... Mahatma Gandhi had cleanliness and sanitation closest to his heart. Whether we resolve not to leave a speck of dirt in our village, city, street, area, school, temple, hospital, and what have you, by 2019 when we celebrate 150<sup>th</sup> anniversary of Mahatma Gandhi? This happens not just with the Government, but with public participation. That's why we have to do it together... Has it ever pained us that our mothers and sisters have to defecate in open? Whether dignity of women is not our collective responsibility? The poor womenfolk of the village wait for the night; until darkness descends, they can't go out to defecate. What bodily torture they must be feeling, how many diseases that act might engender. Can't we just make arrangements for toilets for the dignity of our mothers and sisters? ... you must be getting shocked to hear the Prime Minister speaking of cleanliness and the need to build toilets from the

ramparts of the Red Fort... The poor need respect and it begins with cleanliness. I, therefore, have to launch a 'Clean India' campaign from 2nd October this year and carry it forward in 4 years. I want to make a beginning today itself and that is – all schools in the country should have toilets with separate toilets for girls. Only then our daughters will not be compelled to leave schools midway”.<sup>1</sup>

In 1990, India also became one of the signatories to the Millennium Development Goals (MDGs). It is also a signatory to Sustainable Development Goals (SDGs). Goal 6 of the SDG focuses on **ensuring availability and sustainable management of water and sanitation for all**. Under SDGs, some indicators are modified MDGs and some are new, and India's performance will be monitored on the basis of those indicators. UNICEF's Report **Progress on Drinking Water and Sanitation 2014 Update** shows that India made reasonable improvement in sanitation coverage between 1990 and 2012. Urban India had relatively better base in 1990, but rural India's status with respect to sanitation was poor. In 1990, 50 per cent population in urban India had access to improved sanitation facilities and in 2012, 60 per cent had similar access. In rural areas, access to improved sanitation increased from 18 per cent in 1990 to 36 per cent in 2012. Compared to urban India, the performance in rural area was more impressive.

Prime Minister's commitment and announcement about improving the sanitation situation in rural India has borne some fruits. The **Swachhha Status Report 2016** published by National Sample Survey Organisation (NSSO), of Ministry of Statistics and Programme Implementation has taken note of the progress at all India level. It is almost a benchmark as the survey was conducted in May-June 2015, about 9 months after the Prime Minister declared the national commitment to make the country Open Defecation Free (ODF). In



this 72<sup>nd</sup> National Sample Survey, it was found that 45.3 per cent households reported having sanitary toilets and in urban area, the percentage was 88.8. The latest assessment of the status with respect to key sanitation indicators in the country reveals the following.

The rural household toilet coverage has improved to 68 per cent by September 2017. 11.32 crore toilets have already been built in rural India. This is a good progress indeed. Five states are declared completely ODF. 195 districts in the country are ODF and 237,084 villages are declared ODF.<sup>2</sup> More than one third of India thus, is declared ODF. In the three year period, it is a significant achievement as the programme is in a mission mode. However, it is also understood that having toilet and having access to toilet is not the same thing as using them. Further, while understanding the reasons for not using the toilets, one comes across several problems. More than one-third of rural households in India still do not have usable toilets in their houses. An interesting comparison was made in the recent past between the percentage of population having cell phones and having toilets at home. Percentage of households having a cell phone far exceeded the percentage having a toilet in the house. This reflects people's awareness, understanding and priority to sanitation.

Mahatma Gandhi was the first leader of eminence to have focussed his attention on sanitation and hygiene issue. Till the last days of his life, he continuously drew people's attention to this problem. Most importantly, he worked on the problem and conducted numerous experiments in building toilets, clearing the faecal material scientifically, emancipating the sanitation workers who handled faeces most hazardously and were socially severely discriminated and shunned with untouchability. In order to substantially improve sanitation and hygiene in the country, it is necessary to revisit Mahatma Gandhi's ideas and work.

### **Mahatma Gandhi's Concerns:**

Gandhiji's work on sanitation began in South Africa. He had internalised the need for a high standard of sanitation for any civilised and developed human society. His exposure to England and English settlements in South Africa had convinced him that the West was moving fast and ahead in the area of



sanitation. He told the Indians in South Africa and later in India that the West which had evolved a science of corporate sanitation and hygiene and one thing all in country could and must learn is the science of municipal sanitation. Gandhi ji expressed concern on sanitation in public arena till January 29, 1948, a day before he was assassinated. In the draft constitution for the Lok Sevak Sangh that was to replace the Congress, he mentioned the following in the duties of the people's worker.

“He shall educate the village folk in sanitation and hygiene and take all measures for prevention of ill health and disease among them”.

Gopal Krishna Gokhale, Gandhiji's Guru in Politics, had asked Gandhiji to travel in the country for one year before embarking on any public action. Gandhiji did not miss the insanitary conditions in trains, ships, holy places and neighbourhoods. Some of his observations are worth revisiting as the situation has not changed very much since last hundred years and more. On 14 March, 1915, while travelling to Rangoon in an overcrowded deck as a passenger, he observed.

What was an apology for a bath room was unbearably dirty, the latrines were stinking sinks. To use the latrine one had to wade through urine and excreta or jump over them... If anything was lacking to complete the picture of stink and filth, the passengers furnished it by their thoughtless habits. They spat where they sat, dirtied the surroundings...<sup>3</sup>

Visiting Lakshman Jhula, a location near Hardwar, he found that a scenic and beautiful gift

of nature was tainted by human beings visiting the place. He noted.

As at Hardwar, so at Hrishikesh, people dirtied the roads and the fair banks of Ganges. They did not even hesitate to desecrate the sacred water of the Ganges. It filled me with agony to see people performing natural functions on the thoroughfares and river banks...<sup>4</sup>

He had visited Benares (Varanasi) and he observed about Kashi temple and surroundings the following.

I visited the Viswanath Temple last evening and as I was walking through those lanes, these were the thoughts that touched me. If a stranger dropped from above on to this great temple and he had to consider what we as Hindus were, would he not be justified in condemning us? Is not this great temple a reflection of our own character? I speak feelingly as a Hindu. Is it right that the lanes of our sacred temple should be as dirty as they are? The houses round about are built anyhow. The lanes are tortuous and narrow. If even our temples are not models of roominess and cleanliness, what can our self-government be? Shall our temples be abodes of holiness, cleanliness and peace as soon as the English have retired from India, either of their own pleasure or by compulsion, bag and baggage?<sup>5</sup>

Describing a Third Class Railway Compartment environ Gandhiji had said.

We do not know the elementary laws of cleanliness. We spit anywhere on the carriage floor, irrespective of the thought that it is often used as sleeping space. We do not trouble ourselves as to how we use it; the result is indescribable filth in the compartment. The so called better class passengers over-awe their less fortunate brethren. Among them I have seen the student world also. Sometimes they behave no better. They can speak English and they have worn Norfolk Jackets and therefore claim the right to force their way in and command seating accommodation. I have turned the searchlight all over and as you have given me the privilege of speaking to you, I am laying my heart bare. Surely we must set these things right in our progress towards self-government.<sup>6</sup>

He realised that villages were virtual hells. Many still are. Gandhiji, in almost all public gatherings

and civic receptions during first ten years after his return in 1915, brought sanitation related issues in his address. In *Navajivan* and *Young India*, Gandhiji wrote about sanitation frequently. In almost every Congress major convention, he in his speech touched upon the sanitation issue. For Gandhi insanitation was an evil. In a speech in Calcutta (now Kolkata) on August 25, 1925, talking to the potential village level constructive workers, he told the workers to go to villages with broom-stick, quinine, castor oil and spinning wheel which represented health, sanitation and hygiene, and village industry.

Gandhiji was of the strong opinion that sanitation education should be given from primary school onward. Only three R's were not enough, lessons in manners and sanitation and removal of untouchability were the indispensable preliminaries to the initiation of three R's (Reading, Writing and Arithmetic). Gandhiji firmly believed that sanitation and hygiene was everybody's business. He then told every volunteer and constructive worker to become a scavenger so that the class of manual scavengers was eliminated. He knew that they stood last in the list of the condemned.

### Gandhiji: A Sanitation Worker

Gandhiji had become a staunch practitioner in sanitation work. In Phoenix, Ashram and Tolstoy Farm in South Africa, sanitation was set up and managed by all inmates. Many experiments were conducted and human excreta was turned into fertiliser and considered very valuable. Dry latrines were used and every morning a team of inmates would remove the containers and transfer the night soil into bigger container and carried to farm. It was deposited in a pre-fixed spot and left to turn itself into manure. It was then used to as fertiliser for the horticultural crops. Similarly, in India too, the sanitation work in Kochrab, Sabaramati and Sevagram Ashrams was undertaken by all inmates. Gandhiji and the inmates had amply demonstrated that scientific handling of night soil was possible for all and it should be practised. Doing so would also help ending the problem of inhuman conditions forced upon scavenging communities that were then condemned with untouchability.

Gandhiji also felt deeply hurt the way his countrymen treated communities who were condemned to handle filth and human excreta. The feelings had developed even when he was a child and

not as an adult who had understood untouchability. This is evident from an episode when once he told his mother that he had touched an untouchable and on being questioned seriously he would say that he was joking.<sup>7</sup> Later as an adult, he was to say that untouchability was the most horrendous practice and Gandhiji dedicated his entire life to remove this blot. He had also realised that Indians had over time developed a very unscientific attitude towards sanitation and hygiene. It was this attitude that was responsible to create a class of people who were to handle filth and faeces. This class was then condemned to live outside the main settlement in poverty and destitution and most inhuman physical and mental conditions. When Gandhiji gave call to improve sanitation and hygiene, he also had firm agenda of integrating the condemned communities with all as equals without bias, prejudice and contempt.

Gandhiji carried his concern for curse of untouchability in the country. Removal of untouchability was a personal, social, religious and political agenda for him. Sanitation for him was not limited to having clean and hygienic toilets, streets, and waste disposal, but it extended to integrating the scavenging and other communities that had become untouchable for centuries with the so called sacred mainstream social groups. Liberty and equality for every individual on earth was the most cherished value for Gandhiji. In his view, India would remain insanitary if untouchability was not completely removed. Hence, the tribute to Gandhiji would remain underpaid if we as a society fail to respond comprehensively to do away finally with insanitation and the social sickness of untouchability. Gandhiji had not merely taken an intellectual position on the issue, but he was emotionally committed to it and spent his life in removing this blemish. He was out to sanitise the orthodox mind-set with all embracing love for the untouchables.

### **Social Innovation and Enterprise**

The youth in the country should be reoriented to think about sanitation issue as an opportunity to innovate and become social entrepreneurs having economic implications. Sulabh International is a shining example of innovation and enterprise in sanitation sector. There is also Sanitation and Environment Institute in Sughad, Gandhinagar,

Gujarat. Founders of both were inspired by Gandhiji and impressed by his efforts. However, one or two such institutions are not enough for the country. There is immense scope to turn the sanitation problem in the country into an opportunity. The political will required is that of encouragement and facilitation. The youth of India who take up the work of sanitation should be recognised, helped, paid and lauded. The 2016 Magsaysay Award winner Bezwada Wilson is awarded and recognised for his work on amelioration and resettlement of manual scavengers. According to him, there are still around 200,000 manual scavengers in the country. Youth should come forward and design schemes to wean them away from this inhuman occupation. The work involves two aspects. One is, pressurising, persuading and arranging toilet construction for those households who create this work for manual scavengers. The Gram Panchayats and Municipal bodies in whose jurisdiction manual scavenging is taking place should be duly penalised. Their grants should be made conditional. Second is to skill the scavenging community members and provide alternative vocations. The governments at all levels should come forward with a special scheme to support the willing youth. Sulabh International, Sanitation and environment institute and similar institutions of proven core competency and commitment may become the nodal agencies to undertake the planning, training, and monitoring the scheme.

The problem of open defecation is rampant in rural India. The disposal is considered to be dirty and despicable. The government should recognise treated human excreta as organic manure and provide incentive price support for its acquisition. The village youth should be given skill training to handle the human excreta scientifically and hygienically. This is possible. Then a village level human excreta treatment plants should be supported. The home toilet linked with the two pit latrines also makes them tiny treatment plants and its use should be incentivised. Toilet construction and treating and using scientifically treated human excreta are the modern constructive programme of Gandhiji.

The households in rural and urban India can also be oriented (if necessarily compelled with penal provision) to segregate waste at household unit level. The collection, processing, recycling and

disposal should be a social enterprise for which adequate support and requisite training should be given to youth and they should be oriented to participate. Once youth comes into this work, there will be innovations leading to better handling and disposal. The central premise still is that we should have strong dislike for filth, dirt and insanitation and love and sympathy for the condemned people who do the cleaning and disposal. We have to respond to Gandhiji's call.

There is considerably more to Gandhiji's idea of a Swachh Hindustan. In addition to outer cleanliness, the the *Yugapurusha* Gandhiji wanted to see Hindustan *Swachh* – clean and cleansed, body and soul. He was distressed about the way we lived and maintained our inhabitations. He had an opinion built on his understanding of India's history that one of the main reasons behind Indian communities losing sense of cleanliness, hygiene and sanitation was that during one thousand years of continued aggression of invaders who came in succession turned the communities into subservient and slave like. The civility and culture were severely eroded and sanitation and hygiene was also a casualty.

### Education, Extension, and Research

Gujarat Vidyapith, a university founded by Gandhiji in 1920 has revived the efforts to make Bharat Swachh. It is involved in active promotion of getting toilets built and used. Shri Narayan Desai, son of Mahadev Desai and the former Chancellor of Gujarat Vidyapith, while rendering 108<sup>th</sup> *Gandhikatha*<sup>8</sup> in January 2012 at village Sadra where Vidyapith has a rural campus gave a call to reinstitute Gandhian Constructive Programme. The teachers and the students from the campus committed that they would promote toilets during and after the *Katha*. Vidyapith has been able to facilitate building of more than 2000 toilets in villages surrounding Sadra<sup>9</sup>. It has been indeed difficult to persuade people to give priority to toilets in the villages even within 20 km of the big cities such as Ahmedabad. These difficulties in changing people's mindset increase further if government functionaries are not very enthusiastic and motivated towards this work. All these factors are responsible for the state of India's toilet building story in the middle of second decade of 21<sup>st</sup> century.

Vidyapith has also been working on bio-gas. A project that had come to Vidyapith for Bio-Gas promotion in villages eventually evolved into a full

doing and learning programme. Now Vidyapith has microbiology department from undergraduate to Ph.D. The department teachers and students have set up biogas plants on the highway *Dhabas* using food waste, twigs and a dose of cow dung. We must as a society realise that all shit that is around us is food for various organism that help in improving the production of organic material which is food for us! That is eco-system and we need to honour without any arrogance. We need to understand and respect and work on it to improve our life. Needless to add, that Vidyapith is choice university for poor, dalits and tribal students seeking higher education in mother tongue.

Every university in the country should adopt such a programme for sanitation. Universities vying for excellence in ranking in India have to realise that it is more basic work that remains to be done in the country's villages and urban slums and neglected settlements. There is full scope for education, extension and research. There is further scope for enterprise and employment in the sanitation sector. Sanitation and Hygiene education has to be vigorously introduced and practiced in every school of the country. Unfortunately, the teachers and parents, out of ignorance, arrogance and prejudices are reluctant to undertake sanitation and hygiene work at home and at school. We all need schooling. Mere building of toilets alone will not improve the sanitation scene in the country. Our overall mindset towards sanitation needs to change. In addition to clean surroundings, cleansing of body, mind and soul should also be our priority. Gandhiji beckons.

### Footnotes

- 1 <http://www.pmindia.gov.in/en/tag/speech/> 18December, 2015
- 2 <http://sbm.gov.in/sbm/> Accessed September 10, 2017
- 3 Gandhi M.K. 1927. *An Autobiography or The Story of My Experiments with Truth*. Navajivan Publishing House, Ahmedabad. 1976 Reprint.P 291.
- 4 *Ibid* p 296
- 5 *Ibid* p 212-13
- 6 *Ibid* p 213
- 7 For a full account, interested reader may refer, Pyarelal, 1965, *Mahatma Gandhi Volume – 1*

*The Early Phase.* Navajivan Publishing House, Ahmedabad. 1986 reprint, page 217

- 8 There is an Indian tradition of storytelling, where religious texts and mythologies are narrated in huge public gatherings. Bhagvat and Ramayan story rendering are very well-known. Narayan Desai has successfully used the form to take the Gandhi story to people, three hours a day for five days.

- 9 Efforts have been made before the *Gandhi Katha*. Thus in all, Vidyapith has facilitated construction of more than 5000 toilets since 1990s.

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### 600 Young Professionals as Zila Swachh Bharat Preraks to boost Swachh Bharat

The Tata Trusts, one of the country's leading philanthropic organizations, in collaboration with the Ministry of Drinking Water and Sanitation, the coordinating Ministry for Swachh Bharat Mission, has offered to provide 600 Zila Swachh Bharat Preraks (ZSBPs), one in each district of the country, for a period of one year. This partnership between would mark a critical and landmark beginning that would accelerate the progress on the path to an ODF India. This initiative would inspire many more in the corporate sector to intensify their engagement with developmental programmes of the government. Tata Trusts is committed to help combat malnutrition and stunting among India's children and improving public health indicators by eliminating Open Defecation in the country, through such partnerships with the Union and State Governments.

During his "Mann Ki Baat" address on 25th September 2016, the Prime Minister, Shri Narendra Modi, had made an appeal, on behalf of the Swachh Bharat Mission to the corporate world, to sponsor young professionals who would support district administrations across the country in the implementation of Swachh Bharat Mission.

The ZSBPs will be a cadre of young professionals geared to strengthen capacities at the district, and provide them technical and management support. This cadre will be funded and recruited by the Tata Trusts, at no extra cost to the State government or the Ministry. The role of these young ZSBPs will be to support the Collector/DDO/CEO to implement SBM(G) by coordinating the various sanitation-related activities in the district. In addition to the wider benefits of engaging smart minds in the Mission, this will also ensure a structured integration of the youth in the programme and bring in fresh ideas, energy and enthusiasm to the Mission, thereby accelerating progress on the path to an ODF India. This new initiative will provide the necessary support needed at the State and district level. These young professionals being brought into the districts with the programme will be a part of an initiative that has not been tried in the country before, and will have a unique opportunity to make a difference in the progress and development of their country.

Nearly 3 crore individual household toilets have been constructed so far. Since SBM is a programme focused on usage of toilets rather than construction of toilets alone, it is a notable achievement that 67 districts and nearly 1.3 lakh villages of the country have become Open Defecation Free, including 3 completely ODF States – Himachal Pradesh, Kerala and Sikkim and the percentage of households that have access to toilets to 58 per cent today from 38 per cent. SBM will also have a big impact on reducing girl child dropout rates from the education system, and help prevent many reported and unreported crimes against women, that are perpetrated due to open defecation.

Tata Trusts has also given their aid in 35 district governments across 9 States in areas of Behavioral Change Communication (BCC), technology innovations, promoting microfinance and microcredit, training and capacity building using advanced technologies such as Virtual Learning Centers (VLC).



## HOW MP'S NARSINGHPUR BECAME ODF

**D**uring the rainy season, Radha Bamnele (28) had to wade through knee-deep muck to find a suitable spot to answer nature's call. The predicament was similar for other women in the Khulri Panchayat that is home to about 4550 residents. With all of them having access to toilets now, the women feel immensely relieved of a huge burden they were carrying.

"You cannot imagine the kind of problems we faced when we had no toilets. Now it is wonderful to be living in clean conditions," Radha said. Her mother in law, Draupadi and sister in law Parvati expressed similar sentiments. "We also feel that our health has improved considerably," they said.

According to Pratibha Pal, CEO of the Zilla Panchayat in Narsinghpur District of Madhya Pradesh, women and children played a big role in motivating and sustaining the ODF drive. "They are the biggest beneficiaries too," she added.

### Challenges:

When the Swachh Bharat Mission campaign was started in the district comprising 1050 villages, 446 gram panchayats and 6 blocks, toilet coverage was barely 31 per cent. Needless to say, open defecation was rampant, particularly in the rural areas.

**Attitude:** People were of the opinion that it was normal and harmless to defecate in the open as it was a traditional practice passed down through the ages. Even in families that owned toilets, some of them relieved themselves outdoors through force of habit. They had a misconception that building a toilet in a residential premise was not good and if a toilet was built, they felt it was meant for senior members or women. Hence, all people did not use it on a regular basis. Further, they believed that building a toilet was the government's responsibility and hence, it was a low priority for them. As for the Leach Pit Technology, people felt the small pit would be filled soon and they would have a nasty problem of emptying the pit. In contrast, defecating in the open amounted to freedom.

**Public Spaces:** Public places such as hotels and bus stands had no sanitation facilities whatsoever. Considering that Narsinghpur has a lot of small sugar mills and the economy is chiefly based on agriculture, the area sees as many as 1.5 lakh migrant wage labourers during the cropping season each year. Such labourers had no access to sanitation.



In addition, River Narmada flows through across 170 kms of the district, its banks prone to open defecation. Each year, lakhs of pilgrims visit the area for various religious festivals and in the absence of sanitation facilities, have no alternative but to relieve themselves outdoors.

Two national highways pass through Narsinghpur that sees considerable traffic. However, both drivers and passengers had no access to sanitation. Under the circumstances, the district administration had to deal with geographical, social and economic issues besides lack of trained manpower in the process of generating demand for toilets.



### Strategy:

As far as implementation was concerned, the administration ensured strategic positioning of community led ODF campaign with holistic agenda for ensuring a clean and pure Narmada and a “PawanNarsinghpur.” They formed a District level resource team which comprised of line department officials and eminent personalities and developed a phased plan while engaging the common people, to take pride in creating a clean environment. It began with a household survey to ascertain actual sanitation access in all households of the district which revealed the work that needed to be done and the resources required in terms of human resource, materials and funding. Thereafter, the first phase of the campaign was initiated in one of the most populated blocks with a community approach and a target to achieve ODF status in 3 months. This generated learnings for scaling-up the movement district wide. It also underlined the specific role that had to be played by each department, based on the strength and capacity they had in reaching rural areas.



**Foot soldiers:** To undertake the massive job of community mobilization, an army of 175 sanitation motivators were engaged with a time bound GP wise plan for mobilisation. Mainly youth with a commitment to change the society, they were foot soldiers employed to generate demand and improve service delivery. Such youth were provided skills on tools and techniques to mobilize communities and facilitate collective decision for elimination of open defecation and breaking customs of open defecation. This process helped in the identification of natural leaders – men, women and children who were made responsible to change mindsets and continue surveillance to create an ODF environment.

**Supply Chain Management:** Government engineers were deputed to facilitate easy availability of construction material and masons and ensure quality of toilet construction. PRI functionaries were made accountable for speedy reporting and availability of funding. In addition, district and block level nodal officers were deputed for each GP to coordinate and monitor demand generation as well as supply chain.

**Frontline workers like Anganwadi and ASHA workers:** They took the lead and continuously strengthened the women surveillance committees to sustain the ODF environment. Children surveillance committees (vanersena or monkey brigade) emerged as effective change agents and took charge to demotivate open defecators through their early morning and evening follow-ups.

**Convergent Agenda:** The district administration chalked out a convergent agenda to ensure access to sanitation facilities at every possible public space. Through the engagement of all departments especially revenue department, it was mandated that all public places, road side restaurants/hotels/dhabas have toilets for people traveling or arriving in the district to prevent open defecation. Owners of sugar mills and farmers were asked to build toilets for migrants labourers and ensure that they always used them. Functionality of schools and anganwadi toilets were ensured through both departments. This ensured that everyone coming to the district had access to a toilet.

**Grievance Redressal:** A system of regular reporting, reviewing was established with the deployment of nodal officers. Constant review meetings were held to identify bottlenecks, grievances and issues hindering performance. Solutions were found and timely redressals at each level were made. Social media like Whatsapp was used very effectively to monitor and provide real time support.

**Monitoring and Review Systems:** A monitoring mechanism framework with specific indicators to continuously track and monitor the coverage, processes as well the outputs and outcomes was established

with clear flow of information from villages to district level. Continuous visits were undertaken by district nodal officers to the blocks and villages to review with various teams.

**CLTS Approach:** Based on the learning and previous interventions and experiments across the State, it was decided to use community approach tools and techniques to mobilize a sense of disgust and shame of defecating in the open. The approach integrated collective decision at community level as a first step to initiate implementation of sanitation plan in each of the villages.

In addition, to create an enabling environment for elimination of open defecation, sanitation motivators and frontline workers were trained and engaged at villages to continuously reinforce the open defecation free agenda at each level from Gram Sabha to schools and women meetings. Activities in this regard included triggering among communities, schools and anganwadis; campaigns such as KalashYatra, walk of pride, walk of shame, hallabol, pawanyatra, ODF sports competitions, etc. In all this, focus was on usage of toilets and sustainability; as development of local ownership was strengthened.

### Motivating Factors:

The mission of achieving an ODF district and taking pride in doing so first and setting an example of implementing one of most difficult social change campaigns kept the team motivated, according to the CEO. That ODF meant better health, nutrition and development, the team was well aware of. In addition, there was enthusiastic involvement, of workers at all levels.

### Success Story: Hinotia village:

Durgaprasad Thakur (60) is happy that his family played a significant role in turning his village Hinotia, in Kareli block of Narsinghpur district, ODF within two months. In his village, the surroundings are extremely clean and walls of almost all houses are painted with colourful slogans on the importance of sanitation. Other than his home which is spick and span, the roads leading to the village, the banks of the canal that were prone to open defecation earlier, are now clean and free from litter.

According to Pratibha, when the local monitoring committee was formed, these two areas were targeted the most. Villagers formed groups to take rounds of the entire village, with particular focus on these two spots. Thakur carried a stick with him and led the monitoring team. As always, women and children played a very active role. "We were always concerned about the safety of women and the embarrassment for them to defecate in open. So we ensured that every home got a toilet and everyone used them," Suman Bai Thakur, an active member of the monitoring committee said.



Aakash Thakur, a student of class 8 always carries a green whistle. "If I see anyone trying to break the rule, I whistle and inform the elders of the monitoring team," he said. Nidhi Mehra, a student of class 7 said that she is very happy that her village looks so clean. Children do not fall ill as often now. Munnibai, whose family had a toilet constructed in their agricultural field to ensure regular water supply, said that it is a relief to be able to use the toilet at any time. "It is extremely convenient and safe," she said. Arvind Mehra, the village Sarpanch said that while most people cooperated in the process, some villagers had to be warned about penalty and stopping of pension and other benefits to convince them to give up open defecation. Vimlesh Dubey, member of Janpad Panchayat said that achieving any social target becomes easy when people become committed to the cause. "Right from top officials to children in the village, everyone got totally involved in the process and achieved the ODF status in two months," he said. Rajiv Langhate, Janpad Panchayat CEO said that since the village had achieved the ODF status and was sustaining it through constant monitoring, a detailed project report had already been prepared for solid and liquid waste management in the village.

## Focus of USHA Campaign: Toilet in Homes of Girl Students, MHM

With a view to ensuring that all girl students in the rural district of Chamarajanagar District of Karnataka have access to toilets in their homes, and to provide awareness about menstrual hygiene management (MHM) and other pertinent issues, the district administration launched the USHA campaign.

Having commenced on 25<sup>th</sup> November (International Day for Elimination of Violence against Women), activities of the USHA campaign continued through National Girl Child Day on 24<sup>th</sup> January and ended on March 8, 2017. An acronym for 'Understand, Sensitize, Help and Achieve,' USHA was an intensive campaign to ensure that no girl child was left behind, according to CEO, Zilla Panchayat, Hepsiba Korlapati.



Considering that the district is among the most backward in the country in terms of literacy and other human development indicators with child marriage, teenage pregnancies and malnutrition prevalent, the campaign was intended to address a pressing need.

The main objectives of the campaign were to enable an equitable and decent life for every girl child in the district, to restore her rights and dignity, and to give her identity and space. In the process, access to toilets and menstrual hygiene management were given substantial focus. In this context, teachers across the district volunteered to be mentors and worked beyond the call of their normal duty, alongside functionaries of the Zila Panchayat, participating in a gamut of activities that converged with various government schemes.

For starters, a 3-day training programme was held for mentors, parents and students on – leadership skills, personal hygiene, decision making, problem solving, gender issues, budgeting, and writing to authorities. It concluded with administering of a pledge and a signature campaign by students.

The session on personal hygiene included the importance of hand washing, a discussion on good sanitation practices, a drama on health, child care practices, MHM, use of sanitary napkins, etc. While girl students were taught to make sanitary napkins, small size sanitary manufacturing units were also set up in their hostels.



In addition, a trained mentor was appointed for every gram panchayat who held meetings with students and their parents. Efforts were also made to improve facilities at girls' hostels and academic performance of class 10 students while special focus was given to weak students. Moreover, there was career guidance and counseling for skill development and discussions on life

skills, nutrition and health. As a part of the campaign, Girl Child Week and National Girl Child Day were observed, and the entire district was roped into the celebrations – human chains were formed in all villages, march of pride was taken, pledges were reaffirmed, and cycle rallies were carried out.

The campaign reached out to at least 4 lakh people through students and their parents. Further, successful women from different walks of life were asked to address and inspire the women folk. As for the school parliament, it featured a discussion on women issues.



Toilet access and construction was given considerable focus. In Chamarajanagar, as many as 7000 toilets were constructed between 1<sup>st</sup> April 2016 and 25<sup>th</sup> November 2016. However, between 25<sup>th</sup> November 2016 and 24<sup>th</sup> January 2017, when the campaign was in mission mode, 10,000 toilets were constructed and another 8000 are in the process of being constructed, Korlapati said.

The success of the campaign could be attributed to the involvement of all women. On 26<sup>th</sup> January, a team of over 520 girls and women, 130 USHA mentors, 130 student champions, 130 ASHA workers, 130 Anganwadi workers – each representing the 130 Gram Panchayats in the district participated in an impressive performance at the district headquarters.

### A little girl uses her pocket money to build toilets for poor

Mondrita Chatterjee is an 11 year old child studying at Hill Top School, Jamshedpur. She heard PM Shri Narendra Modi in a speech saying that girls of her age were dropping out of the schools because there are no toilets in those schools. Hearing this, she was surprised and shocked. That day she resolved to do something which would set an example for the girls of her age.

By saving small amounts from her pocket money, she accumulated a sum of Rs 24,000. She used this money to build two toilets in the Kendradhi village under Chhota Govindpur Panchayat of Jamshedpur block. Now everyone in the village and school talks about this initiative by Mondrita. We salute this cleanliness efforts which is now changing the picture of this village. Mondrita visits the village every week to increase awareness about the cleanliness. Seeing her tireless efforts, State Government has awarded Mondrita and she has been appointed Swachhta Doot in her area.



# Kurukshetra

**FORTHCOMING ISSUE**

November 2017

: Irrigation and Water Conservation

## Publications Division's Participation at the 23rd Delhi Book Fair, 2017

Publications Division participated in the 23<sup>rd</sup> Delhi Book Fair, 2017 held at Pragati Maidan in New Delhi from August 26 to September 3, 2017, organized by Indian Trade Promotion Organization in association with Federation of Indian Publishers (FIP). The theme of the fair was “*Padhe Bharat, Badhe Bharat*” - “*India Reads, India Grows*”. About 130 publishers took part in this book fair.

The book fair provided an opportunity to showcase Publications Division's books, e-books and magazines in Hindi, English and Regional languages to a large number of people, from children to senior citizens.



*Publications Division Book Stall at the 23<sup>rd</sup> Delhi Book Fair, 2017 at Pragati Maidan, New Delhi.*

The special segment of books on Freedom Struggle “*Azaadi ki Kahani, Kitabon ki Zubani*” which was created to commemorate of 75 years of Quit India movement, and completion of 70<sup>th</sup> year of Indian Independence were the major attractions of the Publications Division's stall which had people taking keen interest. Some noteworthy titles included ‘*Who's Who of Indian Martyrs, (Life Sketches of Unsung Heroes)*’, ‘*From Raj to Swaraj*’, ‘*Bharat mein Angrezi Raj*’, ‘*Bharatiya Swatantrata Andolan ka Itihas*’, ‘*History of the Freedom Movement in India*’, ‘*India: Before and After the Mutiny*’, ‘*1857: The Uprising*’, ‘*Remember us once in a while*’. DPD also displayed 100 volume set of the monumental ‘*Collected Works of Mahatma Gandhi*’, besides other important titles on Gandhiji like ‘*Mahatma*’ (in 8 volumes), ‘*Gandhi in Champaran*’, ‘*Romain Rolland and Gandhi-Correspondence*’, ‘*Satyagraha*’. Various other titles from different genres like India's rich and diverse cultural heritage, biographies



*Visitors browsing through books at the Publications Division's stall.*

of freedom fighters, national leaders, history, art and culture, land and people, other subjects of contemporary relevance and children's books in Hindi, English and the regional languages were also displayed. An e-kiosk was also put up at the stall for the visitors to have a look at Publications Division's digital library, having over 1000 digitized titles.

Hon'ble Minister of State for Culture, Dr Mahesh Sharma,

Secretary DoPT, Shri Ajay Mittal, Chairman, IGNC, Shri Ram Bahadur Rai, Member Secretary, IGNC, Shri Sachidanand Joshi also visited Publications Division's stall besides several senior officers of government, writers and publishers.

Publications Division had a record sale of Rs.15.37 lakhs during the Book Fair through its various books and journals. Last year, the sale was to the tune of Rs. 10 lakh. This time, the Publications Division also installed mPoS machines to facilitate cash less transactions. Nearly 22 per cent of the total sales were done through cashless transactions.

Two Book Release events were also organized on August 26 and August 31, 2017 during which, a total of 17 titles on varied topics were released. The titles ranged from biography of the singer MannaDey, History of Indian Freedom Movement by noted Historian Tarachand , to Indian Costumes. Four volumes of 'Sanskrit Sahitya Ratnawali' which were co-published with Sasta Sahitya Mandal were also released.

A mobile app 'Saluting the Patriots' was also launched to provide short and inspiring narratives about India's glorious history of freedom struggle. This in-house app is bilingual.



*Publications Division's official receiving the award for "Excellence in Book Production" from Hon'ble Minister of State for Culture and Tourism Dr Mahesh Sharma.*

The Federation of Indian Publishers gives awards on excellence in book production every year in various categories during the Delhi Book Fair. This year, Publications Division bagged a total of



*Publications Division officials receiving Gold Trophy for Excellence in Display by ITPO.*

11 Awards and two Certificates of Merit for *Excellence in Book Production* in various categories in Hindi, English and Regional languages. The Hon'ble Minister of State for Culture and Tourism, Dr. Mahesh Sharma gave away the awards on August 31, 2017.

Publications Division's display in 23rd Delhi Book Fair was also awarded with *Gold Trophy for Excellence in Display* in Regional Languages, the design of which was prepared by

in-house artists. The award was given away by the Executive Director, ITPO at an award distribution ceremony held on September 3, 2017.

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