



Zangsti Toilet Inauguration

Page 1



World Water Day

Page 4



Eshey Tondup, Executive Director

Page 8

DC LEH INAUGURATES : ALL-WEATHER ZANGSTI TOILET



Avny Lavasa, Deputy Commissioner Leh, interacts with the guests during the inauguration of the toilet.

Deputy Commissioner (DC) Leh Avny Lavasa formally inaugurated the café, sales outlet and all-weather public toilet at Zangsti on March 23. The event was also organised to celebrate the success story of the first-of-its-kind toilet in Leh town, which is funded by the District Administration whereas the finish work was carried out by Bremen Overseas Research Development Association (BORDA) and Ladakh Ecological Development Group

(LEDeG) under the Liveable Leh project with financial support from BMZ.

DC Leh Avny Lavasa was the chief guest for the occasion whereas Additional Deputy Development Commissioner Moses Kunzang was the guest of honour. RK Razdan, executive officer, Municipal Committee Leh (MCL); Rigzin Spalgon, sub-divisional magistrate (SDM) Durbuk; Ramon Magsaysay award winner Sonam Wangchuk, Mohammad



Avny Lavasa, Deputy Commissioner Leh, with Mohammad Iqbal, director of PAGIR (on wheelchair).

Iqbal, president, People's Action Groups for Inclusion and Rights (PAGIR), were some of the prominent guests present on the occasion.

The café, sales outlet and all-weather toilet at Zangsti has been built in an eco-friendly way using local techniques and knowledge of architecture with insulated wall and mud plasters. The public toilet is functional throughout the year as it uses the sun's energy for heating. The toilet has been designed for male, female, as well as the specially-abled and the construction of a ramp, make it universally accessible.

The main objective of the construction of the toilet was to address the issues of non-functionality of public toilets in winters due to extreme weather conditions. Also,

there is a common conception that public toilets are unhygienic and inaccessible. The toilets at Zangsti and New Bus Stand were constructed by the District Administration to change that perception.

"Lot of problems are related to toilets in Leh. The majority of the issues are cleanliness and hygiene. So, we came up with the idea of a toilet which could be clean, hygienic and functional throughout the year. The toilet was thrown open three months back and we got a tremendous response from the users," said Avny Lavasa, DC Leh.

The café, sales outlet and public toilet also endeavours to remove the cultural and social stigma associated with the job of a sanitation worker. Therefore, a café is housed in the

public toilet so that the staff members could work as waiters and serve tea and coffee to the customers while also ensuring the cleanliness and maintenance of the toilet.

"It is one of its kind of toilet in Leh and we are really thankful to LEDeG and BORDA who played an important role in making this dream come true. It is a success story as it was functional in winter. We want to replicate this model in other parts of Leh also. I want aspiring youth from Ladakh to step forward and come up with such innovative ideas and models," added DC Leh.

Meanwhile, Additional Deputy Development Commissioner (ADDC) Moses Kunzang shared the business model of the toilet with the audience. "This is a business model in



which the toilet has been outsourced to PAGIR, an organisation which works for the differently abled. PAGIR and Oriental Crafts will use the space to sell and promote their products. PAGIR will employ staff and generate income from the toilet, sales outlet and the café. The staff will keep the toilets clean and also serve hot beverages to the customers,” he said.

He also informed the public that there are adequate toilet facilities in Leh town. “We have around 10-12 public toilets within a range of 1 km in Leh town. The toilet at Zangsti was completed in November last year but we wanted to ensure first whether it would remain functional throughout winter. And we received a lot of positive feedback from people who used this toilet in winter. A lot of

people and organisations are involved in the successful completion of this toilet,” said Moses.

The students of Eliezer Jordan Memorial (EJM) College Leh performed a skit on the occasion highlighting the challenges of toilets in Leh.

RK Razdan, executive officer, MCL, gave the vote of thanks.

Technical specification

The function of public convenience is based on solar gain technique and energy conservation methods. Passive solar wall and direct gain (DG) technology have been incorporated in the structure for solar energy gain. Polyurethane Foam (PUF) and Expandable Polystyrene Foam (EPF)

have been sandwiched between the double wall to block the heat from escaping through the walls. An 18 mm plywood, a thin layer of tar felt, an EP Foam and straw mixed with soil have been used in the roof. A corrugated tin sheet has also been incorporated on the roof as a water-proofing agent.

A toughened double layer glass with aluminium spacers have been used for glazing. PPR double layer pipes with a layer of nitrile foam as insulation over it have been used in the toilet. A pressure pump is used to maintain water pressure at each tap. A scientific septic tank has been constructed to take care of the faecal sludge.

An insulated overhead tank is kept in a glass chamber to prevent the water from freezing in extreme cold in winters.

LEDeG CELEBRATES WORLD WATER DAY



Guests during the celebration of World Water Day in the main market area of Leh town.

Ladakh Ecological Development Group (LEDeG) in collaboration with Public Health & Engineering (PHE) Department organised World Water Day at the main market area of Leh town on March 22 under the Liveable Leh project, which is funded by the European Union and co-funded by BORDA. The theme for this year's World Water Day was 'Leaving no one behind.'

Additional Deputy Commissioner (ADC) Sachin Kumar was the chief guest for the occasion. The other guests present during the event were Sagir Hussain, Executive Engineer, PHE; Wangyal Phuntsog, AEE, PHE; Tashi Dorjey, AEE, PHE; Iftikhar Ahmed, AE, PHE; Dr Mohammad Iqbal, District Health Officer (DHO) Leh; RK Razdan, executive officer, Municipal Committee Leh (MCL), and Dr Tsering Phuntsog, LEDeG committee member.

Dr Tsering Phuntsog welcomed the guests and shared the importance of celebrating World Water Day. He said that people have a misleading impression that water is abundant on earth and that they have right to use as much freshwater

as they want. However, the people of Ladakh are facing water woes due to change in climate in the last few decades. Dr Tsering shared that the situation is worse in winters when temperature drops below freezing point. Lack of snowfall and the receding of glaciers at an alarming rate has further worsened the conditions.

He added that a majority of people still do not have access to safe drinking water. He warned that the situation will only get worse with the increase in demand of water and growth in population. He asked if the demand for water supply doubles over the next five decades, then what will happen to the farmers who are dependent on water sources for their crops.

Dr Tsering said that people have become overly dependent on PHE for water supply. And, even though PHE is working hard to ensure proportionate distribution of available water in an optimum way, some people take more than their share whereas few have very limited access to water. He said the people should take responsibility to conserve water.

He shared with the audience that the water source near



Additional Deputy Commissioner Sachin Kumar flags off the awareness campaign

LEDcG Office was found contaminated after water quality tests were carried out. He said it is because of the changing lifestyle of the people of Ladakh as more people are using flush toilets in absence of a proper septic tank which eventually leads to contamination of groundwater.

Thereafter, Wangyal Phuntsog, assistant executive engineer (AEE), PHE, shared the relevance of the event and requested the audience to conserve water for the future generation. He added that the PHE Department has set a target to reach each and every family by 2030. He explained the theme of the World Water Day to the audience and said that project was everybody was not getting an equal share of water.

He said that around 8 crore people in India don't have access to safe drinking water. And although some countries are water-rich but they lack access to safe drinking water due to extreme poverty. As per sustainable development goal (SDG)-6, which focuses on "ensuring availability and sustainable management of water and sanitation for all", the department will provide equal drinkable amount for all

by 2030. He shared some more statistics with the audience. According to him, 1 in 4 primary schools and 1 in 6 secondary schools have no drinking water service. Also, 3.5 million people die annually from water-related diseases.

He said distribution of water is an important issue and climatic conditions, especially winters when temperature drops below zero degrees, are a big factor is equal distribution of water for all. Phuntsog informed that around 60%-65% of the households have been connection with water connections under Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT). And, the construction of a reservoir at Bombgarh and Skampari has already been completed under Atal Mission for Rejuvenation and Urban Transformation (AMRUT).

Phuntsog said that the PHE Department lift water from, the Indus River Basin which is then used to supply to the public thereby making it a costly affair. He said that there would be even water supply for all once the project is completed. Post-completion of the project, they would be



able to lift 7.5 MLD from Indus River bank and lift until Khakshal area.

Phuntsog said that there are 365 habitation in Ladakh out of which 314 are fully covered. A 'Habitation' is a locality within a village where a cluster of families reside. The total population should be 100 or more for consideration for coverage under the rural water supply norms laid down by the Department (Section 2). It is generally assumed that around 20 families reside in a habitation. Average number of persons in a family is taken as 5. In case of hilly areas, a habitation may have a population, which is less than 100. Phuntsog added that 40 are partially covered.

Then, chief guest Sachin Kumar, additional deputy commissioner (ADC), interacted with the audience and informed them that they organised

the event in the market area of Leh town for widespread dissemination of information on importance of conservation of water. He appealed to the public to make judicious use of water. He also cited example from his tenure as the sub-district magistrate (SDM) at Khaltse and shared that a majority of the cases registered in his office were related to water.

Kumar hoped for good water distribution in 2019 keeping in the mind the heavy snowfall in Ladakh in winter. But he also shared that the water sources are not increasing due to non-recharge of the aquifers. He said the district administration has taken few steps to put a check on water, such as registration of private borewells. He said that people should come forward and support the cause to ensure judicious use of water.

Then, Dr Mohammad Iqbal, district health officer (DFO), informed the audience about water-borne diseases. He shared the most of the cases registered in the district hospital are water-borne. More than 1 million people in the world suffer from diarrhoea out of which 58% of the cases are controllable. Dr Iqbal said that people usually consider water as safe which are colourless and odourless but they consider the invisible bacteria present in the water that eventually lead to diseases.

He said that an integrated disease surveillance programme is in place to carry out quality test of water.

In the end, Tenzin Motup, event manager of LEDeG, gave vote of thanks to the guests

RETHINKING WASTEWATER MANAGEMENT IN INDIA

In a highly water-stressed environment, the inefficient use of wastewater is leaving India unable to make the most economical use of its resources, argue a set of researchers from the Council on Energy, Environment & Water

Source: thethirdpole.net

Rudresh Kumar Sugam, Abhishek Jain and Kangkanika Neog

India's population is deeply vulnerable to changes in water supply. Climate change related effects on the monsoon are having, and will continue to have, huge implications on agriculture, which makes India even more vulnerable as more than 60% of country's population relying on agriculture for livelihood and nearly two-thirds of the cultivated land is rain-fed. At the same time the government has launched ambitious programs such as the 'Smart City Mission' and the 'Make in India' campaign which need to be reviewed from water and environment lens.

Especially in urban areas water resources are under significant pressure due to high water demand and complex consumption patterns within a small but highly-densely populated areas. Currently, we are meeting the demands of most of the cities by transporting water from hundreds of kilometres. This is both inefficient and energy intensive. A local level solution is

thus essential for sustainable water management. Practices such as reuse of treated wastewater would be of immense significance in achieving water security.

Wasted wastewater

Almost 80% of water supply flows back into the ecosystem as wastewater. This can be a critical environmental and health hazard if not treated properly but its proper management could help the water managers in meeting the city's water demand. Currently, India has the capacity to treat approximately 37% of its wastewater, or 22,963 million litres per day (MLD), against a daily sewage generation of approximately 61,754 MLD according to the 2015 report of the Central Pollution Control Board. Moreover, most sewage treatment plants do not function at maximum capacity and do not conform to the standards prescribed.

In cities, industries and commercial sectors pay higher tariffs for water but they don't have supply assurance. As reported by Fernandes & Krishna in

their report, "Water shortages threaten coal company revenues", nearly 7 billion units (kWh) of coal power, with an estimated potential revenue of INR 24 billion were lost in the first five months of 2016 due to lack of water for cooling in thermal power plants. In addition to water supply augmentation, wastewater treatment offers new economic opportunities for energy and fertilizer recovery.

A paradigm shift from "use and throw – linear" to a "use, treat, and reuse – circular" approach is needed to manage wastewater. That said, investment in wastewater treatment has associated risks as well. It is therefore important to understand the underlying social, political, technical, and financial factors that will drive, facilitate, and sustain wastewater management interventions in India.

A web of inter-connected factors

The Council on Energy, Environment



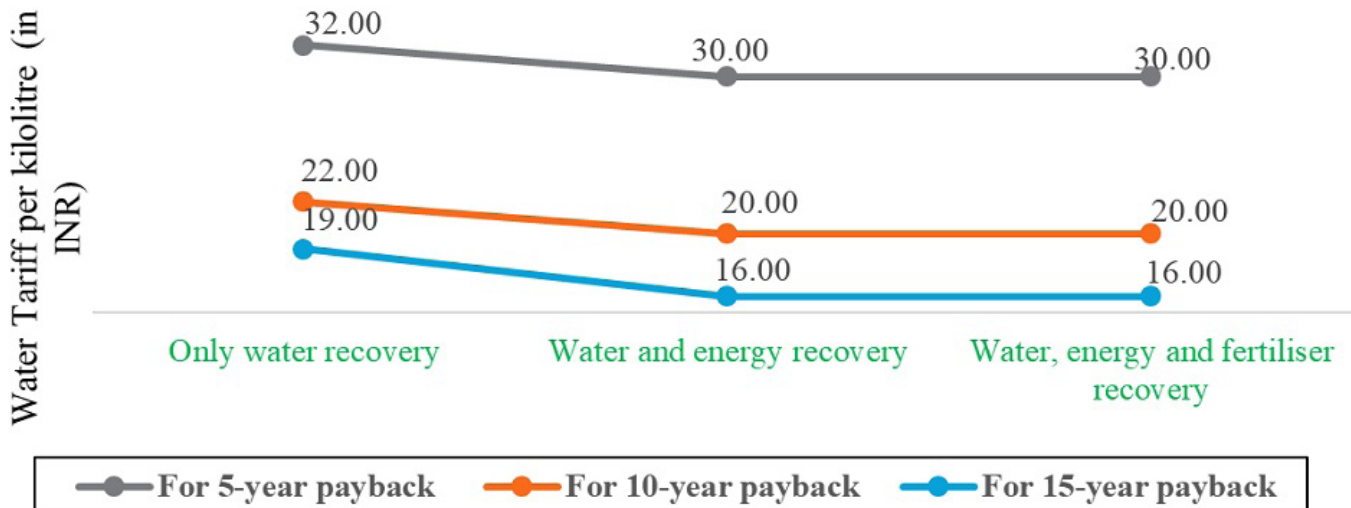
A wastewater treatment plant in Agra.

& Water (CEEW) in association with the 2030 Water Resources Group completed an in-depth study on finding viable pathways for improved wastewater management in India. This study highlights a framework of essential factors for decision-making. This study involved critical literature review, comparative analysis of wastewater treatment technologies, in-depth study of 17 global case studies and expert interviews with wastewater treatment plant operators, academicians/researchers, urban planners/architects and technical and financial experts.

Eight factors were identified as the most critical factors for making an informed decision:

1. Drivers for initiating wastewater management,
2. Policies and regulations,
3. Access to technology and finance,
4. Scale of intervention,
5. Management strategy and institutional framework,
6. Public perception,
7. Phases of deployment, and
8. A framework for participatory approach.

Water tariff for different payback periods and modes of revenue generation



Source: CEEW

These factors need to be seen together; focusing on just one factor, which has often been the case in interventions, could lead to failure, or at least underperformance. For example, water scarcity is the chief factor for initiating wastewater reuse initiatives across the globe, however it needs the support of well-framed policies and regulations as well as access to technology and finance to sustain the initiatives.

A new tool to show the economics

An MS Excel based techno-economic tool which calculates the feasibility of water, energy and fertilizer recovery from wastewater was also developed. The tool helps in determining the potential tariff, based on choice of technology and level of treatment required, for the recycled wastewater at which it can be sold to recover treatment and supply costs. It also has the capability to conduct sensitivity analysis in order to understand how various technology options are sensitive for various parameters, such as land costs and power tariffs, in

determining the economics of the intervention.

The graph below outlines the case of a 50 MLD sewage treatment plant with Activated Sludge Process (most popular treatment method in India) with tertiary treatment.

The study establishes that direct benefits through recovered resources from wastewater could make an economically attractive case for practitioners to adopt circular economy pathways to manage wastewater. There are numerous indirect health and environmental benefits, which makes the case even stronger. This study could potentially guide utilities towards making treated wastewater reuse a viable option.

Rudresh Kumar Sugam Abhishek Jain and Kangkanika Neog work at the Council on Energy, Environment & Water.



Eshey Tondup, the former principal of Lamdon Model School, joined LEDeG as the new executive director in April

Eshey Tondup joined as the new executive director of Ladakh Ecological Development Group (LEDeG) on 1st April, 2019. After the departure of the previous executive director Dr Nordan Otzer in December, the organisation was headed by Sarla Chhewang, president, LEDeG Committee Member, for more than three months until the appointment of the new executive director. Eshey retired from the post of principal at Lamdon Model School, Leh, last year after serving in the institution for more than two decades.

Funded By:



Partners:



Editor	:	Tashi Lundup
Editorial Team	:	TenzinMotup, Fariha Yousuf,
Designer	:	Tundup Gyatso