



Future of Water in Leh



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CURRENT WATER SCENARIO IN LEH Townhall Meeting



District Administration Leh in collaboration with Ladakh Ecological Development Group (LEDeG) organised a one-day town hall meeting on ‘Future of Water in Leh: Where are we heading?’ on September 10 at Sindhu Sanskriti

Bhawan. The objective of the meeting was to hold a participatory discussion on the water scenario in Leh and the steps that are required to overcome the water-related issues of the public.

Honourable Chief Executive Councillor (CEC) LAHDC Dorjey

Mutup chaired the session, whereas Honourable Member of Legislative Assembly (MLA) Leh Nawang Rigzin Jora was the keynote speaker for the occasion. Additional Deputy Commissioner Moses Kunzang was the representative from the DC

Office. The other prominent guests present during the meeting were executive councillors from LAHDC, Gyen Lobzang Nyantak, Upper Leh Councillor; Tikender Singh Panwar, former deputy mayor of Shimla; Manas Rath, senior advisor from BORDA, Sonam Wangchuk, Director HIAL; Chhewang Norphel, retired executive engineer who is often known as Ice Man; Lobzang Tsultim, former director of LEDcG; Rigzin Spalzung, former CEC LAHDC; Tsering Sampel, former president of District Congress Committee; Tsering Namgyal, president of District Congress Committee; P Angmo, president, BJP Mahila Morcha Leh; Puntsok Angchuk, president of Yangtse Yargas Tsogspa; Nurboo Gyaltsan, ex-Member of Legislative Council; Ravinder Thaploo, deputy director, Command Area; Gitanjali, CEO of Himalayan Institute of Alternatives Ladakh (HIAL); Tsering Chondol, president of Women's Alliance of Ladakh; Mohammad Deen, president of LEHO; goba and members of different chutsos and wards of Leh, and members of tours operators and hotel association in Leh.

ADC Moses Kunzang made the welcome speech and apprised the audience about the steps the district administration have in the pipeline to overcome the water-related problems in Leh. He focused on the need to have a proper baseline study to understand the actual water being supplied in Leh. He also shared that the administration will start a registration process for the private bore wells and also check the amount of groundwater being extracted so that necessary steps could be taken. Moses informed that

the administration and LAHDC are working on water augmentation, sewerage system and sewage treatment plant (STP), beautification, maintenance and utilisation of water bodies that flow through the town. He also informed about taking up a pilot project in which they will levy a fee on water to generate revenue for operation and maintenance (O&M), upgradation and strengthening municipal committee, and revival of Chhurpon system.

Thereafter, Manas Rath gave an overview of water scenario in Leh, in which he talked about the water sources, supply, demand, challenges and solutions. Tikender Panwar then shared the Shimla water story with the audience while Tsewang Dorjey Dongbos talked about the situation and revival of Chhurpon system in Leh.

Nawang Rigzin Jora, the keynote speaker for the day, also suggested few steps to overcome the challenges, such as diverting MGNREGA funds for construction of ice-stupas, and concerted efforts of NGO's and the government for conservation of water. There was also a question and answer session in which the public shared their grievances and also threw questions at the panellists.

Lastly, Dorjey Mutup, CEC LAHDC, said there should be policy on conservation of Indus River. He said a Rs 70-crore project is in the pipeline and once the project is completed it will provide water to every household in Leh.

Dr Nordan Otzer, executive director of LEDcG, thanked the guests, speakers and the public for their participation in the town hall meeting.





The Liveable Leh Strategic Planning Committee team at Municipalika 2018.

MUNICIPALIKA 2018 EXPOSURE TRIP

The Strategic Planning team during an exposure tour participated in Municipalika, an international platform to evolve, evaluate and share policies, strategies, cutting edge technologies and innovations towards Smart and Sustainable living in cities, from 19th to 21st September at Bombay Exhibition Centre Goregaon East, Mumbai.

Through the Exhibition and Conference, it aimed at providing a mega-networking forum for governments, experts, entrepreneurs and service providers to collectively find solutions to urban challenges.

The opening session of the conference was inaugurated by Hardeep Singh Puri, Minister of State (I/C) of Housing and Urban Affairs, Devendra Fadnavis, Chief Minister of Maharashtra, Nadir Patel, High Commissioner of Canada in India and Durga Shankar Mishra, Secretary, Ministry of Housing & Urban Affairs Govt. of India.

The members of the Liveable Leh Strategic Planning Committee who attended the event were Dr Zahida Bano, CEO Leh Development Authority (LDA), Rigzin Spalgon, Administrator, Municipal Committee Leh (MCL), Sonam Chosjor, Assistant Commissioner (Revenue), Abdul Gaffar Zargar, Executive Officer, Municipal Committee Kargil, Abdul Mutalib, Executive Engineer, R & B, Tundup Dorjey, Assistant Administrator MCL, Deleks Namgial, General Secretary, All Ladakh Tour Operators Association (ALTOA), Stanzin Norboo, Secretary, ALTOA, Rishav Paul, Coordinator Planning and Development, Smanla Dorje Nurboo, Urban planner and Sunil Kraleti, Urban

planner.

Post-lunch, there was discussion on sustainable and progressive cities in which the experts talked about best practices, ease of doing business and resource mobilisation and financial management. There was also a smart cities conclave following which there was a talk about resilient cities and public safety, which included discussion on disaster mitigation and management, community-based security support systems, and policing, surveillance command and control centres. The concluding session on the first day was on regulatory frameworks for safe, sustainable built environment, in which the experts talked about provisions in building regulations, development control rules and codes to permit innovative options, national building code 2016 review, and safe construction and quality standards.

The second day began with a session on healthy cities: integrated water management and waste water treatment and management, where there was discussion on water supply, treatment and distribution, water metering-technologies, waste water recycling, ground water and river rejuvenation, arsenic fluoride and salinity issues, reduction of T&D losses and NRWn. Thereafter the experts talked about healthy cities: waste water treatment and management in which they discussed about waste water treatments, STPs and various technologies, and waste water recycling and reuse. In another hall, there was discussion in digital cities: E-governance roadmap and Geo-spatial solutions for

urban planning, Geo-Spatial solutions for Indian cities in which there was discussion on innovative use of GIS-GPS in city management, infrastructure design using geo-spatial technology. In another adjacent hall, there was discussion on green buildings in which the experts talked about energy saving design, innovative use of recycled materials, building automation, light, ventilation and air conditioning, green products and landscape: soft and hardscape.

Post-lunch, there was discussion on health cities: sanitation for all, where the experts discussed about progress of Swachh Bharat Mission, ODF (Open Defaecation Free) issues and solutions, design and technologies involved in public toilets and school toilets. The experts also discussed about pollution-free cities and passive design for energy efficiency. Keeping in view the rampant use of cement and concrete for construction of buildings, there was also a discussion on innovations in the use of cement, concrete and composites, construction chemicals and performance enhancers.

On the concluding day, the discussion began with humane cities: PMAY challenges and way forward and housing finance in which the experts talked about mortgage and project financing options, affordable and good quality housing for all. There was also a discussion on connected cities in which the experts talked about paradigm shift in urban mobility with effective public transportation,

transport and traffic infrastructure and parking, non-motorised development and walkability, EV cars and buses, transit oriented development, technology-led transport services, safety and traffic management technologies.

There was also an interesting talk on renewable energy in which there was a discussion on the use of solar, wind, biomass and other renewable sources to power cities. Thereafter, the experts discussed about integrated cities: self-contained cities and new town developments.

There were few takeaways from the event and meetings of the Planning Committee, such as use of oil and grease traps at every storm drain discharge points, construction and demolition waste policy in Leh, procurement of Tata Ace Hopper Tippers for Pangong and Nubra, and procurement of cubicles for the Public Toilet at New Bus Stand which is currently being implemented by LDA with the help of LEDeG.

With participation from more than 1600 delegates, international country pavilions, state pavilions and Municipal Corporations displaying initiatives undertaken for their cities along with participation from 5000+ urban professionals and 170+ solution providers exhibiting their technologies, Municipalika 2018 was one of the largest platforms in the country for promoting business in the sector of Smart and Sustainable City Solutions.

SWACHHATA HI SEVA

Cleanliness drive



Ladakh Ecological Development Group (LEDeG) in collaboration with Municipal Committee Leh (MCL) and All Ladakh Tour Operators Association (ALTOA) organised a Cleanliness and Sanitation Drive under Swachh Bharat Mission and Swachhata Hi Sewa 2018 campaign on September 29.

Additional Deputy Commissioner (ADC) Leh Moses

Kunzang was the Chief Guest for the occasion. Inspector MC Leh, religious leader, Tsetan Angchuk, president ALTOA, Ladakh Women's Alliance, Dr Din Mohammad, director, Ladakh Environment and Health Organisation (LEHO), Merchant Association Leh, working committee members of LEDeG, were among the prominent guests present during the occasion.

The event began with a cleanliness and sanitation drive in Leh town, where the members from LEDeG, Municipal Committee and ALTOA cleaned the streams along the route from Karzoo up to Hotel Yak Tail which were choked with polythene bags, plastic bottles, discarded clothes and garbage.

Later, in the main market, an eco-friendly reusable and recyclable carry bag was launched as a substitute for polythene and plastic carry bags. The new desludging truck purchased by LEDeG and Blue Water Company was also launched by MCL.

Meanwhile, ADC Leh Moses Kunzang addressed the crowd and appealed to them for a collaborative effort to overcome the problems in Leh. He stressed that the Administration and LAHDC Leh need their support to make Leh a clean town. He also appealed to the NGOs, social and private organisations to extend their help in their pursuit of keeping Leh clean.

On the occasion, Moses highlighted some of the initiatives and efforts undertaken by LAHDC Leh in addressing issues of waste management, scarcity of water and traffic management. He also informed the public about BORDA, a German NGO which works for improving sanitation and

promoting decentralised waste and wastewater treatment options. He further shared the development on the redevelopment of Changspa Street and how it will decongest the traffic on the road. He also said a machine, Black Hole, which is used to clear garbage dump, has been ordered from Bengaluru which will be installed at Bomb Guard.

Dr Nordan Otzer, Executive Director of LEDeG, informed the public about the ill effects due to excessive use plastic bags usage on the environment as well as health of the people. He also brought to notice the contamination of groundwater due to sanitary waste, shortage of water in Leh and the importance of traditional local toilets. He also stressed the need to address cleanliness and water management issues and urged everyone to get aboard to fight against sanitation issues instead of relying on the government.

Tsetan Angchuk, president ALTOA, also spoke on the occasion and shared with the audience about the cleanliness campaigns and drives carried out by them to preserve and protect the fragile environment of Ladakh.

Ladakh Film Society also presented a skit on water whereas Art of Motion performed dance in front of the audience. Female artists also presented a theme-based song on the occasion.



The new desludging truck that was inaugurated during the event.

ACCOLADE:

LEDeG wins prestigious Green Energy Award



LEDeG won the prestigious India Green Energy Award for the year 2018. The award was presented by Suresh Prabhu, Minister for Commerce and Industry and Civil Aviation for award category “Outstanding Community-based Green Energy Project” at New Maharashtra Sadan, New Delhi, on September 7, 2018. It was awarded by Indian Federation of Green Energy. Dr Nordan Otzer, executive director of LEDeG, received the award.

The overall purpose of the event was to bring together all the small, medium and large players under a common roof through recognition on their green initiatives. Over the years, it has become a trend to honour those working on green energy with the Green awards, which not only celebrate the spirit of the new challenges involved in the sector as well as to ensure further growth in this sector through appreciation.

The Green awards has a vision to move forward with the concept of a greener world. The award also aims at strengthening the ongoing practices of appreciating the innovation and quality, and also to involve more participation in the green initiatives from not only the large scale project owners/companies, but also the small and medium players. The emphasis is on further streamlining and developing frameworks and to structure the mechanisms for increased sense of responsibility.

The objectives which were covered under this event were

- To showcase the portfolio of individuals, groups and Corporates on green energy initiatives
- To acknowledge the environmental credibility of the firms/ organizations
- To be a part of the programme of green accolades promotion and to make the stakeholders aware of the criteria in a much more effective manner.

LEDEG TEAM AT LADAKH NGO FORUM



The Liveable Leh team of Ladakh Ecological Development Group (LEDeG) attended the fifth meeting of the Ladakh NGO Forum at Ule Tokpo on September 29 and 30. The meeting was organised by Students Educational and Cultural Movement of Ladakh (SECMOL) headed by Sonam Wangchuk and Rebecca Norman. Other than LEDeG, the other NGOs which attended the meeting were SECMOL, Himalayan Institute of Alternatives, Ladakh (HIAL), Snow Leopard Conservancy, Ladakh Arts and Media Organisation (LAMO), Tibet Heritage Fund/Leh Old Town Initiative (LOTI), Flowering Dharma, Nature Conservation Foundation, Rewa Society, Mahila Mandal and PAGIR.

The meeting began with an introduction session following which the NGOs informed the participants about their organisations and the relevant field in which they work. LEDeG's Liveable Leh team also gave a presentation about the project. Fariha Yousuf gave an overview of the project, whereas Parth Gohel informed the participants about the

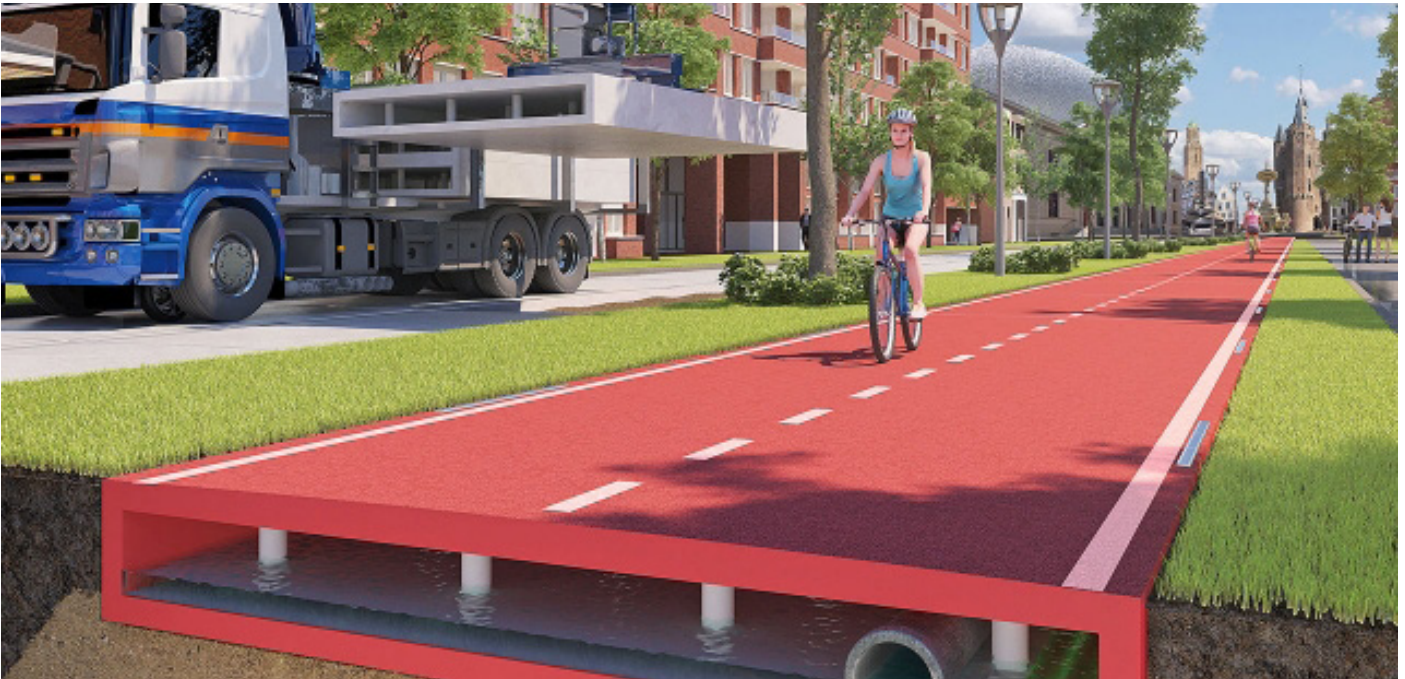
current water scenario in Leh.

Some important points were discussed on the second day. It was decided that the NGO's in Leh would organise common activities, such as awareness campaigns, to strengthen the bond amongst them. There was also deliberation among the participants to set-up a secretariat involving full-time workers for the NGO Forum. It was also decided that a website would be created on which all the NGOs are listed. Also, representatives from NGOs would meet government officials, ambassadors, and Army for meetings and discussions regarding several issues. Few actionable points were also discussed such as organising CSR Summit fests, create A4-sized posters of the all the NGOs and put it on display boards of the offices so that the visitors would know the NGOs working in relevant fields and make the office buildings disabled-friendly.

The representatives of NGOs would meet on first Saturday of every month, while LOTI would host next meeting on 27th October.

ROAD MAKERS TURN TO RECYCLED PLASTIC

For tougher surfaces



Source- Economist

Of all the plastic produced since the 1950s, less than 10% has been recycled. The vast majority ends up being dumped, most of it in landfills. Some is left to litter the natural environment, where it can get into rivers and wash out into the sea. The plastic-waste problem will worsen before it gets better: some 380m tonnes of the stuff are likely to be made this year. That is more than three times as much as the 120m tonnes of bitumen produced annually, most of which goes into building the world's roads.

There is a connection. Just as plastic is derived from petrochemicals, bitumen is produced as a by-product

of refining oil. Both are polymers, which consist of long strands of molecules bound together firmly. It is this characteristic that makes plastic strong and contributes to its great longevity. Such features are also useful for road builders, who use hot bitumen to bind together aggregates made from broken rocks and stones, into what is commonly known as asphalt. All of which has got some people thinking: why not swap one polymer with another?

Recycled plastic is already used to make some products, such as guttering and sewage pipes. Now attention is turning to roads. On September 11th in Zwolle, a town in the Netherlands,

a 30-metre bicycle track made from 70% recycled plastic and the rest from polypropylene was opened. It will be used to test a product called PlasticRoad, which is being developed by two Dutch firms—KWS, a road builder, and Wavin, a firm that makes plastic piping—in partnership with Total, a French oil-and-gas firm.

PlasticRoad is prefabricated in a factory as modular sections. The sections are then transported to the site and laid end to end on a suitable foundation, such as sand. Because these sections are hollow, internal channels can be incorporated into them for drainage, along with conduits for services such as gas and electricity.

For the Zwolle project, sections that were 2.4 metres long and 3 metres wide were used. These were fitted with sensors to measure things such as temperature, flexing and the flow of water through the drainage channels. A second pilot cycleway is being built in the nearby town of Giethoorn.

Smart roads, too

If all goes well, the inventors hope to develop the idea and make the sections entirely from recycled plastic. Paths, car parks and railway platforms could follow. Eventually, sections for use as actual roads are planned. These could contain sensors for traffic monitoring. In time, the circuits in the plastic roads might extend to assisting autonomous vehicles and recharging electric cars wirelessly.

Prefabricated plastic roads should last two-to-three times longer than conventional roads and cost less, the companies claim, mainly because construction time would be reduced by almost two-thirds. Anti-slip surfaces could be incorporated, too, including crushed stones which are traditionally used to dress road surfaces. The sections, when replaced, can also be recycled. But engineers will be watching to see how the track stands up to wear and tear and if the hollow structure causes resonance, which would make such a road unduly noisy.

An alternative method of using recycled plastic is to mix the material into hot bitumen when making asphalt. A road is about to be built this way on the campus of the University of California, San Diego, to test a number of specialist roadmaking plastics developed by MacRebur, a British firm. Each mix is produced from plastic that is not easily or cheaply recycled and so typically ends up in landfill, says Toby McCartney, who founded the firm in 2015 with a group of colleagues.

MacRebur cleans and sorts the plastic and then grinds the waste into flakes or pellets. The plan is for this part of the process to be carried out in the localities where roads are being laid or repaired, so that local waste is used to produce local roads. Each mix can contain 20 or so different polymers for specific surfaces. One mix, for instance, might be suitable for a bus lane that carries heavy loads. Another would provide some flexibility in an area of turning traffic, such as a roundabout, where lateral forces from vehicles' wheels can stretch the surface causing it to tear. Extremes of heat and cold can also be adjusted for. And because the addition of plastic helps to seal up small holes, which allow water to get below the surface of a road and cause it to break up, the modified asphalt can help to prevent potholes.

The company's plastic mixes have already been used in roads, car parks and airport runways in various parts of the world. One of the oldest projects is a stretch of road in Cumbria, in north-west Britain, which is extensively used by Heavy Lorries. This used to need resurfacing every six months or so, but with the addition of plastic it is still going strong after two years, says Mr McCartney. When resurfacing is needed, the material can be recycled again.

Cleaning and sorting plastic made out of multiple polymers can be relatively expensive, especially if it is used to make low-value products such as packaging. But using such plastic as a replacement for bitumen is cost-effective, claims Mr McCartney. As an example, he says that a tonne of bitumen might cost around £400 (\$521) in Britain. A recycled-plastic additive for a standard road works out at £300-£350 a tonne. The additive would replace a proportion of the bitumen, so there are savings to be made. At present 5-10% of the

bitumen is replaced by the additives, but this could be increased to 25%.

Mr McCartney decided to develop specialist recycled-plastic additives after watching a practice sometimes employed in India to repair potholes. Plastic waste collected by pickers is piled into the hole and then set alight with diesel to form a molten mass. It is crude and polluting, but it provides a fix of sorts. A number of roads in India are also made by mixing chopped-up plastic into bitumen.

Australia is another country that is starting to recycle plastic into roads. Earlier this year a 300-metre stretch was completed in Rayfield Avenue, Craigieburn, a suburb of Melbourne, using a substance called Plastiphalt. This consisted of recycled material from more than 200,000 plastic bags and packaging, 63,000 crushed glass bottles and toner from 4,500 printer cartridges. All this was blended into 50 tonnes of reclaimed asphalt to create a total of 250 tonnes of road-building material. The road will be monitored to see how it performs.

Stuart Billing of Downer, a firm involved in constructing the road, said that the cost of using the recycled materials was comparable with building a road in the usual way. But the road is expected to last a lot longer and prove better at coping with heavy traffic.

Officials in Craigieburn reckon that the amount of rubbish used to construct the road, all of which was diverted from landfill, is equivalent to what Rayfield Avenue's residents would have put into their recycling bins over the past ten years. One of the biggest complaints to local councils is about the state of the roads, especially potholes. Households in Australia and elsewhere might as well do more sorting and recycling of plastic if they knew it could result in a smoother drive.



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