

Rain COMMUNITY

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Publisher's Note

In the month of July, Han Heijnen, the President of International Rainwater Harvesting Alliance (IRHA) visited Nepal. Coinciding with his visit, various programs like community toilet inauguration at Bhaktapur, press interaction on JMP 2017, RWH system inauguration at Viswa Niketan Secondary School, etc. were organized. Heijnen also visited the Rain Community project sites- Viswa Niketan Secondary School, Jana Prabhat Secondary School and Bhaktapur IDP Camps.

In this second issue of e-bulletin, we have reported about the activities conducted during his visit. The issue of water quality at Bhaktapur IDP camps has been addressed as the agenda for this issue. In order to raise interest towards stone spouts, the facts and the story behind them has been featured. The community composting at Dallu Awas has been featured as well. The voices from participants of NeHRA meeting have been gathered in the testimonial section.

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Rainwater Harvesting System Inaugurated at Viswa Niketan Secondary School



Fig : Inauguration of Rainwater Harvesting System at Viswa Niketan School, Tripureswor by Bhim Upadhyaya, former Secretary, Ministry of Water Supply and Sanitation.

GUTHI you are great and so is your heart,
Giving water to small children, you've done your big part.
While the busy city Kathmandu is waiting for Melamchi to come,
Lucky we are, we harvest rainwater to drink from.
We take your name and quench our thirst,
Our gratitude towards you GUTHI, we salute your work first.

- **Mr. Kedar Prasad Dahal**
Vice Principal
Viswa Niketan Secondary School
(Translated from Nepali)

The program started with this beautiful poem by Kedar Prasad Dahal, expressing gratitude towards the works of GUTHI. After completion of the project, the school has been fully utilizing the rainwater harvesting system. The underground tank was full with rainwater and the toilets were clean. It was a pleasant sight to see such a huge change in sanitary condition of the school. "GUTHI has indeed helped us to maintain child friendly environment at school" shared Ganga Thapa, Assistant Vice-Principle.

The 50,000 liters capacity RWH system at Viswa Niketan Secondary School was inaugurated by Bhim Upadhyay, the Secretary of Ministry of Water Supply and Sanitation on 21st July, 2017. More than 60 participants had attended the program where the school and the guests shared their thoughts. The participants also observed the rainwater harvesting system; Upadhyay even drank rainwater from the tap.

Rainwater Harvesting..... (contd from page 1)

“At Switzerland, we were very concerned about Nepal after the 2015 earthquake; and we understood that something needed to be done. This is why we started this project”, reflected Han Heijnen, President of IRHA. Thus, realizing the pressing need to supply adequate water at the school, Emergency Rain project was initiated in November, 2015. Now, a catchment area of 428.97 sq. m is fulfilling the water demand,



bringing back smiles on student's and staff's faces. “We are very proud to be a model community school with rainwater harvesting system. Many thanks to GUTHI and IRHA.” shared Ganga Thapa, Assistant Vice-Principle.

Along with the physical construction activities, GUTHI had also organized trainings on rainwater harvesting, WASH and disaster for the students, as well as the staff. Helambar Raj Kandel, the Principal said, “The frequent training sessions conducted by GUTHI has brought a positive change in us. So, we have realized that it is our duty to protect this RWH system and make it long lasting.”

Sanjeev Bikram Rana, Executive Director, KVWSMB,



special guest for the function spoke about the relation between rainwater harvesting and climate change. He focused how RWH can recharge the ground water and reduce effects of climate change. He said, “Indeed rainwater harvesting should be done in all areas.” The RWH system at the school is connected to a recharge well, restricted for water extraction. After the storage tank is full, surplus water flows into the recharge well.

The RWH system at Viswa Niketan Secondary serves the school population of 2600. The sanitation of the school has improved profoundly as there is enough water to clean the toilets and the surroundings. GUTHI had also contributed in the maintenance of existing toilets at the school.

Bhim Upadhyay thanked and congratulated the school, GUTHI and IRHA for the successful completion of the project. He put forward his encouraging words to the audience with a hope to eradicate water problems in Nepal. This way, if all sectors and all the residents of Kathmandu realize the importance of RWH, the problem of water scarcity can be eradicated forever. ✦



Water Supply Mechanism

Hundreds of people are living in Internally Displaced Person (IDP) camps even after 2.5 years of the Nepal Earthquake 2015 in Bhaktapur Municipality. Among them, under the Rain Community project, we have identified six IDP camps. From our study, we observed the IDPs were struggling to cope up with the water supply mechanism. On an average, it takes approximately 20 minutes for them to fetch on an average 20 liters of water by walking. It is stressful and troublesome to them.

“Our neighbours from our old homes inform us whenever the municipal water is supplied and then we rush to collect. They generally supply the water once in every 4 days gap. We use this water for drinking purpose as it is usually clean than the water we fetch from our neighbours’ well,” shared Shiva Laxmi, IDP living at Rotary IDP Camp. They have 3 PVC tanks of 2000 liter, 1000 liter and 500 liter capacity but not



a single tank had water inside it. They do not have enough water to drink. In such situation, they hardly can clean their sanitation and maintain their personal hygiene.

At Bal Vikash Sibhir, though 14 households live in the camp, only 6 households pay for the water tanker. In every 4 days gap, they purchase 2000 liter of water at the cost of NPR. 7,500/-.

“We can not always rely on municipal water supply and wait for it as we also need to go to our jobs. Hence, we have started this mechanism of purchasing tanker water though it is expensive.” Nabina Gainju, currently living in Bal Vikash Sibhir.

Similarly, at Wasikacha Sibhir, they too have the similar mechanism to distribute water among the IDPs. Though they have three wells in the camp, they rely on tanker water drinking purpose as one well has dried up, the next two wells water is turbid and they would not use it for drinking purpose but only limits



it use for washing clothes, bathing, and cleaning purposes. Within it, 45 households reside and each household pays NPR. 300 as a rent because the land is privately owned while they pay NPR. 15 for 20 liters of water.

Krishna Laxmi, 30 years old, currently is living in temporary shelter after Nepal Earthquake 2015 affected her house. She and the other people living in the IDP camp named Wasikacha Sibhir are facing water issues. She shared, “The well water is turbid and we can not use it for drinking purpose. We purchase water from tanker on 4-5 days interval and we use tanker water for drinking purpose only. It is expensive to purchase tanker water but we have no option.”

Rain Community project brings in a solution to their water cry as one of the major activity of this project is to install rainwater harvesting system with a water treatment system to ensure the IDPs are supplied with enough and quality water.



Community Composting in Full Swing at Dallu Awas

Ashmita Bhusal

The piloting of Community Composting project at Dallu Awas kicked off its operation since January of 2017. Kitchen waste from around 120 families goes to the composting plant twice a week. A tricycle goes to the selected households for waste collection three times a week. The schedule for the collection of green waste is Tuesday and Thursday. Sisdol Sarsafai kendra pvt. Ltd. is providing the service to selected 50 houses from khokhadol marg and siddhartha sadak of Dallu Awas, ward no. 15, Kathmandu Metropolitan City (KMC) and operating the compost plant.

Complying with the SWM act of 2011, the community led initiative on solid waste management in Dallu Awas started with the main objective to make source segregation of waste a mandatory practice within the community and treatment of the organic portion of the waste within the community to produce compost, with 50 households for piloting. Two composting boxes with capacity to adjust 1.5 tons of organic waste are in use at the composting site. Training session on Bokashi preparation and composting using the Bokashi method was conducted where the staff of sisdol sarsafai kendra pvt. Ltd. participated and the session was led by Shekha Narayan Maharjan, an expert in composting. The staffs were excited about the training and Nawaraj Maskey, the chief operator from the Sisdol Sarsafai Kendra Pvt. Ltd. expressed his gratitude to Guthi for providing the training and in helping them co-ordinate with the local government bodies.

During the training session arranged for the waste collection personnel, Chairman of ward no. 15, also participated to encourage the operation of community composting plant. As similar to other communities of Kathmandu, the organic waste from Dallu Awas area, which makes up a considerable proportion of the total

waste, ends up at the landfill site on daily basis. "This is unfortunate since, apart from needlessly taking up dwindling landfill space, these materials can easily be diverted and turned into a rich organic fertilizer and the need to transport piles of waste too far off places will be greatly reduced," added Ishwor Man Dongol, Chairperson of Ward no. 15, KMC

In five months, the compost from both the compost box is ready to be used and there is good demand of compost from the community. The first batch compost is being used as catalyst for the second batch of composting; the second batch of composting started since July, 2017.

The support from the community in segregating dry waste and wet waste at source has been fundamental in continuing the operation of community composting. With regular service for the collection of wet waste and dry waste in the scheduled days, the users are happy which has made the tariff collection very easy in the project intervened area, shared Nawaraj maskey, the chief operator of Sisdol Sarsafai Kendra Pvt. Ltd.

Two new sites one at the green belt and the other one near the smriti park of Dallu Awas, are under study to construct community composting plant. There had been some complaints for the smell issues with the composting site for pilot project, since it's located in the residential area. To overcome the stench produced during composting process, limestone powder was used; similarly ash was used to absorb the moisture from the food waste, which would otherwise produce leachate. The new sites under study are away from the residential area with enough buffers for unavoidable smell issues that emanate during composting process.

The project is coordinated effort led by GUTHI and supported by ward office, and other local institutions and civil societies.



Figure: Nawaraj Maskey, coordinator of Sisdol sarsafai Kendra Pvt. Ltd. proudly presents the first batch of compost to a guest who visited the composting plant at Community Development Center at Dallu, Awas

Beauty behind the Stone Spouts

I was born in a Newari family in Patan, a medieval town famous for its art and culture; but was raised outside my ancestral community. Nevertheless, my parents always make sure that their daughters are familiar with the culture, festivals and the heritages. So, before the earthquake, whenever we strolled around Patan, my father always took us to the Manga Hiti, and made us drink water from the spout. "The water is clean Chori, drink it", he encouraged. But I hesitated a little every time, thinking it might be contaminated. Then, I knew very little about the mechanisms, engineering and beauty behind the spouts. But now, a little deep research made me find a vast ocean of interesting facts and stories making me spell bound, surging a feeling of pride in me.

The stone spouts, known as Dhungedhara in Nepali and Hiti in Newari, were constructed since Lichchhavi period to serve multiple functions. An inscription mentions that the oldest spout was constructed at Hadigaon in 550 AD. But the oldest existing Dhunge Dhara is Manga Hiti dated 570 AD which was built by Bharavi. Since then, many Hitis have been constructed



to serve a multiple functions. And the way these functions interconnect with each other is a beauty in itself.

From religious viewpoint, the water from stone spouts are considered to be sacred and pure. According to legend, after immense meditation Bhagirath was successful in bringing Ganga in the Earth. Thus, below every spout, there is an idol of Bhagirath praying for eternal flow of Ganga. The carvings on the stones include intricately designed aquatic organisms revealing the ecological aspects in a religious way. The opening of the spout is usually a Makara, the Bahan of Ganga. The Makara is a sea-creature depicted as half terrestrial and half aquatic animal. Naga (cobra) are also closely associated with stone spout.

But the most interesting part is how the stone spouts were constructed to fulfill water demands of people while being in harmony with the environmental system. The stone spouts are generally rain-fed.



The rainwater infiltrates into the aquifers wherever geographically possible. The spouts are built at a depression so that the sub-surface flow of water can be converged through the spout.

In dry seasons, when the water table falls, the artificial ponds recharges the aquifers; the ponds being fed by the Rajkulo. There are many ponds across the Valley and the names of many places originate from the ponds as well. For example Rani Pokhari, Khicha Pokharai, Prayag Pokhari, Nag Pokhari, Kamal Pokhari, etc. But today, most of the ponds, designed for efficient water management, only exist in names.

The stone spout also has filtration system, using sand of various grading, gravel and even charcoal. Moreover, in some of the spouts, a swastika-shaped filter system was made for maximum contact period and a better water quality. The spout is interestingly made leakage proof with a thick layer of bricks and special impervious clay. Otherwise, we would see water leaking from the sides.

The used water from the spout is channeled through a drainage pipe and is used in irrigational purposes. In some cases, the used water is collected in a pond, after having passed through a filtration system, so that it can be utilized for functions like washing, duck farming, ground water recharge, etc.

The stone spouts are exceptionally designed sustainable source of water. But the rapid urbanization has destroyed its functionality and diminished its value. 400 traditional stone spouts were recorded in Kathmandu Valley, but only a few exist today. The earthquake of 2015 has destroyed even more and the reconstruction works are far from sight.

Reviving these masterpiece should be taken seriously as it will not only fulfill water demand of the Valley, but also enliven the ancient heritage. I just hope, I can go to the Manga Hiti once again, drink water and admire it full heartedly.

Community Toilets Inaugurated at Maheshwori IDP Camp

The smiles on the faces of Maheshwori IDP Camp residents were wide and cheerful. A sense of contentment could be felt among them. When a need as basic as toilets is not fulfilled, people struggle in terms of sanitation, health, privacy and many more. So was the condition at Maheshwori IDP Camp, Bhaktapur after the 2015 earthquake. But, today the situation has improved largely. Public toilets were built at Maheshwori IDP Camp, Bhaktapur and the inauguration ceremony was held on 21st July, 2017.



The three toilets constructed in June 2017, provides sanitation facilities for a total of 15 families. The entire construction was completed by the plumbing team from Ganesh Bhukampa Punarsthapana Kendra.

After completion, the sanitation facility was jointly inaugurated by Han Heijnen, the president of IRHA and Narayan Prasad Thaitu, President of Ganesh Bhukampa Punarsthapana Kendra. The inauguration ceremony was graced by the presence of Mahendra

Khyamali, Chairperson and Shiva Prasad Bala, Member of Ward No. 8, Bhaktapur Municipality.

Narayan Prasad Thaitu said, "Before construction of toilets, there was unhygienic environment everywhere and the place smelled very bad. But now the situation is way better." Due to poor sewerage system, the sewage from houses nearby was sent towards the camp site creating an unhygienic and contamination prone environment. But now, the waste from the IDP camp toilet and nearby houses is sent to the main sewerage system.

Before the construction of toilets in the camp, people had to walk 5-10 minutes to reach public toilet. In case of emergencies, they defecated and urinated in the river itself. Open defecation was an easy solution for children. But with construction of toilets, the problems of sanitation, time consumption, privacy and dignity are all solved. "Now when my married daughters come here, they can stay 2-3 days without any hesitation", shared Chini Maya Nakarmi.

In conclusion, the inauguration of toilets at Maheshwori IDP Camp was a great success. The construction of toilets will certainly help to improve the sanitary condition of camp residents.

However, though the problem of toilets at Maheshwori IDP Camp is solved, they have to carry water in buckets for toilet use and sanitation. So, our next objective is the installation of rainwater harvesting system, which will fulfill their water demands and ease their extra effort invested in transporting water.



IRHA President's Productive Visit to Nepal

The visit of the President of IRHA to Nepal was a big encouragement to GUTHI. Han Heijnen visited the GUTHI project sites on 20th and 21st July, 2017. It was ensured that his stay at Nepal is fully productive and that he can meet and interact with as much project beneficiaries as possible.

On 20th July morning, Heijnen inaugurated the new toilets at Maheshwori Camp. He directly interacted with the residents of the camp. Heijnen also visited the new project site at Washikacha and observed the WASH situation there.



In the 20th July afternoon, Heijnen had a meeting with the Mayor and Deputy Mayor of Bhaktapur, focusing towards rainwater harvesting and reviving the stone spouts of Bhaktapur. Heijnen said that, Bhaktapur is an ancient city with many stone spouts. So, if the stone spouts are revived, it will benefit the environment and attract tourists as well.

A press interaction on JMP Report 2017 and SDGs on WASH was also organized on 20th July to share information provided by the JMP report among the stakeholders from governmental and non-governmental organizations; and to disseminate information among the media. Han Heijnen gave



presentations relating the WASH situation at LAO PDR for information sharing. This program had a huge significance in terms of advocacy as there was a presence of media to disseminate information among the public; and there were government officials who took inputs from the technical experts to implement them in real.

The 20th July afternoon was followed by a meeting with Chiri Babu Maharjan, the Mayor of Lalitpur. The agenda of meeting was similar to the meeting at Bhaktapur. The Mayor promised, "I will leave no stone unturned to revive at least one or two stone spouts in Lalitpur."

On 21st July, the winners of Environment Day Art Competition at Jana Prabhat School were awarded with prizes by. On the same day, the Rainwater Harvesting System at Viswa Niketan Secondary School was inaugurated by Bhim Upadhyay, the Secretary of Ministry of Water Supply and Sanitation. The school expressed their gratitude towards GUTHI and IRHA for helping the school harvest rainwater. The day ended with a NeHRA meeting.

This way, the two days of Heijnen's visit was fully utilized. He was very happy and satisfied to see the project sites going so well.



Voices

Nepal Rainwater Harvesting Alliance (NeRHA) meeting was held with an objective to find solution to tap in rainwater as a resource.

The voices incorporated in this newsletter have been written on the basis of opinions shared by the participants during the discussion held on the meeting.



Mr. **Han Heijnen**, President, International Rainwater Harvesting Alliance shared, “Rainwater simply drains away along with the sewerage. The water supplied by the Kathmandu Upathyaka Khanepani Limited is also poor increasing the health risk. It is necessary to effectively utilize, manage and distribute rainwater. Rainwater management can support the economy and livelihood of the people. Government should have a clear strategy and schemes while public should constantly nag the government until rainwater is utilized in the best possibility.”

Mr. **Indra M.S. Suwal**, Director, Kathmandu Metropolitan City shared, “Proper management and utilisation of rainwater can be very helpful during the incidence of fire accidents. It is necessary to aware and sensitize the newly elected ward chairman at the local level about rainwater management for its best utilisation.”



Rajiv Joshi, Director, Kathmandu Valley Water Supply Management Board shared, “KVWSMB has imposed a rule for the water supply business owner to mandatorily install rainwater harvesting system if they are extracting water by deep boring. It would also be great to build a community led water management scheme at the core area through the installation of rainwater harvesting system.”



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