

Government of India  
Ministry of Jal Shakti  
Department of Water Resources, River Development and Ganga Rejuvenation  
(National Water Mission)

**Proceedings of the Twenty- Third (23<sup>rd</sup>) Water Talk held on 5<sup>th</sup> March 2021**

- National Water Mission (NWM) has been organizing a seminar series-‘Water Talk’ -to promote dialogue and information sharing among participants on a variety of water-related topics. The ‘Water Talk’ is intended to create awareness, build capacities of stakeholders and encourage people to become active participants in the conservation and saving of water. NWM has so far organized 22‘Water-Talks’ on a range of topics dominating the sector concerns.
- **Twenty -Third(23<sup>rd</sup>) Water Talk** in this series was held on 5<sup>th</sup> March 2021 on a virtual platform- ‘CISCO WEBEX’ due to outbreak of Covid-19 pandemic in the country. The talk that witnessed more than 650 participants was organized by NWM with the support of Water Digest, the official media partner for the webinar. The talk was delivered by **Shri Divyang Waghela, Head- Tata Water Mission**. Shri G. Asok Kumar, Additional Secretary and Mission Director, NWM and officials of NWM attended the webinar along with more than 650 participants. The webinar included participants from across the country from various spheres of life. The talk was also live-streamed through Facebook on the 11 social media platforms of various organizations under DoWR. It was noted that there were over 4,000 total viewers in this e-water talk
- Shri G. Asok Kumar, Additional Secretary & Mission Director, NWM welcomed the participants and introduced NWM along with its 5 goals, 39 strategies and the successful campaigns like ‘SahiFasal’ and ‘Catch the Rain’. NWM, in collaboration with Nehru Yuva Kendra Sangathan (NYKS), recently launched “JSA II - Catch the Rain” awareness campaign which will be implemented across 623 districts of the country. With the switch from the physical to digital platform, the reach of the talks have exponentially grown both geographically & numerically with people participating from all across the world from countries like Australia, China, Nigeria. Many water aficionados, eminent personalities including Padma awardees and individuals having done tremendous work in the water sector have been invited to deliver the talk in the past. The theoretical and practical experts shared their experiences on they transformed the lives of local communities through motivation and people engagement.
- The topic of the e-talk by **Shri Divyang Waghela** was “**Water Security through Springshed Management in Indian Himalayan Region** ”. The “Tata Water Mission” programme established by Tata Trusts in 2015 deals with the subject of water security and water salinity in the semi-arid and coastal regions of the country. The organization has also worked in the Himalayan region and north-eastern states of the country with respect to spring watershed management as spring is the core source of water in Uttarakhand, Himachal, Nagaland & Mizoram. Human water requirements can be divided into three major sub-divisions; water for life, water for livelihood and water for ecology. The very first element- ‘**Water for life**’, is a basic human right that deals with

ensuring of safe drinking water for all. As maximum water gets used up by the agricultural sector, '**Water for livelihoods**' represents water that provides livelihoods to millions in the farming community. It plays a very significant role in providing in terms of life and sustainability. With alarming trends in climate variation and climate change, restoring ecology has become the need of the hour and water plays a very critical role in that space as well. Key strategies were undertaken by the organisation for ensuring 'water for life', 'water for livelihood' and 'water for ecology'. Water for drinking purpose – safe drinking water to the Himalayan region.

- Springs are areas on the ground that show groundwater outflow from aquifers below. Also known as 'dhara', 'prava', or 'nola', springs hold cultural significance in the Himalayan region. It has ecological importance as well for providing water to the rivers and providing water to communities living in the Himalayan region. The inhabitants of the Indian Himalayan Region (IHR) rely heavily on springs as a primary water source. There are about three million springs in the Himalayan region which support the lives and livelihoods of 60-70% of the population in the region. Springs form the backbone of communities living in Leh, Ladakh and other northeastern states of the country. Spring water is used for drinking purpose as well as agriculture purposes. From an ecology perspective, a substantial amount of 23.9% of surface flow irrigation systems are based out of springs in HR.
- However, in the last five decades, there has been a massive change in the water consumption pattern leading to an increase in water extraction thereby leading to the reduction in water availability in the country especially in states like Rajasthan, Gujarat, and other parts of Northern India. Water challenges in the Himalayan region are also becoming critical day by day. According to a Niti Aayog report, nearly half of the perennial springs have already dried up or are turning seasonal by limiting flow only during monsoon. Discharge of springs has reduced substantially directly impacting the people socially and economically.
- While working in the Uttarakhand region, it was found that few springs are drying up and women were forced to walk 2-3 km in the hilly region to fetch water which is not just time-consuming but was a huge social burden on women. Thousands of villages were facing acute water scarcity for drinking water and other purposes in the region. However, in the last 5-7 years, there has been a focus on the aspect of water security part by national and state government showing hope and opportunity for self-sustainability. Springs need to be viewed in the context of groundwater and are as important a source as wells or bore-wells.
- Springs in the Himalayan region provide the base flow for rivers and groundwater recharge. A lot of public and private investment goes into well recharging. Similar investment is required to be made in springshed management going forward. There are multiple dimensions to springs with climate playing a critical role in terms of reducing its base flow. Another reason could be attributed to change in land use pattern, substantial change in land cover and change in seismicity having a direct impact on geological formation and impacting the availability of water in springsheds. The government and other non-profit organisations have started aggressively working towards springshed development and have witnessed successful results too.

- The Indian Himalayan region is spread across 12 states and is home to over 50 million people. Both rural and urban communities depend on meeting their drinking, domestic and agricultural water needs through spring water sources in their region. Meghalaya is a pioneer in spring management and has been addressing the problem with a futuristic mindset. On similar lines, springshed management should become a focus area for which there is a need for convergent efforts from the central and state governments, NGOs and academic institutions to collectively develop action research programmes and technological interventions to address the challenging issues.
- The ignorance of springs in the larger context of rivers, watershed and aquifers is also a reason for worry. Unfortunately, there is a large gap in policy and practice in developing a strategic response to springshed management in India. The Tata Water Mission adopted a well-defined methodology for carrying out effective springshed management in Uttarakhand, Nagaland, Mizoram and Himachal Pradesh.
- Six years ago when the organisation started working with the local community based on a scientific approach, a strong standard of operation SOP was put in place, the problem areas were identified and then it was identified which type of springshed management can be undertaken to get the desired results. The model was based on the convergence of two aspects; scientific knowledge provided by experts and traditional knowledge of local community for effective management. The approach was to actively engage the local community as they would have more knowledge about the local springs, ecology and forests of the areas they live in. It is paramount for the people of surrounding villages, community or cluster of villages to be involved and become the primary stakeholder.
- The next step was building of scientific knowledge by undertaking comprehensive studies on springs and hydrological mapping of IHR. As every region has different geological characteristics data collection could become difficult and time-consuming. To facilitate the process, TWM trained locals working on ground on accurate data collection using technological advancement. This way, one of the most important elements of data collection was dealt with at the grassroot level itself. The collected data was then analysed by TWM for a better understanding of spring pattern and geography of the area.
- Another important aspect was training the local stakeholders on watershed management, water budgeting and water balance as primary interventions to work towards water security. The owners and end users must be significant part of the process and should be acutely aware of their water usage and water availability. Local water security institutions and Panchayats should create water security plans and implement them with a scientific approach to understand which intervention is required based on catchment area and treatment area to increase water availability and recharge.
- In order to sustain any infrastructure for a long term, setting up of protocols and defining of processes is a must. It is imperative to evaluate the impact of the work undertaken in the exercise carried out. The next steps hugely depended on what the outcomes show and data plays a crucial role in studying baseline.
- It isn't possible for the government and NGOs to work perpetually work with the communities. The community members are the process holders and need to be trained t

maintain the assets created and protect their resources from falling back to their original position by undertaking effective measures. Spring inventorisation will help state governments and departments for designing budget allocation and deciding on which schemes would be functional. This would also help in putting data in the public domain. The cost of data collection and data transportation is high and so training of locals on data collection is beneficial thereby bringing social capital at the field level.

- All the springs in the region have been geotagged. From a sustainability standpoint, springs are very rich data points and could be highly useful for state governments, district administration and multiple departments for designing their budgetary allocation in order to understand whether the schemes are going to be functional or not. Inventorisation of springs is important. This knowledge needs to be documented well as this data needs to be available with the Panchyats for taking appropriate interventions in the future. This data needs put out in the public domain so that anyone interested to work in springshed management has ready reference data available with them. Putting data in the public domain also helps bring stakeholders together. The cost of data collection is high as the cost of transportation is high and also time-consuming especially in hilly areas. Bringing the social capital at the local level, village level and habitat level is one of the important factors for ensuring source sustainability in the hilly region.
- Women play a significant role in water management as it's one of their primary responsibilities to they go to the forest and fetch water. Keeping this in mind, 50% of the members in water committees and water user groups were women who were involved in the planning and implementation process. Women understand the drudgery of fetching water which has a direct impact on their livelihood especially with respect to water availability for agriculture or irrigation purposes. Gram panchayats and anyone who is a part of the structure needs to be brought in this initiative as they play a major role in water security. There is a need to promote the concept of 'one' water. Although different departments deal with different aspects of water there is a need promote the one water concept and bring all water-related activities under one umbrella.
- Once scientific knowledge is combined with the traditional knowledge of the community potential groundwater recharge zones can be identified and interventions can be made through recharge activities in areas with poor water percolation. If government and academic institutions start working on creating data collectively, it would be very useful for the implementers like grassroot level government employees and NGOs for effective implementation.
- The treatment area has to be understood through the geological cross section, based on its physical terrain and location. The blueprint of implementation plan created for all villages must be based on where the recharge area is and where the treatment area is.
- Community plays a crucial role in recharge works. People mostly contribute through labour as they are aware of the consequences of water shortage. Once ownership is taken all resources could be brought together for investment in better water management.
- Data documentation forms a significant part of the project and is extremely important for the the government as well as the community. Hence, a process called 'Dharajanampatri' was introduced for recording spring data locally. A 'Dharajanampatri' is similar to a 'Kundali' (for humans) that records every small aspect and characteristics of the spring. It's a rich inventory that records elaborate data on the

spring and would help the locals, stakeholders or experts come from outside to understand the springs' behaviour based on which a decision regarding additional interventions would be made. A 'Dharajanampatri' would be created or updated for every quarter .

- According to a case study conducted in 200 villages of Uttarakhand, it was noted that introduction of springshed management led to an increase of 48% in lean discharge just after 2 years of intervention. In the last 5 years, many water user groups, 'Pani Samiti's', comprehensive blueprints of geological mapping and hydrological studies created rich knowledge for the community bringing about a strong social behavioural change. These positive outcomes of Springshed management have the capacity to benefit the lives of millions of people, especially in the Indian Himalayan region. This needs to be scaled up at the mainstream level and replicated in different parts of the country.
- A state-level Springshed Management Consortium was established in Uttarakhand where, under the chairmanship of the Forest department with Tata Trusts being the nodal agency. Many implementation projects were undertaken in partnership with other civil societies. A convergence model was taken up by integrating the Rural Development department, Land Resources/Forest department, Partner organisation and the local community in Uttarakhand. This enabled multi-stakeholders to integrate different schemes and collaborate with villages, provide scientific knowledge and technical support, supervise project implementation and funding and participate in community and village development activities. This well-rounded approach should be replicated at a larger scale. The talk was followed by a session of questions and answers wherein members from the audience were invited to discuss their queries with the speaker. The webinar saw some interesting and unique questions from people across the country.

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