

WCDM - Day 3

Silkyara episode highlights need for innovative engineering & micro-planning: Johari

By RATNAJYOTI DUTTA

DEHRADUN, 30 Nov: In sync with its special coverage of the Sixth Edition of the World Congress on Disaster Management (WCDM), Garhwal Post brings an exclusive interview with Pushpendra Johari, Senior Vice President, Sustainability, at RMSI, an India-based organisation with footprints across the globe.

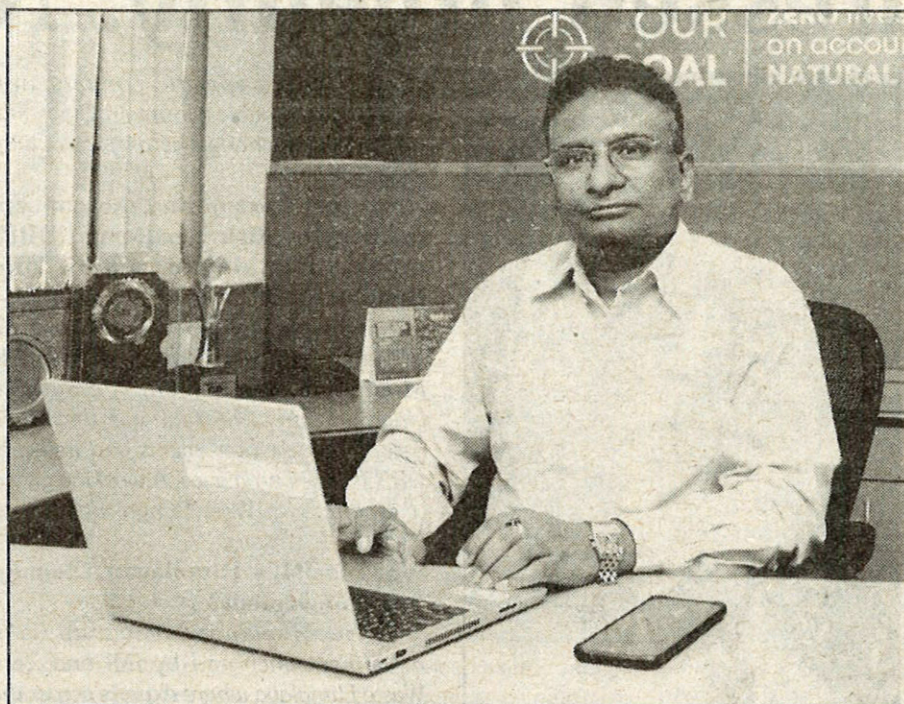
Noida-based RMSI provides geospatial and engineering solution providers for multiple sectors. RMSI provides solutions to global clients for managing risks associated with natural and man-made hazards by applying innovative methods and global best practices. RMSI also has deep expertise in assessing the impact of climate change on hydro-meteorological hazards, disaster assessment, and mitigation planning. RMSI focus areas are hydro-met risk, urban risk, agriculture risk, earthquake, flood and windstorm hazard modelling, and property risk.

Some excerpts from the interview: How can Disaster Risk Reduction be promoted with the help of technological interventions?

Technological interventions can play a crucial role in promoting Disaster Risk Reduction by providing early warning signs, enhancing forecasting capabilities, facilitating mitigation planning, and enabling effective emergency response.

One approach is using Internet of Things (IoT) devices on the ground. For instance, IoT devices placed on slopes or mountains can detect movements and weakening of slopes in mountainous areas, providing early warning signs for potential landslides. Additionally, IoT devices can aid in better forecasting rainfall patterns, thus enabling proactive measures to be taken, such as setting up radars to identify and prepare for significant rainfall that may lead to flooding.

Another aspect where technology can contribute is in modelling. By running multiple scenarios, technology can assist in understanding potential losses and the effectiveness of mitigation strategies. For example, advanced modelling platforms can assess the impact of implementing reservoirs to hold water levels during floods and



Critical Lessons for Tunnel Construction in the Himalayas:

1. Geological Comprehension: Conduct in-depth geological surveys to understand the complex rock formations, fault lines, and potential hazards unique to the Himalayan region.
2. Water Management: Implement robust water ingress management systems to effectively handle the increased water flow caused by heavy rainfall and melting snow in the Himalayas.
3. Emergency Preparedness: Develop comprehensive emergency response plans tailored to tunnel collapses, including training personnel, equipping them with the necessary tools, and establishing clear coordination protocols with local authorities for swift and effective rescue operations.
4. Adaptive Engineering Solutions: Incorporate adaptive engineering techniques that consider the dynamic and ever-changing nature of the Himalayan landscape. This may involve flexible designs that can accommodate geological shifts and unforeseen challenges.
5. Risk Assessment and Mitigation: Conduct a comprehensive risk assessment considering all potential hazards, including geological, environmental, and human factors. This will help in developing effective mitigation strategies.

calculate the reduction in losses and associated costs. This enables decision-makers to determine the optimal mitigation approaches and assess the return on investment.

Another DRR-related area where technology facilitates is 'response planning' through emergency management decision support systems (EMDSS). Integrating data

from various sources such as IoT devices, weather forecasts, information on assets and population, and outcomes of models, technology can assist in making informed and timely decisions during disaster situations.

What are the climate change risk reduction strategies adaptable to India?

In terms of climate change risk reduction

strategies, everything is adaptable for India. The geographical diversity of India, with its mountains, plateaus, river basins, deserts, and plains, allows for a wide range of strategy adoption and implementation. The Indian government is actively working towards transitioning to renewable power sources and promoting the use of electric transportation. The country will be in an ideal situation once renewable electricity and electric transport systems are fully implemented. The government is investing in initiatives related to biofuel and ethanol usage to reduce future climate risks.

However, there is a need to focus on the agricultural sector, as the current infrastructure is not equipped to handle climate change risks. Initiatives such as making agriculture digital to monitor yield are being implemented, but more effort is required to make agriculture sustainable in the face of climate change.

How can RMSI support meet DRR goals through its technological solutions?

RMSI has strong capabilities in natural catastrophic risk modelling platforms and early warning platforms and has served 40 countries globally for hydrometeorological hazards like floods, cyclones, landslides, avalanches, flash floods, and droughts.

RMSI has extensively worked in India. We have developed a flood forecasting platform for 17 river basins in India and a decision support system running in 3 union territories; RMSI also has landslide models deployed in 3 states, developed the cyclone impact forecasting for the entire coastline of India being used by IMD now.

What are the learning curve from the recent rescue operations at Silkyara tunnel?

As a geospatial expert working in the Disaster Risk Reduction (DRR) space, there are a few learnings from the Silkyara-Dandagaon tunnel collapse incident to be followed in the future. This event has highlighted the crucial importance of meticulous planning, innovative engineering, and unwavering commitment to safety in the construction and maintenance of tunnels in the challenging Himalayan terrain.