

IRF stresses on adopting alternative technologies for construction in hill areas

DEHRADUN,
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International Road Federation (IRF), a Geneva based global body working for better and safer roads worldwide has expressed deep concern at repeated loss of life, landslides, areas being cut off and chaos in the road network and infrastructure in the hill state of Uttarakhand for last several years during rains, and has stressed the need of adopting time tested sustainable solutions including floodplain mapping and taking flood proofing mea-

asures.

"It's high time that we use tested sustainable solutions and ecologically proven techniques for avoiding flood related disaster each year and also turn to apt investigative tools in determining causes for failure each year. Depending on the causes, proven technologies that meet specific needs have to be adopted so that the State which has borders with other countries has all weather roads and sustainable infrastructure" said KK Kapila, Chairman, Interna-

tional Road Federation (IRF) and Co-Chairman, FICCI Transport Infrastructure Committee.

"With the help of floodplain mapping impact of floods can be minimized by not allowing habitation and development in flood prone areas, adopting an optimum combination of structural measures such as large storage reservoirs, detention basins and embankments and non-structural measures like flood forecasting, flood plain zoning and catchment area treatment." He said adding that

similarly for all season sustainable roads and infrastructure in the hill state in the aftermath of the natural disaster, there is a need to use non-destructive and least invasive techniques to build roads in the state.

"A quick stop-gap approach in rebuilding the infrastructure cannot be a solution. Rather re-engineering and building the road infrastructure in a step-by-step method using non-destructive and least invasive techniques is the need of the hour. We have to sieve out the best of our

past experiences and adopt state-of-the-art non-conventional techniques and propose the appropriate sustainable solutions," he said. Kapila said ideally the best way to develop roads in hills was through the use of tunnels and connecting viaducts. This minimized disturbance to the existing hill slopes. Thus, it is time that we adopt alternative technologies for our structures," he added.

Floodplain mapping can help avoid flood impact: IRF

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The International Road Federation (IRF), a Geneva-based global body working for better and safer roads worldwide, has expressed deep concern at repeated loss of lives, landslides, areas being cut off and chaos on roads and infrastructure in Uttarakhand during rains for the last several years. It has stressed the need of adopting time-tested sustainable solutions, including floodplain mapping and flood-proofing measures.

"It's high time that we use tested and sustainable solutions and ecologically-proven techniques for avoiding flood-related disaster every year. We can also

adopt apt investigative tools in determining causes for the failure every year. Depending on the causes, proven technologies that meet specific needs have to be adopted so that the state, which has borders with other countries, has all-weather roads and sustainable infrastructure," says KK Kapila, Chairman, IRF, and Co-Chairman, FICCI Transport Infrastructure Committee.

"Floodplain mapping programmes are carried out worldwide to avoid loss of human life and damage to infrastructure. With the help of floodplain mapping the impact of floods can be minimised by not allowing habitation and development in flood-prone areas, adopting an optimum combination of structural measures

such as large storage reservoirs, detention basins and embankments and non-structural measures such as flood forecasting, floodplain zoning and catchment area treatment," he says.

"Similarly, there is need to use non-destructive and least-invasive techniques to build all-season sustainable roads and infrastructure in the hill state in the aftermath of the natural disaster," he said.

"As a first step, a detailed subsurface investigation of the affected areas should be done. Non-destructive testing is an integral and important aspect of subsurface investigation, which is recommended," he adds.

Kapila says ideally the best way to develop roads in the hills is through the

use of tunnels and connecting via ducts.

This minimised disturbance to the existing hill slopes. "One of the best examples is the Kalka-Shimla Heritage Rail the alignment of which comprises 103 tunnels crossing geologically a weak strata. Despite being over 100-year old, this rail line had been closed on rare occasions indicating the robustness of the alignment in penetrating slopes in geologically competent formations and tunneling when such formations are unavailable.

However, the economics often restricts development of such costly but far more permanent solutions. Thus, it is time that we adopt alternative technologies for our structures," he says.

'Rampant blasting of mountains causing floods, landslides'

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Dehradun: Indiscriminate blasting of mountains to build roads or other infrastructure has rendered the fragile areas of the state more susceptible to landslides and floods, say experts and scientists.

According to the director of the Geological Survey of India, the institute had submitted a report regarding the treatment of vulnerable sites in the aftermath of the flash floods of 2013. The state government is yet to take any action on the report.

According to experts, another organization, the International Road Federation - which is Geneva based - had also suggested structural measures such as storing of rainwater in large storage reservoir, detention basins and non-structural measures but these had hardly been implemented on the ground.

"To avoid loss of human life and damage to infrastructure, floodplain mapping programs must be carried out with the help of remote sensing and ground level river data. This can predict in advance which areas will be flooded with a rise in river water level," said IRF chairman K K Kapila. "Floodplain

mapping will enable us to minimize the impact of floods by not allowing habitation and development in flood-prone areas. Optimum combination of structural measures such as large storage reservoirs, detention basins and embankments built in advance to channelise rain water can be adopted. Non-structural measures like flood forecasting, flood plain zoning and catchment area treatment can be undertaken," he said.

Kapila said that the best way to develop roads in hills was through the use of tunnels and connecting viaducts. According to VRS Rawat, a scientist with climate change department of FRI, cloudburst incidents are happening frequently in the past five years in Uttarakhand due to extreme climatic fluctuations.

Bhupender Singh, director of Geological Survey of India said that the institute had carried a study in the aftermath of flash floods disaster on five most affected districts, namely Chamoli, Pithoragarh, Uttarkashi, Baghpat and Rudraprayag.

The report identified the most vulnerable sites for landslides and flood and their specific treatments.