KP @85 Festschrift Conference- Session 4

On Saturday, 31 October 2020 (18:00- 20:05 IST)

Delegates

Prof. A. K. Gosain
Emeritus Professor, IIT Delhi
Director, INRM Consultants Pvt Ltd.

Dr. G. N. Qasba, Former
Commissioner, Srinagar Municipal Corporation

Dr. Kirit Parikh
Chairman, IRADe

Dr. S. K. Tyagi
Former Addl. Director, CPCB and
Governing Council Member IDC Foundation

Dr. Ajith Tyagi
Former Director General, IMD
Senior Advisor, IRADe

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18:00 - 18:45	**Presentation on** "Real-time Flood Forecasting for River Basins of India"	• ***Prof. A. K. Gosain,*** *Emeritus Professor, IIT Delhi & Director, INRM Consultants Pvt Ltd.*
18:45 - 19:30	**Presentation on** "Post Disaster Waste management during the 2014 Srinagar flood"	• ***Dr. G. N. Qasba,*** *Former Commissioner, Srinagar Municipal Corporation, Senior Advisor, Integrated Research and Action for Development (IRADe)*
19:30 - 20:00	**Q & A Session**	**Discussants** • ***Dr. S. K. Tyagi****, Former Addl. Director, CPCB and Governing Council Member IDC Foundation* • ***Dr. Ajith Tyagi,*** *Former Director General, IMD & Senior Advisor, IRADe* • ***Dr. Kirit Parikh****, Chairman, IRADe*
20:00 – 20:05	**Closing Address** ***& Vote of Thanks***	• ***Dr. Jyoti K Parikh****, Executive Director, IRADe*

Click here for webinar Registration

Abstracts

Presentation 1 - "Real-time Flood Forecasting for River Basins of India"
Presenter – Prof. A. K. Gosain, Emeritus Professor, IIT Delhi & Director, INRM Consultants Pvt Ltd.
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Flood forecasting is an important requirement to circumvent the loss of human and animal lives as well as the mobile properties. A timely forecast can help the NDRF to take timely action with respect to getting the potential areas evacuated well in advance as well as keep vigil around some of the weak spots along the rivers that are embanked so as to ensure passage of flood safely.

The INRM Consultants Pvt Ltd., a company incubated by IIT Delhi has formulated a country wide framework (http://inrm.co.in/Applications/IMD_FF/leaflet_map_Index.html) using the hydrological modelling as a one-stop window for real-time flow forecast for all river basins of India. This web based tool provides access to simulated real-time river flows at any location of your interest. Using this, one can query, map, chart and summarize key hydrological parameters along with rainfall and temperature.

The SWAT hydrological model has been used to simulate the river flows. All of the 18 River basins of India have been modelled. River basins are divided into sub basins (21647) and sub basins are further divided into hydrological responses units (1, 10, 000). Model outputs were calibrated and validated using observed discharge data at various locations. Validated model for each basin is run every day to produce the flow forecasts. In other words, all the basins are simulated every day with the updated information on the rainfall forecasts made by IMD.

Such flow forecasts can be very useful for a large number of stakeholders such as water managers operating reservoirs, disaster management (NDRF) staff, general public, etc. River basin hydrological information that has become available through this framework can also be useful for many other activities such as formulation of river basin management plans, flood plain zoning, formulation of reliable and comprehensive farmer's advisories, as well as providing feedback for policy making. All this is possible because the simulation is being done every day even during the non-rainy days thereby not only providing the flood information but also the information on all other aspects of the water balance including low flows, soil moisture, actual evapotranspiration, groundwater recharge etc.

Multiple source rainfall forecast data is being used instead of one source to minimize the uncertainty in flow forecast. This strategy also helps in issuing forecasts without any break even if one data source becomes unavailable on some days.

River flow forecasts formulated uses rainfall forecast provided by IMD for two rainfall forecast models:

- WRF 9 Km resolution rainfall forecast data (high resolution), 3 days forecast
- GFS 12.5 Km resolution rainfall forecast Data (medium resolution), 7 days forecast

This framework, if used effectively has the potential of changing the complexion of water sector and help in achieving the desired sustainability of this precious resource.

Presentation 2 - "Post Disaster Waste management during the 2014 Srinagar flood"

Presenter – Dr. GN Qasba, Former Commissioner, Srinagar Municipal Corporation, Senior Advisor, Integrated Research and Action for Development (IRADe)
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Post-flood sanitation, waste handling, collection, and disposal is a major challenge for any city. Huge layers of garbage including the carcasses of animals threaten the outbreak of epidemics of vector-borne diseases and water-air borne infections. Post disaster Waste management is thus a crucial step in restoring cities back to their normal livability. Early implementation of sanitation, cleaning and disinfecting operations will enable the affected communities to return to normal life. This paper documents post-flood waste management operations carried out after the flood in Srinagar (Jammu and Kashmir, India), in September 2014. Post-flood waste management operations in Srinagar involved collection of 85,157 metric tonnes of waste material and 17,836 truck trips to the city landfill site at Achan, Srinagar. 11.90 lakh litres of disinfectants and 29,500 kgs of anti-odor formulation were used to improve the level of cleanliness, livability and control odor. 1686 animal carcasses were removed and disposed of as per standard protocol. This paper highlights procedures, processes and practices to be followed during post flood waste management operations by Urban Local Bodies and Disaster management authorities.

Keywords: Disaster Response, Epidemics, Srinagar Flood, Waste management