

'Reservoirs not managed using a scientific, decision-support system'

The Hindu, New Delhi Dated : August 27, 2018

As Kerala grapples with the aftermath of unprecedented rains and inundation, Secretary, Ministry of Earth Sciences M. Rajeevan explained the challenges of forecasting floods in the State with relatively small rivers prone to flash floods, inaction at the local level despite meteorological alerts and dam management.

In terms of modelling, how well did our rain forecast models capture the possibility of such heavy rains in Kerala?

- As far as Kerala is concerned, in August we had two spells — on the 4th and the 14th — and both of these were captured by our short range weather prediction system. Each of them were forecast three days in advance. We give a forecast for heavy rains district-wise — in the form of orange and red alerts.

But did these maps give an estimate of the quantum of rains expected — after all rains were on average 50% and some places double the normal?

- A 'red alert' means that you must initiate action. It means that the IMD is expecting heavy rains, so State officials shouldn't just be waiting.

Typically our authorities don't take immediate action based on a red alert alone...?

- That's a different issue but from the IMD's side, we've already warned. An 'orange' means 'be on alert' and a 'red' means take action. So for instance, if a dam is full and you've been warned of heavy rains, then that means you should have been careful. Unfortunately, I've been given to understand that Kerala has no flood warning system. The Central Water Commission (CWC) doesn't have a flood warning station in Kerala.

But they do monitor rivers and the water levels in rivers...

- In Kerala the rivers are relatively small. For instance, if it rains in a hilly region, it can flood within 25 minutes and in an hour, the water will come. Rivers like Cauvery and Narmada have huge basins and such inundations are much slower.

Is there any reason there's no flood warning system in Kerala?

- Well, it's said that this kind of a calamity hasn't happened in the past anywhere. As I said, the focus [by the CWC] is on large rivers and especially those that traverse multiple States.

The point is that, any river can be flooded and any place can be flooded.

But from the earth sciences perspective, can't these flows be observed via satellites and forecasts prepared? You use them for studying the oceans...

- Frankly speaking, we don't have the mandate. This is entrusted to the CWC. We (IMD) have 11 flood warning offices such as in Ahmedabad, Bhubaneswar etc.. They interact with the CWC everyday during the monsoon. Every river is divided into basins and we give a two-to-three day forecast for each basin and we give a quantity — the average rainfall over the basin and how much is likely — and we run them in weather models to generate a forecast. This is given to CWC and they in turn use it to estimate how much water is likely in a river.

Now might be a good time to establish one in Kerala.

- Unfortunately the lead time would still be short...a river can flood in half-hour. We can also use radars... during all this time, we have a radar in Thiruvananthapuram and Kochi.

Our local meteorology offices there used to give CWC 'nowcasts' (forecasts valid for two hours). This is based on how convective clouds form and the way they move. All these products are being given. However they have to be intelligently used by the recipient.

I'm not blaming individuals, institutions or government but it's a fact that in India, none of our reservoirs are managed using a scientific, decision-support system. It's left to a few individuals to take a decision.

Is it because reservoirs are the property of States and managed entirely by them?

- Dams are managed by States and they worry about their own personal requirements such as, hydro-power management.

You should know that (in the case of Kerala this year) it's July, the dams are full, there are two months of monsoon left...I'll stop at that and don't want to interpret further. Decisions should be made by talking to the meteorological office, factoring inputs. I don't think there's such a mechanism in place.

What is the forecast for Kerala? Have we passed the worst of the season for the State?

- Over the next four to five days, there's no major rain expected in Kerala. Beyond that we can't be sure. Our extended range forecasts (15 days and ahead) suggest that only north India will be getting more rain.

The southern and interior part won't get much rain. The west coast, however, will still see rain — Karnataka, Maharashtra but not really Kerala. I do feel that the worst is over for Kerala.
