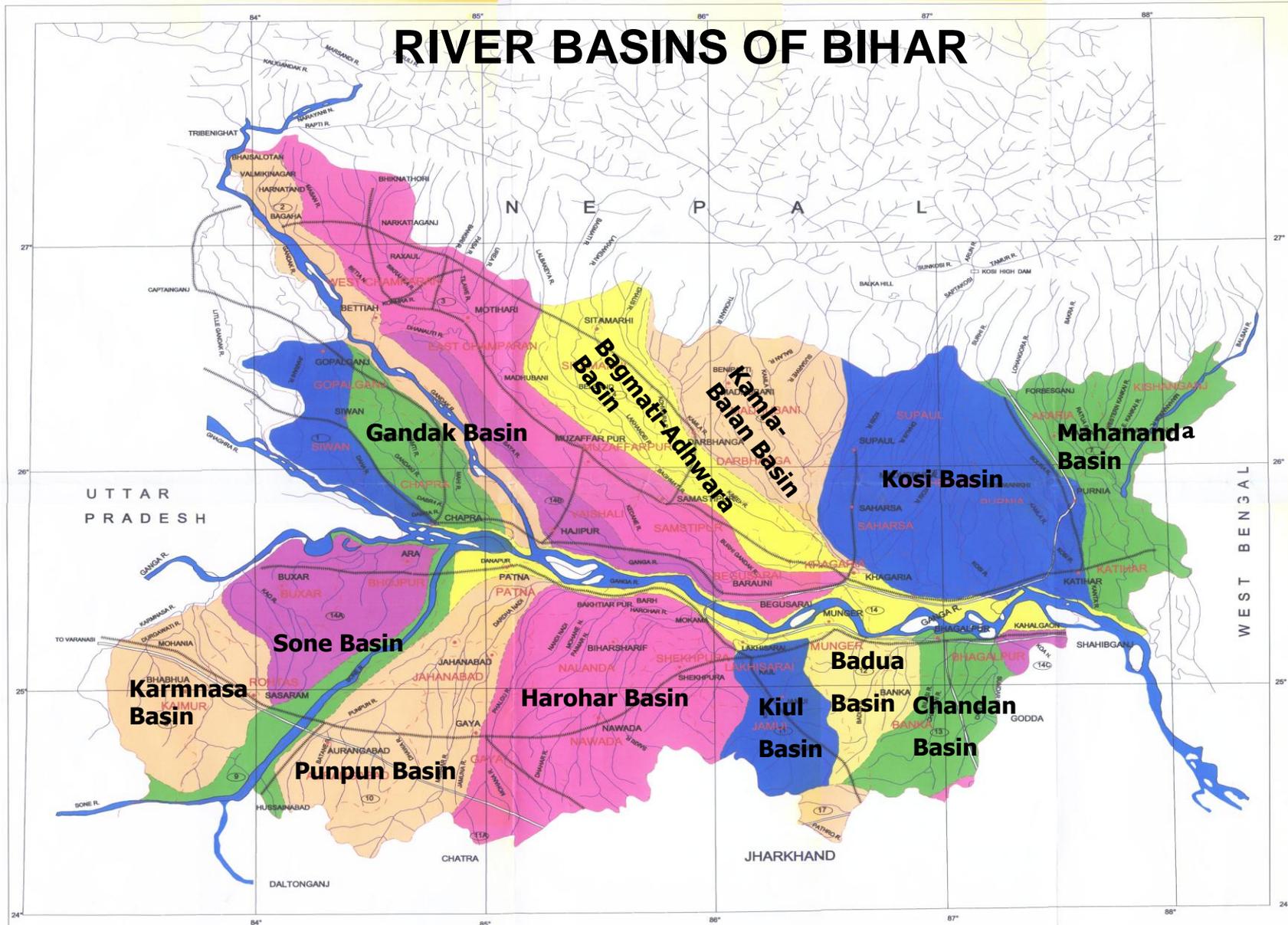


Flood Early Warning System in Bihar

Field Experience

Shri Vyas ji , IAS (Rtd.)
Vice Chairman, BSDMA

RIVER BASINS OF BIHAR



Based on the data and maps supplied by WRD (GOB), Bihar, Survey of India maps, GFC maps, National Bureau of Soil Survey & Land Use Planning, J.C.A.R, Calcutta maps, data from Bihar Remote Sensing Application Centre and other sources. The horizontal distance of India is shown in the map in a distance of twelve nautical miles measured from the appropriate base line. Printed for WRD, Bihar at Anon & Nagve Pvc. Ltd., New Delhi-110020. Tel: 011-2638800/967 (2006)

Flood Prone & Protected Area in Bihar

- Geographical Area - 94.16 Lha
- Flood Prone Area - 68.80 Lha
- No. of Flood Prone Distts - 28
- Extremely flood prone distts-15
- Moderately flood prone distts-13
- Length of Embankment - 3789.96 Km
- Protected Area - 39.96 Lha
- Area remains to be Protected - 28.84 Lha

Stakeholders of flood –EWS (Early Warning System)

- WRD
- DMD
- District Administration
- Community

Flood News in Public Domain

- **Barh Samachar** issued daily from WRD
(State Govt, Central agencies & News agencies)
- **Daily flood bulletin** issued by FMISC(WRD)
containing water level, trend, rain fall data, Nepal rain
fall data etc. (State Govt., Respective Districts,
Central agencies & News agencies)
- **3 days flood forecast** at different locations of
Bagmati River. (by FMISC)

Continued ...

- Development of flood forecast and inundation model for Kosi and other rivers under process in FMISC.
- Flood inundation **Satellite Map**. Received from NRSC, customized by FMISC.
- **Probable inundation map** against any critical location on embankment for early safety measures to be taken by field officers and administration.

Daily Water level Data with 1 day forecast by CWC

- Central Water Commission issues daily water level observed(6.00 AM) at various locations of the rivers with one day forecast.
- This is done on the basis of gauge to gauge correlation of water level.
- This has been found to be accurate to more than 90%.

Actions before flood

- WRD organizes meetings of TAC, SRC to finalize anti-erosion flood protection works at various critical locations along the rivers.
- Approved flood protection works are completed by 31st May.
- Flood fighting materials such as sand, Geo-bags, Nylon Crates are stored near vulnerable locations.
- Real time communication facilities through VHF wireless equipments.

Continued ...₉

- Flood manual/guideline is issued by the Chief Secretary for regular surveillance on embankments by the committee headed by DM and field officers.

Actions During Flood

- Near real time rainfall data of the upstream rivers catchment in Nepal side collected from DHM Nepal website. It gives a probable reflection of rise in discharge / WL in downstream Bihar.
- Based on rainfall-runoff travel time, the likely flood scenario in the downstream is communicated to DMs of concerned districts and field officers of WRD for taking precautionary measures along the embankments.

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- Heavy rainfall in the upstream catchment of the rivers is flashed by IMD and CWC.
 - Near real time satellite images of flood inundation maps issued by NRSC help the field officers of WRD and district administration to understand the extent of flood inundation affecting the communities in the flood plain.
 - DMD operates SMS based EWS – sends EW to the stakeholders in accordance with the communication plan.

THANK YOU