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Supplement of

Ensemble streamflow prediction considering the influence of reservoirs in Narmada River Basin, India

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Supplemental Information

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3   Table. S1 – List of data used with their resolution and sources

| Sr. No.	Type of data	Resolution	Source
1	Precipitation	0.25° / Daily	Indian Meteorological Department (IMD) (Pai et al., 2014)
2	Temperature	1.0° / Daily	Indian Meteorological Department (IMD) (Srivastava et al., 2009)
3	Extended Range Forecast System (ERFS)	1.0° / Daily	Indian Institute of Tropical Meteorology (IITM)
4	Global Ensemble Forecast System (GEFS)	0.125° / 3-hr	Indian Institute of Tropical Meteorology (IITM)
5	Observed streamflow, reservoir water level and storage	Daily	India – Water Resource Information System (IWRIS)
6	Digital Elevation Model	30m	HydroSHEDS http://hydrosheds.cr.usgs.gov/

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6   Table. S2 – The calibrating soil parameters of the VIC-Res model

Sr. No.	Parameter	Range
1	Ds	0 to 1
2	Ds_{max}	0 to 30
3	Ws	0 to 1
4	B_{inf}	0 to 0.5
5	Soil Depth (d1, d2 and d3)	0 to 1.5

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1-day lead   7-day lead   15-day lead   31-day lead
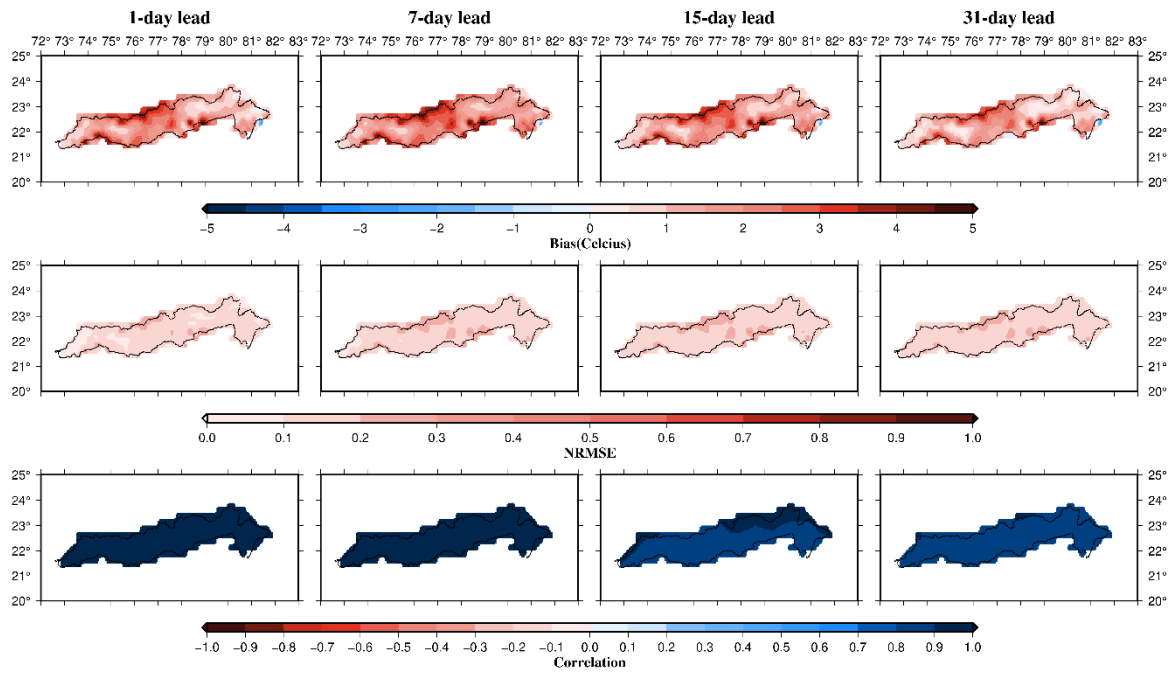
9

10   Fig. S1 - Evaluation of ERFS meteorological forecast minimum temperature data for

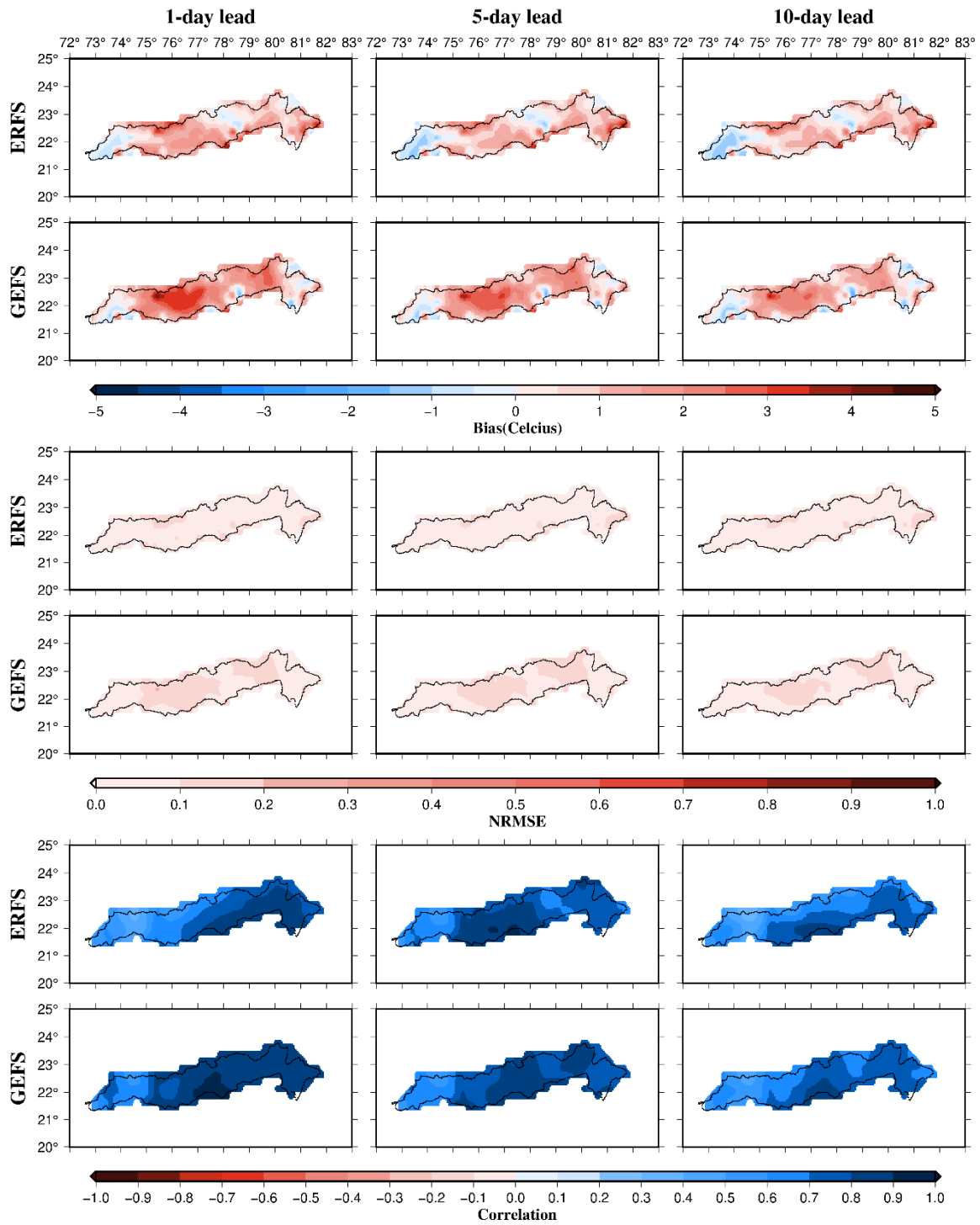11   period of 2003-2018. The median of all members' skill at a grid is represented.
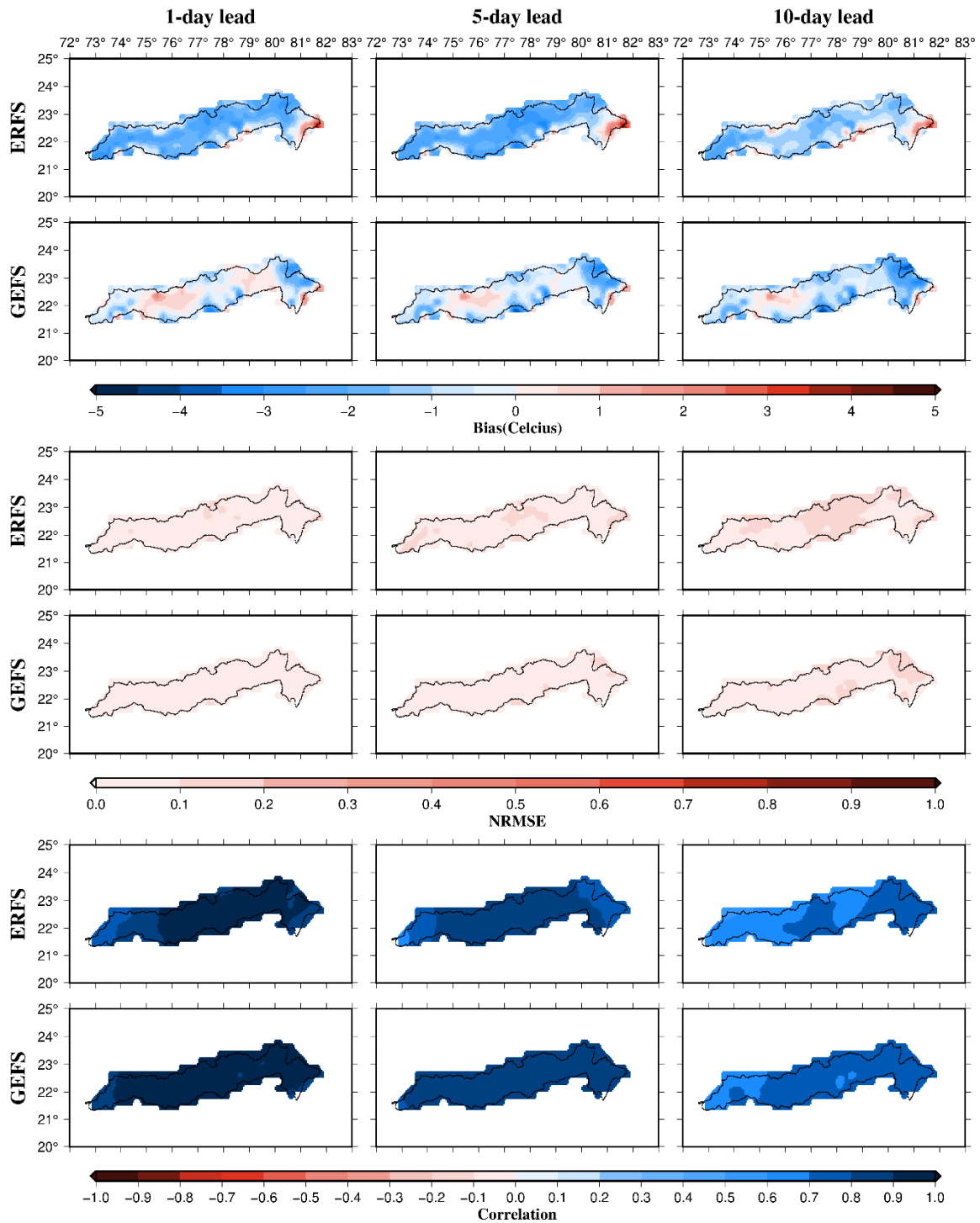
12

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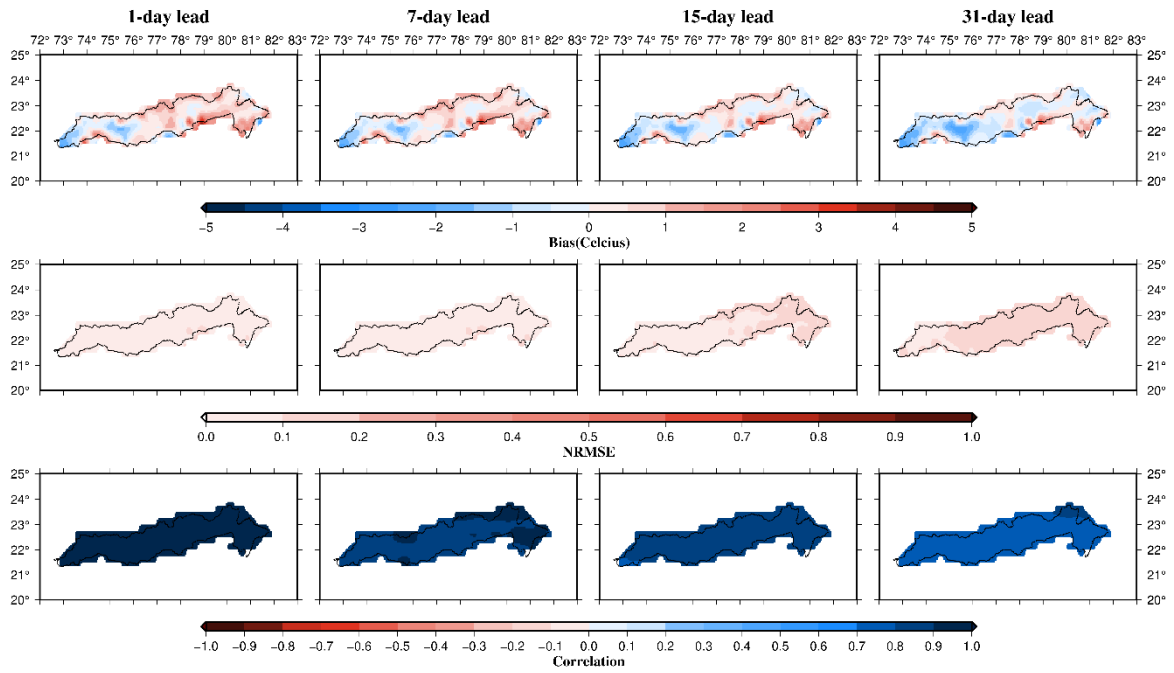
Fig. S2 - Evaluation of ERFS meteorological forecast maximum temperature data for

period of 2003-2018. The median of all members' skill at a grid is represented.

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Fig. S3 - Evaluation & comparison of ERFS and GEFS meteorological forecast minimum temperature data for summer monsoon period of 2019-2020. The median of all members' skill at a grid is represented.

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Fig. S4 - Evaluation & comparison of ERFS and GEFS meteorological forecast maximum

temperature data for summer monsoon period of 2019-2020. The median of all members'

skill at a grid is represented.

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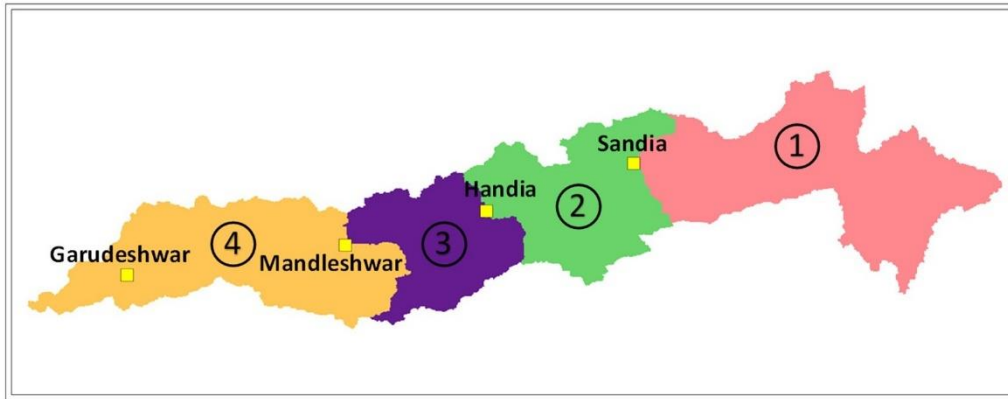
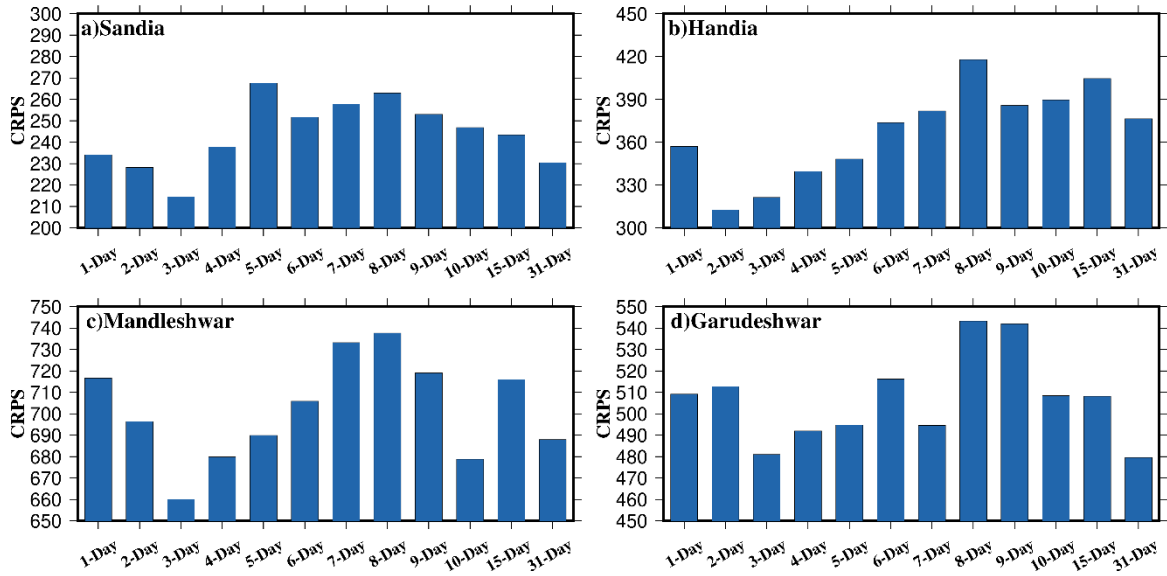| Parameter	1	2	3	4
b_{inf}	0.18	0.26	0.15	0.89
D_s	0.91	0.94	0.34	0.29
D_{smax}	0.01	1.2	3.49	11.65
W_s	0.58	0.74	0.01	0.01
d1	0.05	0.24	0.12	0.05
d2	0.46	0.79	1.31	0.1
d3	0.14	0.1	0.11	0.1

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29 Fig. S5 – VIC-Res calibration parameters in the respective upstream region of each
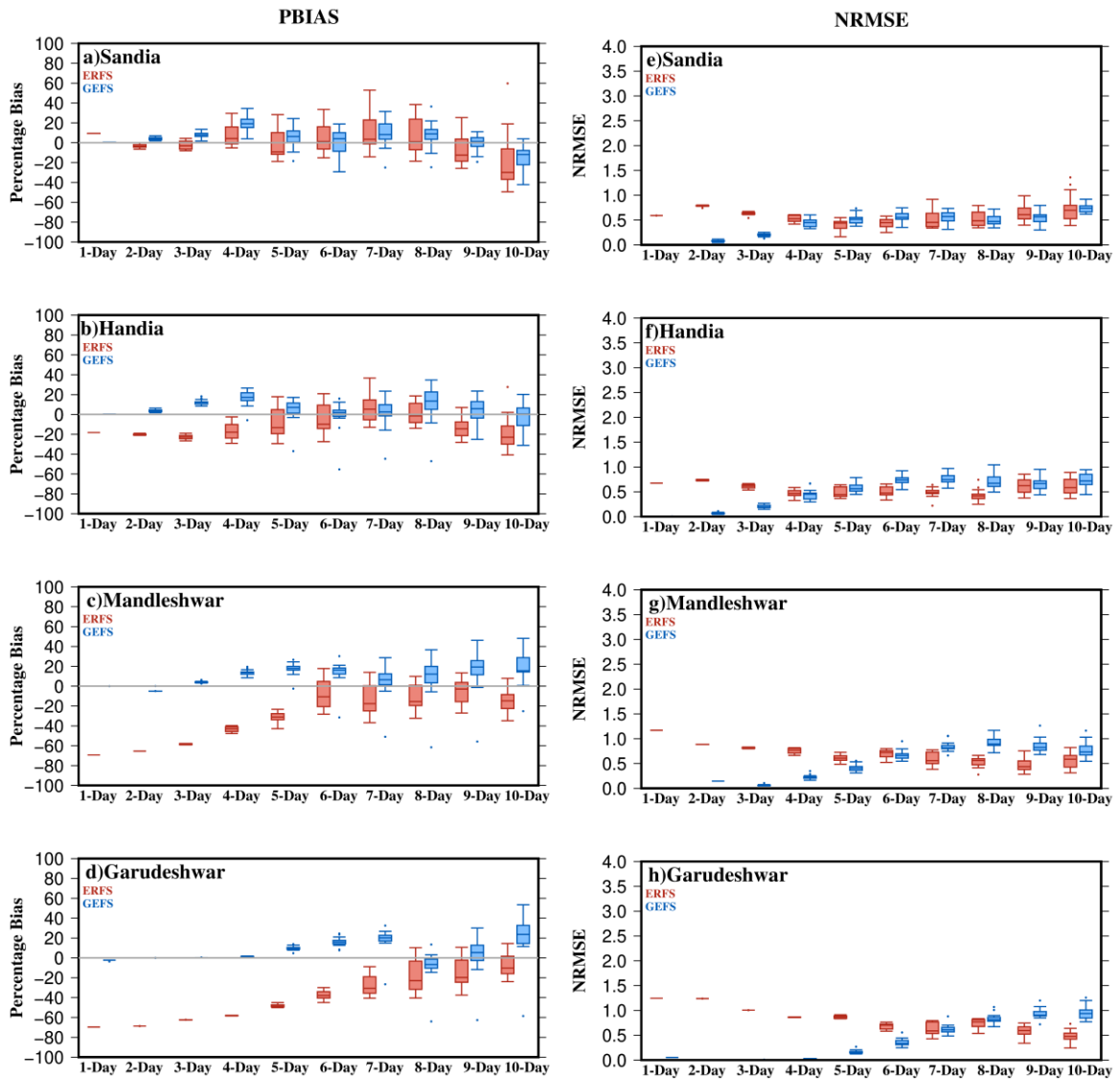
30 station.

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Fig. S6 – CRPS of streamflow forecast for years 2003-2018 at different leads (1-10 day,

15 day, 31 day).

PBIAS   NRMSE

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Fig. S7 - Comparison of PBIAS & NRMSE of high flows (>75th percentile) simulated

using ERFS and GEFS dataset members for 2019-2020. Due to the unavailability of

observed streamflow data, we used daily streamflow simulated by the VIC-Res model
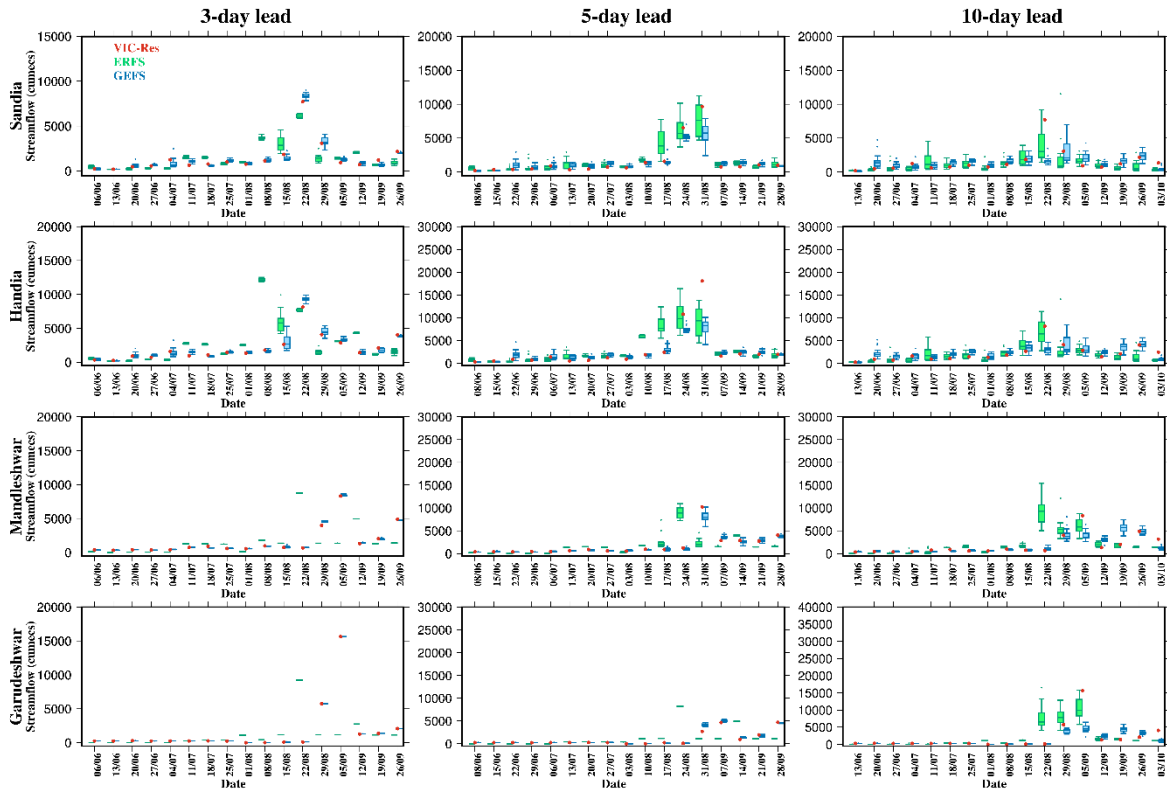
using IMD forcing as input.

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Fig. S8 – Box & whisker plot comparing streamflow simulated from ERFS and GEFS meteorological forecast against VIC-Res simulated streamflow at 3-day, 5-day and 10-day leads from weekly forecast dates of 2020 monsoon.