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**Figure S1.** Bar plot of average forecasted streamflow for 1 to 5-day lead time generated from the SWAT (a, c), and the VIC (c, d) hydrological models using rainfall forecast from JMA, ECMWF, and NCMRWF for the Manot and the Dindori watersheds.

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**Figure S2.** Bar plots of RMSE (a), NRMSE (b), ABP (c), CC (d), R2 (e), and NSE (f) based on the streamflow forecasted using rainfall forecast from ECMWF, JMA, and NCMRWF in the SWAT (red) and the VIC (blue) hydrological models for the Dindori and the Manot watersheds. The first group of bars is for day one lead time.

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**Figure S3.** 1 to 5-days (a to e) ensembles streamflow forecasts for the Dindori watershed from the SWAT hydrological model using rainfall forecasts from ECMWF. Grey lines show ensembles, the dotted red line shows the mean of ensembles, the green line represents the deterministic, and the solid blue line shows the observed discharge.

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**Figure S4.** Streamflow ensemble forecasts from the SWAT hydrological model for the Dindori watershed for 1 to 5 days lead time (a to e) using JMA rainfall forecasts.

E:\STREAMFLOW_FORECASTING\REVIEW\figures\NEW_FIGURES\ens_swat_din_ncmrwf.tif **Figure S5.** Streamflow ensemble forecast using NCMRWF rainfall forecasts in the SWAT hydrological model for the lead time up to 5 days for the Dindori watershed.

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**Figure S6.** Streamflow ensembles obtained from the VIC hydrological moede1 for 1 to 5-day lead time using ECMWF rainfall forecasts for the Dindori watershed.

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**Figure S7.** JMA rainfall forecasts used in the VIC hydrological model to obtain streamflow ensembel forecasts for 1 to 5-day lead time (a to e) for the Dindori watershed.

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**Figure S8.** Forecasts of 1 to 5 days streamflow ensembles for the Dindori watershed using NCMRWF forecast rainfall and the VIC hydrological model.

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**Figure S9.** Bar plots of RMSE (a), NRMSE (b), ABP (c), CC (d), R2 (e), and NSE (f) based on the mean of streamflow ensembles generated using rainfall forecasts from ECMWF, JMA, and NCMRWF in the SWAT (red) and the VIC (blue) hydrological models for Dindori and Manot watersheds. The first group of bars is for day one lead time.

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**Figure S10.** Box plots of the error statistics (RMSE, NRMSE, ABP, R square, CC, and NSE) for forecasted streamflow ensembles at the Dindori watershed using the SWAT (top panel) and the VIC (bottom panel) hydrological models. The rainfall forecasts from ECMWF (E), JMA (J), and NCMRWF (N) for a lead time of 1 to 5 days have been used.

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**Figure S11.** Plots of ensemble spread of streamflow generated by the SWAT (left panel) and the VIC (right panel) hydrological models using ECMWF, JMA, and NCMRWF rainfall forecasts for the Dindori watershed.

**Table S1.** Error statics for 1 to 5-day lead time of streamflow forecasts obtained from various combinations of forecasts data (from NCMRWF, JMA, and ECMWF) and two hydrological models (SWAT and VIC) for the Dindori watersheds. The mean of ensembles rainfall forecast has been used.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Models | Lead Time | Dindori | | | | | |
| RMSE | NRMSE | BP | CC | R2 | NSE |
| VIC with ECMWF | DAI 1 | 34.923 | 0.169 | 8313.733 | 0.812 | 0.66 | 0.53 |
| DAY 2 | 56.057 | 0.139 | 9297.556 | 0.67 | 0.448 | 0.346 |
| DAY 3 | 52.877 | 0.159 | 8746.67 | 0.641 | 0.411 | 0.292 |
| DAY 4 | 46.08 | 0.201 | 6678.098 | 0.596 | 0.356 | -0.037 |
| DAY 5 | 47.44 | 0.242 | 6170.289 | 0.554 | 0.307 | -0.383 |
| SWAT with ECMWF | DAI 1 | 84.896 | 0.268 | 8646.837 | 0.363 | 0.132 | 0.023 |
| DAY 2 | 126.089 | 0.152 | 10375.969 | 0.303 | 0.092 | 0.021 |
| DAY 3 | 108.871 | 0.174 | 9227.907 | 0.306 | 0.094 | 0.023 |
| DAY 4 | 88.752 | 0.16 | 7555.12 | 0.324 | 0.105 | 0.015 |
| DAY 5 | 78.911 | 0.195 | 6839.585 | 0.331 | 0.109 | -0.037 |
| VIC with JMA | DAI 1 | 50.805 | 0.224 | 10217.238 | 0.747 | 0.558 | 0.332 |
| DAY 2 | 53.507 | 0.23 | 10121.19 | 0.729 | 0.531 | 0.35 |
| DAY 3 | 46.723 | 0.227 | 8896.035 | 0.705 | 0.497 | 0.35 |
| DAY 4 | 42.318 | 0.271 | 7353.386 | 0.659 | 0.434 | 0.037 |
| DAY 5 | 41.051 | 0.246 | 6781.317 | 0.671 | 0.451 | -0.085 |
| SWAT with JMA | DAI 1 | 106.515 | 0.302 | 11074.492 | 0.335 | 0.112 | -0.041 |
| DAY 2 | 124.539 | 0.305 | 11648.126 | 0.271 | 0.073 | -0.075 |
| DAY 3 | 115.072 | 0.278 | 10574.137 | 0.261 | 0.068 | -0.065 |
| DAY 4 | 97.157 | 0.263 | 9127.898 | 0.254 | 0.065 | -0.093 |
| DAY 5 | 89.524 | 0.245 | 8368.532 | 0.249 | 0.062 | -0.125 |
| VIC with NCMRWF | DAI 1 | 44.884 | 0.428 | 4706.895 | 0.712 | 0.507 | -1.857 |
| DAY 2 | 44.582 | 0.328 | 4739.228 | 0.688 | 0.474 | -1.032 |
| DAY 3 | 49.736 | 0.353 | 4096.331 | 0.63 | 0.397 | -2.518 |
| DAY 4 | 53.589 | 0.374 | 3425.299 | 0.595 | 0.354 | -2.906 |
| DAY 5 | 56.879 | 0.549 | 3110.496 | 0.564 | 0.318 | -7.036 |
| SWAT with NCMRWF | DAI 1 | 64.062 | 0.325 | 5318.466 | 0.33 | 0.109 | -0.464 |
| DAY 2 | 64.081 | 0.332 | 4835.262 | 0.307 | 0.094 | -0.7 |
| DAY 3 | 59.068 | 0.349 | 4630.062 | 0.396 | 0.157 | -0.71 |
| DAY 4 | 64.188 | 0.232 | 4481.882 | 0.338 | 0.114 | -0.633 |
| DAY 5 | 61.99 | 0.279 | 4249.162 | 0.322 | 0.104 | -1.143 |