Supplementary File for Manoj J et al. (2024)
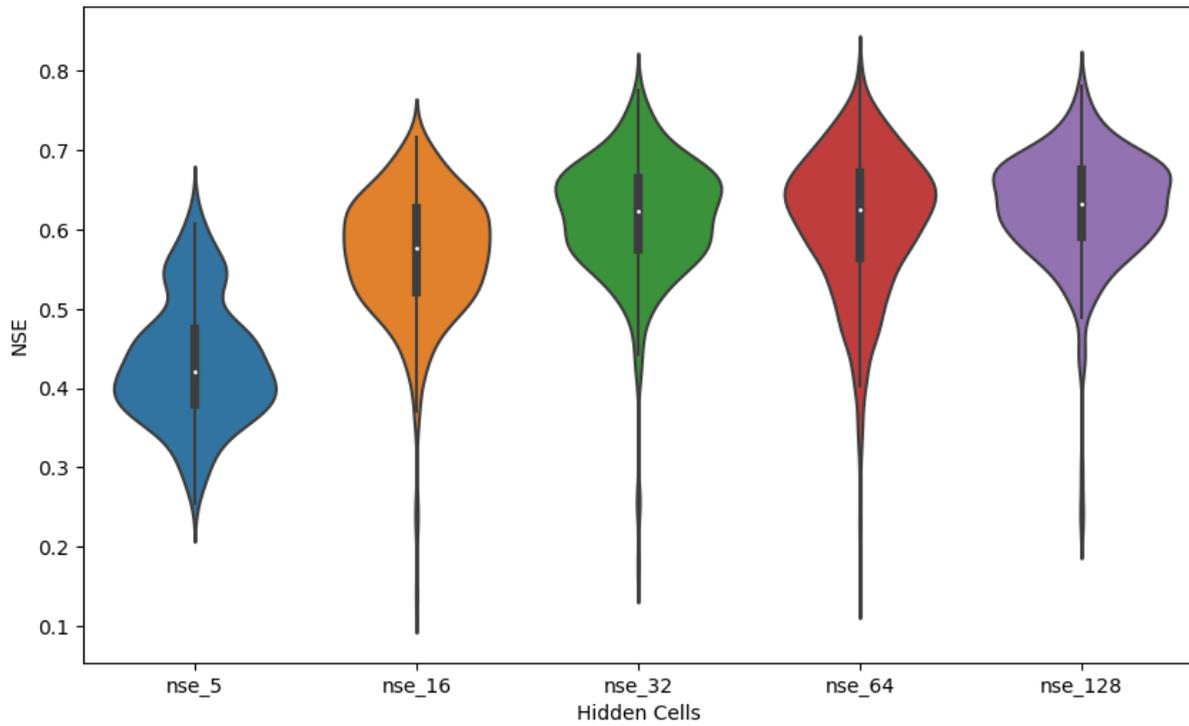
Figure S1 Sensitivity analysis for the LSTM model by changing the number of cells in the hidden layer.

Table S1 Hyperparameter setting for the LSTM models

Hyperparameter	LSTM Network
Hidden Layer	1
Hidden cells	64
Batch size	256
Sequence length	365
Epochs	5
Drop out	0.4
Learning rate	0.001
Optimizer	Adam
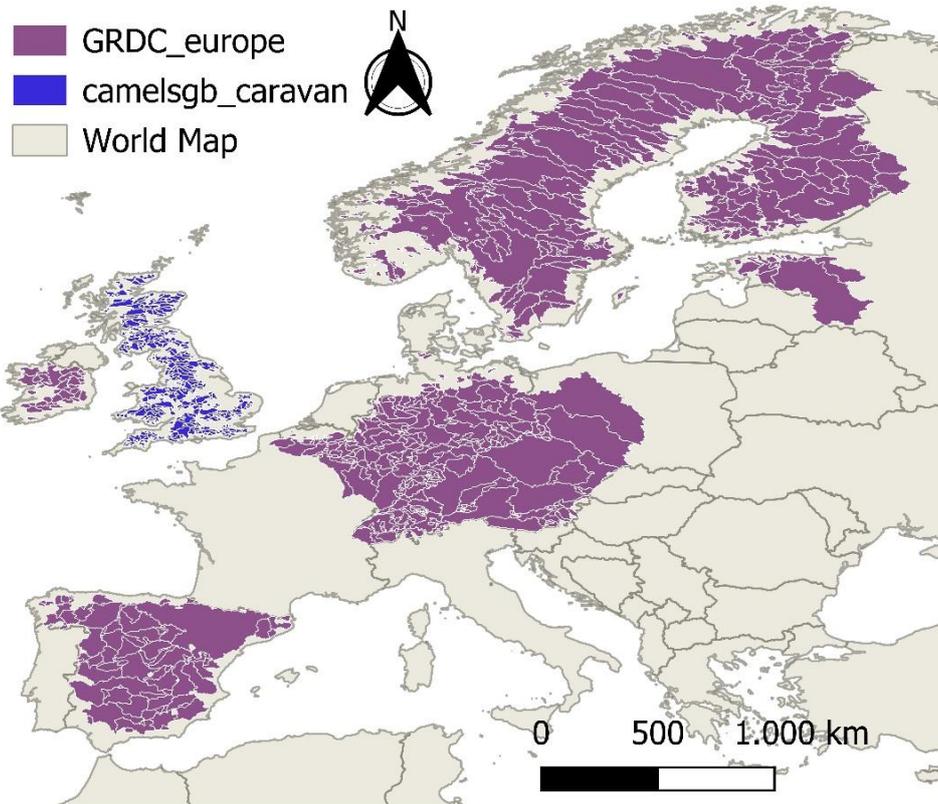
Figure S2 Study area map depicting the catchments from GRDC and CAMELS-GB used for training the LSTM Model.
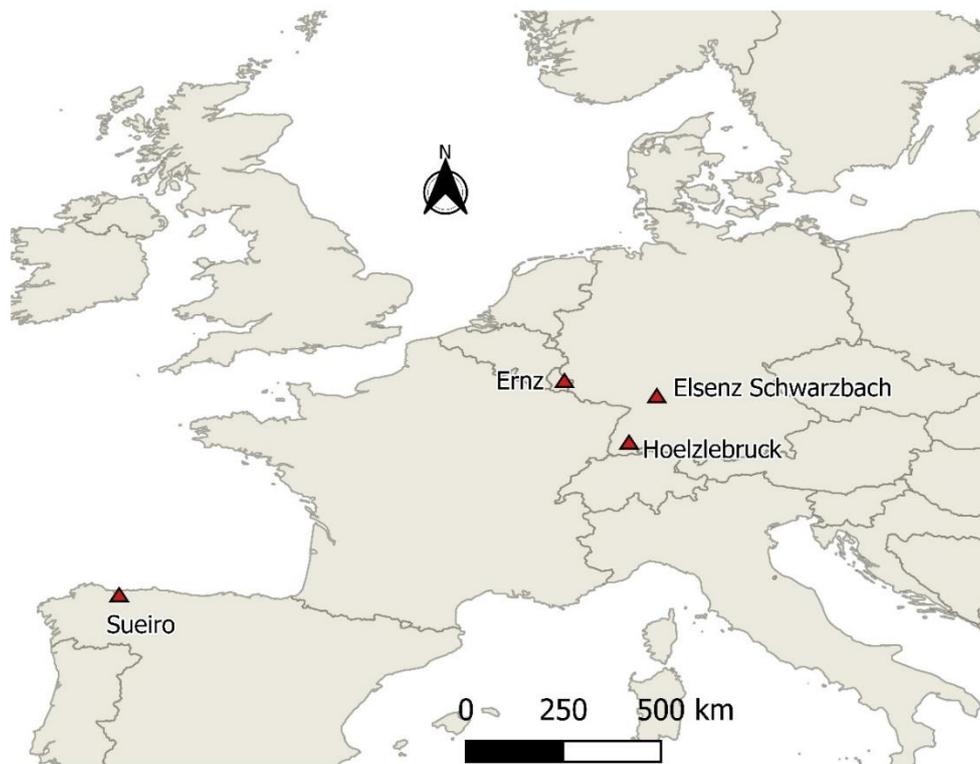
Figure S3 Study area map depicting the four catchments used for out of sample testing.

Manoj J et al (2024): Supplementary File
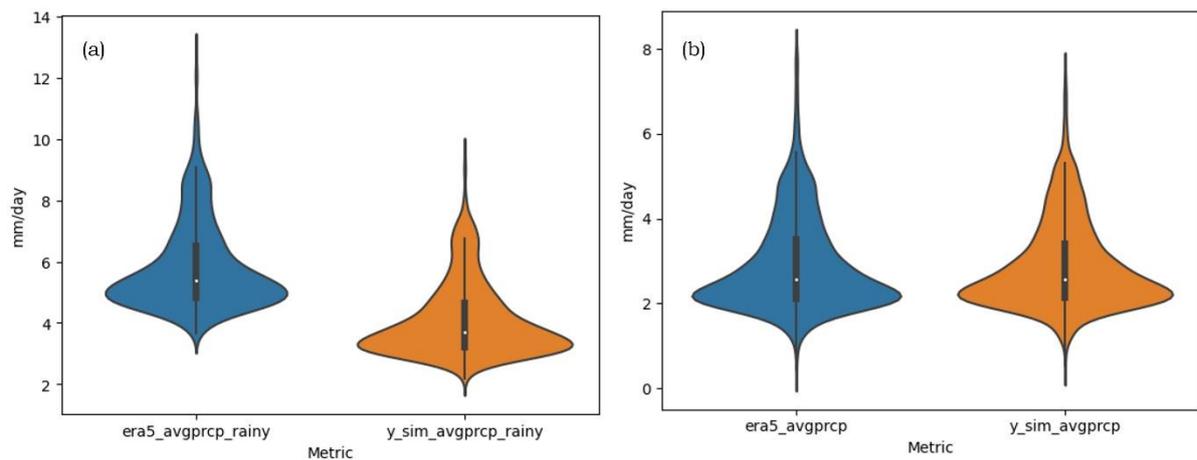
Figure S4 Violin plots for the distribution of (a) rainy day (>1 mm) and (b) total (both rainy and non-rainy) precipitation means for both ERA5 land and LSTM model over the study catchments.
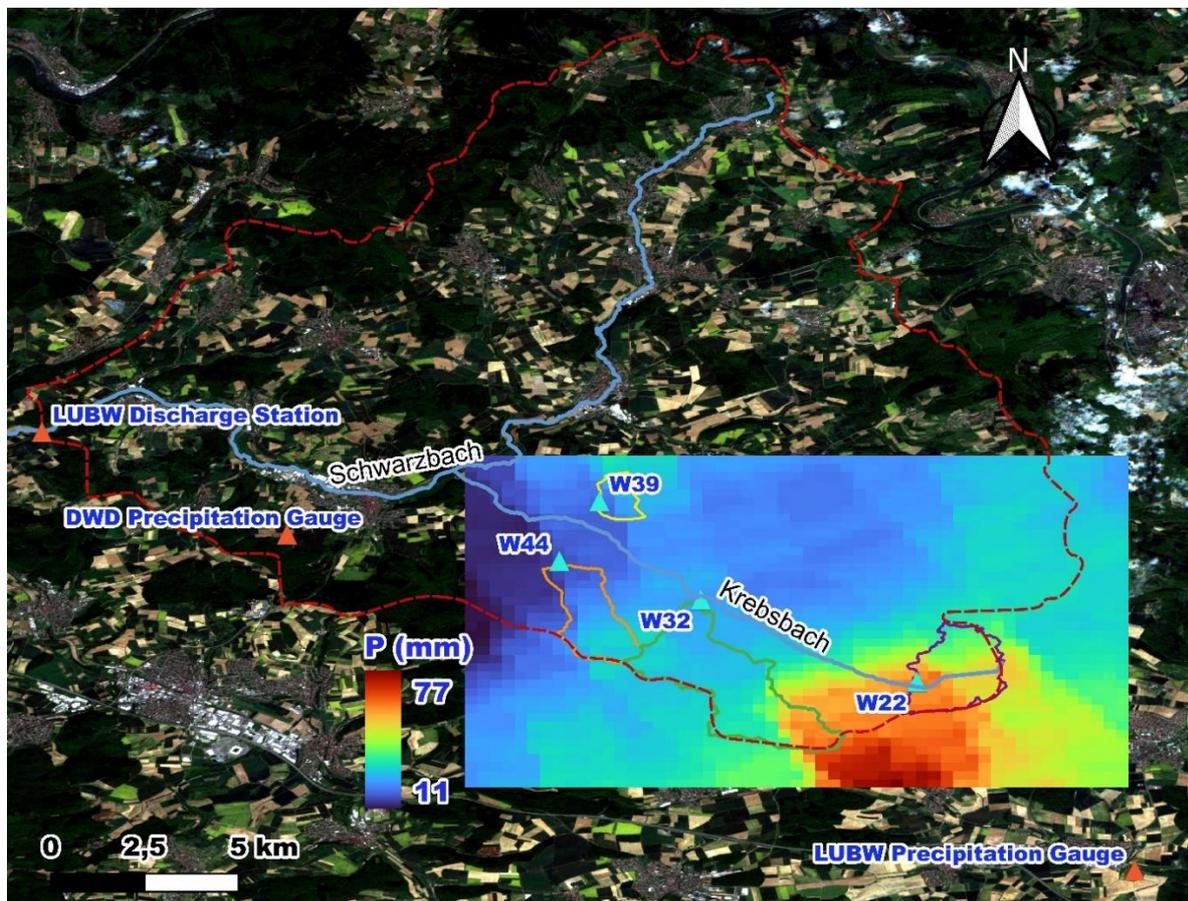
Figure S5 Overview of the Elenz Schwarbach catchment and the four headwater sub catchments – W22, W32, W39 and W44. An overlay layer displays the total accumulated precipitation (in mm) during 08.06.2016 across the four catchments. The gauges of the DWD (German Weather Services) and LUBW (Baden-Württemberg State Institute for the Environment, Survey and Nature Conservation) are also shown. (Figure from Manoj J et al. (2024))

Manoj J et al (2024): Supplementary File

References

Manoj J, A., Loritz, R., Villinger, F., Mälicke, M., Koopaeidar, M., Göppert, H., Zehe, E., 2024. Toward Flash Flood Modeling Using Gradient Resolving Representative Hillslopes. Water Resour. Res. 60. https://doi.org/10.1029/2023WR036420