

**TABLE 3** Goodness of fit functions considered in this study

Function name	Description	Equation	Perfect fit value
Reff	Model efficiency	$1 - \frac{\sum (Q_{osb} - Q_{\dot{i}})^2}{\sum (Q_{osb} - \overline{Q_{obs}})^2}$	1
KGE	Kling-Gupta Efficiency	$1 - \sqrt{\left((r-1)^2 + (\alpha-1)^2 + (\beta-1)^2\right)}$ r: Pearson correlation coefficient between $Q_{\dot{i}}$ and $Q_{osb}$ $\alpha$ : ratio between standard deviation of $Q_{\dot{i}}$ and $Q_{osb}$ $\beta$ : ratio between $\overline{Q_{\dot{i}}}$ and $\overline{Q_{osb}}$	1
R <sup>2</sup>	Coefficient of determination	$\frac{\left(\sum (Q_{osb} - \overline{Q_{obs}}) \cdot (Q_{\dot{i}} - \overline{Q_{\dot{i}}})\right)^2}{\sum (Q_{osb} - \overline{Q_{obs}})^2 \cdot \sum (Q_{\dot{i}} - \overline{Q_{\dot{i}}})^2}$	1
LogReff	Model efficiency for log (Q)	$1 - \frac{\sum (\ln Q_{osb} - \ln Q_{\dot{i}})^2}{\sum (\ln Q_{osb} - \overline{\ln Q_{obs}})^2}$	1
MeanDiff	Mean difference	$\frac{\sum (Q_{osb} - Q_{\dot{i}})}{n} \cdot 365$ n: number of times steps	0
VolumeError	Volume error	$1 - \frac{\left \sum (Q_{osb} - Q_{\dot{i}})\right }{\sum (Q_{\dot{i}} - Q_{osb})}$	1
ReffPeak	Efficiency for peak flows	$1 - \frac{\sum (peak Q_{osb} - peak Q_{\dot{i}})^2}{\sum (peak Q_{osb} - \overline{peak Q_{obs}})^2}$	1

