Q-Flood vs GloFAS: same data, same period

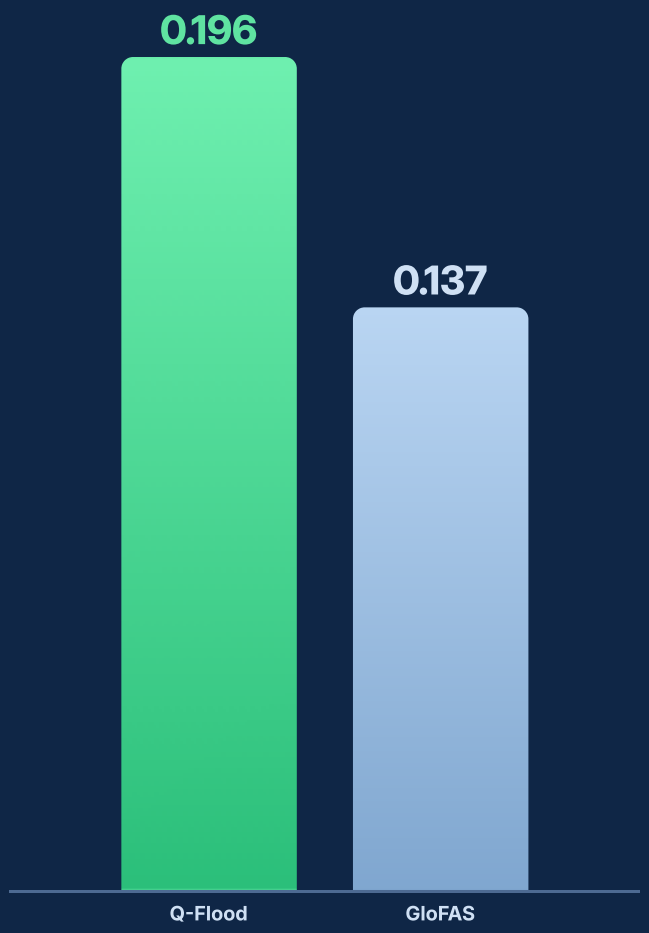
Malaysia, hindcast 2020–2026, 117 flood events, same data and period

Q-Flood (live model 3.3.9-W) GloFAS (Q/Q2 ≥ 1)

CSI · Critical Success Index

higher = better

43% higher CSI

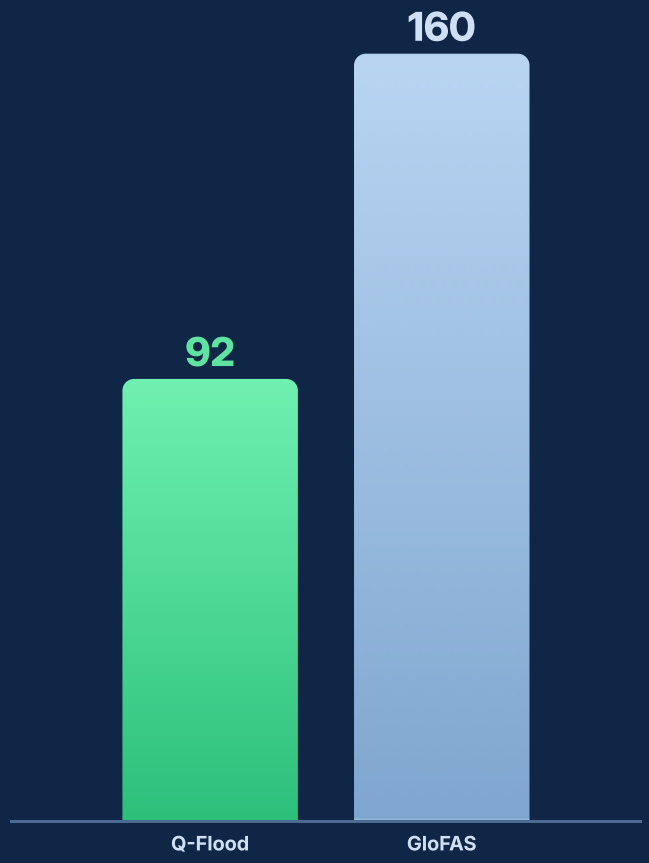


Difference +0.059 (95% CI +0.017 … +0.101)

False alarms (count)

lower = better

68 fewer false alarms

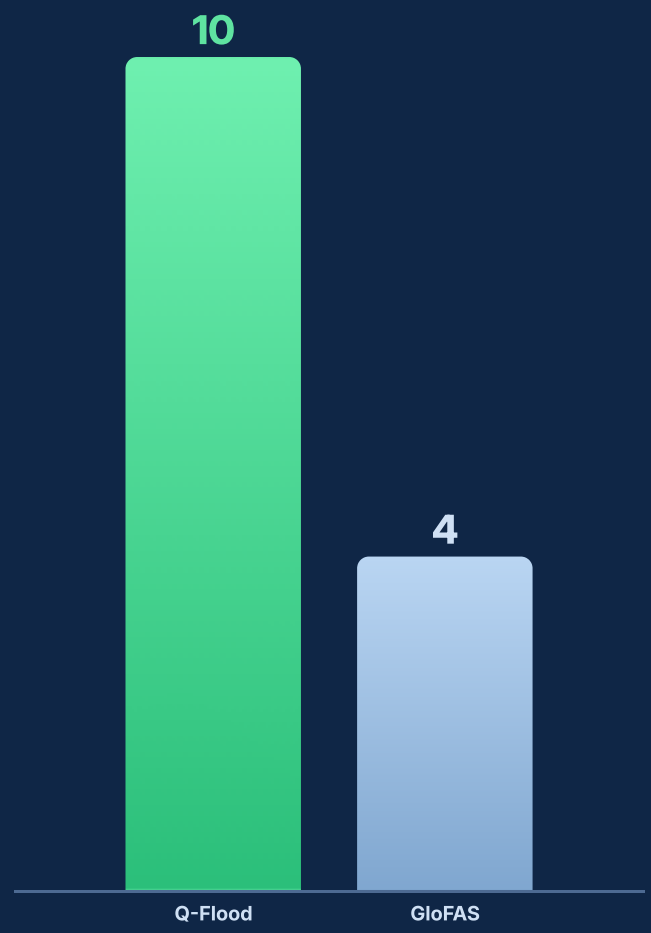


False alarm ratio (FAR): Q-Flood 0.68 · GloFAS 0.80 · false-alarm count 42.5% lower

Early warnings

higher = better

10 events / 4 events



Events flagged 0–2 days before onset (out of 117)

Method: Event-based hindcast; held-out period 1 January 2020 – 1 October 2026, unseen in training (threshold chosen on 2001–2019 data only). Same 117 flood events, same data, same scoring rule. GloFAS rule: discharge ≥ 2-year return-period discharge (Q/Q2 ≥ 1). CSI = hits / (hits + misses + false alarms). Early warning = alarm 0–2 days before flood onset. Confidence interval (CI): 30-day block bootstrap, 1000 resamples. Scores are from the classical model; the quantum layer runs in shadow mode. No skill comparison was made with other systems (Google Flood Hub, EFAS, national systems). Source files: KAYNAKLAR.md.