Q-Flood and flood early-warning systems worldwide

Feature comparison · competitor facts from their public documentation (accessed 1 November 2026)

Feature	Q-Flood	Google Flood Hub	Copernicus GloFAS	Copernicus EFAS	JPS PublicInfobanjir Malaysia official system	Fathom Global Flood Map	JBA Flood Maps · Flood Foresight
Geographic focus	● **Malaysia (16 states) + Türkiye (81 provinces)**	Global: ~150 countries (MY and TR listed)	Global river network	Europe	Malaysia	Global hazard map	Global (every country)
Forecast lead time	1–3 days	Riverine: 7 days · urban flash flood: 24 hours	Up to 15 days	5–15 days	Monsoon flood warning: 2 days	Not a forecast product (return-period maps)	Up to 10 days (Flood Foresight)
Spatial unit	● **Administrative unit: province / state (where decisions are made)**	River point (gauge / virtual gauge) · flash flood 20×20 km	0.05° grid	1′ grid (~1.5 km)	River basins with a forecast model	~30 m grid	30 m grid (5 m in some countries)
Region-specific thresholds	● **Country-calibrated thresholds (MY, TR) · province/state thresholds: *in development***	Return period per gauge point	Return period per grid cell (1.5–500 yr)	Return period per grid cell (2 / 5 / 20 yr)	–	–	Project-based population trigger thresholds
Open data	● **Fully open inputs: GloFAS, GDACS, Open-Meteo**	Free web · API waitlist · GRRR dataset	● Open (Copernicus)	Real time for partners only · public with 30-day delay	Public web portal	Licensed (API / Portal)	Licensed
Flood depth / duration	● **In development**	–	Expected flood inundation extent	Hazard maps (90 m)	–	● Depth (by return period)	● Depth + extent (forecast footprints)
Daily verification log misses included	● **Every day; missed floods included**	Peer-reviewed evaluation (Nature 2024) · daily log: –	Skill maps · event-level daily log: –	–	Monthly service-compliance table	Peer-reviewed validation study	–
Quantum-ready hybrid layer real QPUs, shadow mode	● **Run on IBM ibm_kingston · ibm_fez · ibm_marrakesh and Origin Wukong; shadow mode, the classical model makes the decision**	–	–	–	–	–	–
Local government collaboration Malaysia	● **Collaboration with Malaysian public agencies**	–	–	Out of scope (Europe)	● Is the official agency (JPS)	–	–

● available / strength ● in development – unknown / not in documentation

How to read: "–" = not found in public documentation or unknown; it does not mean "no". This table compares features only: no skill scores were compared with Google Flood Hub, EFAS, JPS, Fathom or JBA. Q-Flood's only measured head-to-head comparison is with GloFAS (see diagram). The quantum layer runs in shadow mode; no accuracy contribution is claimed. Q-Flood does not replace official local warnings. All sources: KAYNAKLAR.md.