Leveraging existing capacities - flood relief following Cyclone Idai (2019), Malawi

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1. Before the flood

- 2017: a **national water point mapping exercise** is commissioned in Malawi and supported by the Scottish Government (Table 1).
- Mapping programme involved **collaboration** between government, NGO, private sector, and academic partners.
- Programme utilised mWater, a free-to-use online platform, to collect, analyse, manage and share data creating a **Management Information System (MIS)**.
- **Training and capacity building** in use of the MIS: 354 government enumerators are trained in data collection. Database management & governance systems in place.

Table 1: A summary table of the key mapping outputs from the national water point mapping exercise in Malawi. Data was collected on all the site types listed across Malawi

Key Mapping Outputs	
Type	*Number mapped*
Water Points	124 702
Sanitation Points	303 495
Waste Sites	10 419

2. During the flood

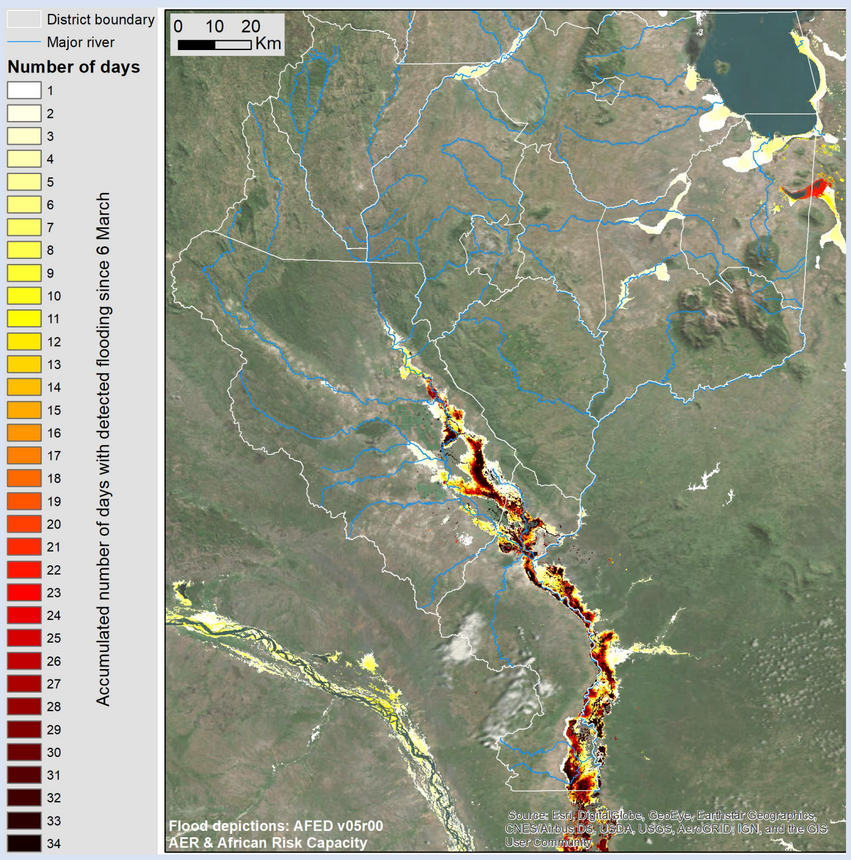

Figure 1 (above): A map of southern Malawi showing the accumulated number of days with detected flooding following the impact of Cyclone Idai in March 2019.[2]

2.1 Flood event

- Cyclone Idai makes landfall in March 2019 – inundating large parts of rural, southern Malawi (figure 1). Widespread damage is caused across the southern region, internally displacing nearly 90,000 people[1]
- Government of Malawi establishes **'WASH Cluster'** to coordinate international relief efforts.
- **Safeguarding drinking water supplies considered a top priority**. Damage and contamination to shallow groundwater (<50m) borehole fed handpumps a major concern.

2.2 Capacity mobilisation

- International financial aid begins to flow to the region. With support from Scottish Government and USAID a handpump repair and rehabilitation project was initiated.
- **Existing data, skill, and coordination capacity is mobilised under the lead of 'WASH Cluster'**.
- A **triage system** (table 2), based on existing data and data-gathering capacity, is developed to help target relief.
  - Water point database overlain on flood extent shapefiles – *likely submerged*
  - Community-level survey developed and enumerators deployed to local communities across southern region. Information is quickly (days) gathered on; qualitative *water quality issues*, *critical damage,* and *biological contamination.*
  - Results are shared in real-time through 'live' MIS to WASH Cluster and all stakeholders involved in relief efforts.
  - **WASH cluster coordinates teams from BASEflow, Strathclyde and local mechanics to instigate repair and rehabilitation work in Mulanje District**, with post-intervention assessments (3 and 6 month intervals)

Table 2 (below): A triage table developed to help identify and target priority water points for post-flood interventions. Triage was developed on the basis of existing data and data collection capacities.

Level	Priority	Description
5	**Very High**	Water point has tested positive for *biological contamination*
4	**High**	Informants report **water quality issues* and/or ***critical damage* to water point infrastructure and water point currently *serves over 300 users*
3	**Medium**	Informants report **water quality issues* and/or ***critical damage* to water point infrastructure and water point currently *serves under 300 users*
2	**Low**	Water point was *likely submerged* during flooding events
1	**Very Low**	Water point issues are not an immediate risk to human health

*Water quality issues: reports of bad water taste, colour, smell or salinity levels
** Critical damage to water point: defined as visible damage to civil works, damage to the lifting device or severe erosion of the soil around the civil works

3. After the flood – results & lessons

1. **Drinking water access safeguarded** for ~184,000 people
2. Functionality rates of handpump-fitted boreholes targeted for rehabilitation improved from 8% to 91% by the 6-month post-intervention visit.
3. **Existing data, systems, and skills** were successfully repurposed to aid the flood response efforts.
4. **Sharing data and data systems** was key to early coordination.
5. **Community experience and knowledge of the flooding event was successfully integrated with existing data** to help direct relief resources
6. **Lessons: (a)** database-driven initiatives should consider multiple uses and demands at the outset **(b)** community-level experience of the flooding event was valuable **(c)** existing capacity and actionable data was sufficient to guide effective response

References: 1. OCHA. (2019). Refliefweb: Tropical Cyclone Idai – Mar 2019. available at: https://reliefweb.int/disaster/tc-2019-000021-moz [Accessed 20/11/22]. 2. Miller, A. (2019). Accumulated Flood Days following Cyclone Idai. (unpublished).

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