

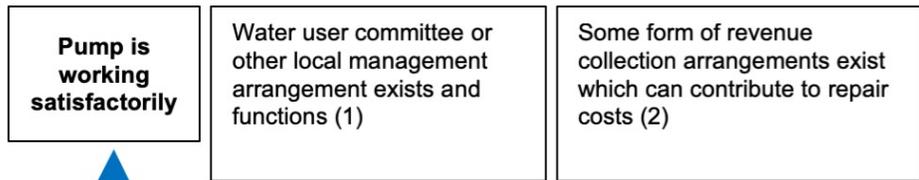
African handpumps: an Apollo 13 approach

Richard C Carter, IRC Symposium
12th-14th March 2019

Why Apollo 13?

- Apollo 13, 13th April 1970 - the explosion, the analysis, the recovery.
- My model also asks “how to succeed?” rather than “why failure?”
- Coincidentally my model refers also to 13 factors which have to be in place for successful management of community water points.



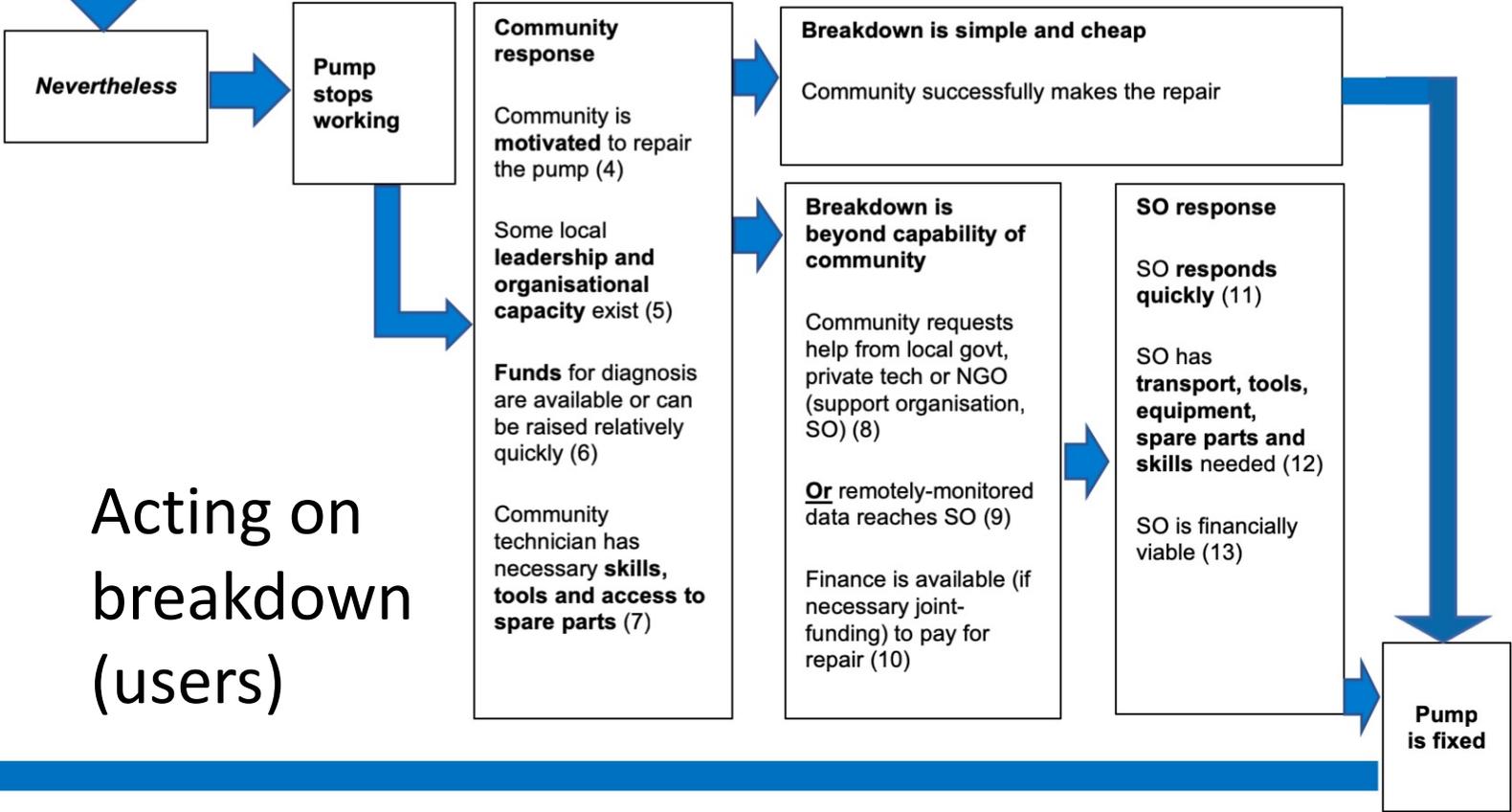


Agreements or bylaws are in place to ensure pump is not abused or vandalised; to ration water use or restrict heavy use in times of limited availability; and to minimise contamination of water (3)

Keeping it working

The conceptual model

Acting on breakdown (support organisation)



Acting on breakdown (users)



A diagnostic instrument

A set of questions arising from the 13 factors ...

Requiring qualitative, thoughtful answers ...

Helping to identify the priority areas for action

Not a mechanistic tool ...



Element / questions

(1) Is there a functioning water point management arrangement at the community level which is clear about its roles, has recognition and authority both within and beyond the community, and is competent to fulfil its duties effectively?

(2) Is there an agreed and functioning revenue collection arrangement in place, even if it is only sufficient to cover minor repairs?

(3) Has the community leadership agreed rules for water point management, which can address context-specific risks (such as abuse of the pump by children, vandalism or theft) to the water point?

(4) In case of breakdown, how strong is the motivation of the community to attempt a repair? Are there readily accessible alternative sources of water which may inhibit such motivation?

(5) Is there sufficient leadership within the community to organise and attempt a repair? Is there the organisational capacity to mobilise community members as necessary?

(6) Are funds available, or can they be raised quickly, to pay for repairs carried out by the community?

Element / questions

(7) Does the community actually possess the skills and tools to effect a simple repair? Can the community readily access spare parts?

(8) In the case of a breakdown which is beyond the community's capacity, are the water users motivated to request external assistance from a designated support organisation?

(9) If handpump performance is monitored remotely using sensors, is this system reliable at informing the designated support organisation?

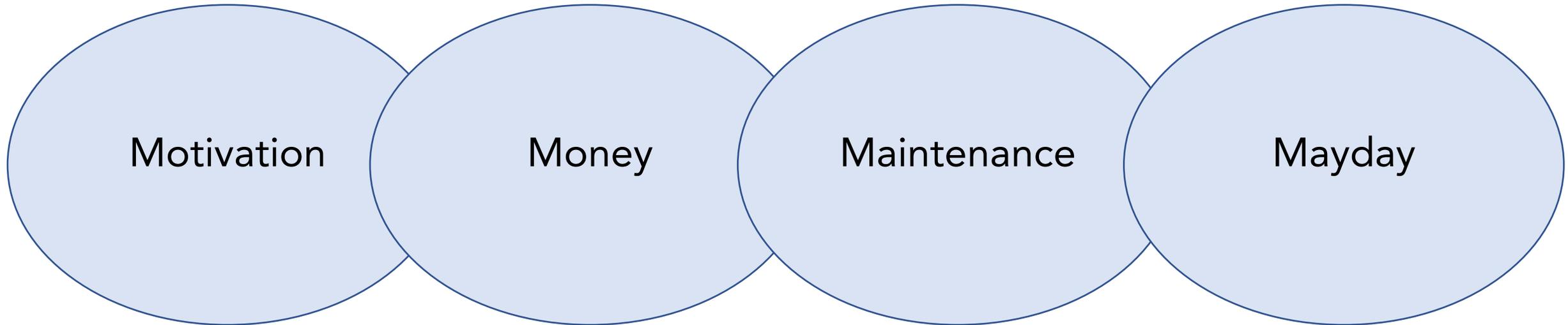
(10) Are funds available, or can they be raised quickly, to cover the costs of major repairs? These funds may originate from within the community, or outside, or a combination. Does local Government provide financial or in-kind support for major repairs (capital maintenance)?

(11) In case of call-out, does the designated support organisation respond quickly?

(12) Does the designated support organisation have the transport, skills, tools, and access to spares which it needs to perform effectively?

(13) Is the designated support organisation viable financially? Does it have a long enough contract or mandate to ensure continuity of service?

Key diagnostics – a health check



Motivation to repair, motivation to call for and pay for help.

Money for minor and major repairs, with external subsidy if necessary

People, skills, tools, transport and spare parts supply chains

Rapid response to monitoring or reporting of a serious fault

A chain is only as strong as its weakest link

Motivation

Money

Maintenance

Mayday



Safe return of Apollo 13 crew, four days after the explosion

... if only every handpump could be repaired and returned to service that quickly ...

