

LifePump: challenging the status quo of pump “uptime”

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Background

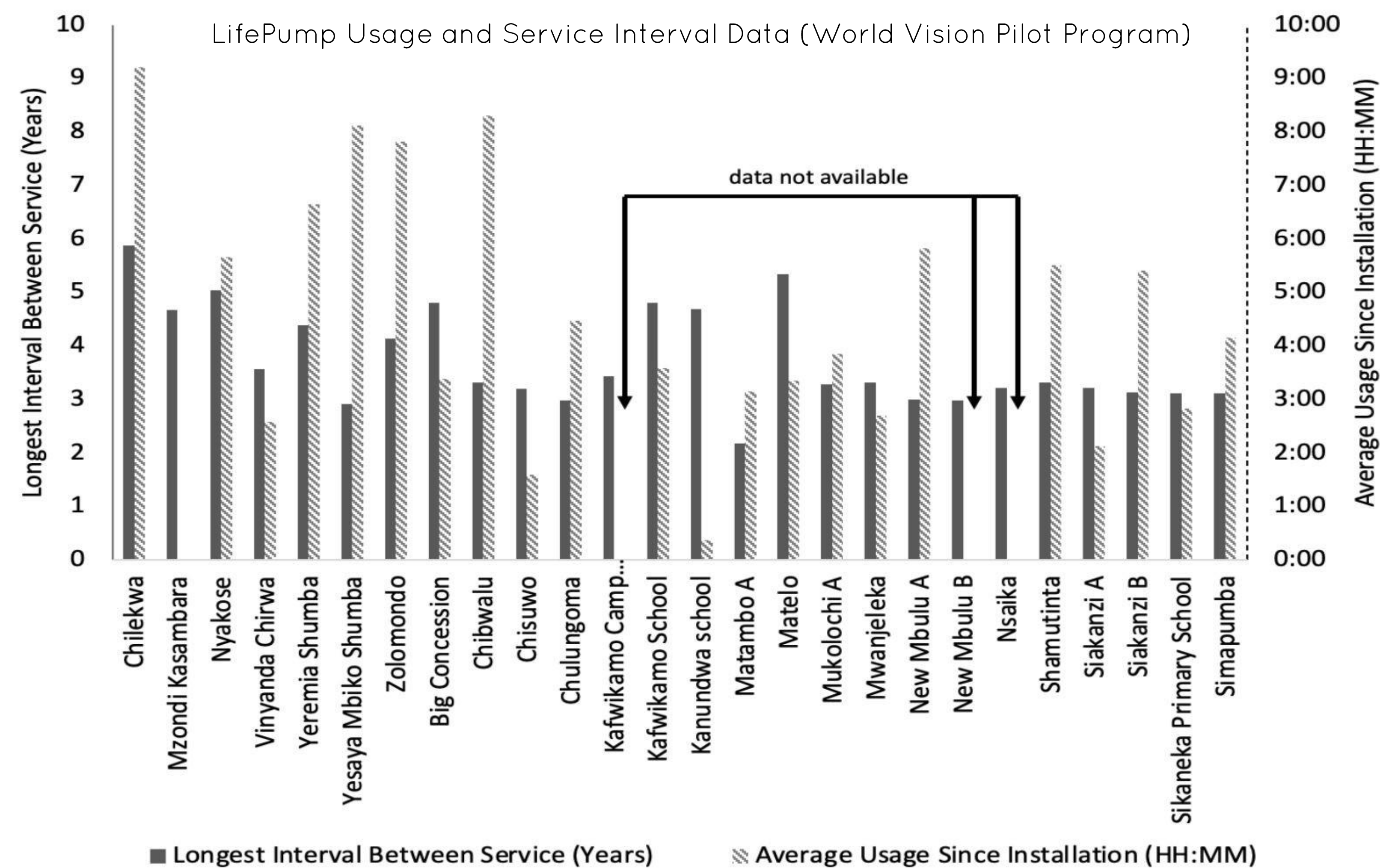
In 2019, the Design Outreach LifePump™ was adopted into the Zambian and Malawian policy as an acceptable appropriate technology hand pump for water depths greater than 50 meters and 30 meters, respectively. This milestone is opening opportunities for non-governmental organizations (NGOs) to utilize LifePump where other standard hand pumps are unable to supply water year-round due to depth limitations or issues with hardware reliability. Not only is LifePump proving a greater technical standard for hand pump technology, but it is also helping to redefine functionality, uptime, and sustainability.

Challenge

Some organizations measure functionality of water systems based on status upon arrival, uptime, water availability, or handle movement, which fall short in determining if sufficient water is available when it is needed. Various hand pump studies have shown that hand pump functionality ranges from 60% to 90%, with averages falling closer to 60%. Even 90% functionality could mean a hand pump is not working 36 days out of the year, which is very disruptive to community development. These definitions of functionality do not capture the full story of hand pump efficacy, water availability, and subsequent impact on communities.

Solution

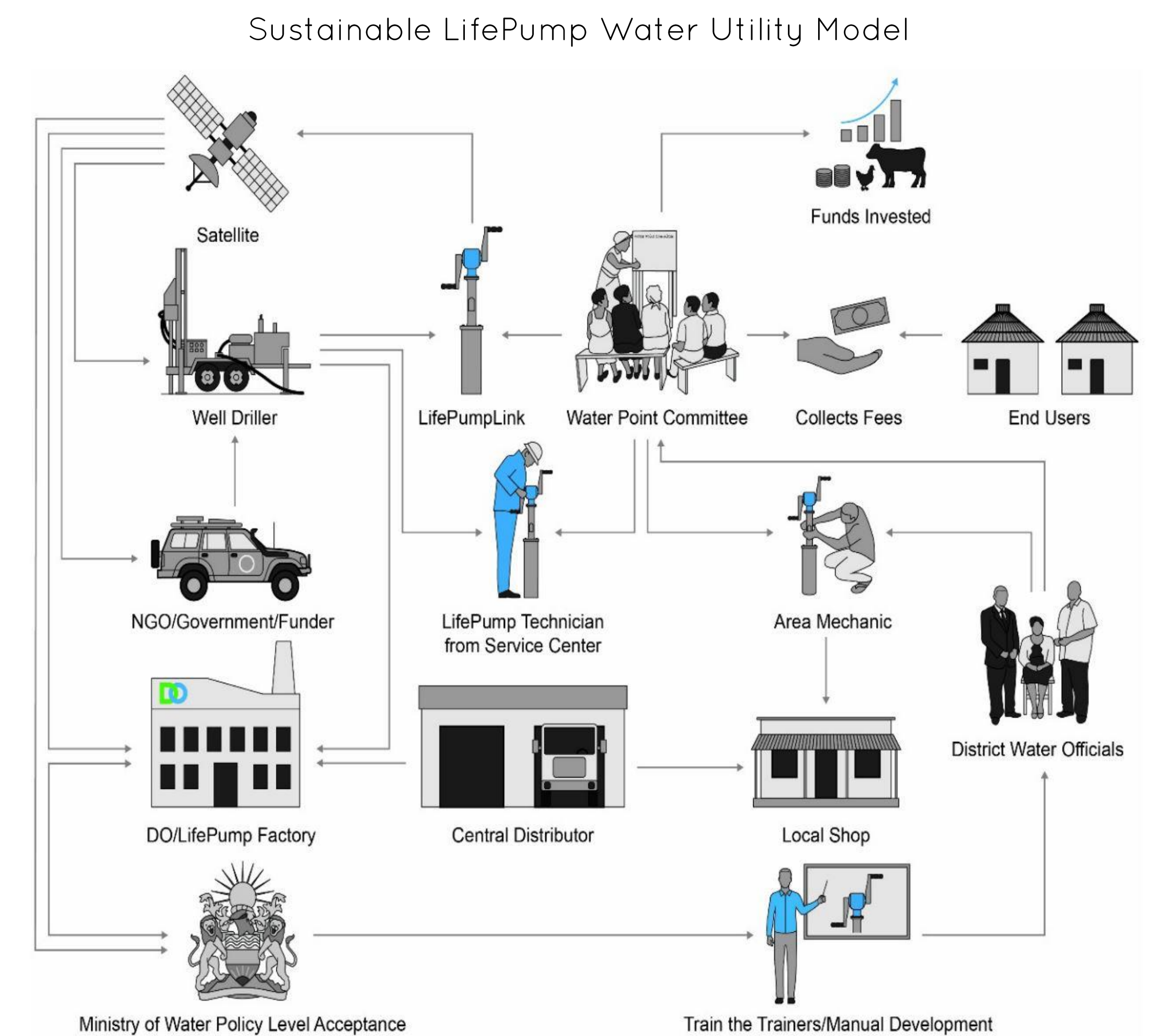
The LifePump is an ultra-deep reaching hand pump that provides an effective solution for year-round water supply, thanks to its robust design and stainless-steel materials. Additionally, engineers at Design Outreach are reimagining how to measure success with a goal that LifePump should operate as designed 98% of the time and not experience downtime for longer than 24 hours at one time. A key assumption is that during downtime, a community can sustain proper health, plants, and animals with extra water that was previously collected. Design Outreach is actively monitoring over 100 LifePumps in 7 countries to show such availability of water over time and believes the goal of near 100% uptime is achievable through the unique reliability of LifePump paired with LifePumpLink™ monitoring technology.



Zolomondo, Malawi (LP installed Nov 2013)
Longest Service Interval: 4 years and 1 month



Yeremia Shumba, Malawi (LP installed Aug 2015)
Longest Service Interval: 4 years and 4 months



Next Steps

Over the coming years, Design Outreach plans to advance towards the goal of near 100% uptime through a combination of LifePump, LifePumpLink (remote sensing) alerts, training, and supply chain development (specifically in Malawi, Zambia, and Zimbabwe). This definition of success drives hardware development, fee collection, and supply chain networks of pump technicians, service hubs, and in-country parts and tool availability.