

Editorial: Seeking and using informed common sense

'If I had an hour to solve a problem and my life depended on the solution, I would spend the first 55 minutes determining the proper question to ask, for once I know the proper question I could solve the problem in less than five minutes.' (Albert Einstein)

I wonder how many of us who do our little bit to solve the world's water and sanitation problems dare to follow Albert Einstein's advice in the quotation above? How often do we propose 'solutions' to non-existent problems, or come up with complicated questions which miss the point entirely?

Let me suggest first some of the criteria which help to define a real problem.

- **The problem must matter** – to someone, some group of people, or to the planet. A disabled or elderly person who cannot access a safe and clean latrine has a real problem. So too does a peri-urban community which lacks reliable, affordable water services. Uncontrolled land clearance which alters the hydrology and sediment load of rivers matters, because it damages the environment and has direct impacts on people and ecosystems.
- **The problem must matter at a practical level.** Academic questions asked out of pure curiosity certainly have an important place in scientific endeavour, but their place in the context of poverty, humanitarian response, and development is questionable. Ethical issues around the extraction and use of data from human subjects, and the raising of expectations in the undertaking of research are important, and increasingly recognized.
- **The tail must not wag the dog.** Many WASH 'solutions' address the 'problem' of purification of dirty water. Important though this is, it is not always the highest priority for water consumers. Another 'solution' provides for defecation in plastic bags which contain treatment chemicals. Unless in extreme situations, this is unlikely to be a welcome option for those seeking solutions to their sanitation problems. An infamous 'solution' enabled children to lift water while playing on a roundabout. The excessive cost, and the incorrect assumption that children are always available and willing to play, contributed to its demise. Many or most of these so-called solutions address problems which are more real in the mind of the inventor than those who will have to use the solutions.

Asking the right questions usually means starting by asking the right people to help define the problem or question. Service users are our key informants. We also need a deep understanding of context, which can only be acquired through first-hand experience. Such tacit knowledge is essential.

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Once we have defined the problems with the help of the people experiencing them, the ways of addressing them might still not be so obvious.

Much play is made nowadays about evidence-based policy and practice. However, although there is a significant amount of evidence concerning, for example, the health impacts of improved water supply, sanitation and hygiene, there is far less systematic research and evidence about practical implementation of WASH at scale. The WASH Evidence Paper produced for DFID by an eminent panel of authors in 2013 made this very clear (DFID, 2013).

So what to do, and how to go about it, in the absence of extensive evidence about 'what works'? The first important point is that the relative absence of scientifically rigorous evidence of what works does not imply that what practitioners do in their daily work is ineffective, it just means that it has not been scientifically researched and documented.

Second, if we consider the typical logical hierarchy of objectives, with **outputs** being the physical deliverables (taps, toilets, trainings, and so on); **outcomes** referring to the continued functioning and utilization of those outputs; and **impacts** meaning the wider and longer-term results of such utilization (e.g. better health, time and energy saving); then our focus should be firmly on outcomes. We know that delivering outputs on its own is insufficient. We know that the achievement of significant impacts requires numerous parallel improvements alongside WASH (e.g. education, nutrition, immunization, health services). What matters is that services work and that they are used. These are the outcomes which we should seek, and our research should find out how best to achieve these.

I appeal in the title of this editorial for the application of common sense. There is another warning from Albert Einstein, that 'common sense is the collection of prejudices acquired by the age of eighteen'. To avoid excessive subjectivity and bias, we need to temper common sense with evidence gathering. We need to do some research which asks the right questions and addresses real problems. We need to undertake trials which make sense, but which are pre-tested – at least by peer-review of the ideas which have gone into their design. We need to design adequate ways of evaluating the successes and failures of such trials. But crucially we need to take the step beyond small-scale trials and 'pilots' to interventions at meaningful scale. This is where much good work by NGOs and local governments falls short – if good practice does not go to scale then this represents a lost opportunity.

I think you will find as you read the papers in this issue of *Waterlines*, that they follow many of the principles outlined above – they identify real problems, seek greater understanding, explore innovative solutions and propose ways forward. The challenge of implementing new solutions at scale and demonstrating unequivocally that they can work still remains.

Richard Carter

References

DFID (2013) *Water, Sanitation and Hygiene: Evidence paper*, London: DFID, <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193656/WASH-evidence-paper-april2013.pdf> [last accessed 10 March 2015].