

Editorial: Why partial solutions may not be solutions at all

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In the United Nations' exposition of Sustainable Development Goal 6 ('ensure availability and sustainable management of water and sanitation for all'), the problems of water and sanitation are framed in terms of the targets and indicators that would demonstrate desired progress. The underlying problems for which these targets represent a solution include the world's failure so far to achieve universal and equitable access to safe and affordable drinking water and to adequate and equitable sanitation. Specific attention is also drawn to the threats to the quality and quantity of the water resources on which humanity depends for its survival.

In our fast-moving world there is an understandable urge to propose and implement 'solutions' before the underlying problem has been properly and fully understood. Misconception of the problem leads at best to partial solutions, and at worst to irrelevant or harmful actions. Real life is complicated since total understanding of the problem is rarely possible, and so we have to go forward based on a limited grasp of its complexity.

It is important to recognize that the physical world is far more susceptible to analysis, modelling and prediction than the world of the social sciences. The behaviours of human beings and the organizations and institutions that we create are more difficult to anticipate with accuracy, and yet these behaviours are at least as important as, and interact with, the technologies that we use to deliver services.

The problems of universal and equitable access to water and sanitation services involve complex interactions between natural resources (in particular, water itself); the technologies needed to lift and convey water, or contain and treat faecal waste; the investments needed to first introduce and then maintain that technology; international and national public sector, private sector and civil society organizations, with their policies, budgets and ways of working; and, crucially, the attitudes, values and behaviours of society and of individual service users.

In relation to sanitation and hygiene, the core problem is the contamination with faecal pathogens ('germs') of many aspects of our environment – from soil and water resources, to homes, hands, foods and utensils. Ask a succession of 'why' questions, and it quickly becomes clear that the underlying causes are to do with where we defecate, what (if any) technology we enjoy for containment or transport of excreta, how effective and acceptable (in terms of comfort, safety, privacy and ease-of-use) that technology is, whether or not and how effectively we clean ourselves after defecation, what services are available for removal and treatment of faecal sludge, how affordable such services are, and so on along the entire faecal sludge 'chain'.

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As far as domestic water is concerned, the problem is immediately multi-dimensional. In the absence of an 'improved' service, my water source may be distant, permitting only limited consumption; it may be low-yielding, seasonal or contaminated; using it may be very time consuming and physically demanding; and there may be access issues and conflict, especially at times of low yield.

Even when people enjoy so-called 'improved' services, in which proximity and other issues have been addressed, the problem has not always been fully solved. Aspects such as affordability, reliability and manageability remain, and may well be intensified by well-meaning but partial solutions. A community handpump, supplying good-quality water close to home, is technically more challenging, certainly more costly in financial terms, and potentially less easily managed than a waterhole in a distant river bed. It has solved part of the problem but not the whole.

We (by which I mean those of us in Governments, NGOs, donor organizations, consultancy and research organizations involved in WASH problem-solving) often focus on the part of the problem that we can address, mistaking it for the whole. Consequently we invent new technologies for anything from water exploration to water treatment, or from pit latrine additives to pads and cups for managing the menstrual cycle more effectively. These all have their place – an important place – but they can only be part of a true solution if they address the full breadth of the problem, including those evolving aspects of the problem introduced by new technologies.

The problems of water and sanitation need to be appreciated in terms of the interaction of physical and human systems, and effective solutions must also span this complexity.

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