

Stanford SOCIAL INNOVATION REVIEW

Water Thinking By Rajesh Shah

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Water Thinking

The Peer Water Exchange manages diverse solutions and resources to fight the global water crisis **BY RAJESH SHAH**

THE FACTS ON WATER point to a universally acknowledged crisis: More than 1 billion people lack access to safe drinking water; 6,000 children under age 5 die every day from water-related diseases; half the world's hospital beds are filled because of water-related diseases; and 2.7 billion people lack access to hygienic sanitation facilities that prevent contamination and provide dignity.

There is no dearth of technological solutions to this tragedy. Yet successful projects to solve rural water problems require approaches other than technology—community organization, education, behavior change, ownership transfer, and long-term monitoring. These approaches, although necessary, create a complexity that has hampered our ability to take any solution to scale. Even with billions of dollars of funding over decades, we have not been able to reduce the size of the water crisis.

But the drinking water crisis can be solved. The Peer Water Exchange (PWX)—a technology platform I conceived and built for Blue Planet Network (BPN, formerly Blue Planet Run Foundation, or BPRF)—has used a network approach to manage diverse solutions to and resources for the global water crisis. PWX is a decentralized network and decision-making system that can effectively and transparently scale up the management of thousands of projects without a bureaucracy. Over the past six years, 73 small and large organizations around the world have proved that the PWX platform works.

We are small now, but our goal is ambitious: By 2027, we aim to provide safe drinking water to 200 million people. This will require \$8.5 billion in funding and the management of 200,000 projects over 20 years.

TODAY'S FUNDING MODEL

To resolve the water crisis successfully, we need a healthy dose of criticism about current funding models and the disadvantages they create for solving social issues.

Management in the North: Foundations and NGOs are experts at raising money, but they find it hard to oversee small remote projects. BPRF was able to create a new global athletic event to build awareness of the water crisis, but managing projects in 14 countries was a challenge with no easy solution. Although I was a funder, was I really the right person to decide on projects? Wouldn't using existing field expertise result in better decisions?

Fundraising in the South: Implementers are experts in their fields, but they spend significant time on fundraising and managing donors and donor agencies. A large fraction of energy can be spent in beautifying an application or report instead of executing a project.



Reporting: Funding agencies spend time and resources on reporting, which often involves repackaging reports from the field. Raw data are hidden, and only a tiny fraction of activity is reported.

Failures and learning: The entire philanthropic chain reports only good things and is unwilling to share mistakes, so no one learns from them.

Monitoring: Site visits are often a photo op and usually expensive. At BPN, we constantly balance the cost of travel with the cost of funding another project. Monitoring can and should be a learning, sharing, and teaching experience.

Cooperation and sharing: Implementers do not cooperate or share enough. They compete for resources and funding, which results in North-South communication instead of South-South dialogue.

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All the points above contribute to the main problem with today's practices: lack of scalability. Even if we increased investment in the water sector using the current model, not all the money can be absorbed and put to effective use. We need a new approach, one that is scalable, efficient, and collaborative, combining transparency with effectiveness—one that attracts the vast investment commitment that this crisis demands.

WATER THINKING

The core problem when we look at the water crisis is the lens through which we structure it, which I call Vaccine Thinking. This lens has developed over centuries as a result of a string of scientific and industrial successes. It has culminated in a mindset that is now deeply ingrained in our psyche and completely integrated with our educational, economic, and governmental systems. Vaccine Thinking seeks to find and deploy a single universal solution, a solution that can be mass-produced. It is used in projects to provide village-level electricity and in efforts like One Laptop per Child. But Vaccine Thinking has been unable to solve problems such as the water crisis, poverty, and climate change.

To address the water challenge we need to use a different lens—one that allows us to structure the problem differently, to examine many diverse and partial answers and processes, and to set up new expectations of results. The water crisis does not have a universal solution. There are many solutions, and they all involve a behavior change to deliver results. To deploy diverse solutions we need a new mindset, one I call Water Thinking.

Vaccine Thinking differs from Water Thinking as follows:

Dosage: Vaccine Thinking creates a one-time solution, a single dose, or projects involving a single set of transactions. Water Thinking creates a lifetime supply, requiring many different transactions, including preparatory and follow-up.

Point of impact: One cannot give water, unlike vaccines, to people. It has to be delivered to households or communities. Administering community-level solutions requires going to the site, bringing people together, and coordinating activities.

Solution type: Vaccines are universal—the same vaccine applies to all genders, ages, and races. Solutions to water supplies, especially in rural areas, are localized in climate, geography, culture, gender relations, and political structure.

Knowledge transfer: Vaccines involve no transfer of knowledge about how the vaccine works or how it was developed. Successful solutions for water in rural areas require knowledge transfer. Why water purity is important and how to establish a good source of water and keep it clean are questions whose answers need to be ingrained into a population as part of any water project.

Ownership transfer: Vaccines involve no transfer of ownership. Solutions to rural water problems need to be owned by the community for long-term success. In fact, if the community is not organized or does not desire to be self-sufficient, solutions are bound to fail.

Changes in behavior: Vaccine-based cures require no change in behavior. Social problems demand many changes in behavior. Water solutions need changes in water usage, hygiene, sanitation practices, and protection of the water supply.

Metrics: The metrics along the vaccination process can be captured

easily. Solutions to water are very hard to quantify. For example, diarrhea rates are unlikely to go to zero immediately after the implementation of a project, but will produce good trends over time, often with spikes that may contradict progress.

Risks and failures: Our society accepts the risks and failures involved in creating a vaccine. We have the patience to keep funding cures for AIDS, cancers, and other diseases. Yet with small water projects we are very risk averse and respond negatively to failures. This drives behaviors that often misrepresent results, or focus on the successes only, both of which lead to the loss of much learning.

Funding and project size: For vaccines, we are able to centralize our funding. For social development projects in rural areas, the money has to be delivered in small chunks, something large institutions are not equipped to do. The management of thousands of small projects is one of the challenges of scale and requires us to think differently from our large funding mentality.

THE PEER WATER EXCHANGE

The Peer Water Exchange was deployed in 2006 to tackle today's unscalable funding approach and apply Water Thinking. We have been using the Internet, especially Web 2.0 technologies, to manage projects in a way that minimizes bureaucracy, increases transparency, enables collaboration, improves effectiveness, and delivers results efficiently. Just as eBay and Craigslist do not deliver the same products to all consumers, but allow millions of different transactions, we do not manage projects with one approach or template. We also manage and coordinate interactions before, during, and after project implementation.

In PWX, work is assigned to leverage core competencies. Investors are in charge of fundraising and can focus on systemic issues. They evaluate proposals, seek and study trends, and act on them. Implementers—experts in their field—review each other's standardized applications for funds, instead of spending time applying for funds. Reviewers, who are other applicants, funders, or third parties, can critique the approach, ask questions, and offer suggestions. We see this happen repeatedly: Reviewers want to share their experience and help others succeed. Collaboration and learning are part of the process. Independent third parties can participate to observe and monitor projects.

PWX has been using Web 2.0 models of social and collaborative knowledge development networks for six years now. The network has grown through referrals; as more organizations join PWX, more resources are added to manage more work, and collaboration increases along with the knowledge base. Last year we introduced a set of business intelligence software tools for the water sector.

PWX continues to evolve. It is currently the only scalable, map-driven, and completely transparent platform in the water sector, as well as the only participatory decision-making system where applicants weigh in on funding decisions. The next step is to build out the first social development exchange—where all transactions are tracked, knowledge is disseminated, and people come together to solve global crises.

Water Thinking and PWX can tackle and solve the water crisis. My hope is that it also will energize society by showing that collective action is a way to solve many of our social problems. ■