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When The Well Runs Dry: The Currency Of Water

**Ashoka***We write about finding entrepreneurial solutions to the world's problems.* [FULL BIO](#) 

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Today half the world is enduring drought, undermining food supply chains, and placing new stresses on often fragile economies and communities. Drought may be thought of as a natural calamity, but agricultural and socio-economic drought can often be predictable and manageable with enough advanced notice.

Like money, water must be budgeted by governments and communities alike and there is an increasing need to understand our “cash flow,” what comes in, what gets spent. With this in mind, the Inter-American Development Bank (IDB), in partnership with the [PepsiCo](#) PEP +0.47% Foundation, recently unveiled Hydro-BID, a ground-breaking water resource data management and modeling tool geared towards Latin America and the Caribbean (LAC).

Hydro-BID takes advantage of decades of data and empowers decision-makers—water agencies, municipalities, farmers, NGOs and corporations—to make intelligent “water budgeting” decisions months ahead of a drought. Now being piloted in Brazil, Peru, Haiti and Argentina, the tool is expected to impact more than three million people across the LAC region by 2017.



Shipot, a common source of drinking water in a Ukrainian village. (Photo credit: Wikipedia)

Hydro-BID uses a web-based architecture and runs like a browser or app, making it flexible, modular and scalable. Leveraging extensive datasets, hydrologic modeling, simulation systems and a comprehensive navigation feature, the tool visualizes the expected availability of freshwater in water-scarce regions under virtually any climate, population and land use scenario.

The open-source water modeling system organizes and aggregates data on the location, connectivity, and direction of water flow across surface water bodies in LAC, including more than 230,000 delineated basins. It was developed to interact with virtually any type of climate model or data source and can determine in real time, for example, how changes in rainfall, runoffs, temperatures and precipitation, can affect water supplies and allocation.

As opposed to many other water data visualization resources, Hydro-BID supports "what-if" assessments, based on different variables and inputs. In addition, the tool runs in real time which can have important implications on timely decision-making. For example, Hydro-BID allows various water management alternative scenarios to be run live during one, single session with stakeholders, rather than the usual waiting time for model results which typically take several months.

By aggregating and analyzing available data, users can visualize different scenarios, gauge changes in flow rates, and gather a comprehensive picture of freshwater

supplies instantaneously. (For more information on how Hydro-BID's simulation system works and view a case study featuring the Rio Grande Basin in Argentina, view [this video](#).)

Looking at watersheds around the world, we admittedly have a poor handle on the influx of the water which our cities, farms and lives rely. We need solutions that help decision-makers budget and plan their water resource use. With tools like Hydro-BID, planners and policymakers can predict water supply shortfalls and unmet demand, design monitoring networks and irrigation programs, and better manage water policies, allocation and budgeting.

Benjamin Franklin, one of America's Founding Fathers famously said, "When the well runs dry, we know the worth of water." Today, the value of being able to better predict water availability is clear. As vexing and complex as water issues can be, partnerships and innovations—such as the IDB's Hydro-BID technology—are crucial to working to develop holistic and sustainable solutions to water allocation.

We must all become stewards of water, and it begins with recognizing the worth of water now, and taking action before the well runs dry.

This post was written by Dan Bena, Senior Director of Sustainable Development at PepsiCo, and Dr. Fernando Miralles-Wilhelm, Advisor (Water Resources) at the Inter-American Development Bank.