

Real liquidity: Why investors care about water

Investors should understand the water risks in their portfolios, even if the companies don't

by Julie Fox Gorte, Ph.D., Senior Vice President for Sustainable Investing

One of the great teaching tools in undergraduate economics is the Diamond-Water Paradox, which challenges us to think through why water, a necessity of life, is almost free, while diamonds, which pretty much everyone can live without, are expensive. The deus ex machina here is scarcity: Diamonds are scarce, and water isn't. Rewind the tape: it wasn't. That's changing, and fast.

Most people understand that it takes water to make food. Morgan Stanley recently analyzed water risks in food production and came to the sobering conclusion that at least one-third of global production of three major food commodities—wheat, corn and soybeans—occurs in areas where water scarcity is high or extremely high. If drought affects enough of the range, food prices could suffer, along with the fortunes of agriculture companies.

For instance, both Archer Daniels Midland and Bunge Limited¹ suffered² from lethargic earnings during the Midwest's drought in 2012. Today's drought epicenter is California, which grows 90% of the U.S.'s tomatoes. Last year, tomato growers used their increasingly precious water for tomatoes, producing a bumper crop but at a premium price. Campbell Soup Co.³ paid⁴ the highest price ever for tomatoes last year. The drought also dealt a blow to Campbell's carrot business, which contributed⁵ to a 28% drop in its profitability last quarter.

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KEY TAKEAWAYS

- » As water becomes increasingly scarce, all investors should be aware of the water risks in their portfolios.
- » Several industries are already feeling the impact of water scarcity: agriculture, semiconductors and electronic equipment, and energy production have been the hardest hit. It is not well known yet what effects increasing water scarcity will have on other sectors.
- » The water we have on earth has been here for billions of years, and we aren't getting more.
- » Few economies can withstand increasing water scarcity without damage, and companies that figure out how to make use of it more efficiently are better positioned for long-run prosperity.

¹ As of 3/31/2015 no Pax World Funds owned investments in Archer Daniels Midland or Bunge Limited. Holdings are subject to change.

² Andrew Hecht, "Archer Daniels Midland And Bunge Have Been Crushing It... Bumper Crops Lead To Bumper Profits," Seeking Alpha, February 10, 2015. <http://seekingalpha.com/article/2900836-archer-daniels-midland-and-bunge-have-been-crushing-it-bumper-crops-lead-to-bumper-profits>.

³ As of 3/31/2015, Campbell Soup Co. represented 0.6% of the Pax Ellevest Global Women's Index Fund. Holdings are subject to change.

⁴ Michael B. Marois, "Tomato Demand Spurs Record California Crop Amid Drought," Bloomberg.com, November 3, 2014. <http://www.bloomberg.com/news/articles/2014-11-03/tomato-demand-spurs-record-california-crop-amid-drought>.

⁵ Craig Giammona, "Campbell Soup Struggles With Role as Carrot Farmer Amid Drought," Bloomberg.com, February 25, 2015. <http://www.bloomberg.com/news/articles/2015-02-25/campbell-soup-struggles-with-role-as-carrot-farmer-amid-drought>.



Julie Fox Gorte, Ph.D., Senior Vice President for Sustainable Investing, oversees environmental, social and governance-related research on prospective and current investments as well as Pax's shareholder advocacy and work on public policy advocacy. Prior to joining Pax, Dr. Gorte served as Vice President and Chief Social Investment Strategist at Calvert. Her experience before she joined the investment world in 1999 includes nearly 14 years as Senior Associate and Project Director at the Congressional Office of Technology Assessment, Vice President for Economic and Environmental Research at The Wilderness Society, Program Manager for Technology Programs in the Environmental Protection Agency's policy office and Senior Associate at the Northeast-Midwest Institute. Dr. Gorte received her Bachelor of Science in Forest Management at Northern Arizona University and a Master of Science and Ph.D. from Michigan State in resource economics.

Computers Need Water Too

It is not so well known what increasing water scarcity could do in other sectors. One of the driest things in the office is the computer. Surely that can weather a drought? Well, no. Semiconductors, indispensable for computers and other electronic equipment, take a boatload of water to make. One semiconductor fab can use as much water⁶ as a small city; a large one can use⁷ nearly 5 million gallons per day. Semiconductor production recently was identified⁸ as one of the six industries most imperiled by California's drought.

Even turning the computer on can be endangered by drought. The thirstiest industry on the planet is electric power. According to the Carbon Disclosure Project (CDP)⁹, about one-sixth of all water used worldwide goes into the production of energy, from fuel mining to electricity generation. The water it takes to power up the computer is real, if invisible to users. And imperiled: A recent article¹⁰ noted that Brazil and California (the world's seventh and eighth largest economies by gross domestic product) both rely on hydropower, and both are seeing electricity production impacts from drought. California is coping, with only about 10% of its electricity coming from hydropower. But three-quarters of Brazil's electricity comes from hydropower, so while California considers rationing water, Brazil is rationing both water and electricity. Even with rationing, there have been rolling blackouts. Of the electricity generation companies responding to CDP's 2014 water risk survey, 38% reported¹¹ detrimental impacts to business operations as a result of deteriorating water security. Three years ago, before the California drought was in the headlines on a daily basis, Standard & Poor's produced a report¹² on how water shortages could increase costs for utilities in the UK, where there was a drought in 2012.

Investors are beginning to understand these risks better. The Principles for Responsible Investment Initiative is running a multi-investor dialogue on water risks, and the United Nations Environment Programme Finance Initiative has a water work stream focused on investment challenges and opportunities related to water.

Water is the stuff of life, and increasingly the stuff of investment. Few economies can withstand increasing water scarcity without damage, and companies that figure out how to make use of it more efficiently are better positioned for long-run prosperity. The water we have on earth has been here for billions of years, and we aren't getting more. The Curiosity rover found water on Mars, but at the moment, that's not an investable idea, and it won't help the Brazilian utilities or California vegetable growers.

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⁶ IEEE Spectrum Podcasts, "Semiconductor Manufacturing Plants can use as much water as a small city. As the Industry Grows, Finding New Ways to Recycle and Conserve Water," August 31, 2009. <http://spectrum.ieee.org/podcast/semiconductors/design/semiconductor-manufacturing-plants-can-use-as-much-water-as-a-small-city>.

⁷ China Water Risk, "8 Things You Should Know About Water & Semiconductors," July 11, 2013. <http://chinawaterrisk.org/resources/analysis-reviews/8-things-you-should-know-about-water-and-semiconductors/>.

⁸ Erik Sherman, "6 industries hurt by the California drought," Fortune, April 9, 2015. <http://fortune.com/2015/04/09/6-industries-hurt-the-most-by-the-california-drought/>.

⁹ CDP, "Power Generation Utilities - Navigating Global Water Risk," December 9, 2014.

¹⁰ Mackinnon Lawrence, "Severe Drought Hastens Hydropower's Slow Decline," Forbes, November 4, 2014. <http://www.forbes.com/sites/pikere-search/2014/11/04/severe-drought-hastens-hydropowers-slow-decline/>.

¹¹ CDP, "Power Generation Utilities - Navigating Global Water Risk," December 9, 2014.

¹² Michael Wilkins, "How Water Shortages In Eastern England Could Increase Costs For U.K. -Based Utilities," Standard & Poor's, RatingsDirect on the Global Credit Portal, February 29, 2012. http://www.circleofblue.org/waternews/wp-content/uploads/2012/03/Standard-and-Poors_Water-Shortages-East-of-England_290212.pdf

All investors should understand the water risks in their portfolios, even if the companies don't. Investor pressure is a great way to convey the message that investors need to understand water risks to portfolio companies, and they need it: 70% of the global utilities that CDP requested water risk information from in 2014 chose not to respond. That's not acceptable.

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Pax World Investments

Pax World Investments

30 Penhallow Street, Suite 400
Portsmouth, NH 03801
800.767.1729
info@paxworld.com
www.paxworld.com

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