Industry's Role in Our Water Future

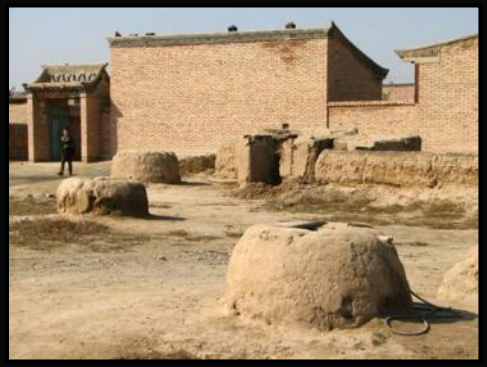
Water: Quality, Quantity, and the Need for Innovative Technologies

Government-University-Industry Research Roundtable (GUIRR)
30 June 2010

Dan Bena
Sustainable Development
PepsiCo, Inc.
dan.bena@pepsico.com

First, industry must recognize the magnitude of the global challenges….

TOO LITTLE



TOO MUCH

TOO DIRTY

PEPSICO
PERFORMANCE WITH PURPOSE

Then, understand the unique and inter-connected role that water plays….

Water access

Food security

Water safety

Global health

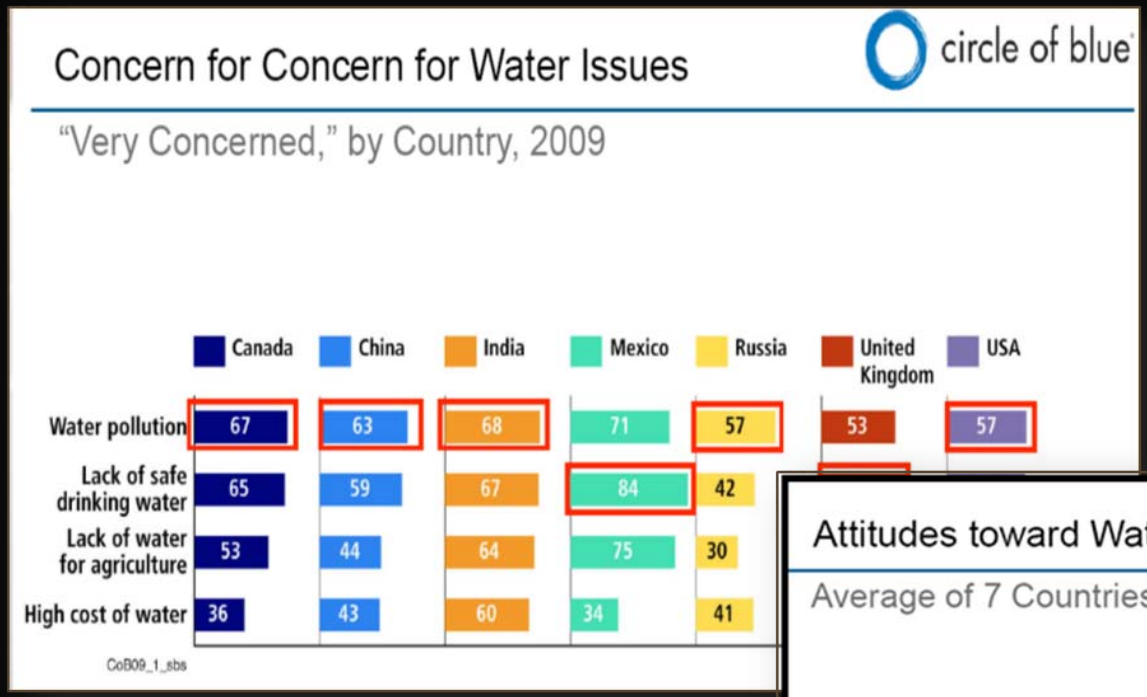
Education

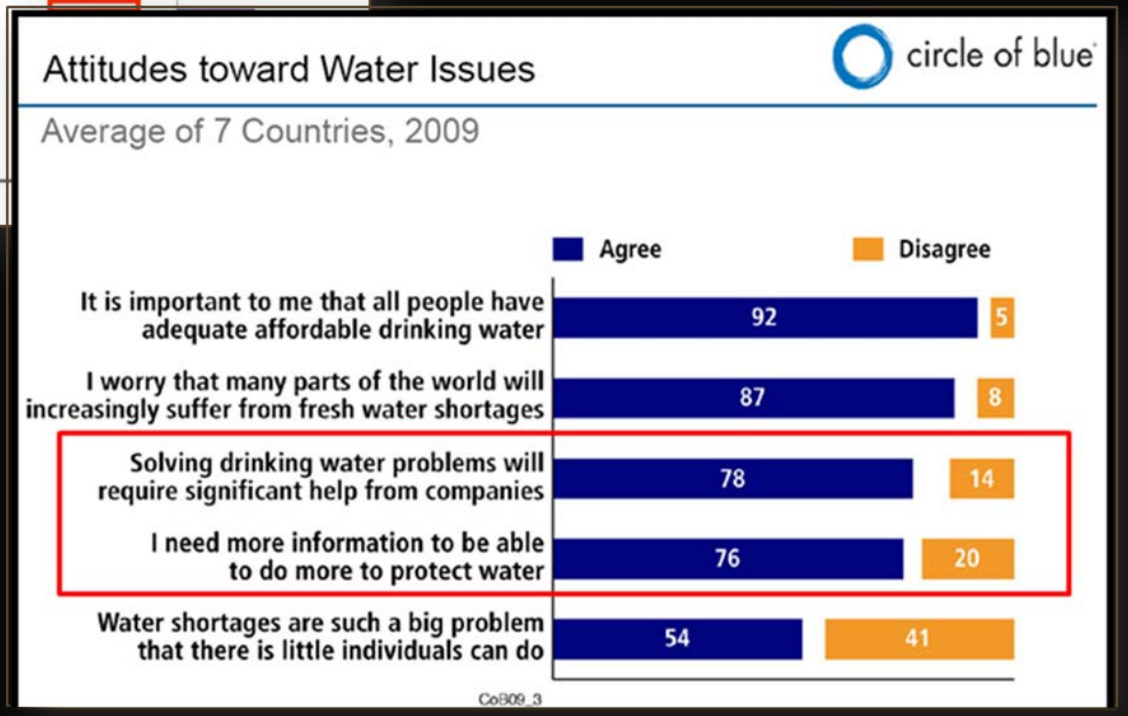
Gender equality

THRIVING COMMUNITIES

Then, “tune in” to the expectations of a diverse collection of stakeholders….

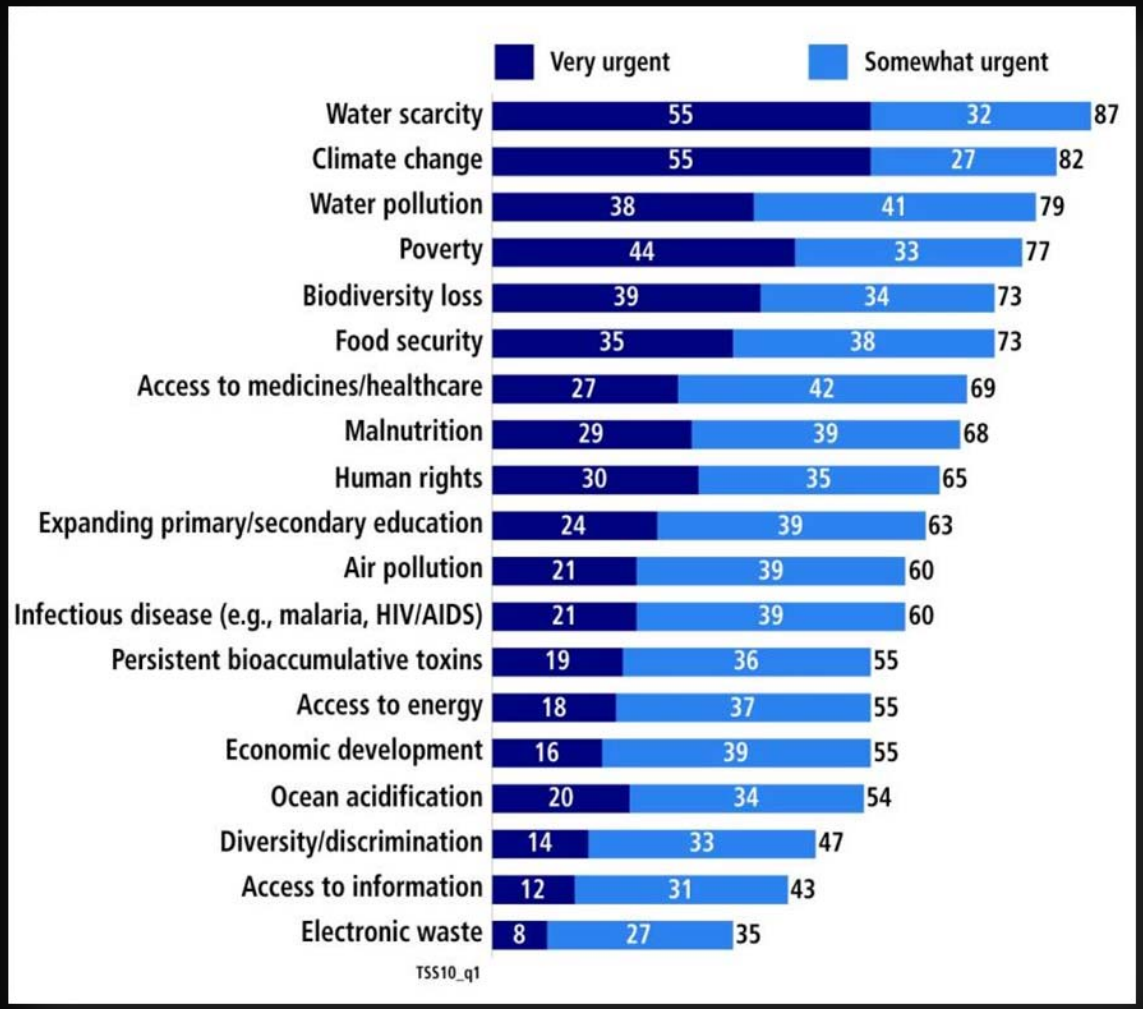
Across multiple countries, people's concern for the water crisis has outpaced concern for climate; they also see a clear role for companies to play in resolution.





Sustainability *experts* across 80 countries also agree that water scarcity and climate change top the list of urgent challenges

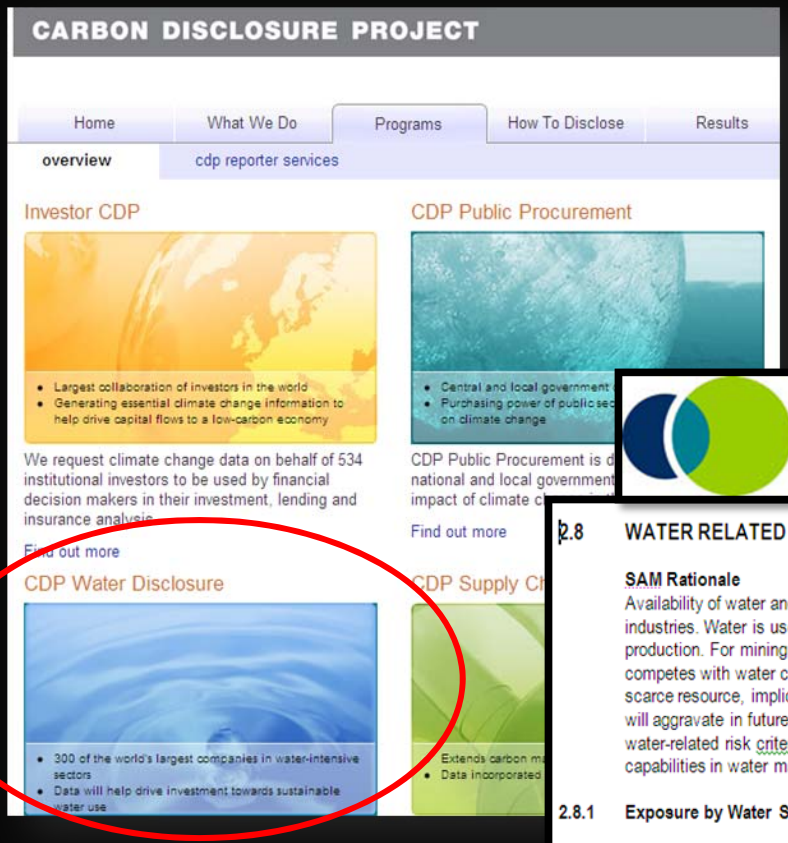
- There is a strong sense of urgency to address numerous and diverse sustainable development challenges
- The most urgent issues are highly inter-connected, which implies the need to take a systems approach to addressing sustainability, rather than developing narrow solutions for specific issues
- Across nearly all industries, water and energy-related issues are cited as the most important for business to address

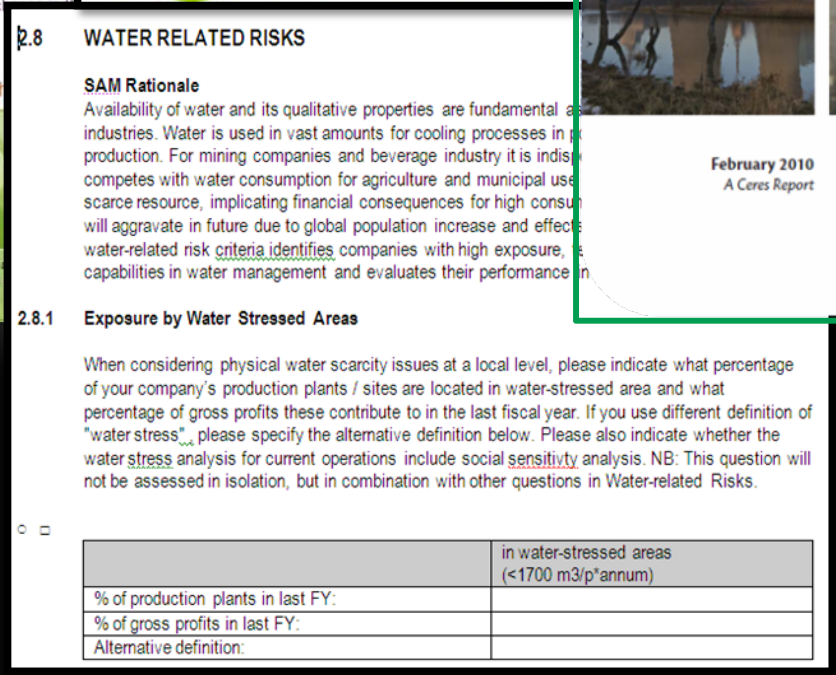


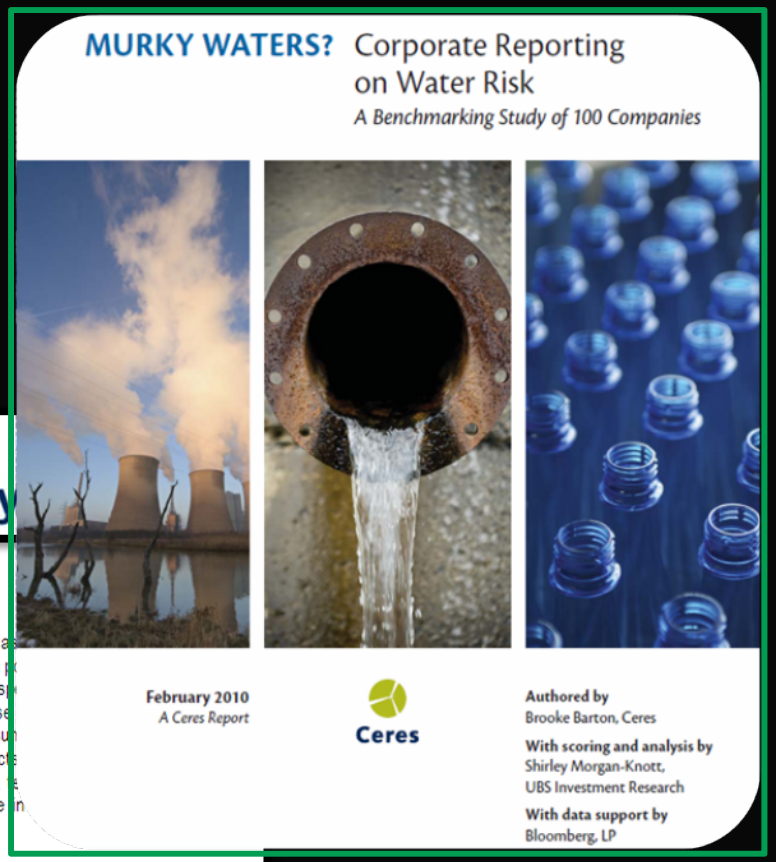
Globescan/SustainAbility Expert Survey; 1,261 experts; 80 countries; April 2010

1t. Considering society's numerous sustainable development challenges, please rate the urgency of each of the following...

Expectations for rigor and transparency are increasing dramatically







Then, wrap this all together into a cohesive water strategy….

Water stewardship is part of our broader commitment to the planet and its people— *The Promise of PepsiCo*

ENVIRONMENTAL SUSTAINABILITY

To the planet we all share...

It's a promise to be a good citizen of the world, protecting the Earth's natural resources through innovation and more efficient use of land, energy, water and packaging in our operations.*

OUR GOALS AND COMMITMENTS

WATER:
Respect the human right to water through world-class efficiency in our operations, preserving water resources and enabling access to safe water.
- Improve our water use efficiency by 20 percent per unit of production by 2015.
- Strive for positive water balance in our operations in water-distressed areas.
- Provide access to safe water to three million people in developing countries by the end of 2015.

LAND AND PACKAGING:
Rethink the way we grow, source, create, package and deliver our products to minimize our impact on land.
- Continue to lead the industry by incorporating at least 10 percent recycled polyethylene terephthalate (rPET) in our primary soft drink containers in the U.S., and broadly expand the use of rPET across key international markets.
- Create partnerships that promote the increase of U.S. beverage container recycling rates to 50 percent by 2018.
- Reduce packaging weight by 350 million pounds—avoiding the creation of one billion pounds of landfill waste by 2012.
- Work to eliminate all solid waste to landfills from our production facilities.

CLIMATE CHANGE:
Reduce the carbon footprint of our operations.
- Improve our electricity use efficiency by 20 percent per unit of production by 2015.
- Reduce our fuel use intensity by 25 percent per unit of production by 2015.
- Commit to a goal of reducing greenhouse gas (GHG) intensity for U.S. operations by 25 percent through our partnership with the U.S. Environmental Protection Agency Climate Leaders program.
- Commit to an absolute reduction in GHG emissions across global operations.

COMMUNITY:
Respect and responsibly use natural resources in our businesses and in the local communities we serve.
- Apply proven sustainable agricultural practices on our farmed land.
- Provide funding, technical support and training to local farmers.
- Promote environmental education and best practices among our associates and business partners.
- Integrate our policies and actions on human health, agriculture and the environment to make sure that they support each other.

** For more information on our goals and commitments, including a metrics baseline and timeline, and risks, please visit www.pepsico.com.*

Respect the human right to water through world-class efficiency in our operations, preserving water resources and enabling access to safe water.

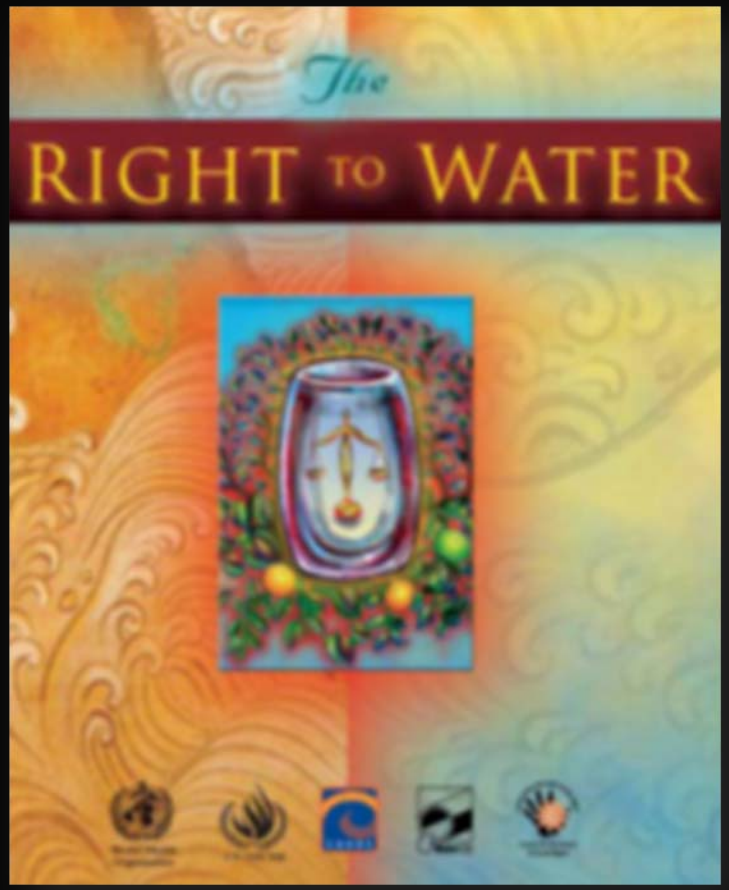
- Improve our water use efficiency by 20 percent per unit of production by 2015.
- Strive for positive water balance in our operations in water-distressed areas.
- Provide access to safe water to three million people in developing countries by the end of 2015.

This promise is "operationalized" through a focus on four areas:

1. Water as a basic human right
2. Conserving water within our operations (quantity and quality)
3. Reducing water use in agriculture
4. Partnering for change (through policy advocacy, engagement, and communication)

Respect the Human Right to Water in our communities *and* in our operations

- **Safety**: We will ensure that our operations preserve the quality of the water resources in the communities in which we do business;
- **Sufficiency**: Our operating objective is to ensure that our use of water will not diminish the availability of community water resources to the individuals or the communities in the areas in which we operate;
- **Acceptability:** We will involve communities in our plans to develop water resources, and will assure transparency of any risks or challenges to the local governments and community members in an on-going manner;
- **Physical Accessibility**: We will assure that our operations will not adversely impact physical accessibility of community members to community water resources and will address community concerns in a cooperative manner;
- **Affordability**: We will appropriately advocate to applicable government bodies that safe water supplies should be available in a fair and equitable manner to members of the community. Such water should be safe and of consistent and adequate supply and affordable within local practices.



Companies must understand their footprint….

Footprint depends on shoe size and weight…
and on *where and when* you tread.

WEIGHT

Components of pilot water footprint for Tropicana produced in Zeebrugge, with oranges from Brazil

Carton Production

- Carton board

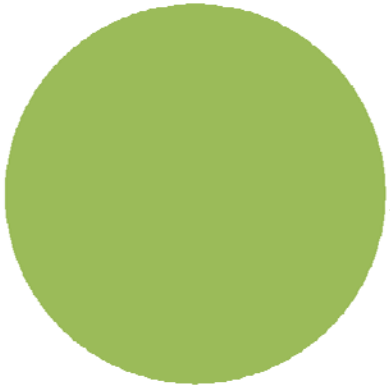
- Corrugate Case Outter

Corrugate Case
(Primary Fibre Forestry)

Orange
Juicing

- Orange
Agriculture

Orange Agriculture (Rainfall)



Corrugate Case Recycled Fluting

Corrugate Case Inner

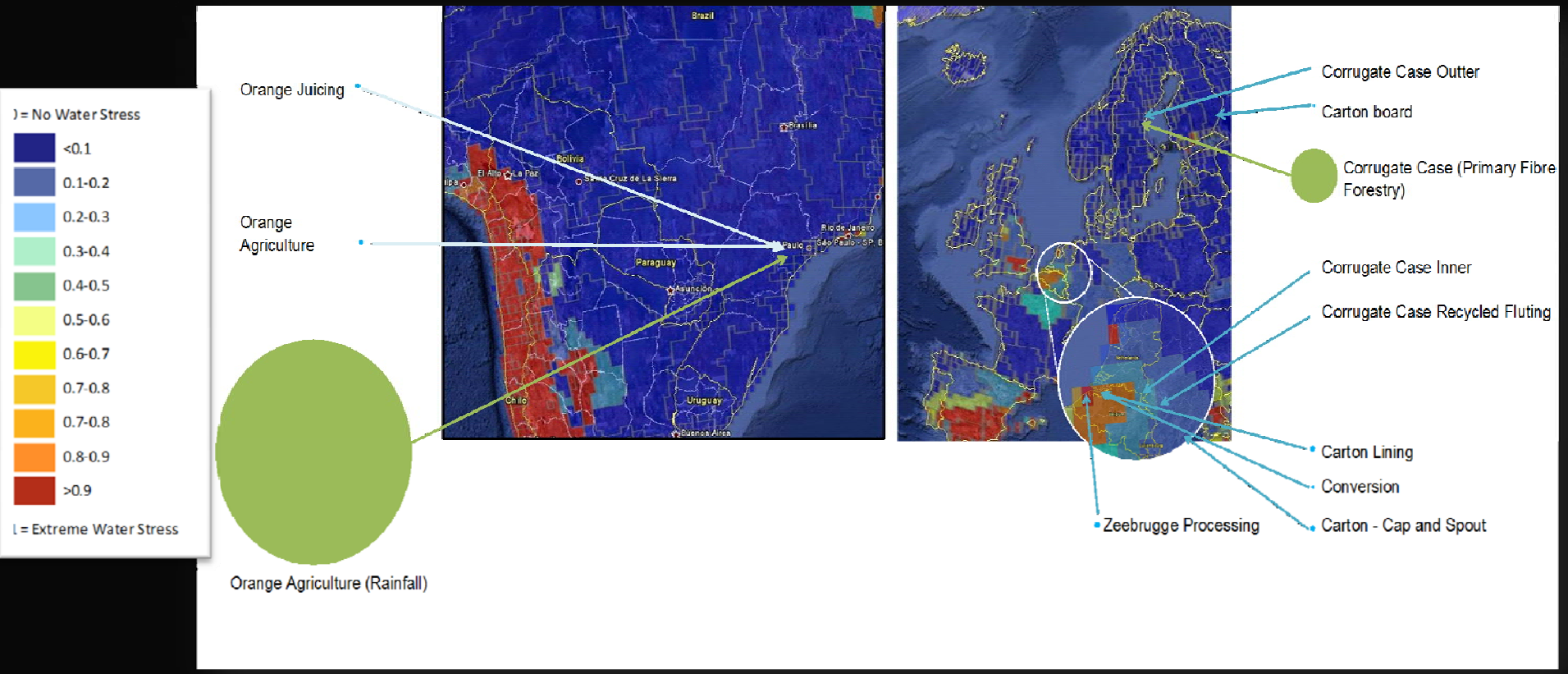
- Carton Conversion

- Carton PE/EVOH

- Carton - Cap and Spout

- Zeebrugge Processing

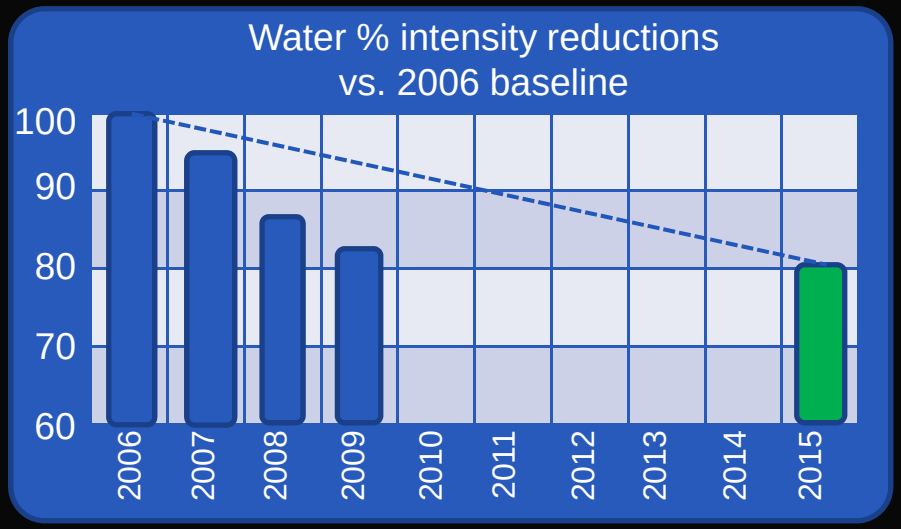
The interpretation changes significantly when we look at impact through the lens of local scarcity

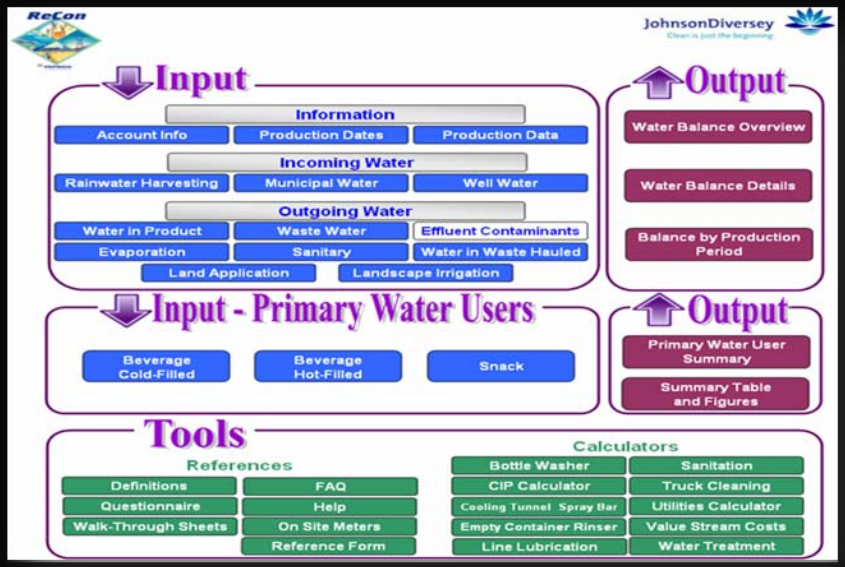


- Context is EVERYTHING!
- Greatest *impact or risk* is not necessarily equal to greatest *use*
- A water footprint only provides *direction; a single, aggregated number is of limited value*

Once the components of water footprint are understood, companies must take steps to manage them….

We are well on our way to exceed our public commitment to improve our water use efficiency by 20% by 2015





- Using the Water ReCon Tool to measure all water streams in our plants and assign a value to those streams
  - **Identifies reuse priorities within the plant**
- Educating our associates to look for the basics
  - **Dripping hoses**
  - **Squeegee vs. pressure hoses**
- Investing in technologies to conserve water
  - **Low water corn cook**
  - **Reverse osmosis reclaim**
  - **Membrane bioreactor (MBR)**

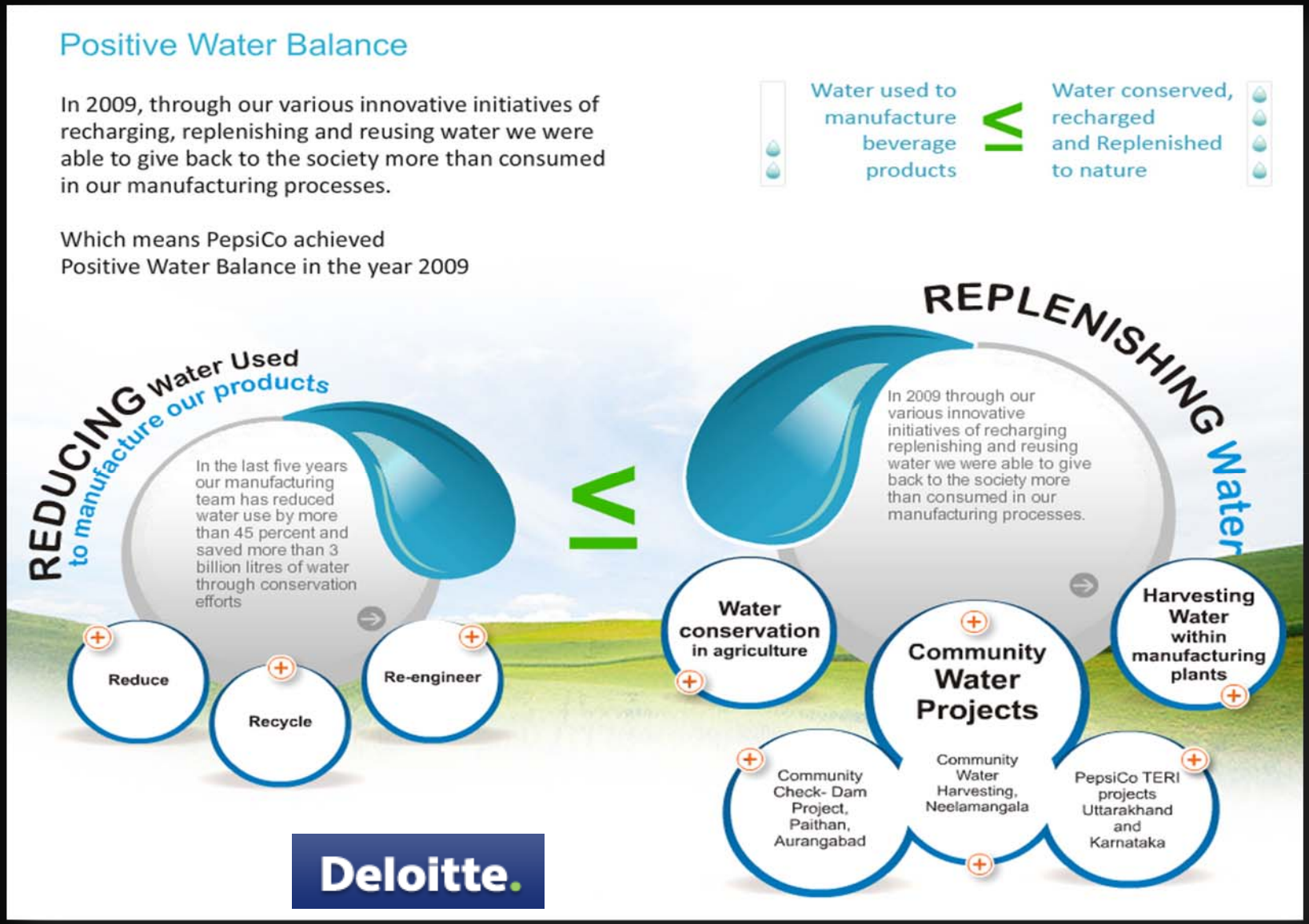
Casa Grande “Near Net Zero” plant is a showcase of PepsiCo’s commitment to innovation and forward thinking

Using MBR technology will allow the plant to reduce water usage by 75-90%

Our business in India has also been expanding a novel approach to paddy cultivation, using direct seeding of rice (DSR)

- Agriculture uses over 85% of water in India (FAO)
- Water table is receding in 80% of Punjab
- India grows about 130 million tons of rice over about 108 million acres
- DSR conserves ~30% water (0.9 million liters of water / acre) over puddling
  - **If 25% of the Indian rice cultivation can be shifted to direct seeding, water saving will be <u>equal to the total water consumed by Indian Industry</u>**
- 75% reduction in methanogenic greenhouse gas emissions
- In 2009, PepsiCo applied direct seeding to over 6500 acres across five states
  - **<u>Over 5 Billion liters conserved</u>**

Our India business reached a milestone in 2009: *Positive Water Balance*



“Business cannot succeed in a society that fails.”

--Bjorn Stigson, President

WBCSD

A critical contributor to our commitment to respect water as a human right is our Foundation portfolio of partners

Watershed

Protection at the **Watershed Resource**

Distribution

Distribution to the people who need it

Purification & Sanitation

Purification of the water for the community

Sanitation & Hygiene at discharge to prevent Recontamination

COLUMBIA WATER CENTER
THE EARTH INSTITUTE AT COLUMBIA UNIVERSITY


The Faces of Future Success