

# Water is not a free good.

Jud Hill  
Managing Partner  
Summit Global Management, Inc.



# Some Water Factoids

- Fresh water sources are less than 1% of water on earth..less than 1/100th of the 1% is usable/available
- Over 75% of global illness is caused by water borne disease..unsafe drinking water...significant impact on global GDP
- Since 1950 world population has doubled, but water consumption has tripled
- “In door” plumbing is only available to 20% of the world’s population
- It takes 1500 gallons of water to produce a hamburger, fries and a coke
- Scientists at the *Scripps Institution of Oceanography* in San Diego forecast that within 13 years Lake Mead and Lake Powell along the Colorado River, the two largest reservoirs in the southwest United States, could become ‘*dead pool*’ mud puddles.
- The pulp and paper industry withdraws more than 3.4 trillion gallons of water per year – it takes 100 gallons of water to produce one ream of paper



# Water: Ubiquitous Yet Unseen

## Virtual Water Content of Common Products

Item	Liters Water	Item	Liters Water
1 glass of beer	75	1 glass of wine	120
1 glass of milk	200	1 glass of OJ	170
1 cup of coffee	140	1 egg	135
1 cup of tea	35	1 hamburger	2,400
1 slice of bread	40	1 tomato	13
1 potato	25	1 orange	50
1 apple	70	1 micro chip	32
1 cotton T-shirt	4,100	1 leather shoe	8,000
1 sheet of paper	10	1 kilowatt	21
1 kilogram steel	95	1 liter of gasoline	95

Data Source: UNESCO IHE  
November 2004



# Water Has No Substitute At Any Price

**Water is not a free good...some one has to pay for treatment and distribution**

- Over \$1 trillion invested in US infrastructure
- EPA estimates that over \$350B is needed over the next 20 yrs to rehabilitate US water infrastructure

**Water is the most essential yet the “cheapest” commodity we use**

- We pay less for our cable bill than we do for our water bill
- Less than 1% of the water that enters your home is ingested (drinking/cooking)

**Water treatment and recovery requires intensive energy use**

- The electric power industry uses 39% of water in the U.S. (withdrawals)
- First-generation biofuels (50 gal water required/gal of corn based ethanol vs. ¼ gal required/gal of gasoline)
- Over 20% of California’s energy is used to move water
- In parts of the northeastern US over 30% of treated water is lost thru exfiltration



# Water Risk Framework

## Physical Risks

- Water is heavy..too expensive to move long distances
- In many cases water is an allocation issue not an availability issue (ag. vs.municipal)
- Water security (feed source/point of entry/point of use)  
new issues..xenobiotics (trace pharmaceuticals/endocrine disruptors)

## Political Risks

- Like politics..all water is local..very emotional issue
- Community opposition to water withdrawal & growing awareness of ecosystem impacts and need to recycle and reuse..."toilet to tap"
- Human right to access clean water...somebody has to pay..via directly or via subsidy

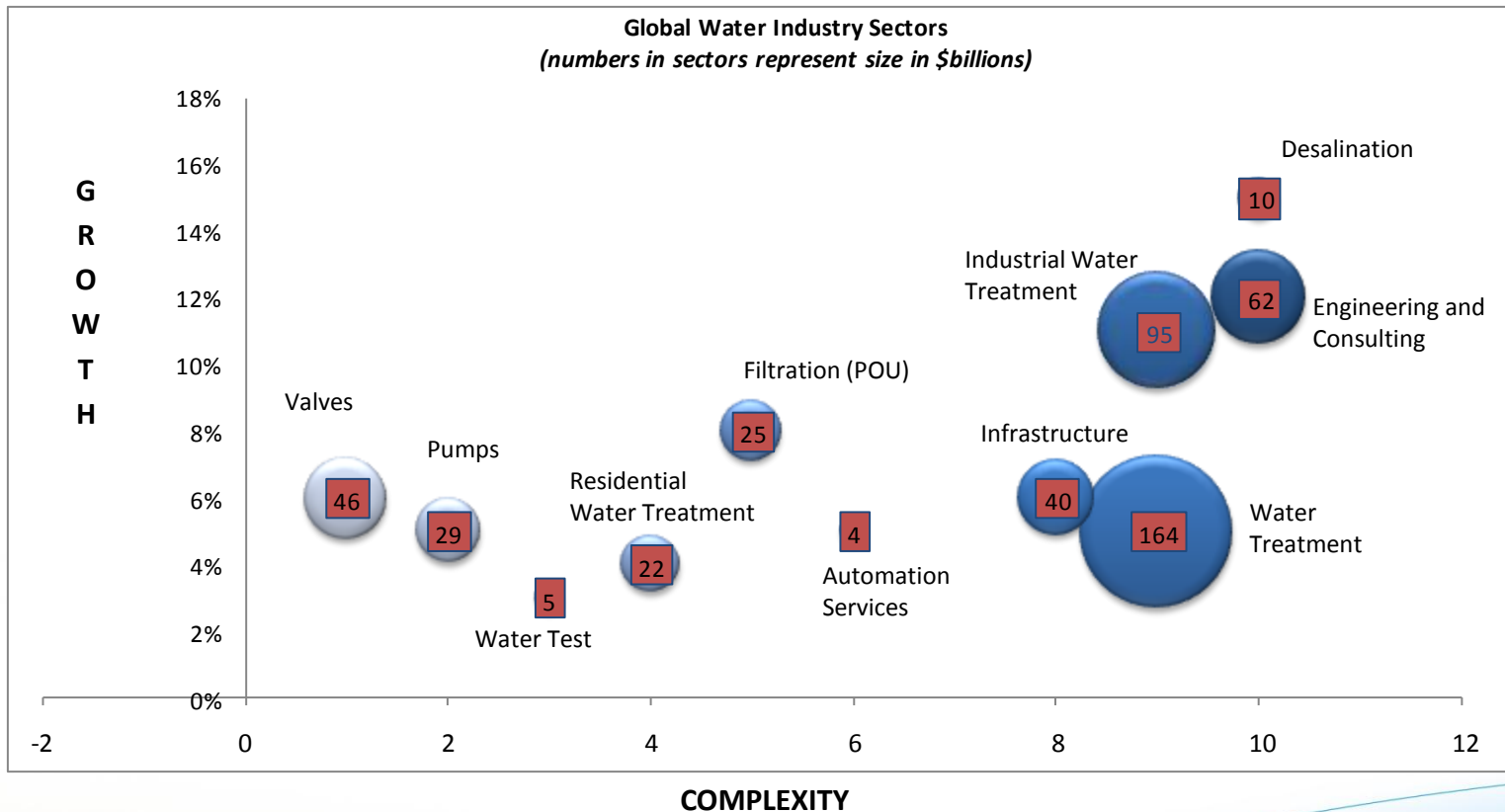
## Regulatory Risks

- Only true monopoly...you can't choose your water utility
- Increasing costs on water (still cheap \$1/day on average)
- Growing regional water disputes & litigation



# Target Market Sectors

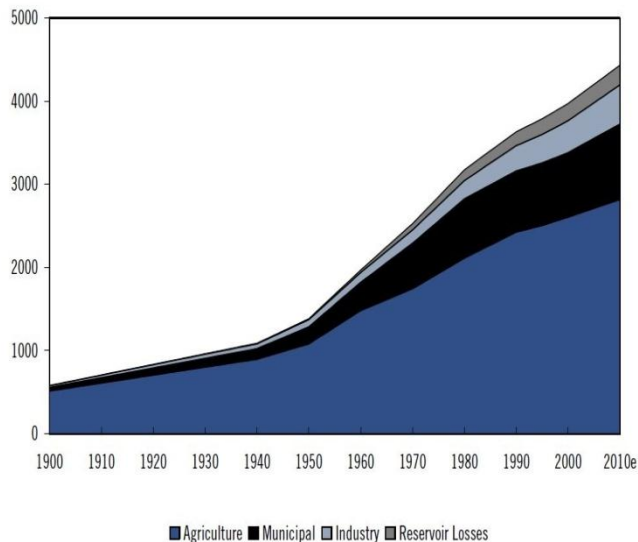
The \$456 billion global water market is comprised of the following sectors:



Data Source: Goldman Sachs "Americas: Multi-Industry, March 24, 2008 report.  
Complexity is based on company estimates.

# Global Water Demand

## Water demand is growing



Source: United Nations Educational Scientific and Cultural Organization

## In areas with limited water resources

Australia's population is concentrated on the East coast yet climate change is resulting in more rain on the Western coast

China has 20% of the worlds population yet only 7% of the worlds water resources

The two fastest growing states in the US, Arizona and Nevada, are also the driest

A UN report stated that, already, an estimated 1.1 billion people have no access to safe drinking water, 2.5 billion lack proper sanitation and more than 5 million people die from waterborne diseases each year – 10 times the number of casualties killed in wars around the globe.

# China and India Markets

	% of the world's water	% of the world's population
North America	15%	8%
South America	26%	6%
Europe	8%	13%
Africa	11%	13%
Asia	36%	60%
Australia	5%	4%
Subset of Asia: China	7%	21%
Subset of Asia: India	4%	16%

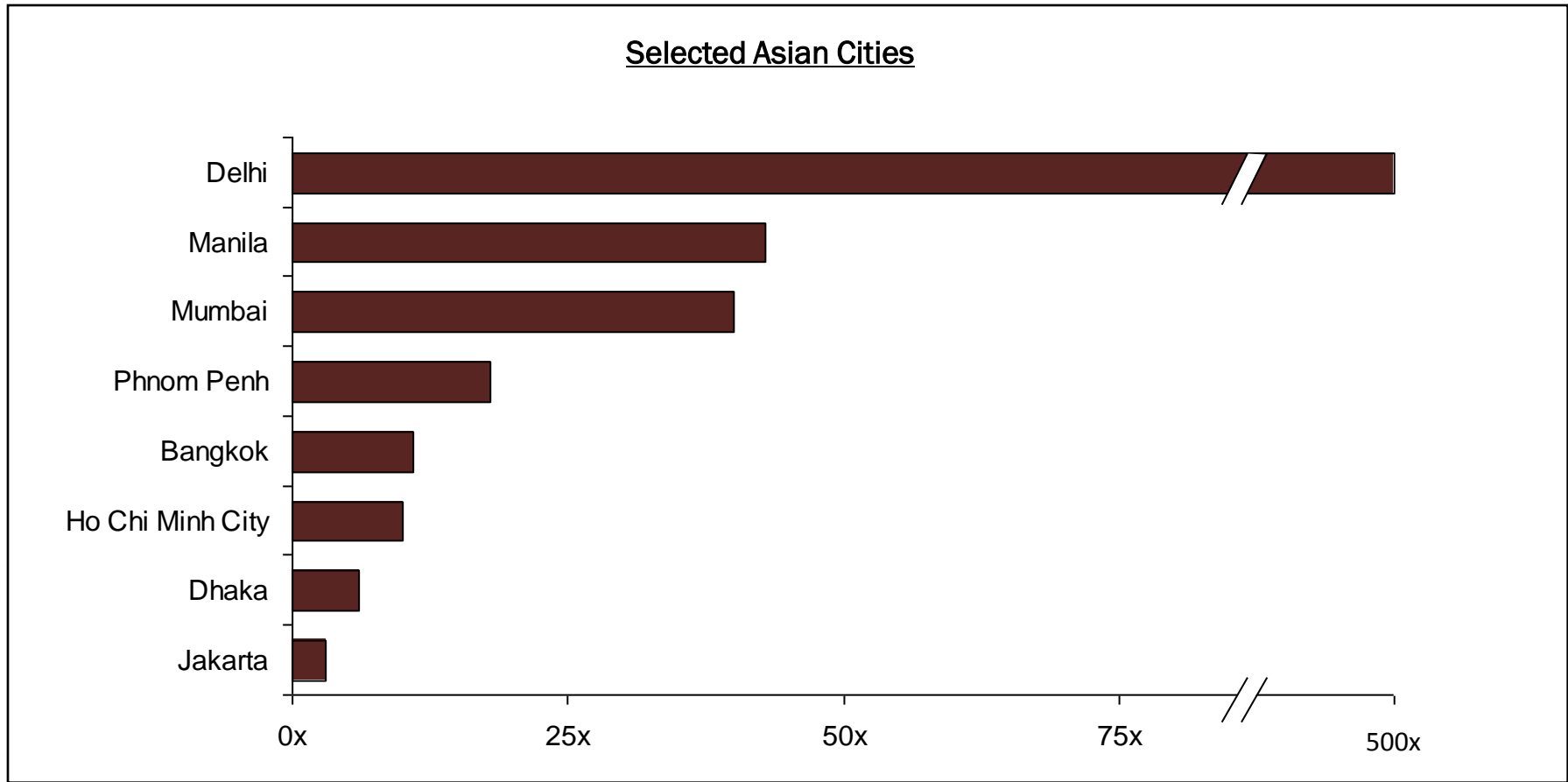
*Data Source: UN Educational, Scientific & Cultural Org/Int'l Health Programs*

- China government's focus on water: most recent 5 year plan - \$80B is budgeted for water infrastructure.
- In China, 53% of the rivers, 50% of the lakes and 35% of the aquifers are classified as polluted.
- Nine of China's ten largest cities have unfit drinking water.
- India has one of the lowest per capita amounts of fresh water in the world at 1,600 cubic meters. USA = 10,000.
- India's urbanization driving consumption. Rural usage 40 liters/day vs. cities of 160 liters/day and Mumbai is at 350 liters/day.

*Data Source: Goldman Sachs Global Investments; Research "Americas Multi-Industry" March 24, 2008*



# Water Vendors' Price as a Multiple of Price of Piped Water



Source: UN; Asian Development Bank

# Water Supply in Developing Countries

## *Opportunities, Issues, Challenges and Drivers*

### Opportunity

- WHO estimates 60,000 children die each day from lack of clean water
- Only 20% of the worlds population enjoys the benefits of running water
- One of the largest issues impacting GDP growth in emerging markets

### Drivers

- Demand is exploding,.... solutions available (e.g. small membrane biological reactors (MBR's), desalination, advanced disinfection)
- Political will...education...regulatory enforcement

### Issues/Challenges

- Availability of Capital
- Country Risk
- Currency risk
- Exit and repatriation risk
- “ability to pay” risk
- Infrastructure risk (e.g. no metering or billing system in place)
- Private Investors will.. “follow the money not the need” ...just a fact



www.twitter.com/dogeatdoug

4/17

© 2009 CHILTONS SYNDICATE, INC. www.chiltons.com

FLORIAN

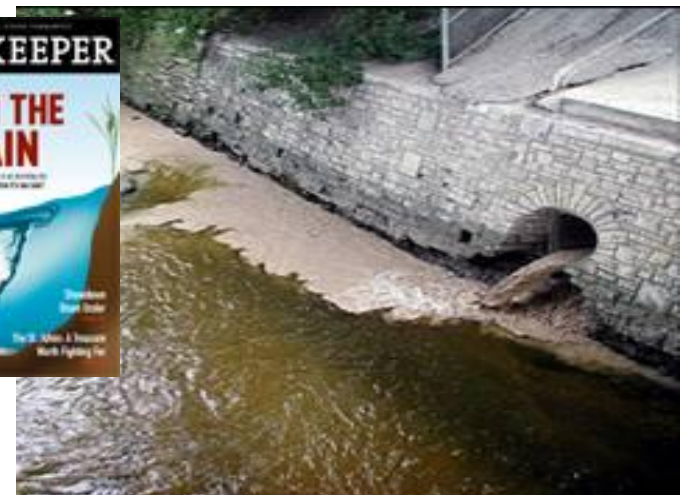


- 💧 Waterkeeper Alliance is an international environmental organization, uniting nearly 200 local Waterkeeper groups at the regional, national, and global levels.
- 💧 Our network of programs patrols and advocates for over 100,000 miles of rivers, bays and coastlines in 19 countries on 6 continents, and right here in Milwaukee!





- 💧 We share the knowledge, experience and skills that protect and restore the vitality of our waterways.
- 💧 And tackle issues from stormwater and factory farms to government reform and clean energy.
- 💧 Our website and magazine inform and inspire tens of thousands across the US and around the world.





Cheryl Nenn, Riverkeeper  
Milwaukee, WI, USA  
[www.milwaukeekeeper.org](http://www.milwaukeekeeper.org)

Our mission is to protect water quality and wildlife habitat in the Milwaukee, Menomonee, and Kinnickinnic River Watersheds.

As the licensed Riverkeeper® for Milwaukee's Rivers, we identify sources of pollution, respond to citizen concerns, and find solutions to problems affecting our rivers and Lake Michigan.

