

SUMMER IN THE CITY

4TH ANNUAL CSR INVESTING SUMMIT

Globalization Trifecta: Water Scarcity, Food Shortages, and Renewable Energy

July 20, 2016

Corporate Risks: Water Scarcity

Higher Operating Costs due to scarcity of freshwater resources

- Corporations face risks including: increasing costs to withdraw water (including water rights or land purchases), withdrawal limits (lowering production), increased regulatory oversight, or their license to operate being withdrawn.
- Access to polluted or saltwater sources: Companies may find it is necessary to clean water through filtration, desalination or other means to meet standards for their products or manufacturing processes.

Event Risk: Severe Droughts & Floods

- Globally we are seeing an increase in both the amount and severity of floods / drought due to climate change, low infrastructure investment and urbanization.
- Companies operating in flood/drought regions may be subject to reduced time of operations, facility damage, and increased insurance cost. By the end of the century, the United States may face up to \$180 billion in economic losses because of drought and water shortages.
- Example: In 2010 [Toyota Motor](#) and [Unilever](#) affiliates in Pakistan said the worst floods in the nation's history impacted growth and forced production cuts*

Reputational Risk

- Companies with a poor water stewardship reputation may find it increasingly difficult to continue operations or expand.
- Example: [Coca-Cola](#) has been forced to abandon plans to build a new bottling plant in India's southern state of Tamil Nadu after fierce resistance from local farmers, who feared that the US-based beverages company would use local groundwater.*

Corporate Risks: Food Shortages/Food Security

Political Instability

- Food shortage and food price hikes fuel civil unrest and political instability, introducing more business risk for corporations and increased likelihood for supply chain disruption or manufacturing inefficiencies.
- *Example: 2007-2008 Food crisis triggered food riots in countries from Haiti to Bangladesh to Mozambique*

Supply chain disruption or manufacturing inefficiencies

- Global food shortages will become three times more likely as a result of climate change.
- Russia's severe heat wave, wildfires and drought in 2010 resulted in economic losses estimated to be US\$15bn as drought and wildfires destroyed crops, particularly wheat.
- *Example: Over one-fifth of Russia's wheat crop had been destroyed and the government banned all grain exports, contributing to wheat price futures reaching their highest point in nearly two years. **General Mills** was one of many food manufacturers that faced significant price pressure as a result, announcing increases between 4% and 5% in September 2010*

Poverty/Human capital development

- Food security is intricately linked to socio-economic development and economic growth with women and girls often most negatively impacted.
- Extreme weather patterns and lack of water creates unemployment and loss of income for billions across the globe.
- *Example: **Unilever** collaborates with different NGO's globally with a focus on empowerment of women in developing countries as a way to increase access to productive resources, services and opportunities, such as land, livestock, financial services and education, where rural women have less access than men. Overall, women are responsible for half the food production in developing countries but women rarely participate in shaping their countries' economic and social policies.*

Corporate Risks: Fossil Fuel Energy

Climate Change Risk

- Higher costs of operations and risk mitigation that are driven by more event risk, the need for adaptation, and heightened insurance costs.
- Extreme weather can interrupt energy supply, leading to rolling energy blackouts and interruption in supply chains.
- *Example:* Rolling blackouts for 1.5 million people, cut California's GDP and is thought to have cost around \$40bn.

Regulatory Costs

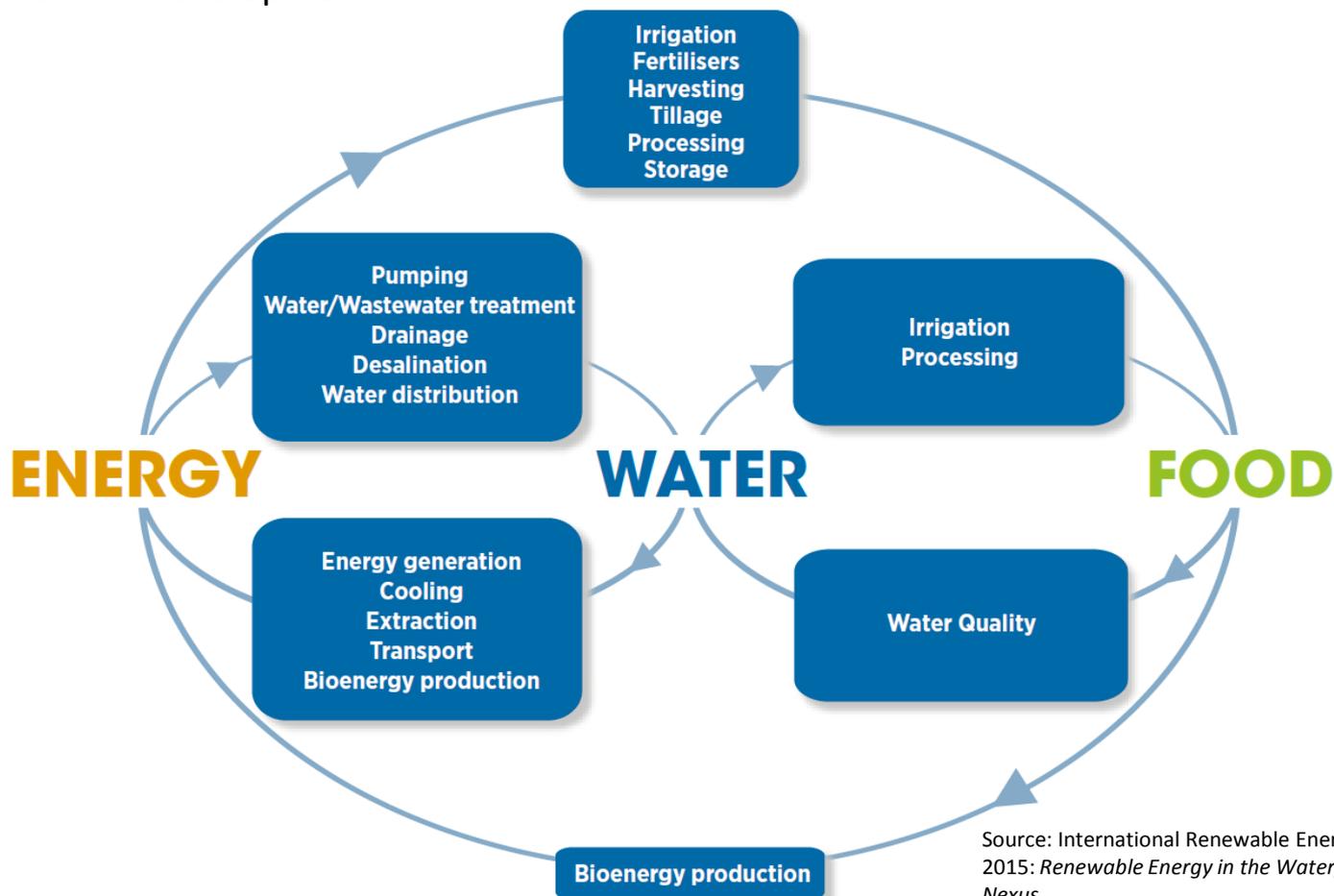
- In an effort to combat climate change, governments globally are mandating companies to reduce emissions, increase efficiencies, or move toward clean energy. Companies will face added costs of regulation if not proactive around reducing their reliance on fossil fuels.
- *Example:* Paris Climate Talks, US Clean Power Plan, Europe's 2020 Climate & Energy Targets, China's Five-Year Plan
- Annual cost estimates for complying with the Clean Power Plan range from \$1.4 billion to \$2.5 billion in 2020, to \$5.1 billion to \$8.4 billion in 2030. These annual cost estimates factor in both the costs of investments in transitioning to lower-carbon electricity options and the savings that result from investments in energy efficiency.

Geopolitical Instability

- The fight for rights over natural resources leads to heightened geopolitical risks.
- *Example:* Role of climate change in the Middle East's upheaval during 2010 and 2011

Water – Food – Energy Nexus

The inter-related nature of water, energy and food systems becomes a risk multiplier, exacerbating operational, financial, reputational and societal risks for corporations that may hinder growth and development.

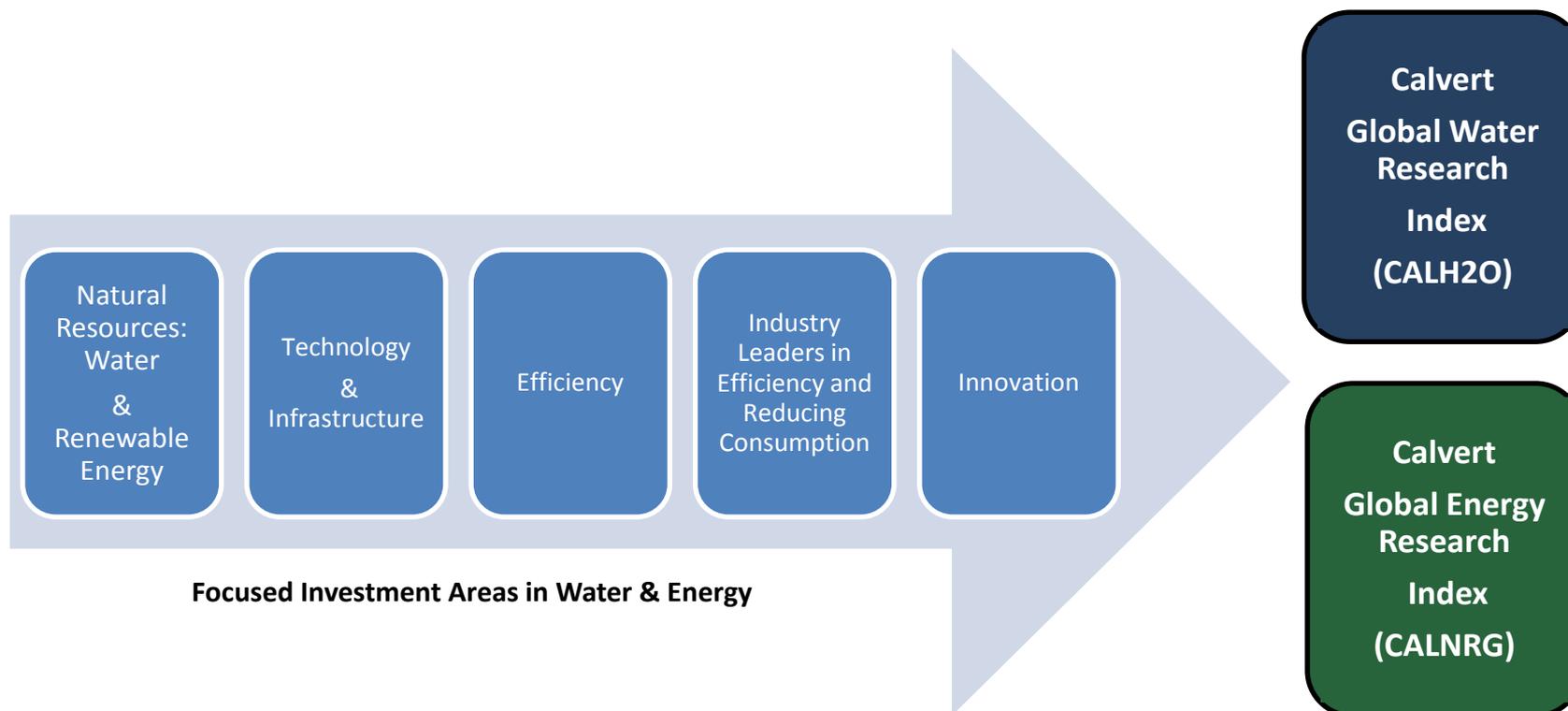


Source: International Renewable Energy Agency, 2015: *Renewable Energy in the Water, Energy & Food Nexus*

Calvert's Solution-Oriented Approach



Calvert invests across the value chain, incorporating demand and supply sides, with a focus on innovation.



Risks

Investment involves risk, including possible loss of principal invested. An index strategy has operating expenses; a market index does not. Although expected to track its target index as closely as possible while satisfying its investment criteria, an index strategy will not be able to match the performance of the index exactly.

About Calvert

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