

BUSINESS VALUE OF WATER  
FOOTPRINTS:  
A VALUE CHAIN AND FINANCIAL RISK  
PERSPECTIVE

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# Outline

- Motivation and Background
- Approach
  - ▣ Value chain
  - ▣ Financial Risk Metrics
- Water Footprints for Financial Risk Mitigation
  - ▣ Risk distribution on value chain
  - ▣ Specific risk targets
  - ▣ Applicability to beverage industry
- Lessons learned & Path forward

# Motivation and Background: Water Footprints and Business Risk Metrics

- Relevance of water footprints for corporate strategy and investment decisions - so what?
- Role of financial services industry and government in risk management - external drivers?



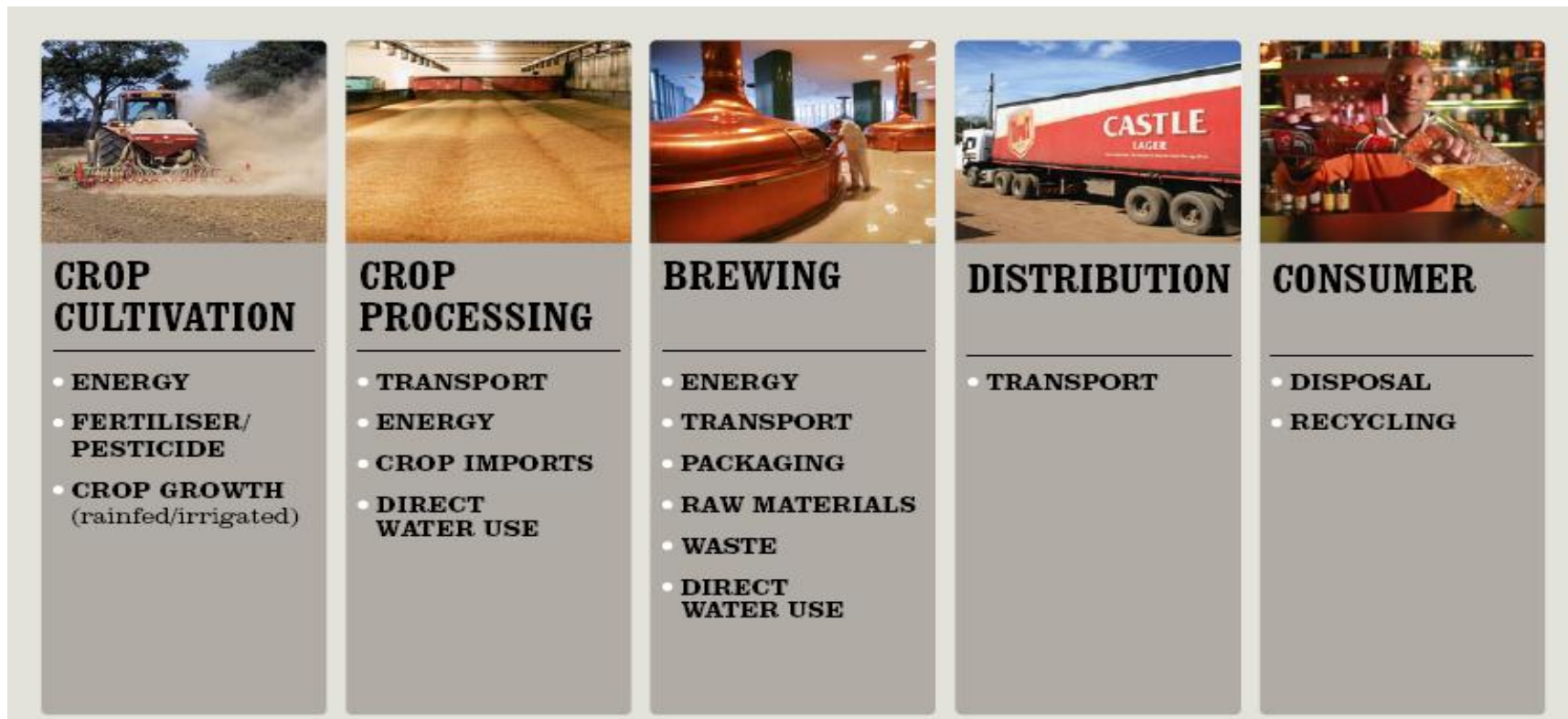
*Business case beyond PR?*

# Approach

- Value Chain Analysis
  - ▣ How is value creation distributed?
  - ▣ How is water risk distributed?
  
- Financial Risk Metric Assessment
  - ▣ Which financial metrics drive corporate action?
  - ▣ How are financial risks distributed across value chain?
  
- Water Footprint Risk Mitigation
  - ▣ Management and technology investment options
  - ▣ Translation to beverage industry

# Corporate Value Chain Systems

VALUE CHAIN: Material (supply) and non-material (e.g. financial services)  
VALUE CHAIN SYSTEM: Value chain across industries (outsourced activities)



# Financial Risk Metrics: Definitions

1. Market valuation
2. Risk Management
3. Corporate debt rating
4. Project finance

## Climate Risk Disclosure in SEC Filings

An Analysis of 10-K Reporting by Oil and Gas, Insurance, Coal, Transportation and Electric Power Companies

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 **Ceres**  ENVIRONMENTAL DEFENSE FUND  
finding the ways that work



# Overview: Water Footprint Risks

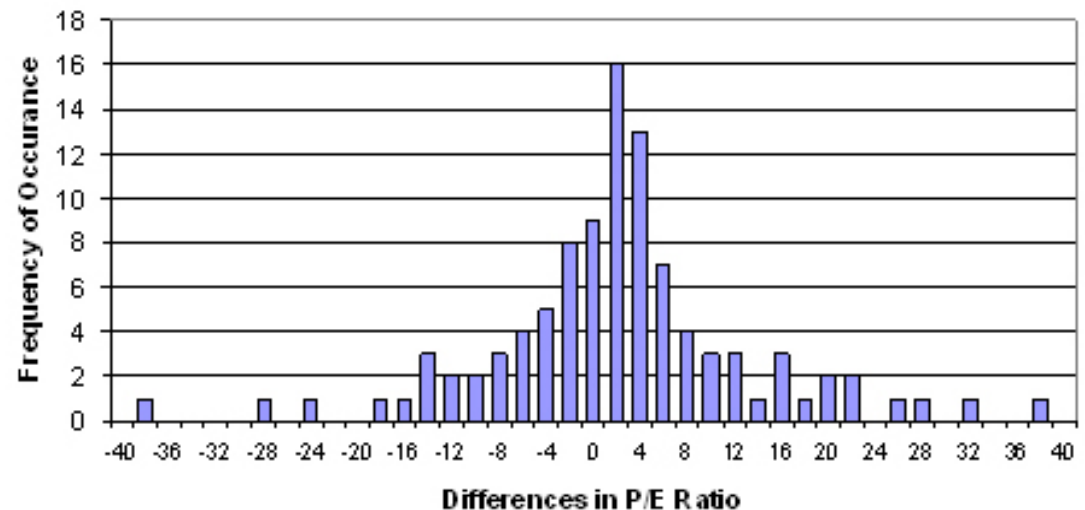
Value chain segment/risk	Raw material production	Suppliers	Direct operations	Product use/end of life
Market valuation	Med	Low	Low	Low
Risk Mgmt (Liability)	High	High	Medium	High
Corporate Debt Rating	Low	Medium	Medium	Low
Project Finance (Lending rates)	Low	Medium	High	Low

# Market Valuation

- The stock market gives better share price valuation to companies that are perceived of as sustainable (Global 100 list; Dow Jones Sustainability Indices).
- Due to the amount of value of stocks in global markets, the implications are enormous.

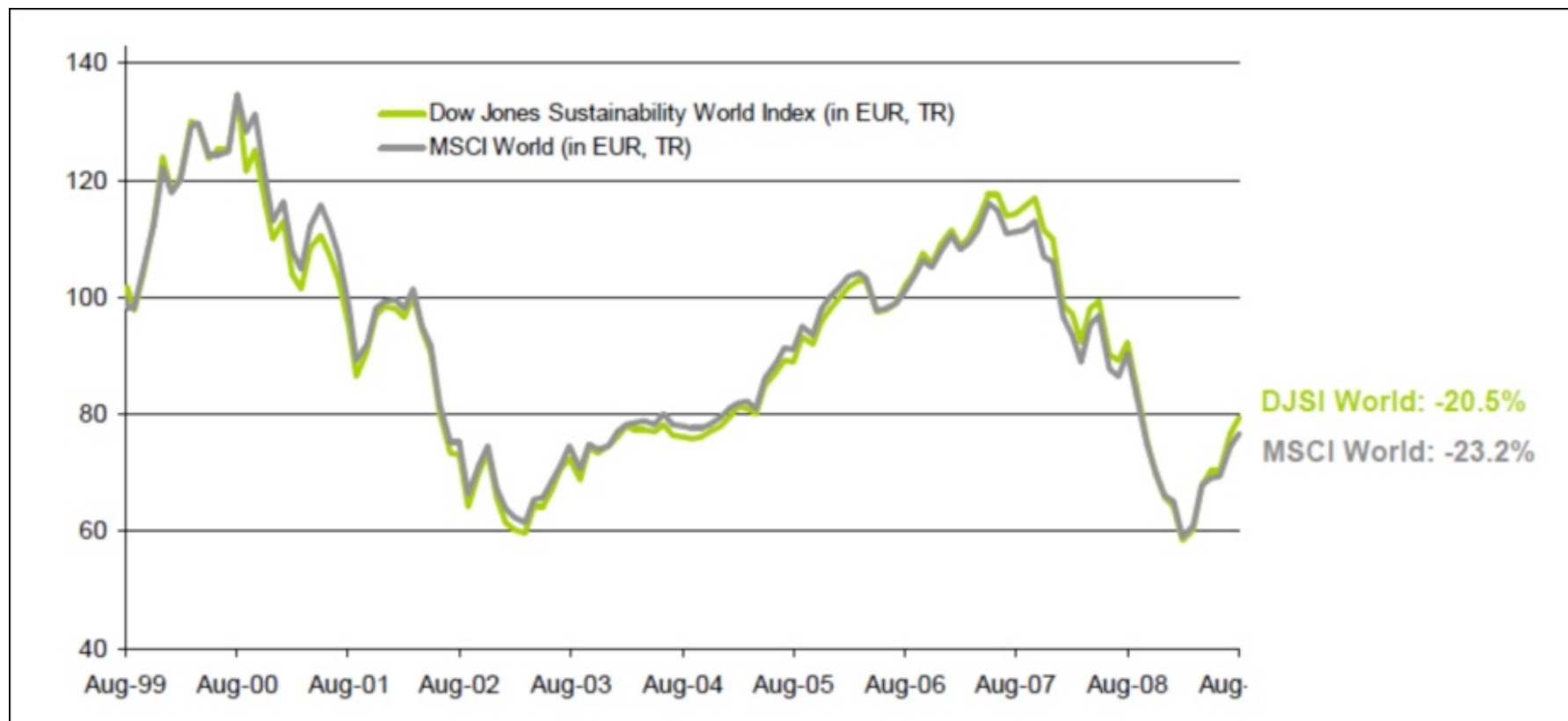
Prediction of a **15% difference in P/E ratio**, which would mean billions of dollars of stock market increased value for most large companies traded on major exchanges

Companies On the Global 100 List versus Companies Not On the Global 100 List





# Sustainable vs Non-sustainable Company Indices



# Risk/Liability Management



- Reduce risk of agricultural crop price volatility for client
- Transfer Risk to financial players (ie. Reinsurers or investors)
- Broad Range of weather related instruments available
- Reduce product liability costs
- Reduce Insurance Premiums
- SwissRE Pilot Program
  - Details? Insurance payout of weather insurance kicks in when rainfall 10 " below 30yr average, per in. increments - max 10-20% of lost business value

# Project Finance



- Large capital intensive projects dependent on water supply
- Hydroelectric, food processing facilities
- Increased lending rates, lack of proceeds from loans
- Sacramento Municipal Utility District (SMUD) case study
  - Details? Rate impact of passing on weather insurance costs/losses to customers

# Corporate Debt Rating



- ❑ Directly related to a company's balance sheet
- ❑ Supply chain analysis to locate risks
- ❑ Public or Private debt markets affected
- ❑ Insurance amounts to 2-3% of Cost of Goods Sold (COGS)

# Water Footprints - Financial Risk Mitigation

## □ Lessons learned

- Improve market valuation by 15%
- Reduce project lending rates by 10%
- Reduce crop price volatility by 10%
- Reduce insurance premiums

## □ Path forward

- Method to calculate economic/financial impact of corporate water footprint goals
- Translate to beverage Industry
- Tighten financial risk impacts
- Benchmark against industry competitors
- Evaluate financial and technology investment tradeoffs
- Limnotech partner with insurer who has financial expertise