

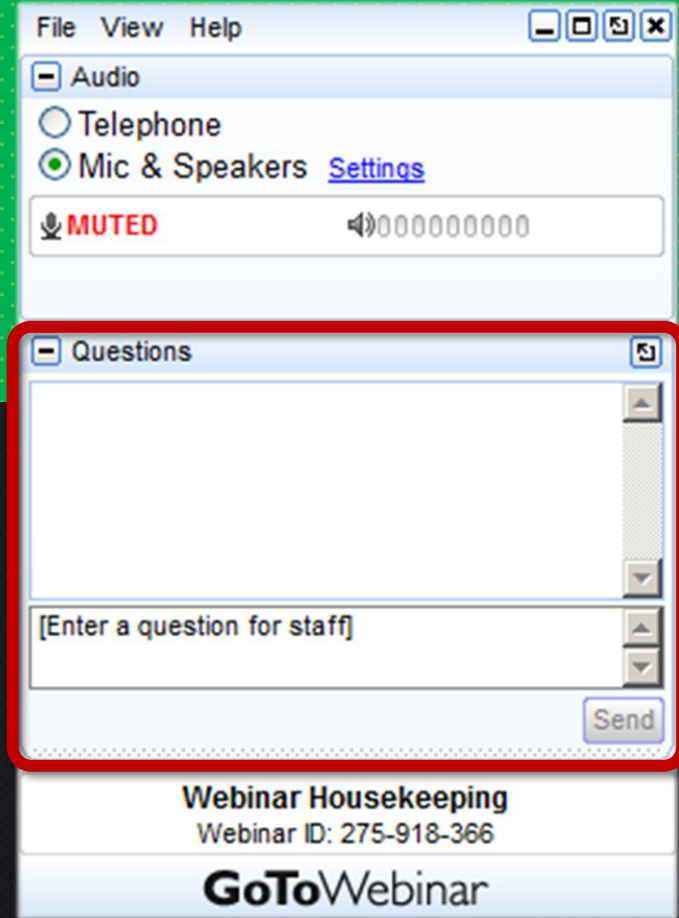
# Water Scarcity and its Impact on Procurement

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BEROE  
INSIGHTS

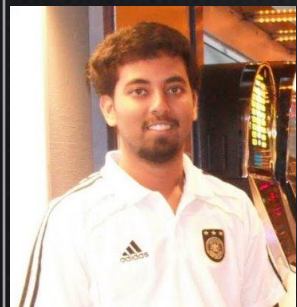
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# Members for the Webinar

## Host



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**Senior Research Analyst  
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**India**

## Moderator



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**Engagement Manager  
Beroe-Inc.**

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**India**

# Water Scarcity and its Impact on Procurement

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BEROE  
INSIGHTS

# Agenda



WHO

will be benefitted?

HOW

can this issue be addressed?

WHAT

will happen to industries that rely on water?

WHY

is Water Scarcity imminent?

# Demand for Water





20  
gallons

1

Pint  
beer



132  
gallons



2  
Liters

Bottle of Soda



5000  
gallons



To grow a  
day's goods  
for a family  
of four

# Demand outweighs supply

## Demand Pressure



Growing Population



Economic growth by Urbanization



Agricultural usage

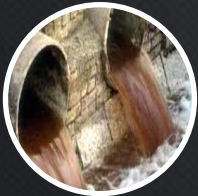


Intl. Food Trade and Policies



Water use in Energy Production

## Supply Pressure



Quality deterioration by industrialization



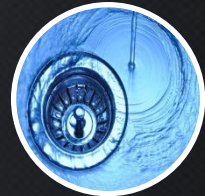
Erratic Precipitation



Drying Underground Aquifers



Inefficient Water Management



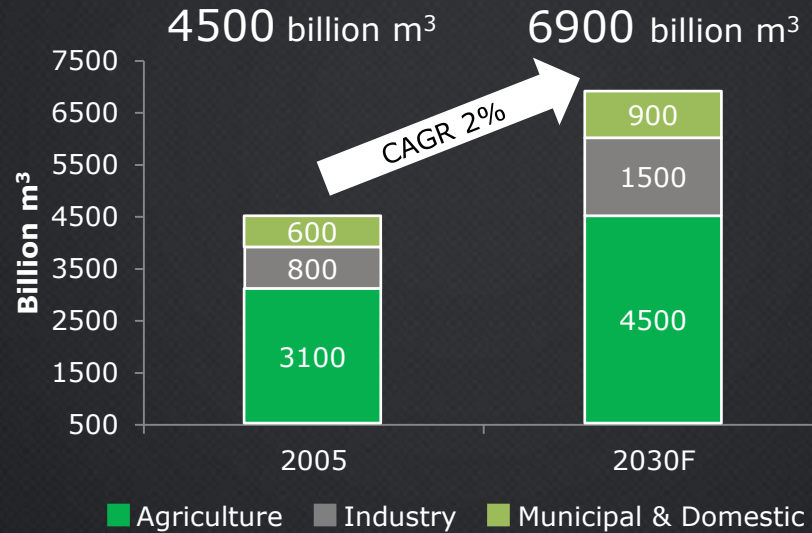
Wastage due lack of knowledge



# Global Demand Outlook

The 2030 Water Resources Group estimates...

Global Aggregate Water Withdrawals Forecast



# Global Demand Outlook

In the next 15 years



Strong demand from developing countries

# Water Stress by Region



Industries are yet to come up with an optimal solution to tackle the  
looming water scarcity

# Water Footprinting



# Water Footprinting

**Water Footprint** is the total volume of freshwater used to produce the goods and services consumed by the business.

## Average Supply Chain for Breweries

Raw  
Materials



Processing



Production



Packaging



Transport



Retail

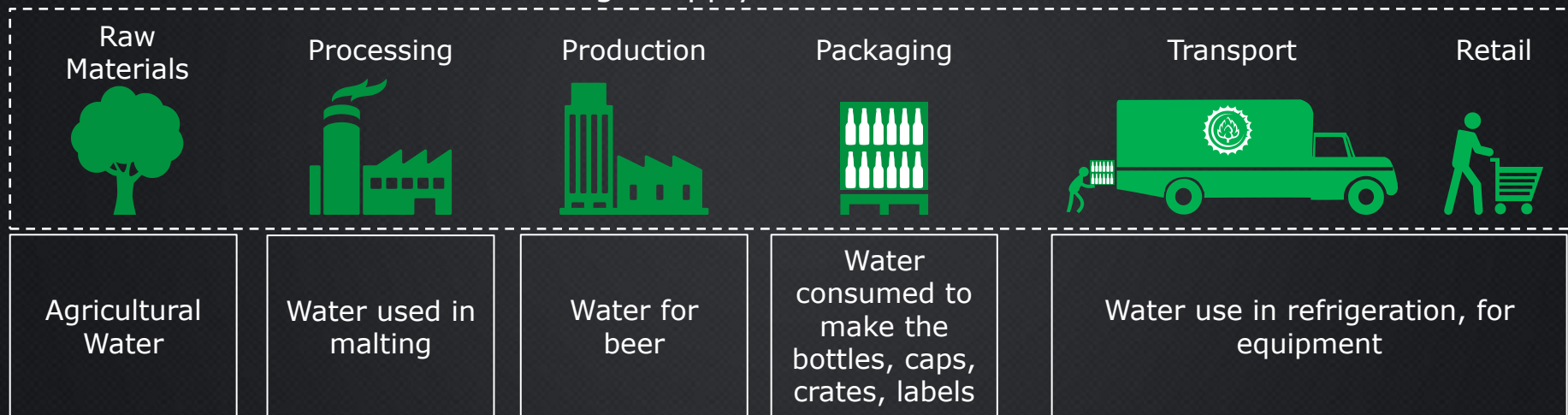


Water Footprinting does not mean accounting the water usage of factory operations alone and reducing them

# Water Footprinting

**Water Footprint** is the total volume of freshwater used to produce the goods and services consumed by the business.

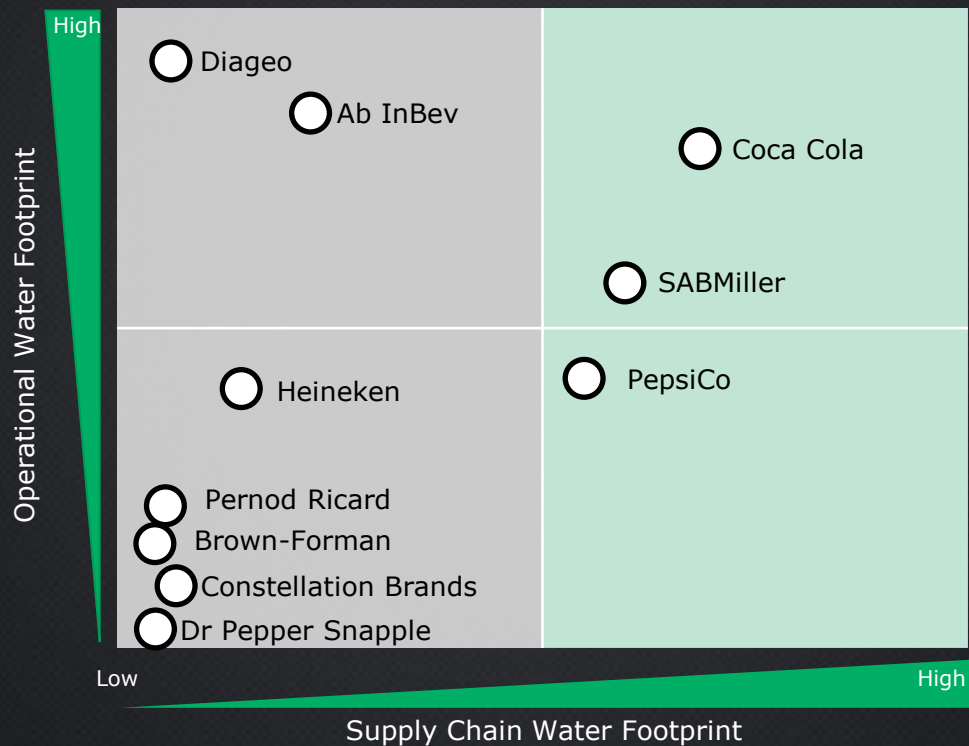
## Average Supply Chain for Breweries



Water Footprint of the entire supply chain has to be estimated and reduced

# Water Footprint Reporting by companies

Ceres benchmarks 100 companies on their water footprint activities as following



*Supply Chain Water Footprint reporting done by only a few companies*

# Why is supply chain water footprinting so low?

## Water Footprint Network



Industry Experts

### Data Difficulty

Difficult to obtain data from all direct/indirect suppliers

### Supplier Complexity

Wide range of suppliers with diverse locations

Changing suppliers/traders increase complexity

This may justify why so far many companies have only been able to address their direct water footprint

Just because estimating the water footprint for the entire supply chain is difficult, it does not mean we can ignore it



# Case Study

# Case Study Basis

## Why Breweries?

Water Consumption  
High  
(across supply chain)

Water Footprint  
Level  
Operational  
Footprint identified for most  
breweries

Implementation  
Efficient  
Footprint reduction achieved in  
certain locations

Most breweries and beverage companies are ahead in the race of operational footprint reduction

## Why South Africa?

Water Charges  
**1.91 USD/m<sup>3</sup>**  
(global high)

Water Stress  
High  
(40-80%)

Breweries  
Top 4 global beer brands

# Case Study Basis


Brewers are cited only to better illustrate the need for water footprint

The principles of water footprint reduction discussed here are applicable  
for all industries

# Global Brewery Location Map

## Top 4 Beer Producers



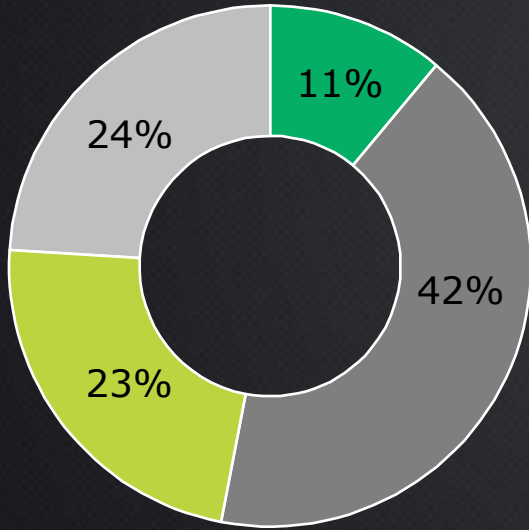
 High Stress (40-80%)

Brewery Locations of Ab InBev, SABMiller, Heineken and Carlsberg are mapped

# Average Water Footprint for Brewery in South Africa

Total Water Footprint 6586 m<sup>3</sup>

Water Footprint by Category



- Raw Materials
- Packaging
- Brewing (Production)
- Auxiliary Equipment

Specific Water Footprint  
(m<sup>3</sup> water per m<sup>3</sup> beer)

South Africa 5.9 m<sup>3</sup>

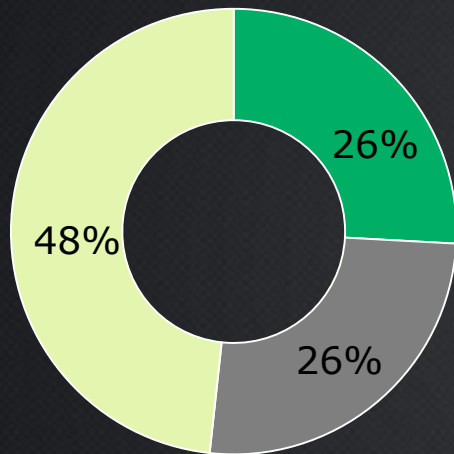
Global Industry Standard 4.3 – 4.7 m<sup>3</sup>

*Water footprint varies depending on the availability of water in the region*



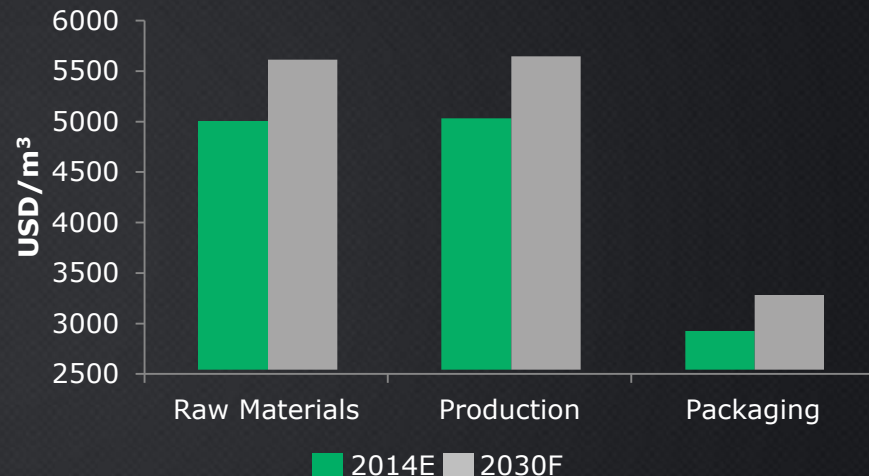
# Water Consumption by COGS

COGS Share for Brewery



■ Raw Materials ■ Production ■ Packaging

Water Cost for Brewery - South Africa



■ 2014E ■ 2030F

Future Demand  
**High**  
(from all industries)

Forecast Price Increase  
**12%**  
(by 2030)




Future Brewery Costs  
**High**

# Water Footprinting in Action

## Strategies by Companies

# Water Footprint Practice in Action

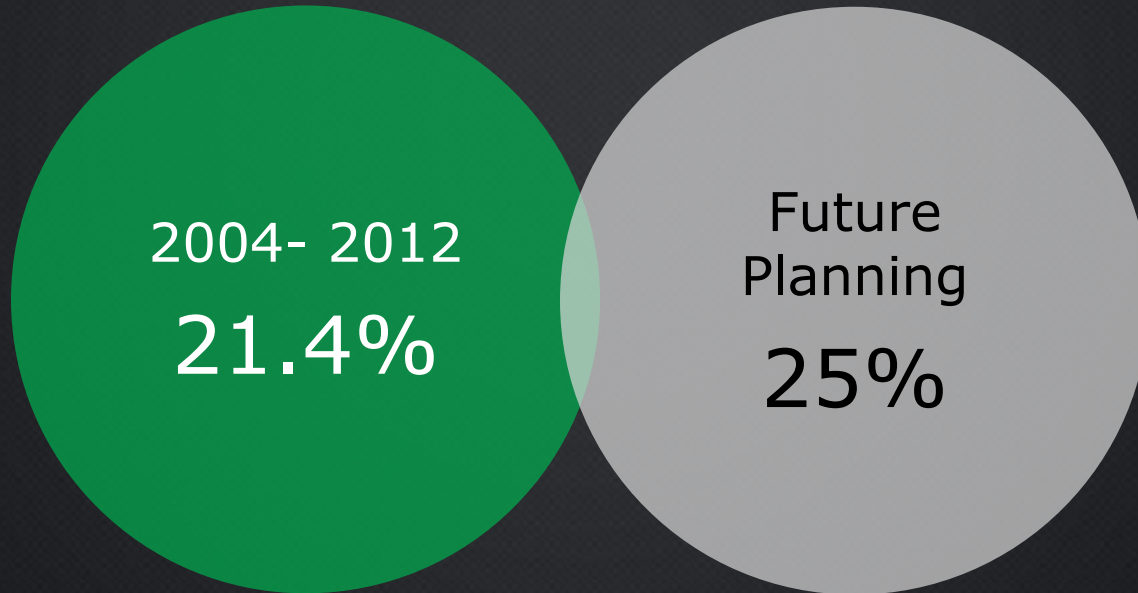
## SABMiller

			
Country	Peru	Tanzania	South Africa
Water Footprint per m <sup>3</sup> of Beer	4.3 m <sup>3</sup>	6.5 m <sup>3</sup>	4.1 m <sup>3</sup>
Improvement achieved	7%	11%	8%

# Water Footprint Practice in Action

## Coca Cola

Water footprint efficiency improvement



# Water Footprint Practice in Action

## Nestle



The diagram illustrates Nestle's Water Footprint Practice in Action through five interconnected water droplets, each representing a key practice. To the right, a Venn diagram shows the results of the Nestle Water Stewardship Initiative since 2005, with two overlapping circles representing reduced water withdrawals and reduced water discharges.

W

Work to achieve water efficiency across our operations

A

Advocate for effective water policies and stewardship

T

Treat the water we discharge effectively

E

Engage with suppliers, especially those in agriculture

R

Raise awareness of water access and conservation

### Nestle Water Stewardship Initiative (since 2005)

**33%**  
reduced water  
withdrawals

**48.5%**  
reduction in  
water discharges



# Need for Water Footprinting in Procurement

# Water Footprinting and Procurement

-Importance-

Manufacturers



Cost Savings

Suppliers



Cost Savings

Identifying the water intensive segment of supply chain would result in future cost savings

# Water Footprinting and Procurement

-Importance-

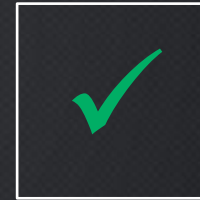
Manufacturers



Suppliers



Sustainable  
Suppliers



Preferred  
Supplier

Supply chain water footprinting could reveal the sustainable suppliers

Early practice of water footprinting and making amends in the production procedures could result in advantages of being the preferred supplier in the future

# Water Footprinting and Procurement

-Importance-

Manufacturers



Suppliers



Continuous  
Supply

Consistent raw material supply even during a water crisis period

# Water Footprinting and Procurement

-Importance-

Manufacturers



Suppliers



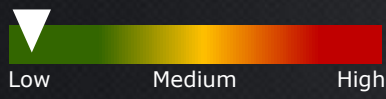
Green and Sustainable tag to the products



# Implications of not reducing Water Footprint

## Physical Risk

Freshwater shortage  
in supply chain



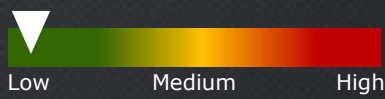
## Financial Risk

Increased water and  
manufacturing costs



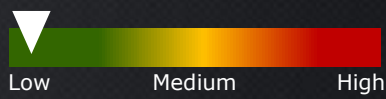
## Regulatory Risk

Increase in water  
regulations due to  
Governmental  
involvement



## Reputational Risk

Unsustainable  
production methods  
impact public image



# Reducing Water Footprint is not only about cutting costs

35

## Ethical Implications

Water stressed regions will have equal demand from domestic use and industrial use of water

## Industry Role

It is important for industries to reduce their water footprint in water stressed regions, in order to restore equilibrium in sharing of available resources

# Reducing Water Footprint is not only about cutting costs

36

## Regulatory Implications



Conflict  
Diamonds and  
Conflict Minerals  
brought  
regulatory  
actions

RED certificates  
issued for  
sustainable palm  
oil

Carbon Tax was  
levied in order to  
reduce the  
carbon footprint  
of businesses

# Reducing Water Footprint is not only about cutting costs

37

## Regulatory Implications

Regulations on mandatory water footprint efficiency standards is inevitable

## Industry Role

Early practices of achieving water footprint efficiency across the supply chain needs to be implemented by industries to avoid scrambling at the last moment when regulations are in place

Water Footprinting is about preparing for the future

# Procurement and Water Footprinting

They go hand in hand



# Effective Category Management

Is Water Footprinting a Procurement problem?

Procurement efficiency has been measured through  
Purchase Price Variance

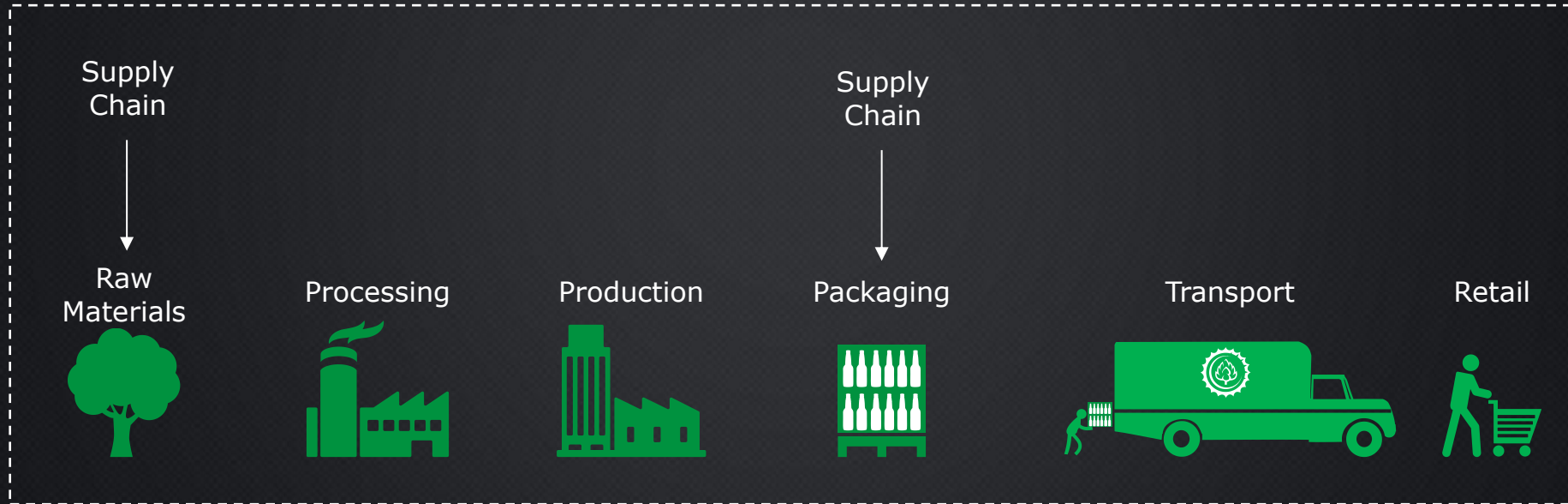
Purchase Price Variance does not account for water management



Buying a beer bottle with \$0.02 discount this year, as compared to  
the previous year

# Effective Category Management

Category managers must begin to take note of the happenings across the supply chain to develop a holistic view of their respective categories

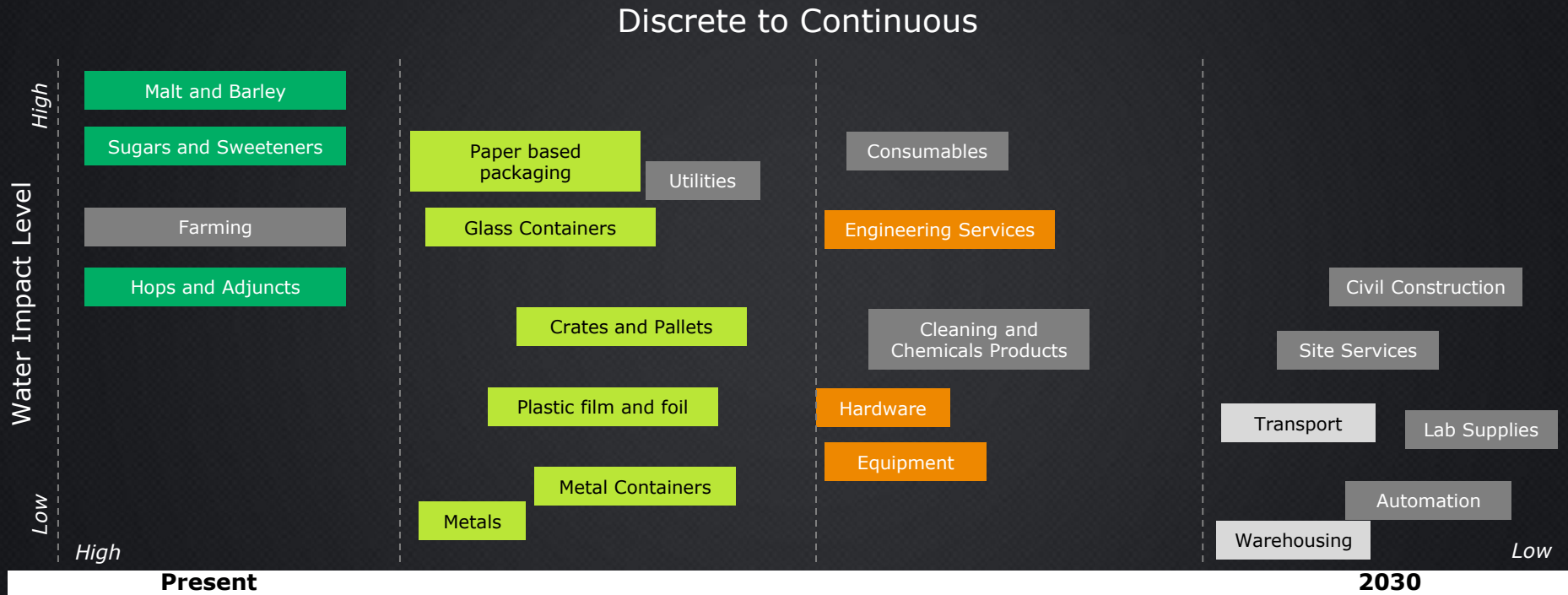


# Effective Category Management

Continuous Category Management would help companies implement water footprinting principles across supply chain

Continuous Category Management will aid efficient sourcing of raw materials

# Effective Category Management



# Effective Category Management

It is essential to try and reduce the water footprint of the most water intense segments of the supply chain immediately

# Conclusion



WITH<sub>2</sub>OUT

Water Footprint Reduction across industries and supply chain is the way out