

Sustainability & Big Data

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Big Data

Collection of huge amounts of information + sophisticated analytics = new insights, questions and opportunities

- **Information**
 - from many varied unrelated sources
 - All data in varied formats
- **Analytics**
 - Differ between organizations
 - Often proprietary
- **Learning**
 - How to make better predications



Big Data in Sustainability = Environmental, Social & Governance (ESG) Data

- Companies generate ESG data to demonstrate corporate sustainability performance.
- Public companies release ESG data through:
 - Annual Form 10-K report
 - Annual company sustainability or CSR report
- Other data sources:
 - CDP disclosures
 - GRI reporting
 - Emissions Trading Allowances
 - Sustainalytics on Bloomberg
 - Other data aggregators
 - Disclosures to rating & ranking agencies



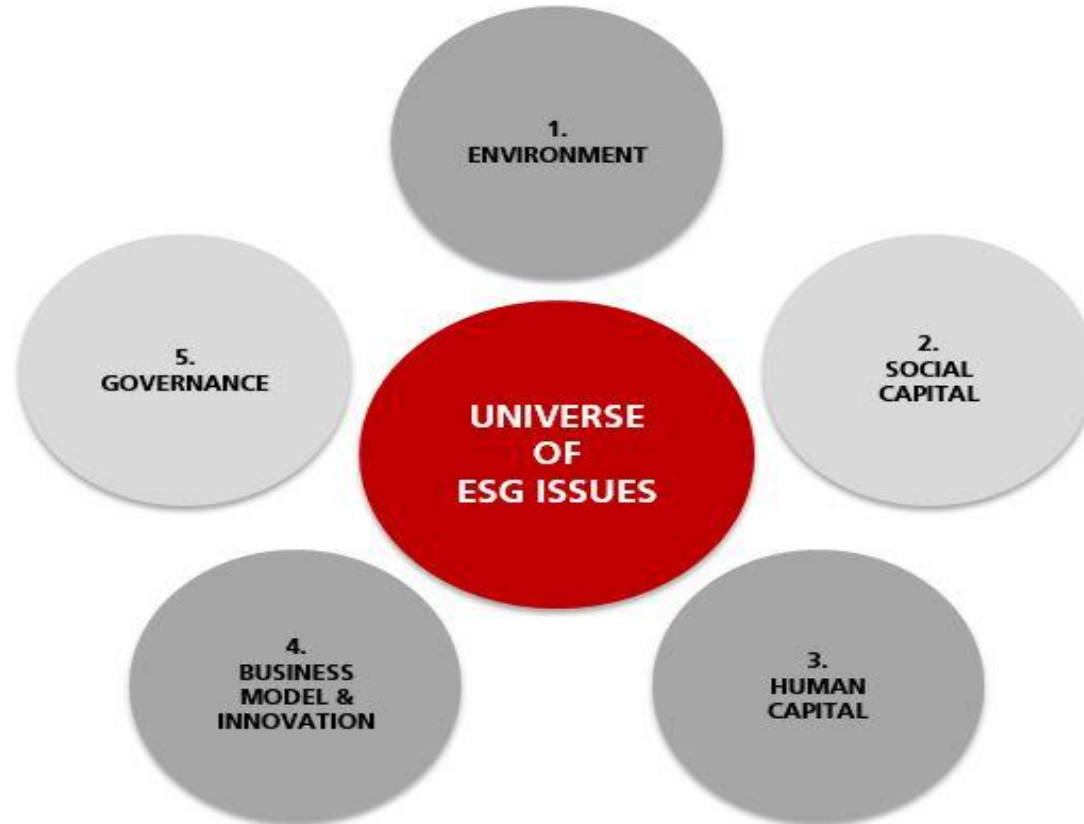
What Does ESG Data Measure?



Universe of Sustainability Issues

An evidence-based, industry-specific approach

- Climate change risks
 - Environmental accidents and remediation
 - Water use and management
 - Energy management
 - Fuel management and transportation
 - GHG emissions and air pollution
 - Waste management and effluents
 - Biodiversity impacts
- Communications and engagement
 - Community development
 - Impact from facilities
 - Customer satisfaction
 - Customer health and safety
 - Disclosure and labeling
 - Marketing and ethical advertising
 - Access to services
 - Customer privacy
 - New markets
- Diversity and equal opportunity
 - Training and development
 - Recruitment and retention
 - Compensation and benefits
 - Labor relations and union practices
 - Employee health, safety and wellness
 - Child and forced labor



- Long term viability of core business
 - Accounting for externalities
 - Research, development and innovation
 - Product societal value
 - Product life cycle use impact
 - Packaging
 - Product pricing
 - Product quality and safety
- Regulatory and legal challenges
 - Policies, standards, codes of conduct
 - Business ethics and competitive behavior
 - Shareholder engagement
 - Board structure and independence
 - Executive compensation
 - Lobbying and political contributions
 - Raw material demand
 - Supply chain standards and selection
 - Supply chain engagement & transparency

A major player in Sustainability and ESG Data is Bloomberg

- Bloomberg is a Major News and Financial and ESG Data Aggregator.

320,000 subscription terminals in use around the world,

- Bloomberg uploads financial and ESG data disclosed by public companies in Form 10-K and annual sustainability or corporate social responsibility (CSR) reports.
- Bloomberg subscribers include investors, Fortune 500 companies, academic institutions, and public libraries around the world.
- Bloomberg data is used to better predict
 - Company's financial performance
 - Long-term performance
 - Industry performance & trends
 - Company risks and opportunities along the value chain



800 ESG metrics tracked by Bloomberg

Environment Disclosures (up to 11 categories)

- Air emissions
- Water
- Waste
- Energy
- Fines/Spills
- Investments
- external initiatives
- Operational policy
- Sector specific

Social (7 categories)

- No. employees
- Employee diversity
- Accidents/incidents

Social cont'd

- Community and customers
- Operational policy
- Supply chain
- Training

Governance (up to 12 categories)

- Board structure
- Board independence
- Board/executive diversity
- Attendance
- Auditors
- Board activities
- Board committee
- Compensation
- EXEC activities

Governance cont'd

- Shareholder rights
- Specific country reqs.
- Executive compensation

Carbon Disclosure Project (8 categories)

- CDP score and responses
- Reporting
- Emissions
- Emissions trading
- Risks and opportunities
- Emissions reduction
- Governance and targets
- Fuel use

Ratios/derived fields (up to 10 categories)

- Bloomberg disclosure scores
- Carbon/GHG intensity
- Energy intensity
- Resource: materials
- Waste intensity
- Water intensity
- Community spending
- Accidents/incidents
- Training
- Sector specific

Value of ESG Data



Sustainability Accounting Standards

- Environmental
- Social
- Governance



Form 10-K



Financial Accounting Standards

- Business
- Financial
- Governance

Investment Value

- Efficient due diligence and screening
- Data for determining portfolio risk exposure
- Peer-to-peer comparability of ESG risk & opportunity

Corporate Value

- ESG legal and risk management tool
- Cost-effective reporting
- Peer benchmarks
- Market-based sustainability perspective

Client Service Value

- New service offerings
- Powerful industry research
- Thought leadership

ESG DISCLOSURE SCORE TREND

TOP 3 U.S. AGRIBUSINESS COMPANIES

| TOP 3 U.S. AGRICULTURAL PRODUCTS COMPANIES | 2009 | 2010 | 2011 | 2012 | 2013 |
|--|------|------|------|------|------|
| COMPANY A | 29 | 29 | 21 | 37 | N/A |
| COMPANY B | 16 | 19 | 25 | 21 | 21 |
| COMPANY C | 18 | - | - | 19 | N/A |

*NOTE: ESG Disclosure Scores range between 0 (no disclosure) and 100 (full disclosure).
N/A means the data has not been released.*

Do you see a momentum with any of these companies?

Current Environmental KPIs

Top 6 U.S. Meat, Dairy, Poultry & Fishing Companies

| TOP 6 U.S. MEAT, POULTRY, DAIRY & FISHING COMPANIES | ESG Disc Score | GHG Emissions | Energy Consumption | Total Water Use | Total Waste | Investment in Operational Sustainability |
|---|----------------|---------------|--------------------|-----------------|-------------|--|
| COMPANY A | 44 | 767 | 1.96 | 18,171 | 0.14 | \$3,400,000.00 |
| COMPANY B | 37 | 408 | 1.10 | 6,963 | 0.21 | NA |
| COMPANY C | 31 | 5,200 | NA | 92,293 | NA | \$1,900,000.00 |
| COMPANY D | 13 | NA | NA | NA | NA | NA |
| COMPANY E | 9 | NA | NA | NA | NA | NA |

What questions does this ESG benchmark raise for you?

Current Environmental KPIs

Top 4 Global Restaurant Companies

| Top 4 Global Restaurant Companies | GHG Intensity/Sales | Water Intensity/Sales | Total Waste | Investment in Operational Sustainability |
|-----------------------------------|---------------------|-----------------------|-------------|--|
| Company A | 66 | N/A | N/A | N/A |
| Company B | N/A | N/A | N/A | N/A |
| Company C | 20 | N/A | N/A | N/A |
| Company D | N/A | N/A | N/A | N/A |

What questions do the disclosure gaps raise for you?

Current Social & Governance KPIs

Top 4 Global Restaurant Companies

| 4 Top Global Restaurant Companies | % Women Employed | % Women Mgt | % Women on Board | % Minority Employed | % Minority Mgt | Community Spend | % Indep Directors |
|-----------------------------------|------------------|-------------|------------------|---------------------|----------------|------------------|-------------------|
| Company A | N/A | 28 | 23 | N/A | N/A | \$ 21,700,000.00 | 92 |
| Company B | N/A | N/A | 17 | N/A | N/A | \$ 12,747,000.00 | 92 |
| Company C | N/A | N/A | 13 | N/A | N/A | N/A | 88 |
| Company D | N/A | N/A | 17 | N/A | N/A | \$ 60,000,000.00 | 75 |

What questions do the disclosure gaps raise for you?

Current Environmental KPIs

Top 7 U.S. Processed Food Companies

| PROCESSED FOODS (7) | ESG Disc Score | GHG Emissions | GHG Intensity/Sales | Total Water Use | Water Intensity/Sales | Investment in Operational Sustainability |
|---------------------|----------------|---------------|---------------------|-----------------|-----------------------|--|
| COMPANY A | 48 | 769 | 96 | 24,820 | 3,083 | \$16,000,000.00 |
| COMPANY B | 48 | 1,924 | 125 | 49,697 | 3,222 | NA |
| COMPANY C | 42 | 1,011 | 57 | 16,200 | 911 | NA |
| COMPANY D | 36 | 326 | 46 | 6,473 | 974 | NA |
| COMPANY E | 26 | NA | NA | NA | NA | NA |
| COMPANY F | 26 | NA | NA | NA | NA | NA |
| COMPANY G | 19 | NA | NA | NA | NA | NA |

What questions does this ESG benchmark raise for you?

Current Environmental KPIs

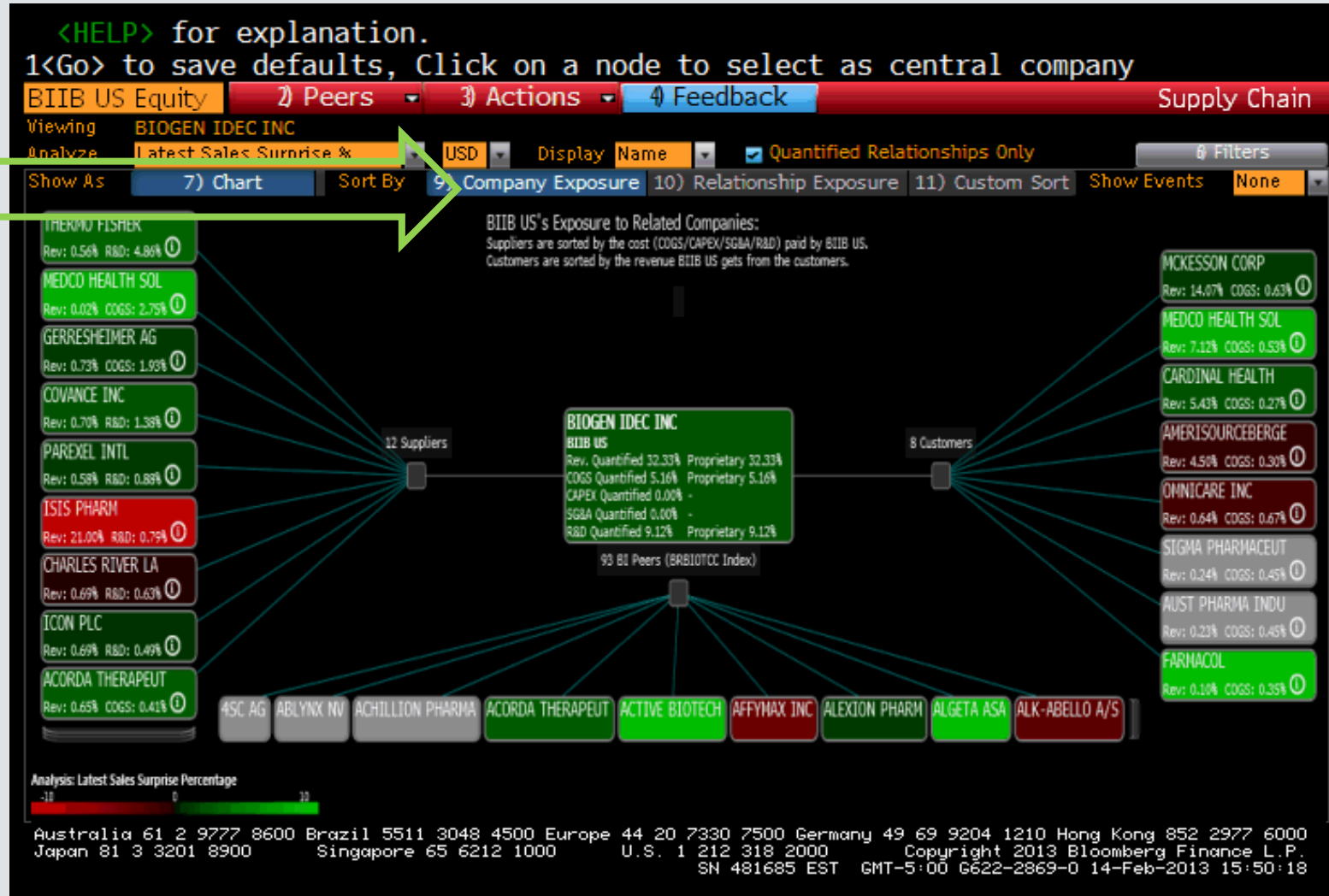
Top 4 U.S. Household Products Food Companies

| Household Products (13 securities) | ESG Disc Score | Total GHG Emissions | GHG Scope 3 | Tot Water Use | Water Intensity/Sales |
|---------------------------------------|----------------|------------------------|-------------|------------------|--------------------------|
| COMPANY A | 71 | 671 | 511 | 8,775 | 504 |
| COMPANY B | 57 | 5,101 | NA | 93,000 | 4,397 |
| COMPANY C | 48 | 1,953 | NA | 43,490 | 659 |
| COMPANY D | 45 | 5,700 | NA | 74,300 | 883 |

What questions does this ESG benchmark raise for you?

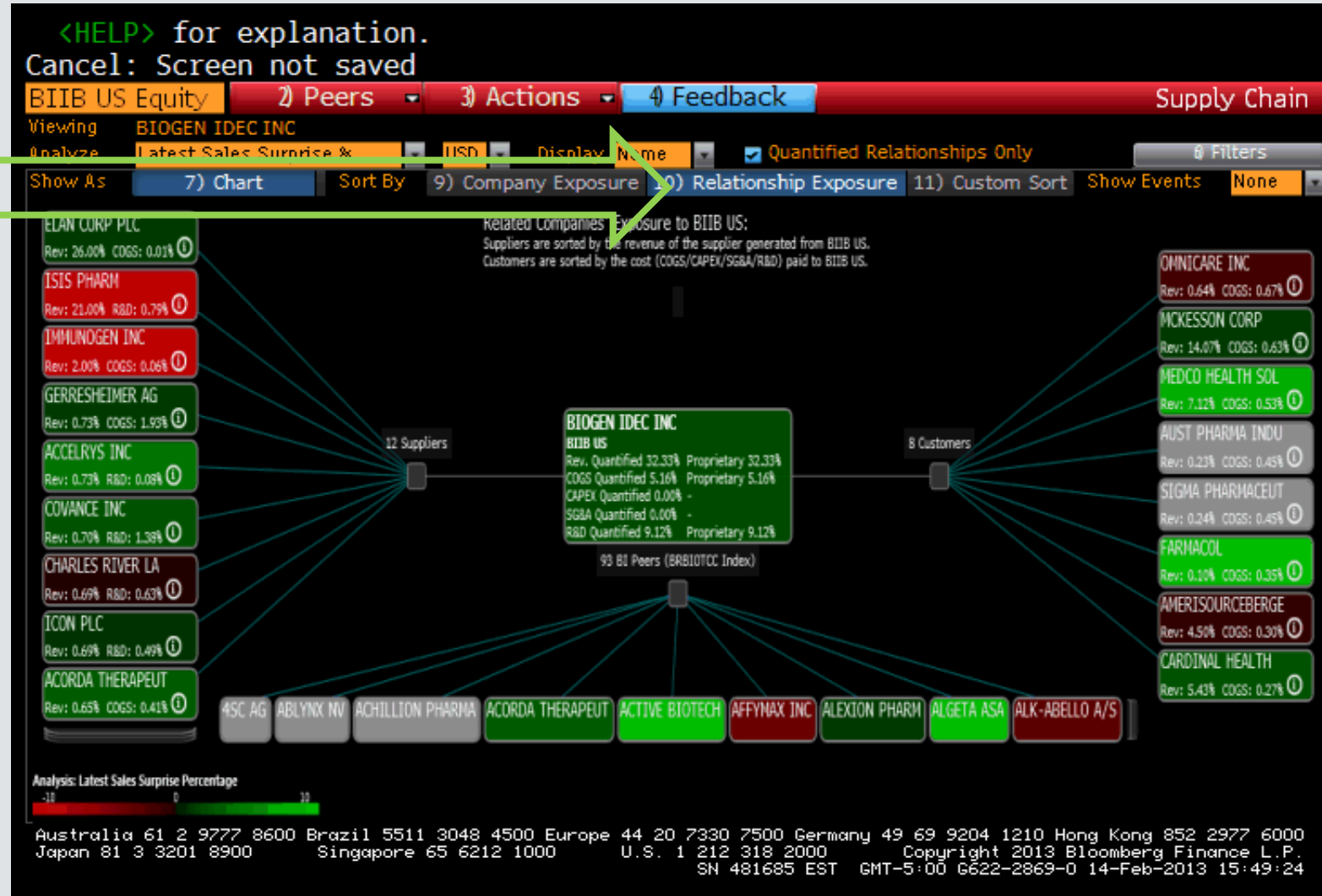
ESG Data for Your Value Chain Data

from your point of view



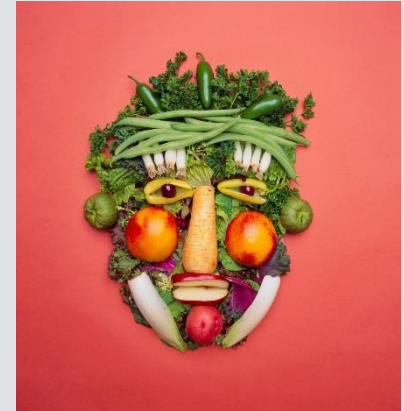
ESG Data For Your Value Chain

from your stakeholders' perspective



Looking at these charts of data

- We see there is a lot of data, but it's a basket of fruit
- Consider what the data means
 - Are you actually making progress in becoming more sustainable?
 - How can this data help you tie your sustainability efforts to your corporate strategic marketing and customer preferences?
 - How does this data affect your financial performance?



So what does the company sustainability/CSR leader do with this information?

- **Validate that the data is correct**
- **Correct any incorrect data**
- **Consider filling in the data gaps if needed**

What action should you take as a result of the insights gained from ESG data?

- Consider how your supply or value chain affects the data
- Consider how you affect your customers' value chains
- Consider how this data makes you look to your stakeholders
- Consider what information you want or need to become more sustainable?

Numbers may speak for themselves

But

- Data is subject to “biased” interpretation
- Data can lead to incomplete or partially correct conclusions
- Data, especially big data, can blur the distinction between correlation and causation
- Data does not unambiguously tell us if a company’s sustainability efforts are succeeding

How do we get data to take reflect the complex reality in which we operate?

Conversations & stories hold the key

A good sustainability story grounded in data, can

- Inspire your stakeholders with your compelling sustainable future vision.
- Communicate what's really behind the numbers
- Present the “uncountable” such as ethics, values, culture, fairness, trust, community
- Explain the “why” which may not be obvious from the numbers

As sustainability/ CSR leaders it is our job to use the big data to craft a more compelling sustainability conversation

**“Everything that can be counted does not
necessarily count:
everything that counts cannot necessarily be
counted.”**

Albert Einstein

Thank you & let's continue the conversation!

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