

# Topics in Sustainable Finance: *ESG and SDGs*

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[www.ae4ria.org](http://www.ae4ria.org)

# Alliance of Excellence for Research and Innovation on Aephoria (AE4RIA)

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Professor Dr. Phoebe Koundouri

Founder & Scientific Chair AE4RIA

President, European Association of Environmental and Resource Economists

## Research Institutions

## Accelerators

## Academies, Networks, Associations

**ReSEES**  
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ATHENS UNIVERSITY OF ECONOMICS & BUSINESS

**ATHENA** Research & Innovation  
Information Technologies  
Sustainable Development Unit

**ICRE8**  
International Centre for Research  
on the Environment & the Economy

**Stochastic Modeling  
and Applications  
Laboratory**  
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ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

**DTU**  
DTU Management  
Department of Technology,  
Management and Economics

**SUSTAINABLE DEVELOPMENT  
SOLUTIONS NETWORK**  
A GLOBAL INITIATIVE FOR THE UNITED NATIONS  
Global Climate Hub  
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS  
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Research & Innovation  
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**eit** Climate-KIC Hub  
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**SUSTAINABLE DEVELOPMENT  
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**SDSN**  
Europe

**SDSN**  
Greece

**EAERE**  
European Association  
of Environmental and  
Resource Economists

**Water  
Europe**  
Technology & Innovation

Nexus  
Cluster

Academia  
Europaea  
~19 88~

World Academy of  
Art and Science

**iap** SCIENCE  
HEALTH  
POLICY  
the interacademy partnership

# Definition of ESG

## ESG

is a **generic term** used by investors to refer to **the factors** that can affect a company's ability to create long-term value. It also refers to **intangible assets**.

~ PRI Academy

E

Environmental

- Pollution
- Biodiversity Loss
- Climate Change
- Deforestation
- Resource Depletion
- Waste Management

S

Social

- Human Rights
- Child Labour
- Product Safety
- Product Mis-selling
- Labour Standards
- Employee Relations

G

Corporate  
Governance

- Accounting
- Board Composition
- Bribery & Corruption
- Executive Pay
- Tax Avoidance
- Shareholders' Rights



# ESGs

- ESG grew out of investment philosophies clustered around sustainability and, thereafter, **socially responsible investing**.
- Early efforts focused on “screening out” (that is, excluding) companies from portfolios largely due to environmental, social or governance concerns, while more recently ESG has favourably distinguished companies that are making **positive contributions** to the elements of ESG, premised on treating environmental and social issues as core elements of strategic positioning.
- The “**E**” captures energy efficiencies, carbon footprints, greenhouse gas emissions, deforestation, biodiversity, climate change and pollution mitigation, waste management and water usage.
- The “**S**” covers labour standards, wages and benefits, workplace and board diversity, racial justice, pay equity, human rights, talent management, community relations, privacy and data protection, health and safety, supply-chain management and other human capital and social justice issues.
- The “**G**” covers the governing of the “E” and the “S” categories—corporate board composition and structure, strategic sustainability oversight and compliance, executive compensation, political contributions and lobbying, and bribery and corruption.



## Environmental

Renewable fuels  
Greenhouse gas (GHG) emissions  
Energy efficiency  
Climate risk  
Water management  
Recycling processes  
Emergency preparedness



## Social

Health and safety  
Working conditions  
Employee benefits  
Diversity and inclusion  
Human rights  
Impact on local communities



## Governance

Ethical standards  
Board diversity and governance  
Stakeholder engagement  
Shareholder rights  
Pay for performance

# ESGs

- **ESG metrics** have evolved in recent years to measure **risk** as well as **opportunity**.

<b>Physical Risks</b>	In 2017, 73 companies on the S&P 500 publicly disclosed a material effect on earnings from weather events, and over 90% of these companies disclosed the effect on earnings was negative.
<b>Supply Chain Risks</b>	Supply-chain disruptions due to climate risk have increased 29% from 2012 to 2019.
<b>Reputational Risks</b>	Forty-seven percent of consumers walk away from a brand that doesn't align with their beliefs.
<b>Regulatory Risks</b>	The number of climate change regulations has grown to 1,500 globally, up from 72 in 1997.
<b>Litigation Risks</b>	More than 1000 cases have been filed in the U.S. on climate change impacts as of May 2019.
<b>Transition Risks</b>	Electric vehicles (EVs) are on track to account for over half of new car sales by 2040.
<b>Human Capital Risks</b>	Eighty-six percent of millennials would consider taking a pay cut to work at a company whose mission aligns with their values and the cost of replacing one employee is between 10-30% of an employee's annual salary.



- In the absence of international consensus regarding ESG disclosures, a number of **frameworks** and **indices** have emerged to guide company disclosures and inform investors.

# Timeline of Sustainability Reporting Standards (ESG Metrics)

**1997**

- GRI (Global Reporting Initiative)
- Greenhouse Gas Protocol

**2005**

- Principles for Sustainable Investment (PRI)

**2010**

- Integrated Reporting (<IR>)

**2015**

- Task force on Climate-Related Financial Disclosures (TCFD)

**2000**

- Carbon Disclosure Project (CDP)

**2007**

- Climate Disclosure Standards Board (CDSB)

**2011**

- Sustainability Accounting Standards Board (SASB)

**2021**

- CSRD (Corporate Sustainability Reporting Directive)

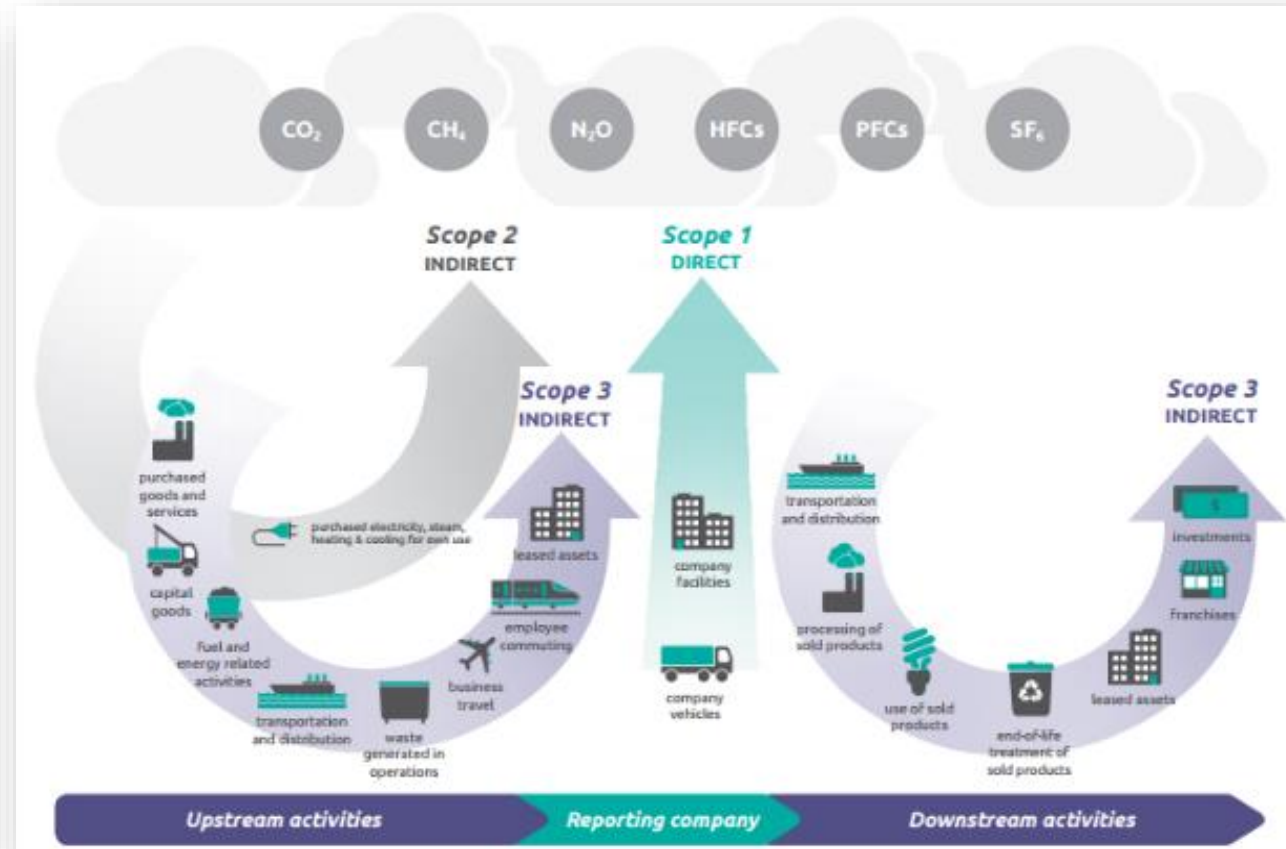




The Global Reporting Initiative (GRI) is a network-based organisation that **aims to mainstream a firm's disclosure on environmental, social and governance performance.**



- An extensive standardized framework supporting companies to measure and manage their GHG emissions
- It sets a common understanding of corporate carbon footprint and scopes of emissions



Carbon Disclosure Project (CDP) is an international nonprofit organization based in the United Kingdom, Germany, and the United States that helps companies and cities disclose their environmental impact.

## How CDP works





The UN Principles for Responsible Investment (PRI) is an international organization that works to promote the incorporation of [environmental, social, and corporate governance factors \(ESG\)](#) into investment decision-making.



### ENVIRONMENTAL

climate change  
resource depletion  
waste  
pollution  
deforestation



### SOCIAL

- human rights
- modern slavery
- child labour
- working conditions
- employee relations



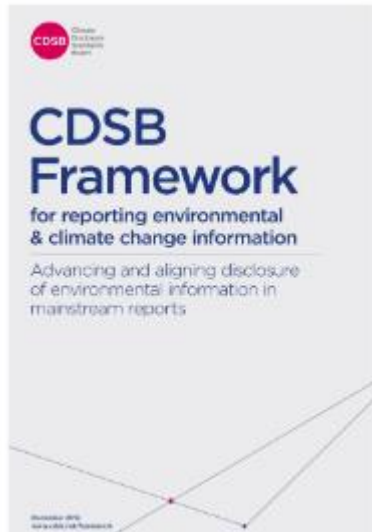
### GOVERNANCE

- bribery and corruption
- executive pay
- board diversity and structure
- political lobbying and donations
- tax strategy





Climate  
Disclosure  
Standards  
Board



- The CDSB Framework for reporting environmental and climate change information is designed to help organizations prepare and present environmental information in mainstream reports for the benefit of investors.
- It allows investors to assess the relationship between specific environmental matters and the organization's strategy, performance and prospects.



# INTEGRATED REPORTING



- **Integrated reporting (IR)** is a "process that results in communication, most visibly a periodic "integrated report", about [value creation](#) over time.
- An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects lead to the creation of value over the short, medium and long term."



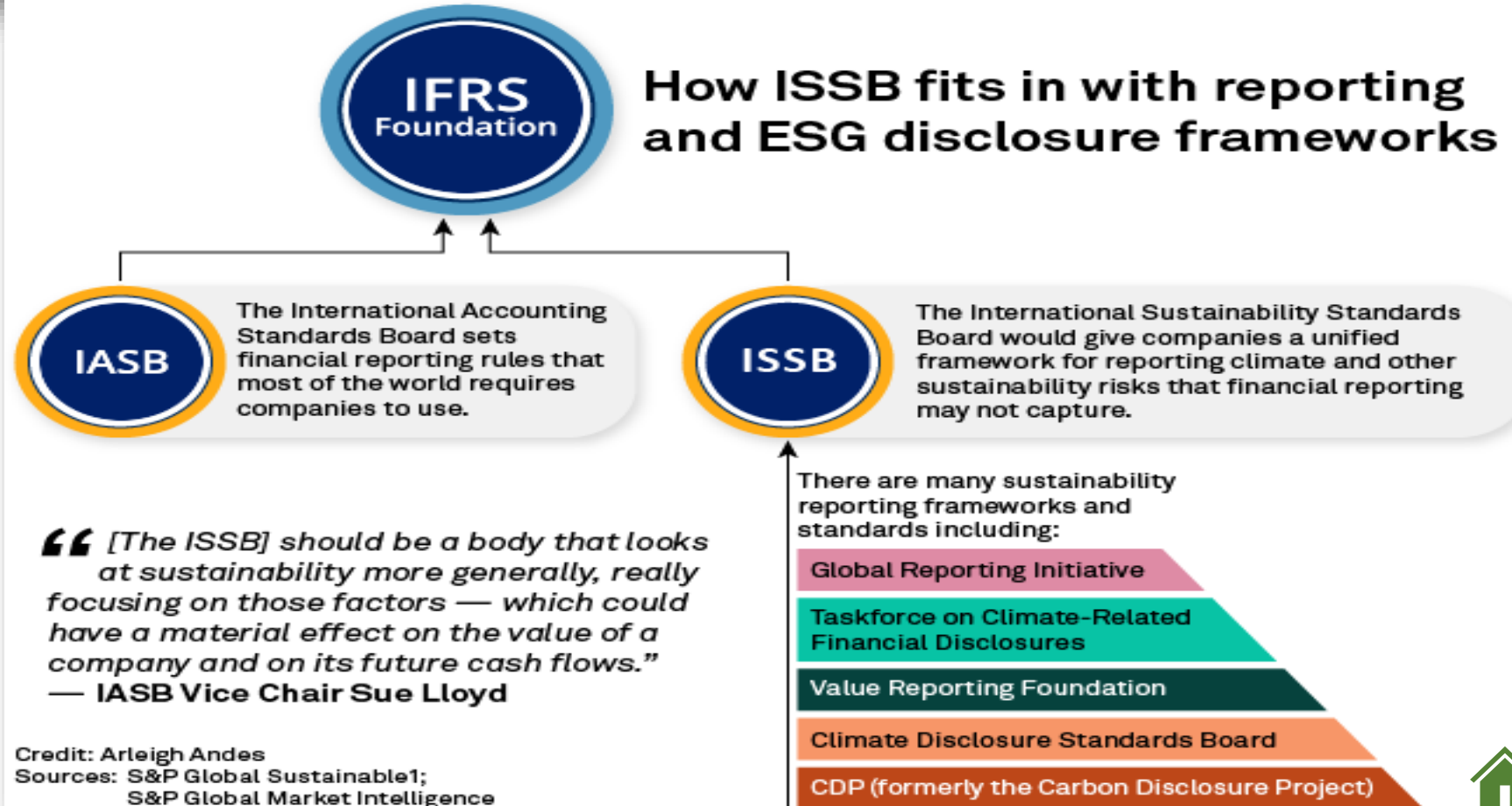
# IFRS Foundation announces ISSB and consolidation with CDSB and VRF



UN CLIMATE  
CHANGE  
CONFERENCE  
UK 2021

IN PARTNERSHIP WITH ITALY

The Sustainability Accounting Standards Board (SASB) is an ESG guidance framework that sets standards for the disclosure of financially material sustainability information by companies to their investors.





The Financial Stability Board created the Task Force on Climate-related Financial Disclosures (TCFD) to improve and increase reporting of climate-related financial information.

## Core Elements of Recommended Climate-Related Financial Disclosures



### **Governance**

The organization's governance around climate-related risks and opportunities

### **Strategy**

The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

### **Risk Management**

The processes used by the organization to identify, assess, and manage climate-related risks

### **Metrics and Targets**

The metrics and targets used to assess and manage relevant climate-related risks and opportunities



# Corporate Sustainability Reporting (CSR)



- [The CSRD](#) will be phased in from now until 2023.
- Entities not currently subject to NFRD (the current EU Non-Financial Reporting Directive addresses ESG elements) but are considered large should have to fully comply with the CSRD. This includes a **mandatory requirement** for *external assurance* on the information you provide.
- Entities currently reporting in accordance with NFRD, must report on the **impact of climate change** on your organisation. This includes a mandatory requirement for external assurance on the information you provide.
- Subsidiaries of global non-EU firms, are also subject to the CSRD.
- Reporting under the CSRD will be required under the EU Taxonomy. This is a common classification of economic activities significantly contributing to environmental objective using science-based criteria. The EU Taxonomy itself has reporting requirements that will come into effect partially from January 2022 and fully from January 2023. The CSRD, together with the EU Taxonomy, should be seen as a 'package designed to help improve the flow of capital towards sustainable activities.

- All large companies (2 out of 3 criteria met)
  - Revenues > EUR 40 million
  - Total assets > EUR 20 million
  - > 250 employees
- All companies with listed securities on EU-regulated markets, except micro-undertakings
- Listed SMEs, small and medium-sized enterprises benefit from +3 years for implementation



# Integrate SDG's to Corporate Sustainability Reporting (CSR)



#EUGreenDeal Senior Working Group



## Environmental

- Renewable fuels
- Greenhouse gas (GHG) emissions
- Energy efficiency
- Climate risk
- Water management
- Recycling processes
- Emergency preparedness



## Social

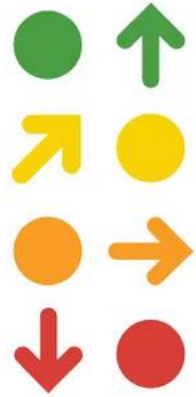
- Health and safety
- Working conditions
- Employee benefits
- Diversity and inclusion
- Human rights
- Impact on local communities



## Governance

- Ethical standards
- Board diversity and governance
- Stakeholder engagement
- Shareholder rights
- Pay for performance





# SUSTAINABLE DEVELOPMENT REPORT 2022

SDG Index and Dashboards

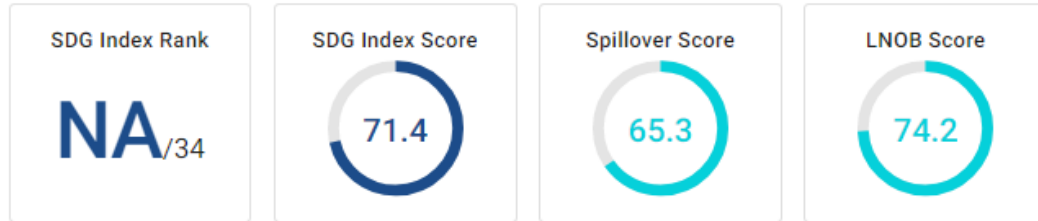
From Crisis to Sustainable Development:  
the SDGs as Roadmap to 2030 and Beyond



## European Union

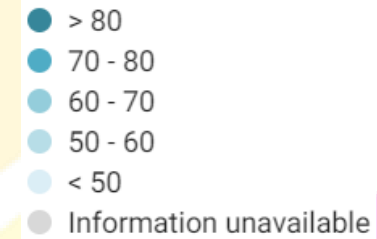
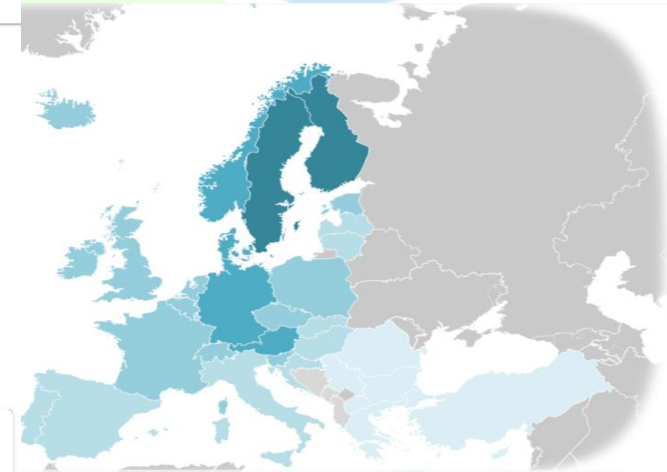


OVERVIEW INDICATORS



### SDG Dashboards and Trends

Click on a goal to view more information.



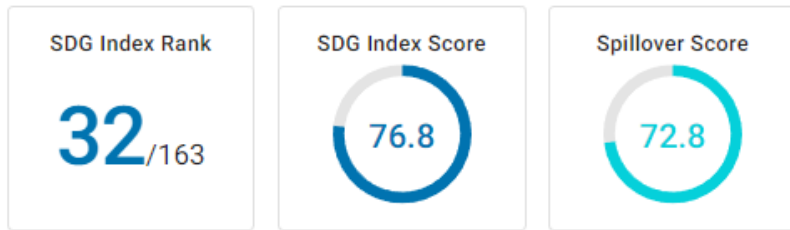
Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable  
 Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing ↔ Trend information unavailable

# Greece

OECD member



OVERVIEW INDICATORS POLICY EFFORTS



## SDG Dashboards and Trends

Click on a goal to view more information.



Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable

Trends: ↑ On track or maintaining SDG achievement ↗ Moderately improving → Stagnating ↓ Decreasing \*\* Trend information unavailable



# Progress at Subnational NUTS2 Level - Greece

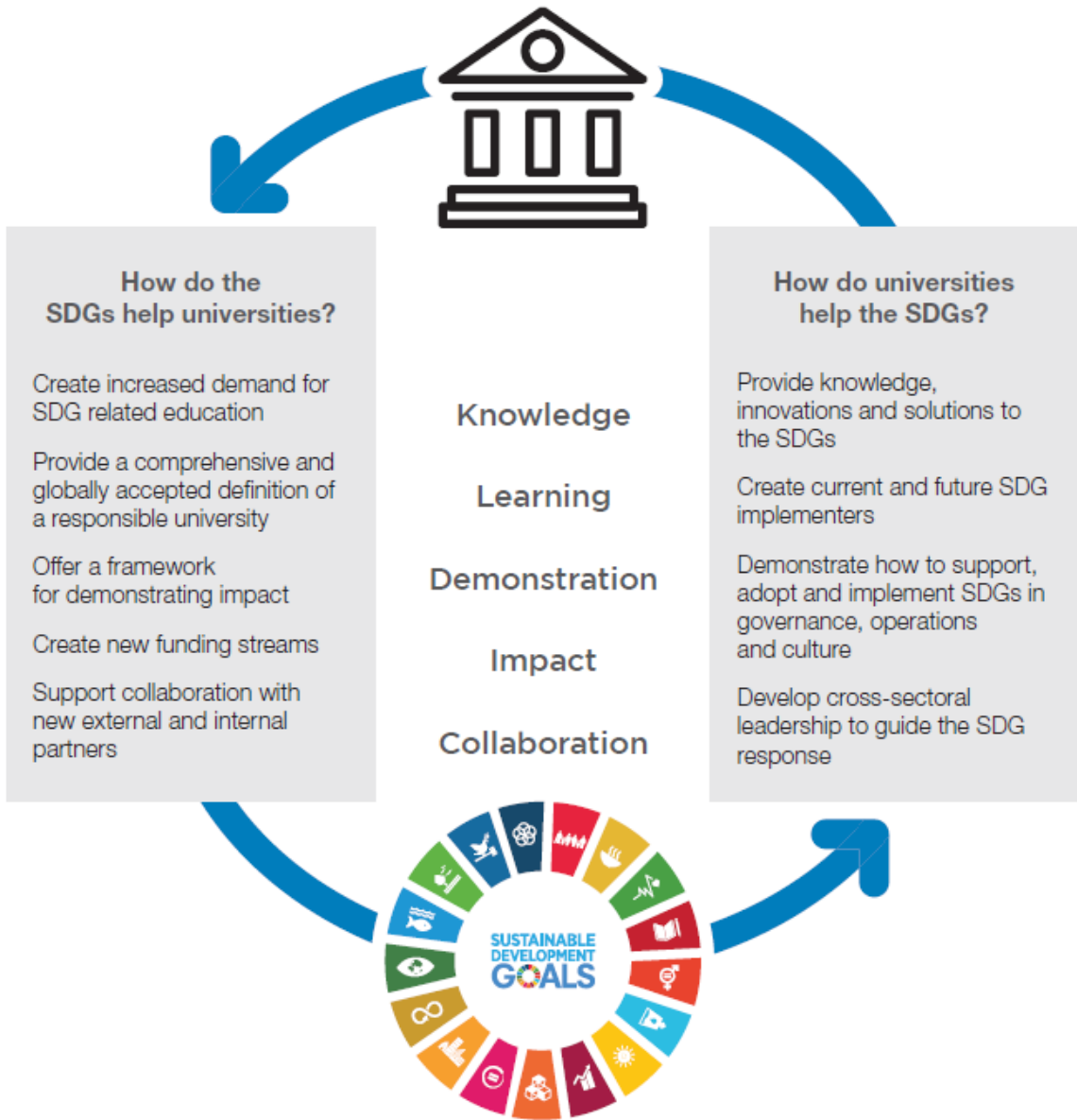


Table 3 The SDGs heat map for the Greek regions

	Eastern Macedonia and Thrace (EL51)	Attica (EL30)	Northern Aegean (EL41)	Western Greece (EL63)	Western Macedonia (EL53)	Epirus (EL54)	Thessaly (EL61)	Ionian Islands (EL62)	Central Macedonia (EL52)	Crete (EL43)	Southern Aegean (EL42)	Peloponnese (EL65)	Central Greece (EL64)
SDG1	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Minor challenges	Minor challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges
SDG2	Minor challenges	Major challenges	Major challenges	Minor challenges	Significant challenges	Significant challenges	Significant challenges	Significant challenges	Major challenges	Significant challenges	Major challenges	Minor challenges	Minor challenges
SDG3	Major challenges	Major challenges	Significant challenges	Significant challenges	Significant challenges	Target achieved	Minor challenges	Major challenges	Significant challenges	Minor challenges	Major challenges	Significant challenges	Major challenges
SDG4	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges
SDG5	Minor challenges	Target achieved	Minor challenges	Minor challenges	Minor challenges	Significant challenges	Significant challenges	Minor challenges	Significant challenges	Major challenges	Significant challenges	Significant challenges	Minor challenges
SDG6	Significant challenges	Major challenges	Significant challenges	Significant challenges	Target achieved	Significant challenges	Minor challenges	Minor challenges	Minor challenges	Major challenges	Major challenges	Significant challenges	Significant challenges
SDG7	Significant challenges	Significant challenges	Minor challenges	Minor challenges	Significant challenges	Minor challenges	Minor challenges	Minor challenges	Significant challenges	Significant challenges	Significant challenges	Significant challenges	Major challenges
SDG8	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Major challenges	Minor challenges	Minor challenges	Significant challenges	Major challenges
SDG9	Major challenges	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges
SDG10	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges
SDG11	Major challenges	Major challenges	Significant challenges	Major challenges	Significant challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges	Major challenges
SDG13	Target achieved	Minor challenges	N/A	Significant challenges	Minor challenges	Significant challenges	Significant challenges	N/A	Significant challenges	Major challenges	N/A	N/A	Minor challenges
SDG14	Significant challenges	Major challenges	Minor challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Target achieved	Major challenges	Significant challenges	Target achieved	Significant challenges	Significant challenges
SDG15	Minor challenges	Major challenges	Significant challenges	Minor challenges	Minor challenges	Target achieved	Minor challenges	Significant challenges	Minor challenges	Significant challenges	Minor challenges	Significant challenges	Minor challenges
SDG16	Minor challenges	Major challenges	Major challenges	Significant challenges	Minor challenges	Significant challenges	Minor challenges	Major challenges	Major challenges	Major challenges	Major challenges	Significant challenges	Significant challenges



# SDG Dashboards for Universities



Progress at **Institution** Level

**Athens University of Economics and Business**



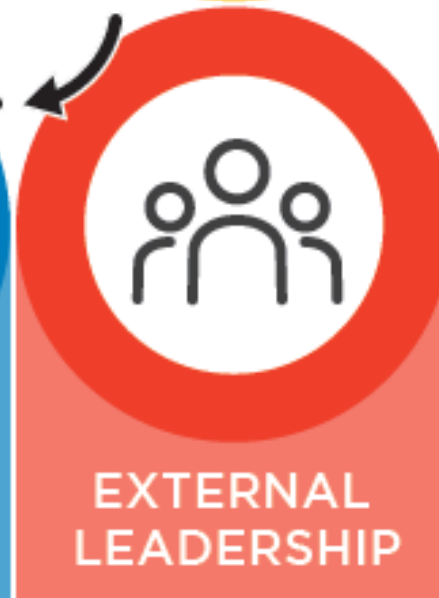


# University and SDGs

Research on the SDGs  
Interdisciplinary and transdisciplinary research  
Innovations and solutions  
National & local implementation  
Capacity building for research



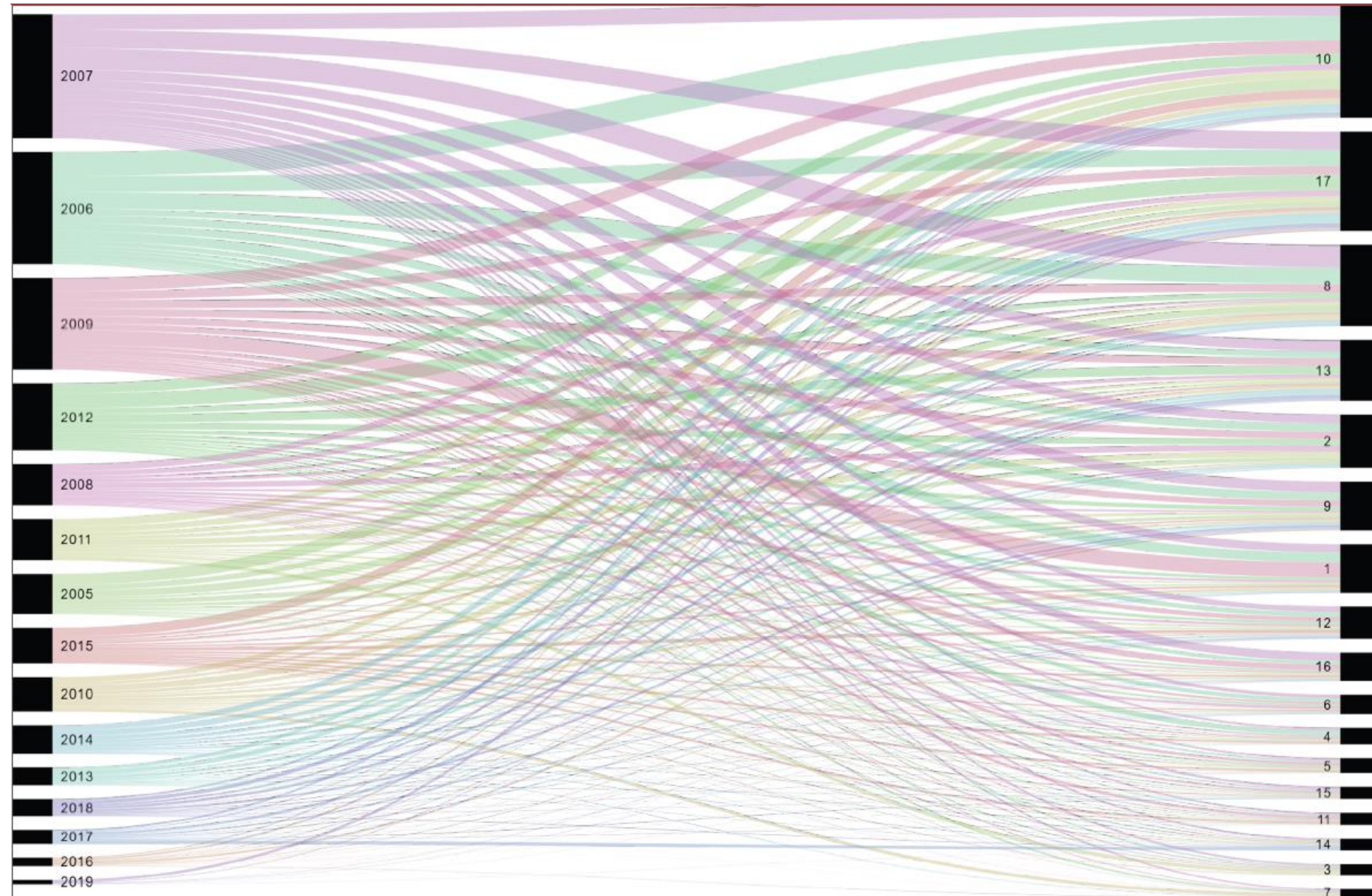
Education for sustainable development  
Jobs for implementing the SDGs  
Capacity building  
Mobilising young people



Public engagement  
Cross-sectoral dialogue and action  
Policy development and advocacy  
Advocacy for sector role  
Demonstrate sector commitment

Governance and operations aligned with SDGs  
Incorporate into university reporting

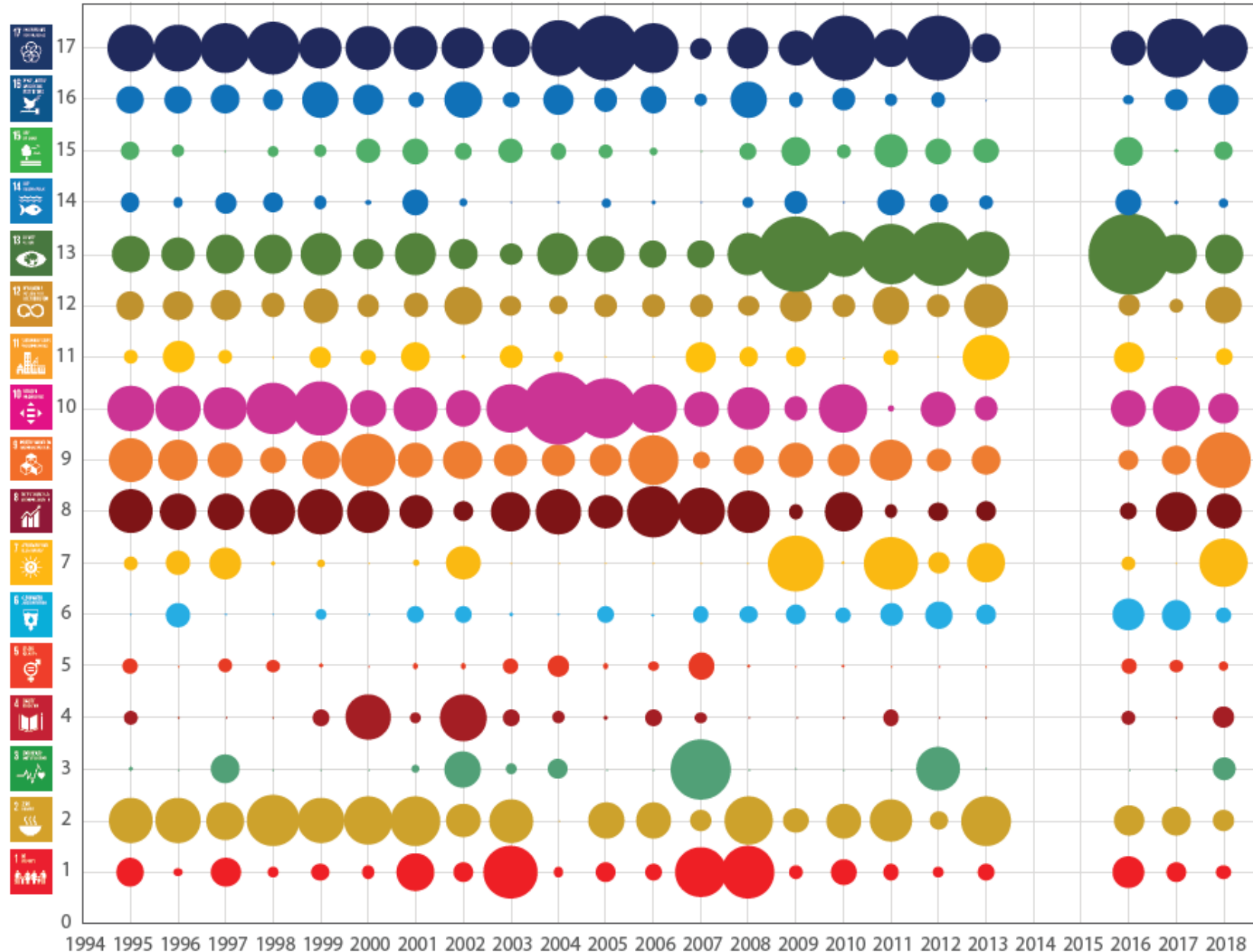
# Research



- Publications (abstract, introduction, conclusions) (google scholar, research gate, MODIP, scopus, pixida)
  - a) Published Papers/working papers
  - b) Conference presentation / Conference proceedings
  - c) Journal article (maybe to add weights for some journals)
  - d) Report
  - e) Book
- By Year, to quantify progress
- Weight denotes relevant importance

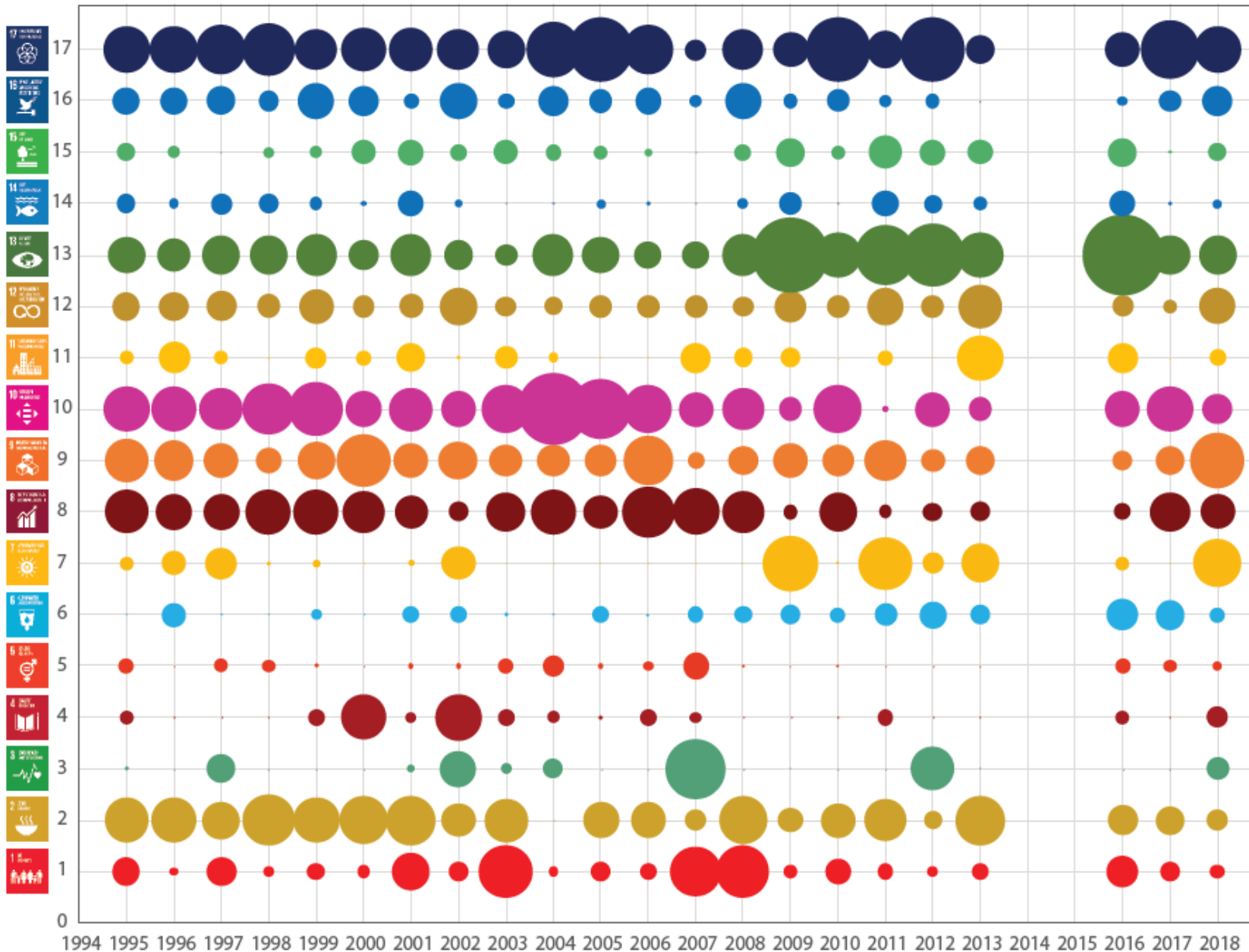


# Education



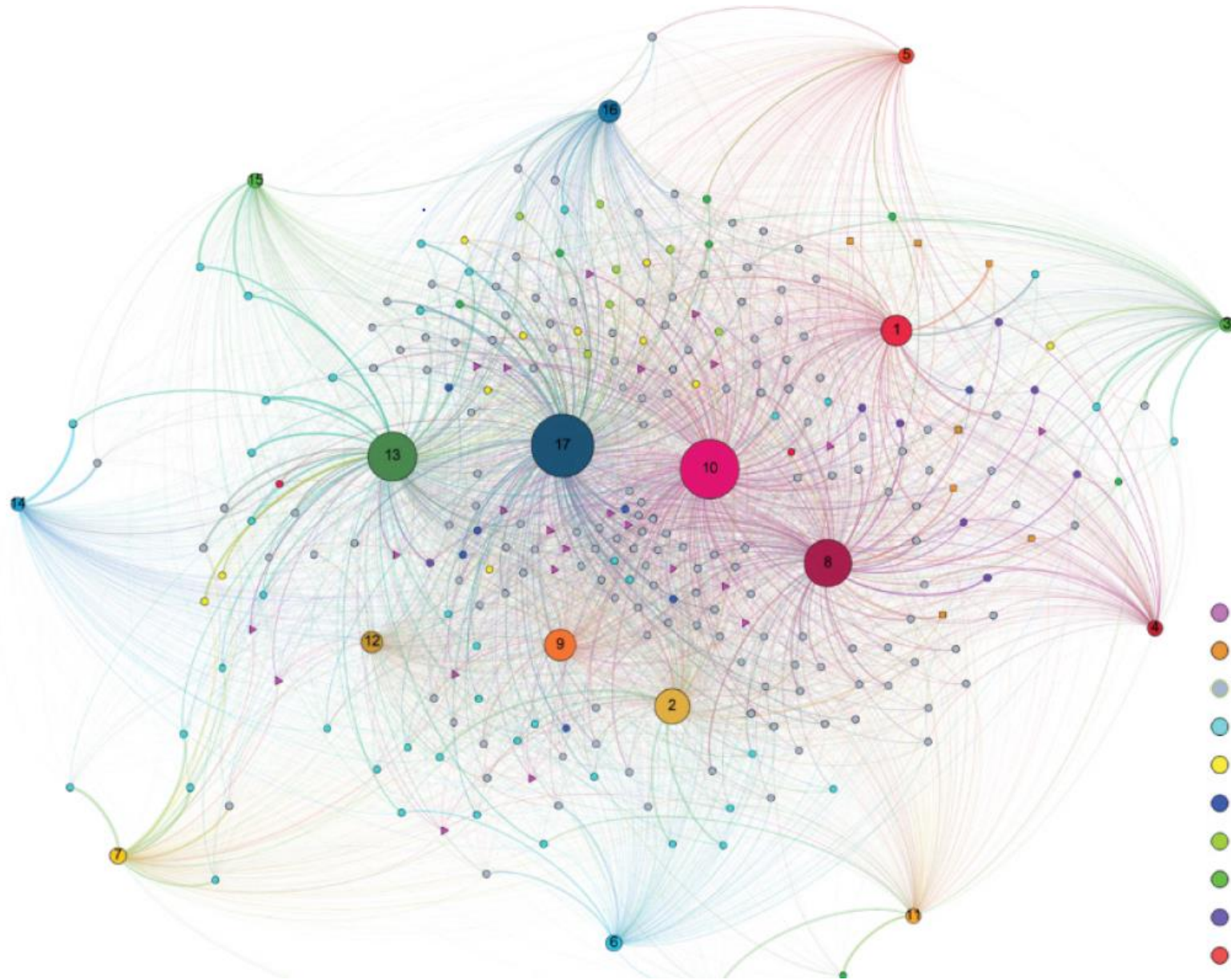
- SDG Reporting by Uni Department
- Based on Mappings with Course Outlines, Seminars , SDG Capacity Building Activities.

# Operations & Governance



- Rank Operations and Activities by SDG as in the provided pool of actions in UNSDSN [guide](#)
- Report by University organisational units

# External Leadership



- Map SDGs to News/ Announcements / Activities
- Distance Measures relative importance
- Map University Networks



- **Downscale Sustainable Development Report to Company Level**



The image shows the cover of the 'Sustainable Development Report 2022'. At the top left is the logo for the Sustainable Development Solutions Network, a global initiative for the United Nations. To the right of the logo is a navigation menu with links for 'Home', 'Networks', 'The SDG Academy', 'About Us', and 'News & Events'. The main title 'SUSTAINABLE DEVELOPMENT REPORT 2022' is prominently displayed in large blue letters. To the left of the title are four colored circles (green, yellow, orange, red) with arrows pointing up, right, down, and left respectively. To the right of the title are various icons representing different SDGs, such as a person, a book, a water drop, a sun, a bar chart, a gear, a factory, a leaf, a fish, a tree, and a bird. Below the title, the text reads 'SDG Index and Dashboards' and 'From Crisis to Sustainable Development: the SDGs as Roadmap to 2030 and Beyond'. At the bottom left is the Sustainable Development Solutions Network logo again, and at the bottom right is the Cambridge logo.

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK  
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# SUSTAINABLE DEVELOPMENT REPORT 2022

SDG Index and Dashboards

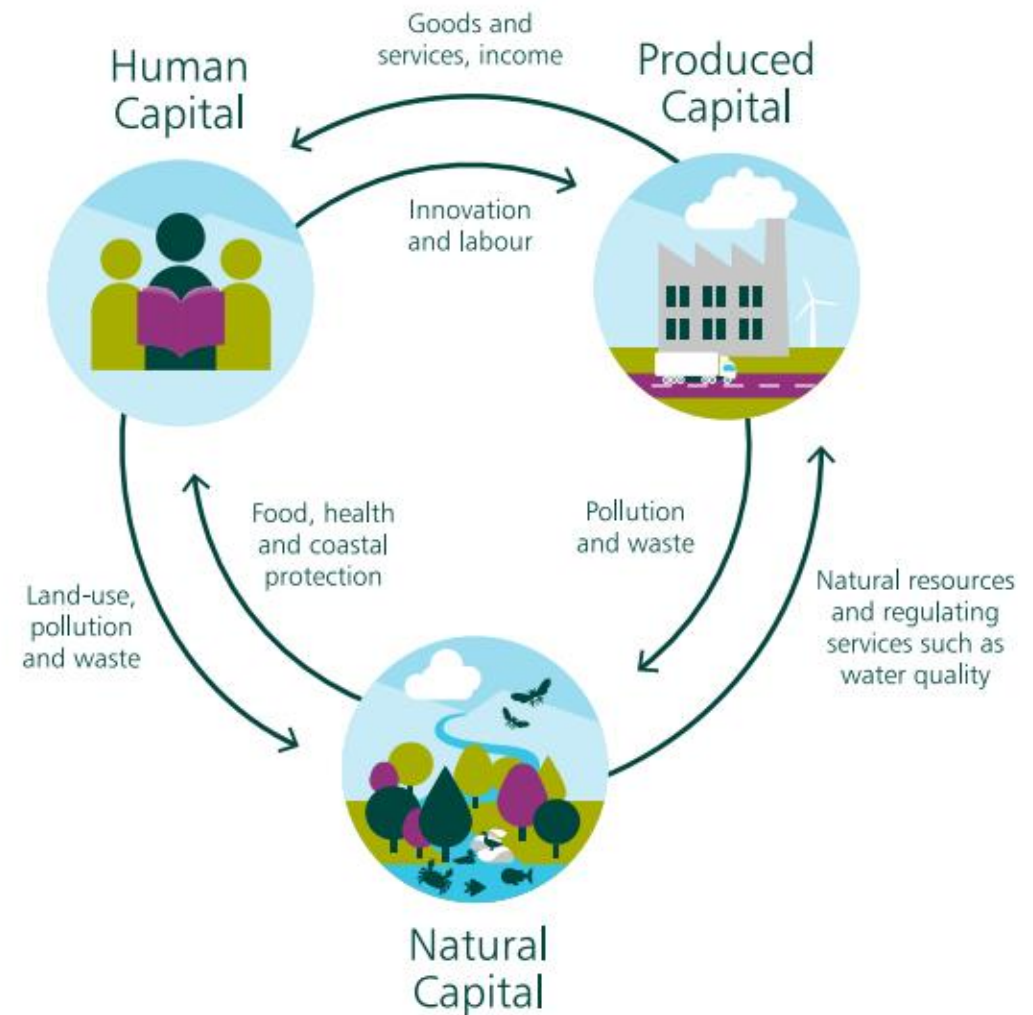
From Crisis to Sustainable Development:  
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SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK  
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

CAMBRIDGE

# Companies need to adopt a Holistic Environmental Strategy

- **Responsible Corporate behavior** is not only about compliance with the generally accepted ESG standards or principles;
- Companies need to **quantify** and **monetize** their impact on Natural Capital, Human Capital and Produced Capital;
- Natural Capital provides a wide range of services called ecosystem services, which make human life possible;
- Companies must understand the interaction among all types of Capital (Natural, Human, Produced), their dependency on each of them and develop an appropriate strategy to **address their business risks and opportunities**.



# Connection between ESG and Financial performance

Proceedings

## The Impact of ESG performance on the Financial Performance of European Area Companies: An empirical examination †

Prof. Dr Phoebe Koundouri <sup>1</sup>, Prof. Dr Nikitas Pittis <sup>2</sup> and Angelos Plataniotis <sup>3</sup>

<sup>1</sup> Professor and Director of ReSEES Research Laboratory, Athens University of Economics and Business; Director of Sustainable Development Unit and EIT Climate-KIC Hub Greece, Athena RC; Fellow World Academy of Art and Science; President-Elect of the European Association of Environmental and Resource Economists

A good ESG performance generally implies a good financial performance as well;

Further, we noticed that in general:

- A good ESG performance is associated with a lower Beta (lower systemic risk);
- Better ESG performers demonstrate improved profit margins, but this of course depends on the business sector;
- High ESG performance is positively correlated with Profitability (both in terms of 'Return-on-Assets (RoA)' and Return-on-Equity (RoE))



# A Holistic Three-Step approach is necessary for businesses to create value and move beyond compliance-based codes

## Identification

- Identify the important units in the value chain of the business – [Mapping the value Chain of Company](#) , [Products and Services](#), Stakeholders and Materiality assessment

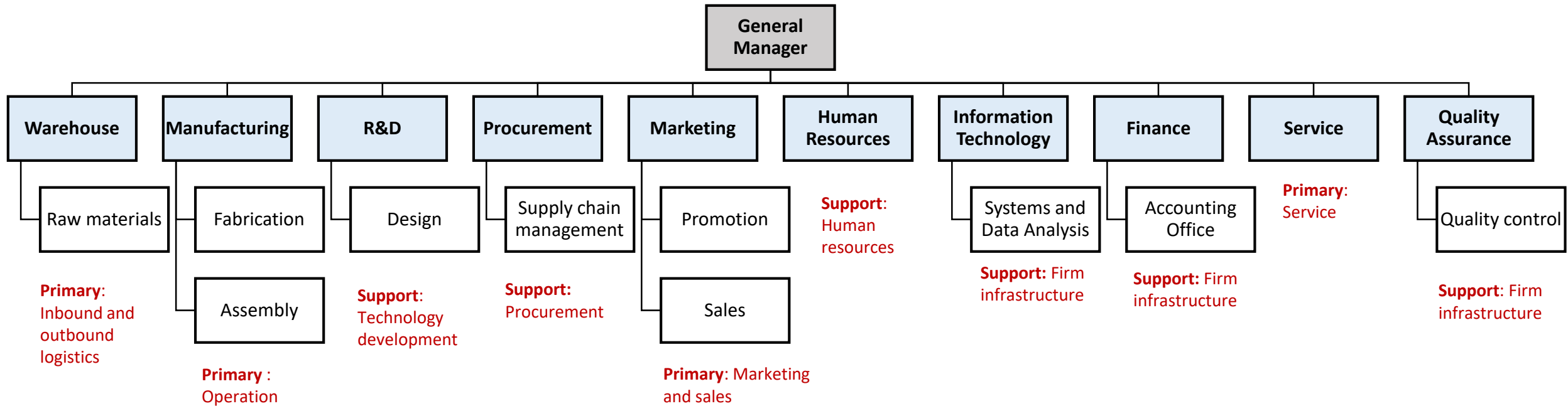
## Development

- [Measure Company's ESG Performance](#) – [Specific ESG KPIs for each company/industry/Unit](#)
- [Link ESG KPI's to SDGs](#)
- [Hybrid metrics could be an ideal tool for businesses that help connecting and combining companies' social and environmental impact with standard measures of financial performance](#)

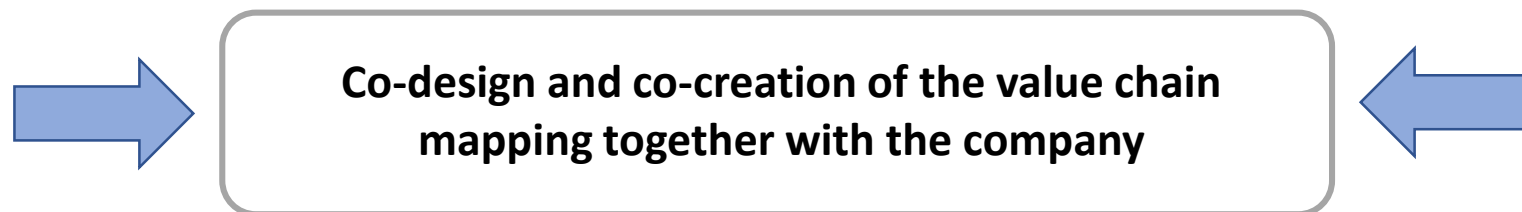
## Assessment & Monitoring

- [SDG/ESG Management, Continuous assessment and monitoring of company's performance to help decide whether, when, where and how to intervene](#)
- SDG Dashboards
- Ability to identify synergies
- Provision of systemic view and framework
- Enable creating value through operational cost reductions, increasing profits, better market positioning, competitive advantage, products and services quality enhancement, reputation improvement, etc.

# Mapping the value chain of the company

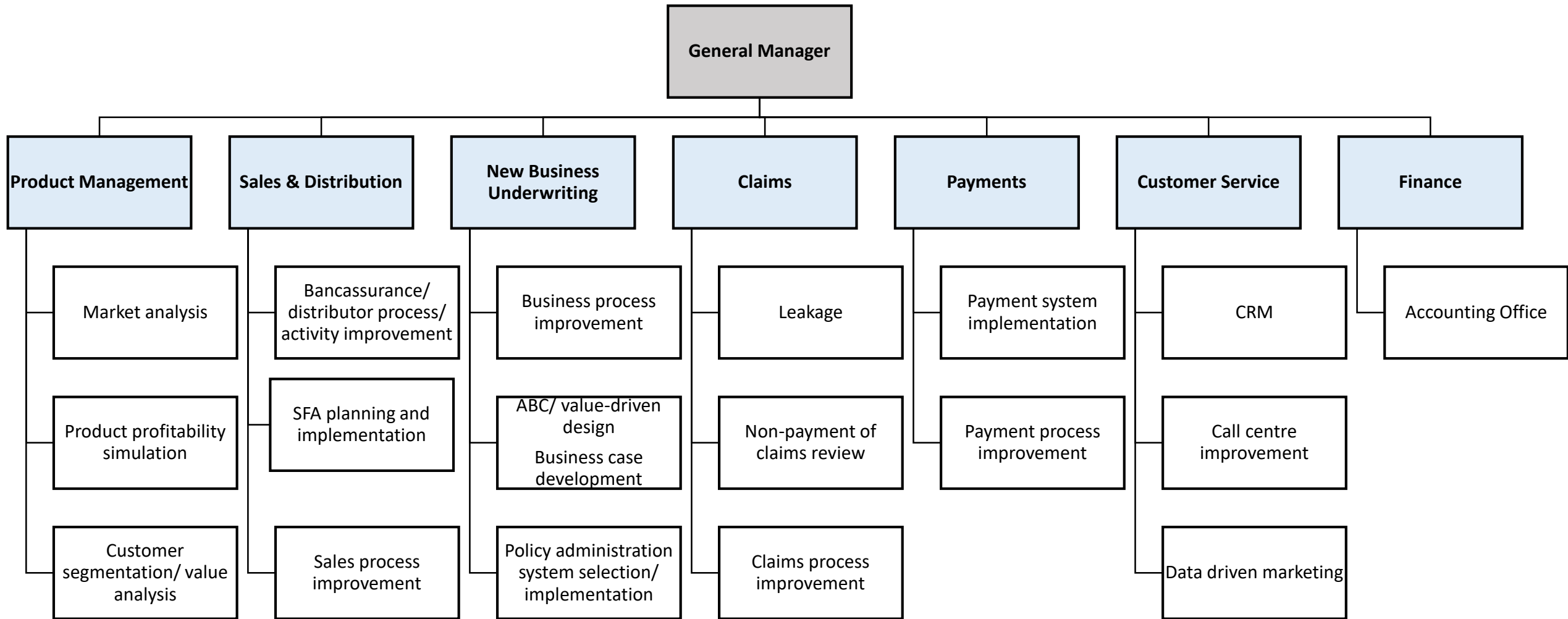


- Typical organization chart based on core business functions.
- Add additional layers depending on the company **segmentation** (e.g., product, geographical, customer).
- First-step in the three-step approach that adapts to each company's specific needs and business units/ products / services.





# Insurance Sector - Example

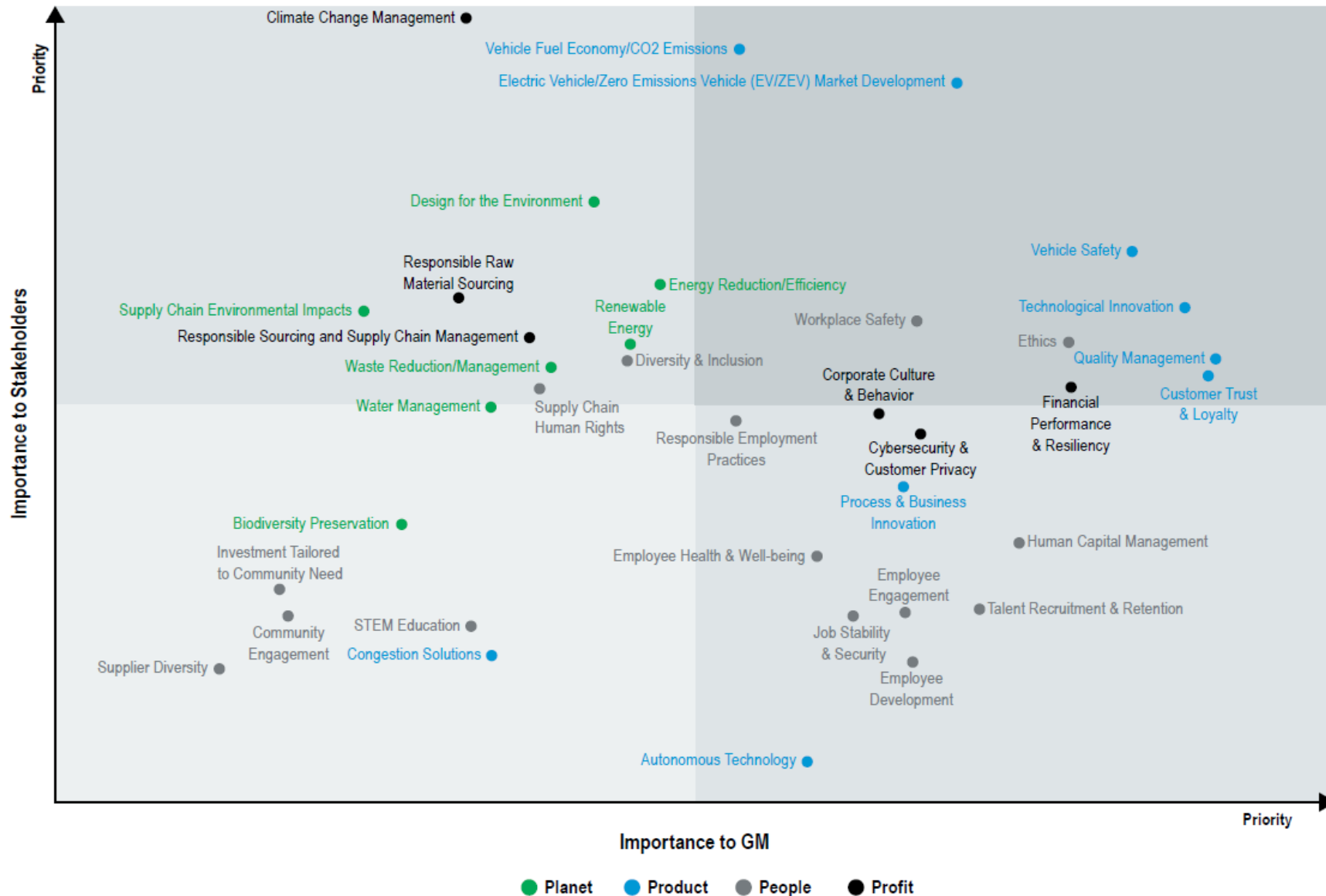


# Company Stakeholders Mapping

- Shareholders/ Investors : - Evidence-based reporting on how risk factors are expected to affect financial performance.  
- Sustainability and viability of the organization in the future.
- Business Partners : - expect a resilient ecosystem with minimal risks of adverse events ranging from financial downturns to data breaches to negative social reputations.
- Employees : - holding their organizations to higher standards beyond just financial oversight.  
- Want to work for organizations that are relevant and understand environmental and social concerns.
- Customers : - Innovative, agile companies that provide products and services that meet their needs  
- Responsive to changing demands and social constructs.
- Regulators : - expecting organizations to be responsible and prudent in all facets of business from financial reporting to the impact on the environment.

# ESG Materiality Assessment

## 2019 Materiality Matrix



- A **Materiality Assessment** is designed to help you identify and understand the relative importance of specific **ESG** and sustainability topics to your organization.
- Materiality Matrix by **Stakeholder Type**.
- Many Layers – Unit Specific

# ESG Key Performance Indicators (KPI's)

## Economic Rating

- Client Loyalty
- Performance
- Shareholders Loyalty

## Environmental Rating

- Resource Reduction
- Emission Reduction
- Product Innovation

## Social Rating

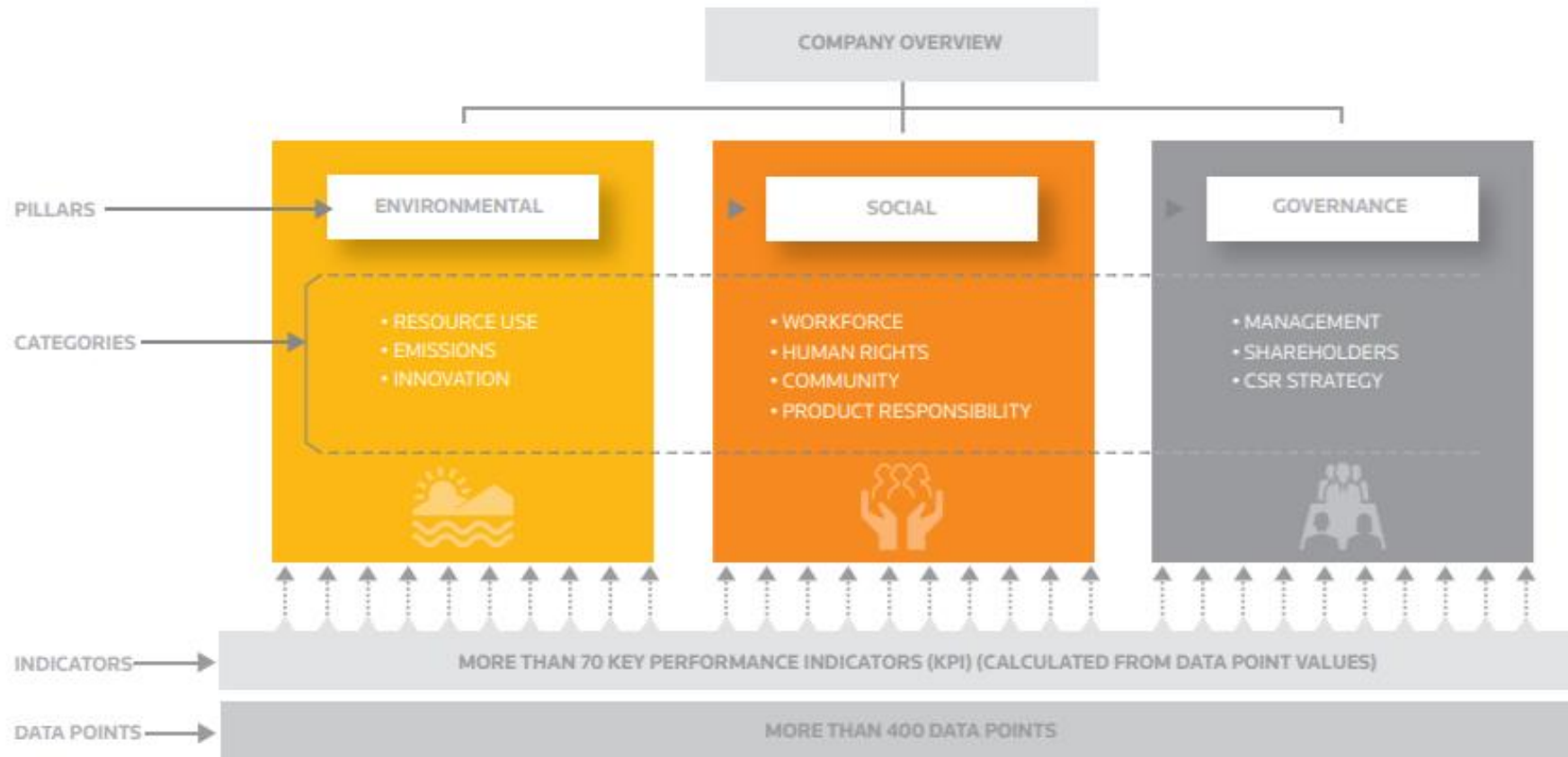
- Employment Quality
- Health & Safety
- Training & Development
- Diversity & Opportunities
- Human Rights
- Community
- Product Responsibility

## Corp. Governance Rating

- Board structure
- Compensation Policy
- Board Functions
- Shareholders Rights
- Vision and Strategy

- More than 600 Generic or Sector/Segment Specific KPI's – following all standards - e.g. SASB (Sustainability Accounting Standards Board), GRI (Global Reporting Initiative), Thompson Reuters, Bloomberg and other **standards**.

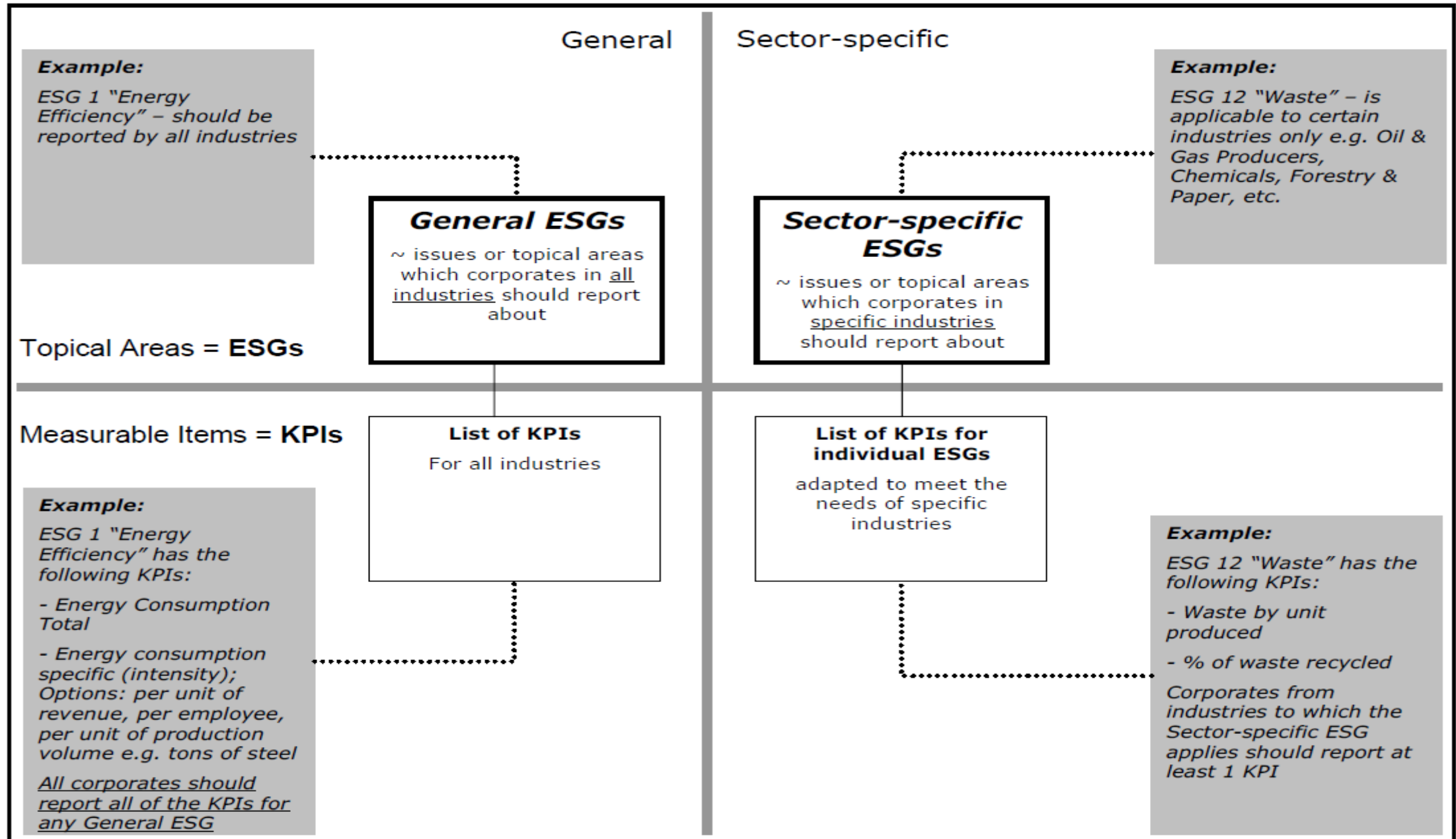
# ESG Reporting Scheme



- The Set of the KPI's are co-identified and validated by the Company, representing all important units across its value chain, and representative of its **Materiality Assessment**.
- Establish an ESG Reporting Scheme : Data Collection / Calculate relevant KPI's.



# Mapping of Company Relevant KPIs across value chain



# Generic ESG KPI's

	<b>E</b> Environmental	<b>S</b> Social	<b>G</b> Governance	<b>V</b> Longterm Viability
<b>General:</b> ESGs which apply to all industry-groups	ESG 1 Energy efficiency ESG 2 GHG emissions	ESG 3 Staff turnover ESG 4 Training & qualification ESG 5 Maturity of Workforce ESG 6 Absenteeism rate	ESG 7 Litigation risks ESG 8 Corruption	ESG 9 Revenues from new products

- Environmental Indicators should not be focused only to Energy, but to cover a broader set of activities with impact to the Environment.
- For example, additional relevant indicators can include:
  - Ecological limits assessed in terms of sustainable production and consumption;
  - Trends in Ecological Footprint and/or related concepts;
  - Trends in extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting;
- Generic KPI's which applies to all Companies / Sectors. Next slide presents some examples.

# Generic KPIs Examples

ESG	KPI
<b>ESG 1 Energy efficiency</b>	ESG 1-1 Energy consumption, total
	ESG 1-2 Energy consumption, specific (intensity); Options: per unit of revenue, per employee, per unit of production volume (tons of steel, for example)
<b>ESG 2 GHG emissions</b>	ESG 2-1 GHG emissions, total
	ESG 2-2 GHG emissions, specific; Options: per unit of revenue, per employee, per unit of production volume (tons of steel, for example)
<b>ESG 3 Staff turnover</b>	ESG 3-1 Percentage of employees leaving p.a./total employees (FTE?)
<b>ESG 4 Training &amp; qualification</b>	ESG 4-1 Percentage of trained employees p.a./total employees (FTE?)
	ESG 4-2 Average expenses on training per employee p.a
<b>ESG 5 Maturity of workforce</b>	ESG 5-1 Age structure/distribution (number of employees per age group, 10 year intervals)
	ESG 5-2 Percentage of workforce to retire in next 5 years
<b>ESG 6 Absenteeism rate</b>	ESG 6-1 Number of mandays lost per employee p.a.
<b>ESG 7 Litigation risks</b>	ESG 7-1 Expenses and fines on filings, law suits related to anti-competitive behavior, anti-trust and monopoly practices
	ESG 7-2 Reserves on preventive measurements against anti-competitive behaviour, anti-tust and monopoly practices
	ESG 7-3 (other) litigation payments, total
	ESG 7-4 (other) litigation payments, reserves
<b>ESG 8 Corruption</b>	ESG 8-1 Percentage of revenues in regions with TI corruption index below 6.0
<b>ESG 9 Revenues from new products</b>	ESG 9-1 Percentage of revenues from products at end of life-cycle
	ESG 9-2 Percentage of new products or modified products introduced less than 12 months ago

# Set of Sector/Unit Specific KPIs

Sector Banks [8350]

- Sector Specific KPI's which applies to Sector/Unit of Company. Next Slide Lists some examples.

A. Overview of sector-specific ESGs

<b>E</b> <b>Environmental</b>	<b>S</b> <b>Social</b>	<b>G</b> <b>Governance</b>	<b>V</b> <b>Longterm Viability</b>
ESG 10 Deployment of renewable energy ESG 12 Waste	ESG 15 Diversity ESG 16 % of Credit loans, undergone ESG screening ESG 17 % of funds managed in accordance to ESG criteria ESG 18 Financial instruments held in accordance to ESG criteria ESG 22 Restructuring-related relocation of jobs	ESG 24 Contributions to political parties	ESG 28 Customer retention ESG 29 Customer satisfaction

# Sector/Unit Specific KPIs Examples - Banks

ESG	KPI
<b>ESG 10 Deployment of renewable energy</b>	ESG 10-1 % of energy in kwh from renewable energy sources as of total energy consumed
	ESG 10-2 % of energy in kwh from combined heat and power generation as of total energy consumed
<b>ESG 12 Waste</b>	ESG 12-1 Waste by unit produced
	ESG 12-2 % of waste recycled
<b>ESG 15 Diversity</b>	ESG 15-1 Percentage of female employees as of total
	ESG 15-2 Percentage of female managers as of total
<b>ESG 16 Percentage of credit loans, investments and prop trading activities undergone ESG screening</b>	ESG 16-1 Percentage of credit loans undergone ESG-screening
	ESG 16-2 Percentage of prop trading activities undergone ESG screening
<b>ESG 17 Percentage of funds managed in accordance to ESG-criteria</b>	ESG 17-1 Percentage of funds managed in accordance to ESG-criteria
<b>ESG 18 Financial instruments, investment property held in accordance to ESG-criteria</b>	ESG 18-1 Percentage of financial instruments, investment property held in accordance to ESG-criteria
<b>ESG 22 Restructuring related relocation of jobs</b>	ESG 22-1 Total cost of relocation in \$, € incl. Indemnity, pay-off, outplacement, hiring, training, consulting
<b>ESG 24 Contributions to political parties</b>	ESG 24-1 Contributions to political parties as percentage of revenues
<b>ESG 28 Customer retention</b>	ESG 28-1 Percentage of new customers as of total customers
	ESG 28-2 Average length of time of customer relationship in years
	ESG 28-3 Share-of-market by product, productline, segment, region or total
<b>ESG 29 Customer satisfaction</b>	ESG 29-1 Percentage of satisfied customers as of total customers
	ESG 29-2 Percentage of revenues from repeat business as of total business



# Cement Industry Examples

Focus Area	Key Performance Indicator
Health and Safety	<ul style="list-style-type: none"><li>• Employee fatalities (N<sup>o</sup>)</li><li>• Employee Lost Time Injuries Frequency Rate</li></ul>
Customer Centricity	<ul style="list-style-type: none"><li>• Net Promoter Score (NPS)</li></ul>
Climate Action	<ul style="list-style-type: none"><li>• Reduction of net CO<sub>2</sub> emissions per ton of cementitious product vs. 1990(%)<sup>[1]</sup></li><li>• Clinker Factor (cementitious) (%)</li><li>• Alternative fuels rate (%)</li><li>• Clean electricity consumption in cement (%)</li></ul>
Sustainable Construction	<ul style="list-style-type: none"><li>• Annual sales of cement and concrete products with outstanding sustainable attributes (%)<sup>[6]</sup></li></ul>

# Cement Industry Examples

<b>Circular Economy</b>	<ul style="list-style-type: none"> <li>• Total waste-derived sources managed (million tons)</li> </ul>
<b>Air Emissions</b>	<ul style="list-style-type: none"> <li>• Reduction of dust emissions per ton of clinker vs. 2005 (%)</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduction of NO<sub>x</sub> emissions per ton of clinker vs. 2005 (%)</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduction of SO<sub>x</sub> emissions per ton of clinker vs. 2005 (%)</li> </ul>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Quarry rehabilitation plans, Biodiversity Action Plans, and third-party certification (%)</li> </ul>
	<ul style="list-style-type: none"> <li>• Third-party certification on critical sites (%)<sup>[2]</sup></li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Implementation of Water Action Plans in sites located in water-scarce areas (%)</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduction in specific freshwater withdrawal in Cementitious (%)<sup>[4]</sup></li> </ul>
	<ul style="list-style-type: none"> <li>• Reduction in specific freshwater withdrawal in Aggregates (%)<sup>[4]</sup></li> </ul>
	<ul style="list-style-type: none"> <li>• Reduction in specific freshwater withdrawal in Concrete (%)<sup>[4]</sup></li> </ul>
<b>Employee Experience</b>	<ul style="list-style-type: none"> <li>• Employee Net Promoter Score (eNPS)<sup>[6]</sup></li> </ul>
	<ul style="list-style-type: none"> <li>• Voluntary Turnover (%)<sup>[6]</sup></li> </ul>
<b>Communities</b>	<ul style="list-style-type: none"> <li>• Community engagement plans with formal stakeholder dialogues and committees in all priority sites (%)</li> </ul>
	<ul style="list-style-type: none"> <li>• Community partners (million people)<sup>[5]</sup></li> </ul>
<b>Suppliers</b>	<ul style="list-style-type: none"> <li>• Sustainability assessment of critical suppliers by an independent third-party (% spend)</li> </ul>
<b>Ethics and Compliance</b>	<ul style="list-style-type: none"> <li>• Implementation of Ethics and Compliance Continuous Improvement Program (%)</li> </ul>



# Insurance Industry Examples

Sector Nonlife Insurance [8530]

A. Overview of sector-specific ESGs

<b>E</b> <b>Environmental</b>	<b>S</b> <b>Social</b>	<b>G</b> <b>Governance</b>	<b>V</b> <b>Longterm Viability</b>
ESG 10 Deployment of renewable energy	ESG 15 Diversity ESG 17 % of funds managed in accordance to ESG criteria ESG 18 Financial instruments held in accordance to ESG criteria ESG 22 Restructuring-related relocation of jobs	ESG 23 Dimension of pending legal proceedings ESG 24 Contributions to political parties	ESG 27 Investments in research on new risk ESG 28 Customer retention ESG 29 Customer satisfaction

# Insurance Industry Examples

ESG	KPI
<b>ESG 10 Deployment of renewable energy</b>	ESG 10-1 % of energy in kwh from renewable energy sources as of total energy consumed
	ESG 10-2 % of energy in kwh from combined heat and power generation as of total energy consumed
<b>ESG 15 Diversity</b>	ESG 15-1 Percentage of female employees as of total
	ESG 15-2 Percentage of female managers as of total
<b>ESG 17 Percentage of funds managed in accordance to ESG-criteria</b>	ESG 17-1 Percentage of funds managed in accordance to ESG-criteria
<b>ESG 18 Financial instruments, investment property held in accordance to ESG-criteria</b>	ESG 18-1 Percentage of financial instruments, investment property held in accordance to ESG-criteria
<b>ESG 22 Restructuring related relocation of jobs</b>	ESG 22-1 Total cost of relocation in \$, € incl. Indemnity, pay-off, outplacement, hiring, training, consulting
<b>ESG 23 Dimensions of pending legal proceedings</b>	ESG 23-1 Amount in \$, € in controversy, dispute from legal proceedings
	ESG 23-2 Amount in \$, € in controversy, dispute from legal proceedings as a percentage from total revenues
<b>ESG 24 Contributions to political parties</b>	ESG 24-1 Contributions to political parties as percentage of revenues
<b>ESG 27 Investments in research on new risk</b>	ESG 27-1 Total investments in research on new risk in \$, €
	ESG 27-2 Total investments in research on new risk in mandays
	ESG 27-3 Total investments in research on new risk in \$, € as a percentage of revenues



# Mapping ESG to SDG Goals and Targets

 Environment



 Social



 Governance

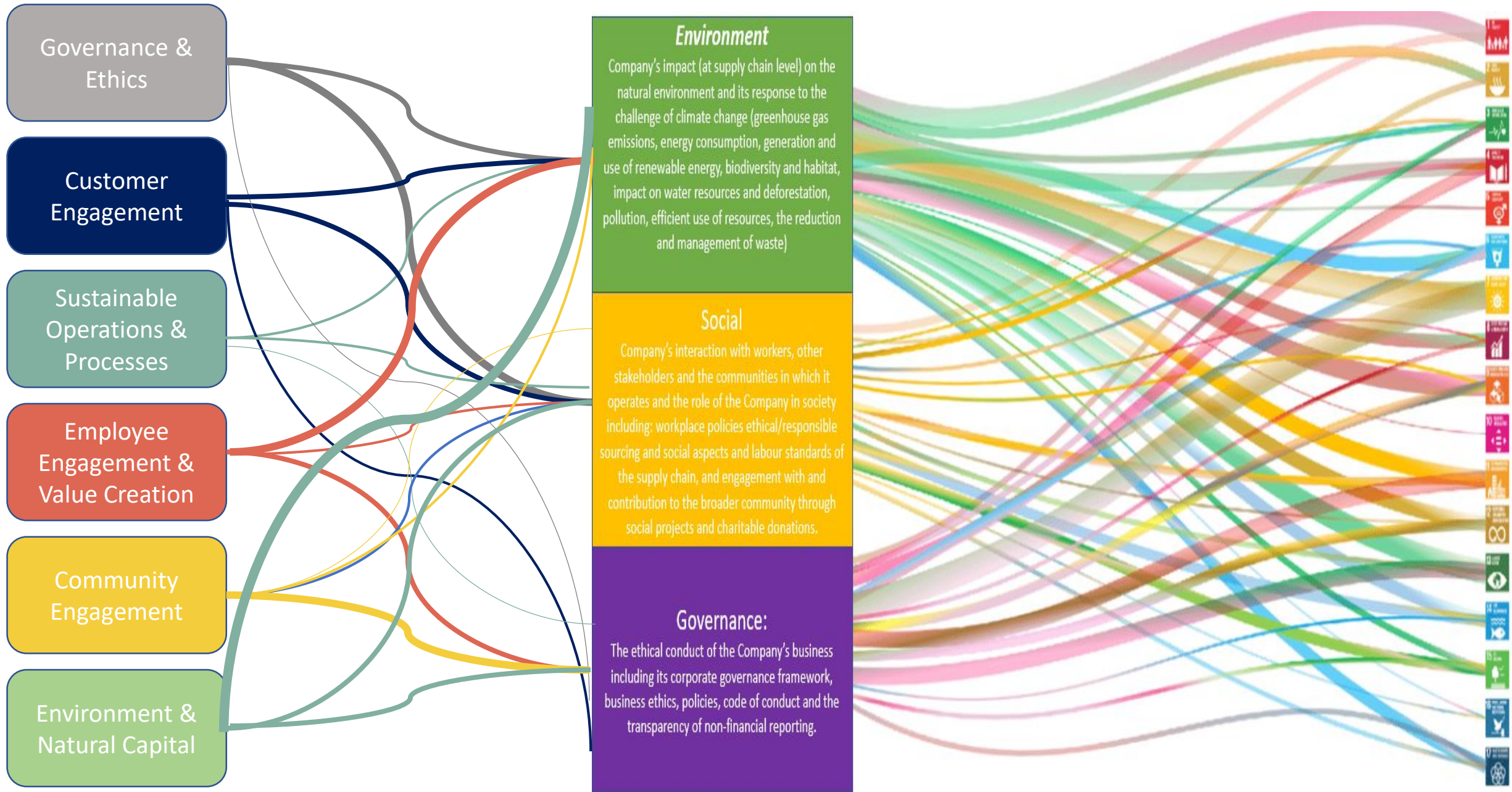


- ESG KPIs are mapped to SDGs Indexes.
- Experts Classification & Machine learning Approaches to map ESG KPIs to the 232 Indicators of 17 SDGs.
- **Targets** are set for SDG Indicators following the common **UN SDSN** methodology.

SDG Goal	SDG Target	Business Theme	Type of Indicator
1. End poverty in all its forms everywhere	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Availability of products and services for those on low incomes	Sector-specific
1. End poverty in all its forms everywhere	1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Availability of products and services for those on low incomes	General
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Corporate governance body	General
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Corporate governance body	General



# Company Sustainability Assessment Framework – 6 ESG/SDG Transformations

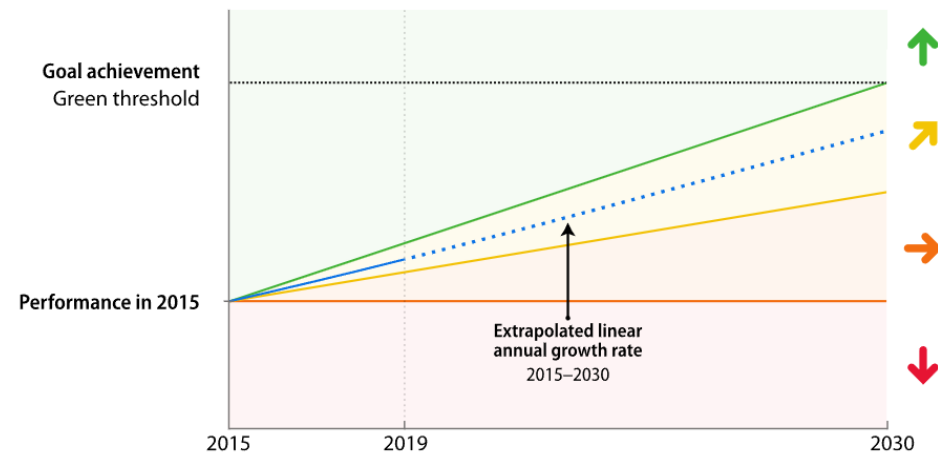


# SDG Footprint Dashboard By Company/ Unit



Dashboards: ● SDG achieved ● Challenges remain ● Significant challenges remain ● Major challenges remain ● Information unavailable

- Calculate the Company's SDG Footprint at a company/ Unit level.
- Calculate SDG Trends/ Pathways to 2030/2050.



# Athens Stock Exchange (ATHEX) ESG Index



- Launched July 2020

Goal to support ESG initiatives and Corporate Social Responsibility in line with 2030 Agenda for Sustainable Development

- **Eligibility Criteria**

- Companies listed on ATHEX Main Market
- ESG scoring greater than or equal to 0.30

- **Selection Process**

- Companies fulfilling the eligibility criteria are ranked in descending order based on their ESG scoring
- The first 60 companies of the rank are included in the index composition

# The Impact of ESG performance on the Financial Performance of European Area Companies: An empirical examination

- Action for Climate crisis: UN Agenda 2030-17SDGs, Paris Agreement, European Green Deal
- Business sector must contribute – Incorporation of ESG in their operations
- Increasing interest of companies in the ESG framework: Good reputation and Performance improvement

## ***Hypothesis :***

- **Good ESG performance => Good overall performance in terms of profitability, valuation, capital efficiency and risk?**

## **Sample:**

STOXX Europe ESG Leaders 50 index (global leaders in terms of environmental, social and governance criteria) Vs  
EURO STOXX 50 Index (Europe's leading blue-chip index for the Eurozone)

## **Work :**

1. We reviewed their ESG reporting framework
2. We examined whether there is a pattern of a better financial performance of ESG Leaders vs Others

# Timeline of Sustainability Reporting Standards (ESG Metrics)

**1997**

- GRI (Global Reporting Initiative)
- Greenhouse Gas Protocol

**2005**

- Principles for Sustainable Investment (PRI)

**2010**

- Integrated Reporting (<IR>)

**2015**

- Task force on Climate-Related Financial Disclosures (TCFD)

**2000**

- Carbon Disclosure Project (CDP)

**2007**

- Climate Disclosure Standards Board (CDSB)

**2011**

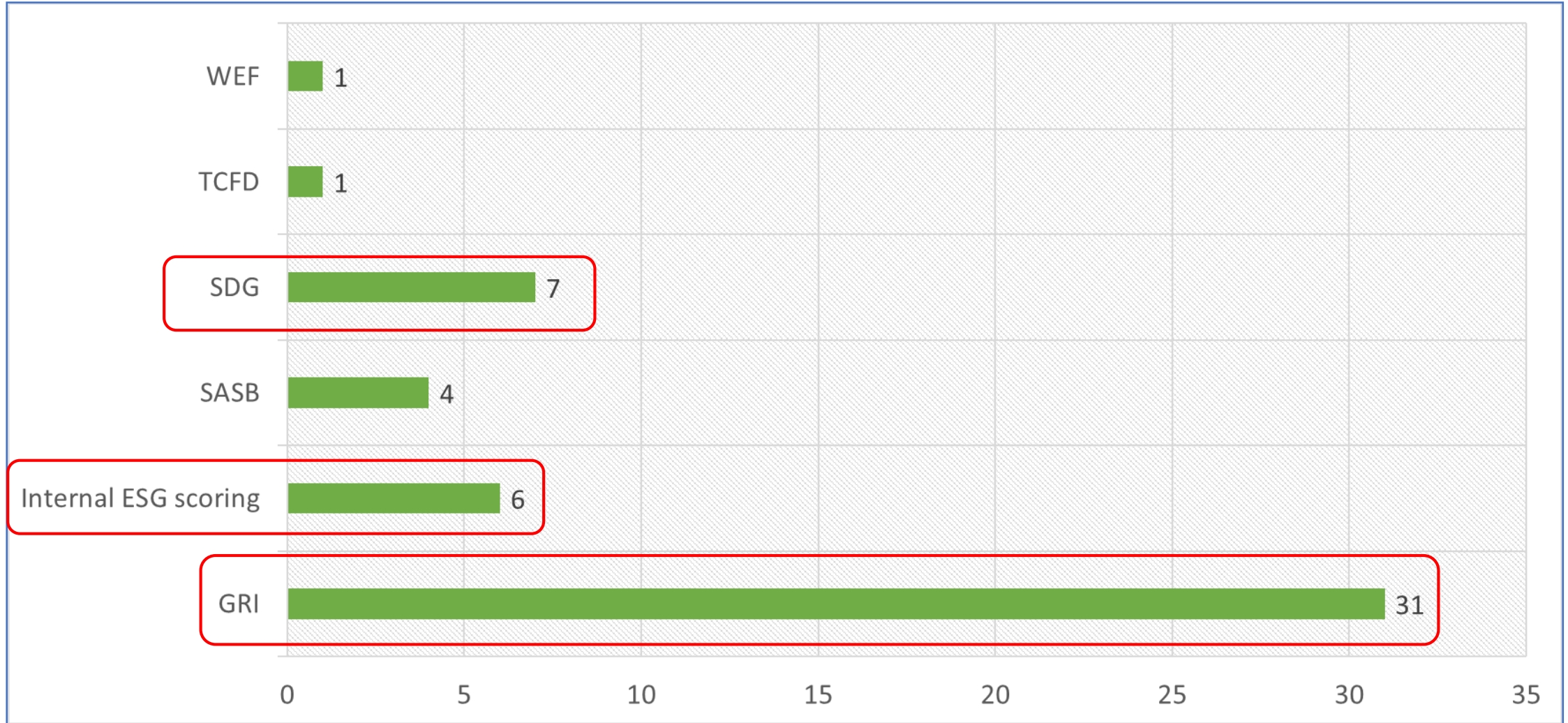
- Sustainability Accounting Standards Board (SASB)

**2021**

- CSRD (Corporate Sustainability Reporting Directive)



# Framework for Sustainability Reporting



# STOXX Europe ESG Leaders 50

ISIN: CH0183680310 | WKN: A1N57L | Symbol: 09J3 | Type: Index

Overview

Charts

Price History



CH0183680

D



Compare



Indicators



+1.27 (+0.92%)

EU0009658145, STOXX

19.88%

18.23%

16.00%

12.00%

8.00%

4.00%

0.00%

-4.00%

-8.00%

-12.00%

-16.00%

-20.00%

-24.00%

-28.00%

-32.00%

-36.00%

-36.00%

-36.00%

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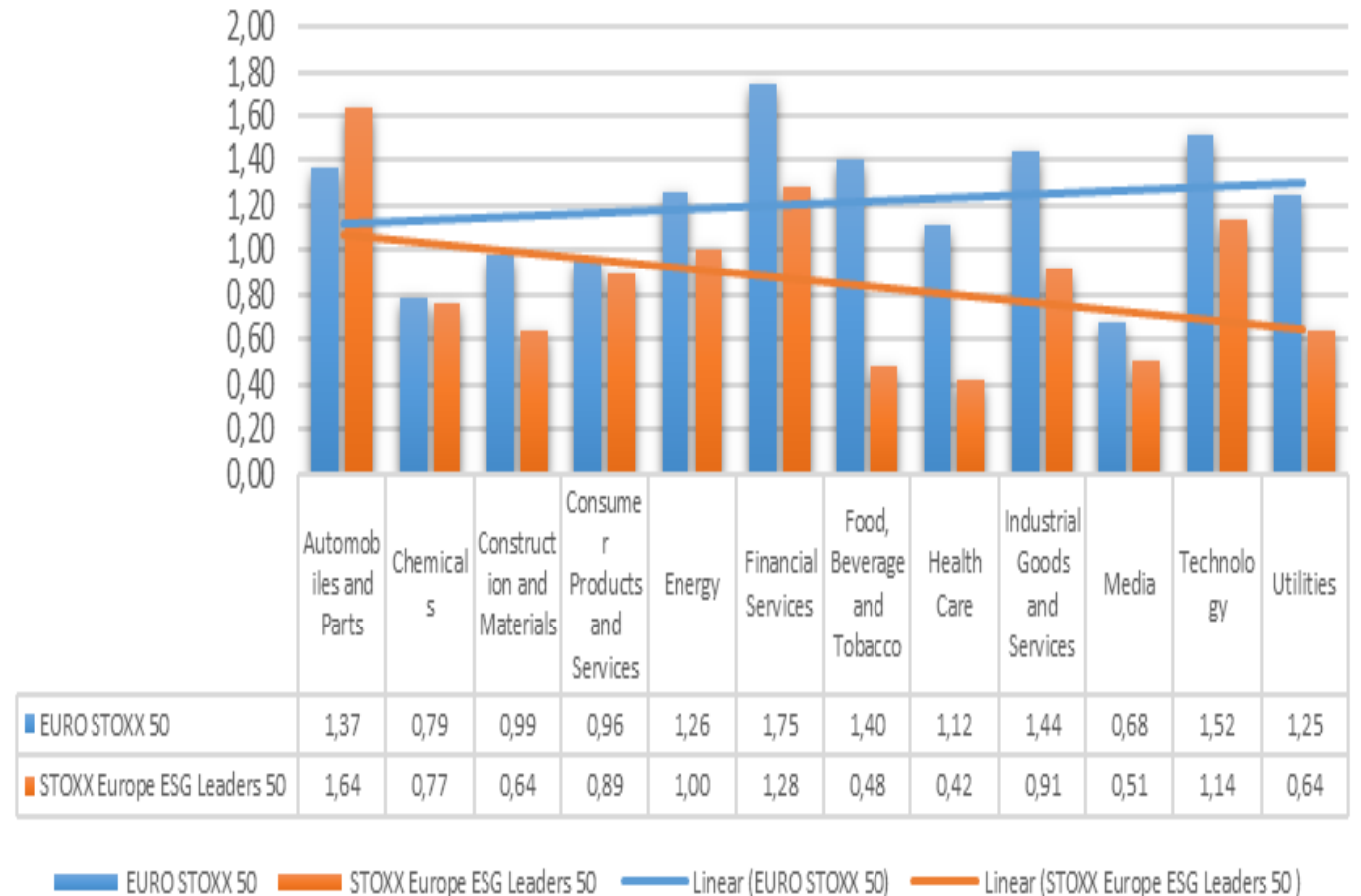
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	Average of Beta (5Y Monthly)	Average of Total Debt/Equity (mrq)	Average of Profit Margin	Average of Return on Assets (ttm)	Average of Return on Equity (ttm)
<b>Automobiles and Parts</b>					
EURO STOXX 50	1,37	158,74	5%	2%	9%
STOXX Europe ESG Leaders 50	1,64	216,08	5%	2%	13%
<b>Chemicals</b>					
EURO STOXX 50	0,79	33,06	10%	3%	6%
STOXX Europe ESG Leaders 50	0,77	83,50	8%	5%	11%
<b>Construction and Materials</b>					
EURO STOXX 50	0,99	106,28	3%	3%	5%
STOXX Europe ESG Leaders 50	0,64	127,05	10%	7%	26%
<b>Consumer Products and Services</b>					
EURO STOXX 50	0,96	96,71	11%	5%	13%
STOXX Europe ESG Leaders 50	0,89	54,01	9%	5%	11%
<b>Energy</b>					
EURO STOXX 50	1,26	80,82	-11%	0%	-11%
STOXX Europe ESG Leaders 50	1,00	74,29	-5%	-1%	-8%
<b>Financial Services</b>					
EURO STOXX 50	1,75	2,63	-23%	0%	-6%
STOXX Europe ESG Leaders 50	1,28	26,59	14%	1%	8%
<b>Food, Beverage and Tobacco</b>					
EURO STOXX 50	1,40	125,80	9%	1%	4%
STOXX Europe ESG Leaders 50	0,48	110,70	9%	6%	13%
<b>Health Care</b>					
EURO STOXX 50	1,12	79,77	-12%	2%	-18%
STOXX Europe ESG Leaders 50	0,42	58,43	21%	11%	32%
<b>Industrial Goods and Services</b>					
EURO STOXX 50	1,44	102,09	3%	3%	7%
STOXX Europe ESG Leaders 50	0,91	70,89	11%	5%	18%
<b>Media</b>					
EURO STOXX 50	0,68	46,81	9%	3%	10%
STOXX Europe ESG Leaders 50	0,51	339,17	17%	8%	56%
<b>Technology</b>					
EURO STOXX 50	1,52	90,12	47%	-3%	-1%
STOXX Europe ESG Leaders 50	1,14	50,30	17%	7%	19%
<b>Utilities</b>					
EURO STOXX 50	1,25	113,10	-3%	2%	-2%
STOXX Europe ESG Leaders 50	0,64	104,44	7%	3%	8%

# Beta indicator

- **Beta indicator: Express the volatility of a stock**
- **High-beta are considered riskier**
- **Companies with good ESG performance tend to have lower beta, therefore lower risk**

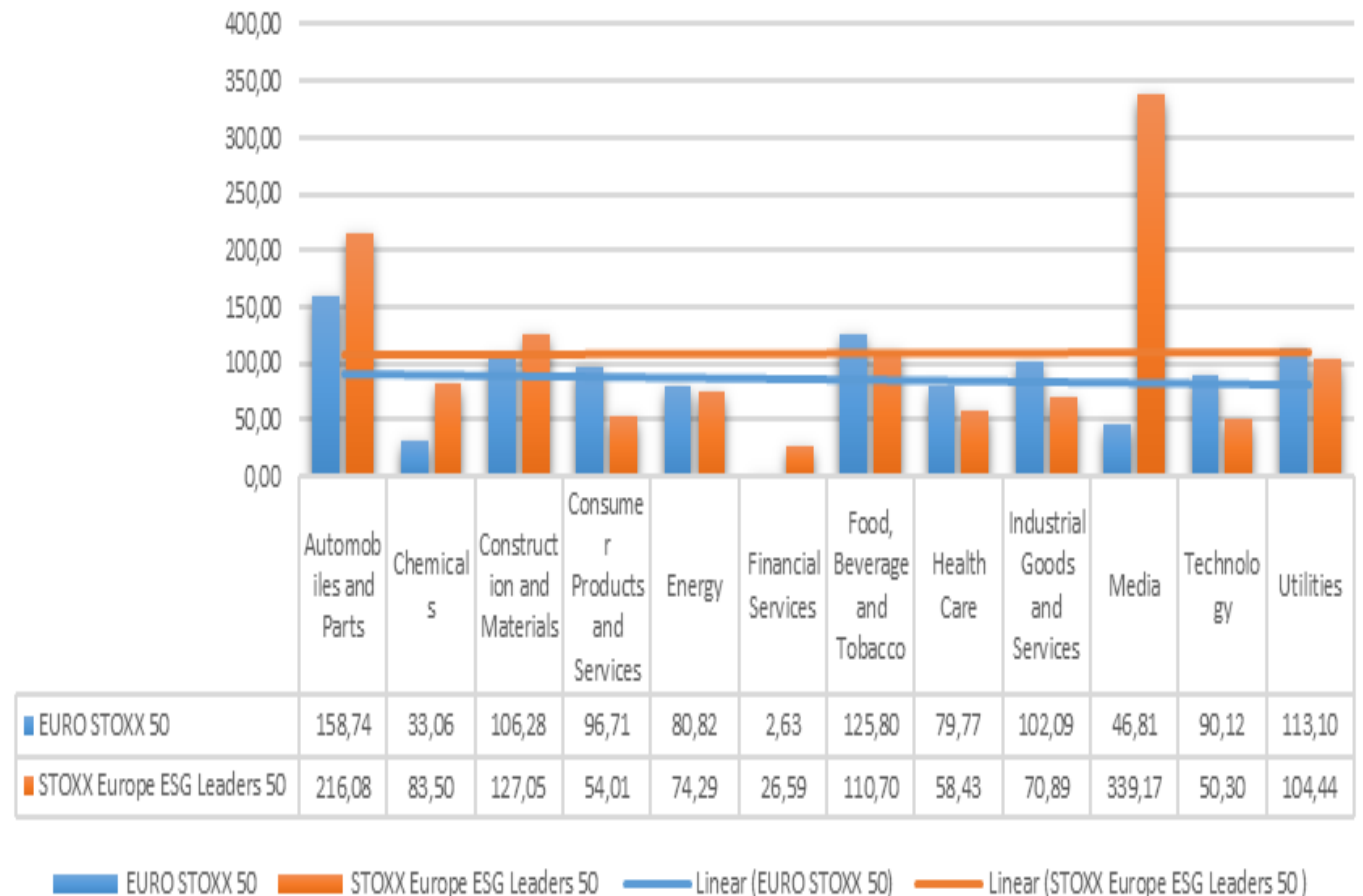
Average of Beta (5Y Monthly) per sector



# Debt-to-equity (D/E) ratio

- **Debt-to-equity (D/E) ratio: Total liabilities divided by shareholder equity,**
- **It is used to assess financial leverage**
- **D / E ratio is at similar levels in all sectors (except for media sector companies)**
- **ESG performance seem to have no impact on financial leverage levels**

Average of Total Debt/Equity per sector

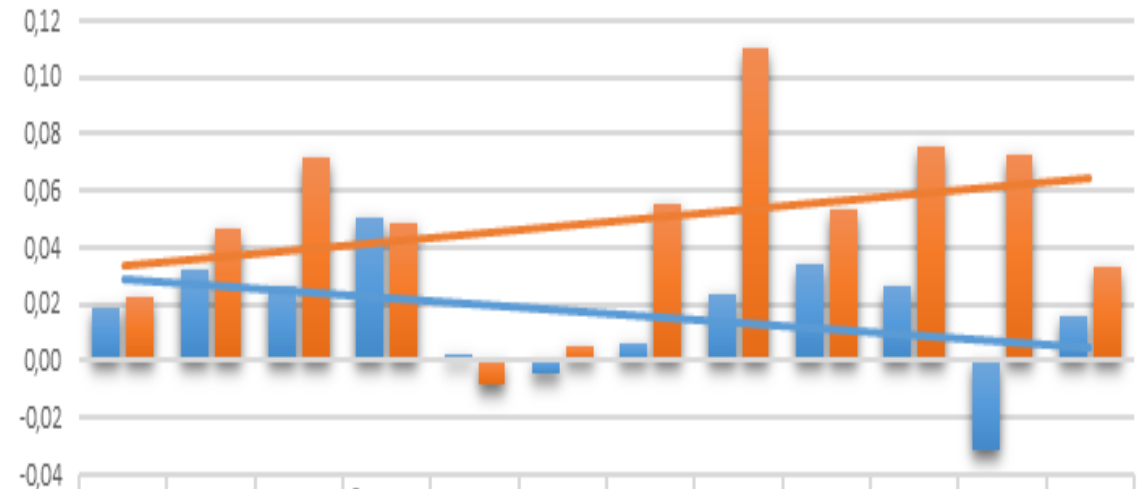




# Return on assets (ROA)

- **Return on assets (ROA): A company's profitability to its total assets**
- **The greater the ROA, the better**
- **Good ESG performers tend to have better ROA**

## Average of Return on Assets per sector



	Automobiles and Parts	Chemicals	Construction and Materials	Consumer Products and Services	Energy	Financial Services	Food, Beverage and Tobacco	Health Care	Industrial Goods and Services	Media	Technology	Utilities
■ EURO STOXX 50	0,02	0,03	0,03	0,05	0,00	0,00	0,01	0,02	0,03	0,03	-0,03	0,02
■ STOXX Europe ESG Leaders 50	0,02	0,05	0,07	0,05	-0,01	0,01	0,06	0,11	0,05	0,08	0,07	0,03

■ EURO STOXX 50 ■ STOXX Europe ESG Leaders 50 — Linear (EURO STOXX 50) — Linear (STOXX Europe ESG Leaders 50)

# Return on equity (ROE)

- **Return on equity (ROE):** Net income divided by shareholders' equity
- **It is a measure of a company's profitability to its stockholders' equity**
- **As with ROA, that companies with good ESG performance have a better return on equity than the rest**

## Average of Return on Equity per sector



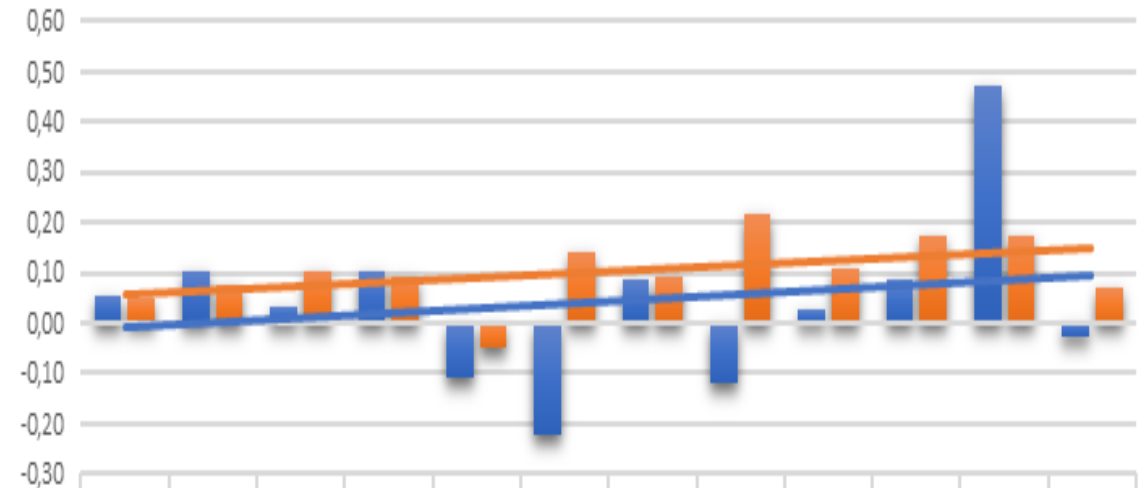
	Automobiles and Parts	Chemicals	Construction and Materials	Consumer Products and Services	Energy	Financial Services	Food, Beverage and Tobacco	Health Care	Industrial Goods and Services	Media	Technology	Utilities
EURO STOXX 50	0,09	0,06	0,05	0,13	-0,11	-0,06	0,04	-0,18	0,07	0,10	-0,01	-0,02
STOXX Europe ESG Leaders 50	0,13	0,11	0,26	0,11	-0,08	0,08	0,13	0,32	0,18	0,56	0,19	0,08

■ EURO STOXX 50   
 ■ STOXX Europe ESG Leaders 50   
 — Linear (EURO STOXX 50)   
 — Linear (STOXX Europe ESG Leaders 50)

# Profit margin

- **Profit margin: how many cents of profit has been generated for each dollar of sales**
- **No clear connection between ESG performance and good profit margin**
- **In some sectors the companies that are ESG leaders have a higher profit margin , but in others not.**

## Average of Profit Margin per sector



	Automobiles and Parts	Chemicals	Construction and Materials	Consumer Products and Services	Energy	Financial Services	Food, Beverage and Tobacco	Health Care	Industrial Goods and Services	Media	Technology	Utilities
■ EURO STOXX 50	0,05	0,10	0,03	0,11	-0,11	-0,23	0,09	-0,12	0,03	0,09	0,47	-0,03
■ STOXX Europe ESG Leaders 50	0,05	0,08	0,10	0,09	-0,05	0,14	0,09	0,21	0,11	0,17	0,17	0,07

■ EURO STOXX 50 ■ STOXX Europe ESG Leaders 50 — Linear (EURO STOXX 50) — Linear (STOXX Europe ESG Leaders 50)



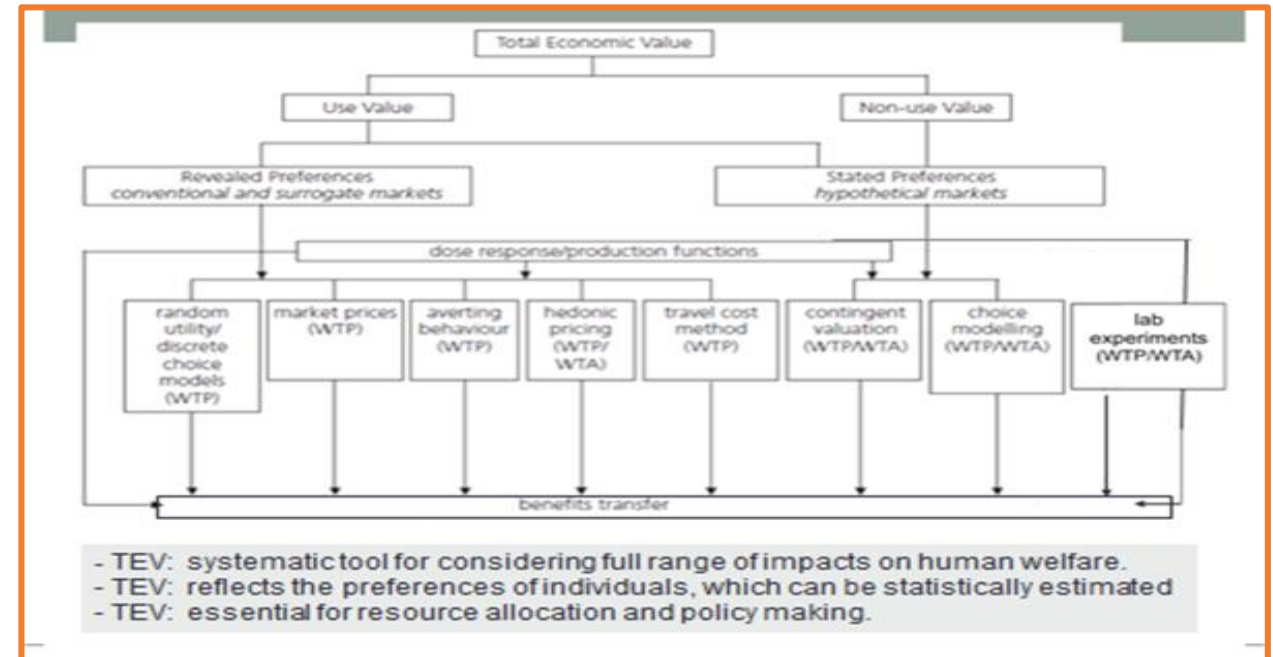
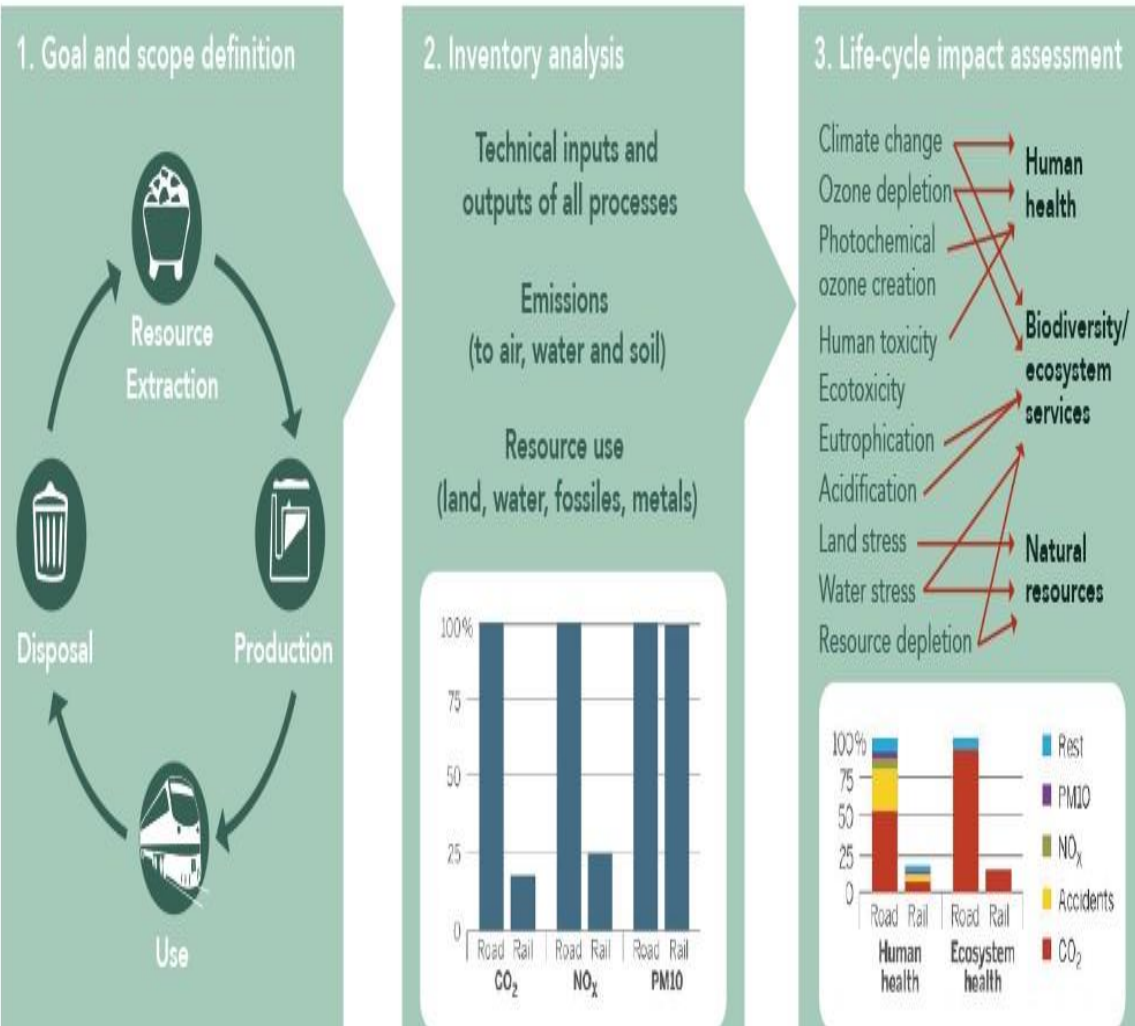
**Table 2: Mean Future Annual Excess Returns**

<b>Panel A: Russell 3000</b>				
	<b>SASB material items</b>		<b>All ESG items</b>	
	<b>Mean</b>	<b>N</b>	<b>Mean</b>	<b>N</b>
Good ESG	0.017	482	0.038	1069
Bad ESG	-0.014	334	0.046	3777
Neutral ESG	0.045	6950	0.048	10599
Missing	0.005	15241	-0.042	7562

<b>Panel B: S&amp;P 500</b>				
	<b>SASB material items</b>		<b>All ESG items</b>	
	<b>Mean</b>	<b>N</b>	<b>Mean</b>	<b>N</b>
Good ESG	0.013	392	0.035	859
Bad ESG	-0.001	113	0.045	1121
Neutral ESG	0.041	2532	0.037	1714
Missing	0.059	834	0.074	177

*Source:* Bloomberg ESG data, CRSP database, SASB, Russell 3000 Index, S&P 500 Index.

# Valuation of Environmental and Socio-Economic Impacts - Total Economic Value (LCA and S-LCA)

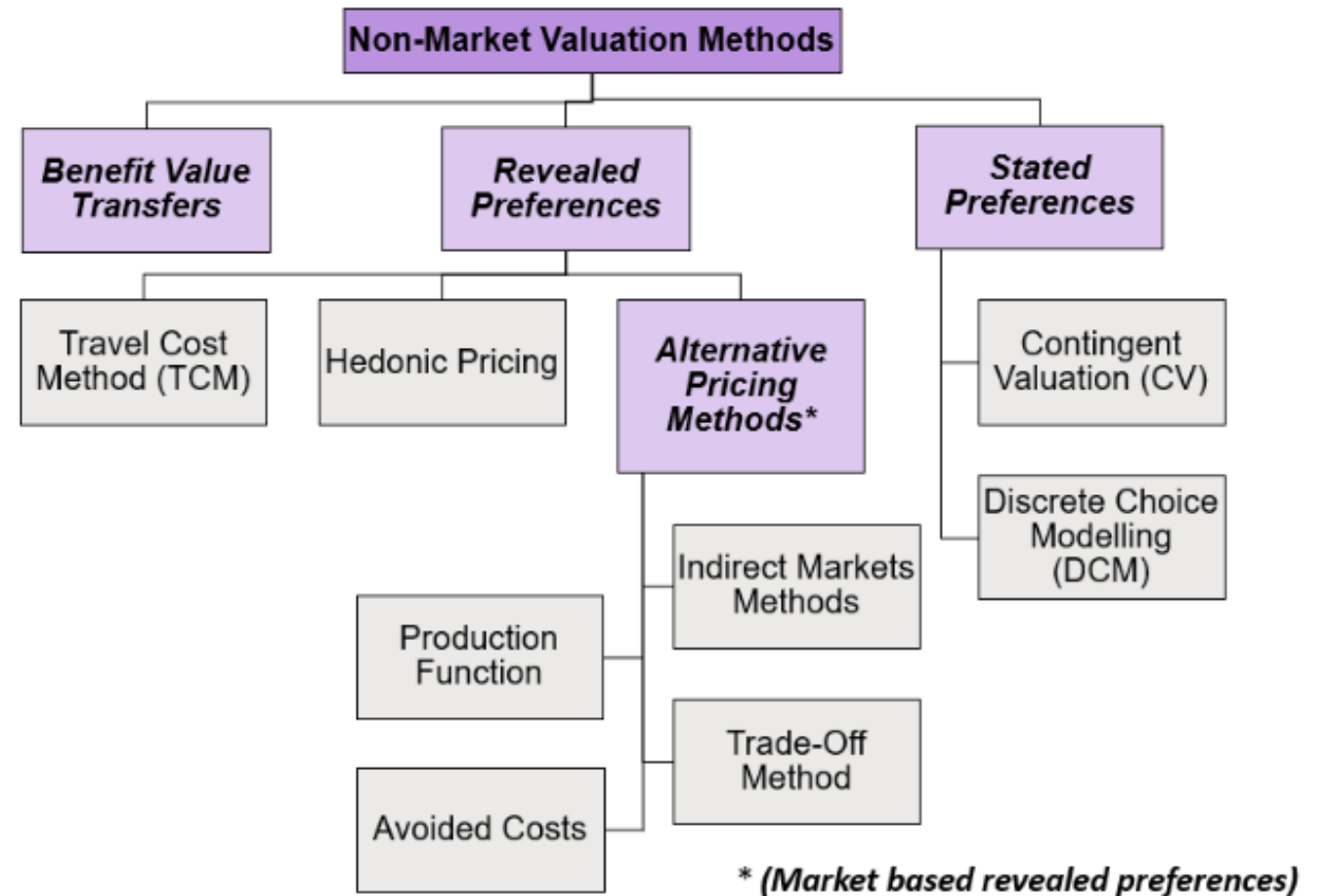


- An LCA is a systematic analysis of environmental impact over the course of the entire life cycle of a product, material, process, or other measurable activity
- Integrate Ecosystem Services / Natural Resources Valuation – Monetize Environmental/ Social Impacts and Costs.
- Tool to translate the Dashboard considerations to Economic Values and support the design of more meaningful Hybrid Metrics.



# Non-Market Valuation Methods

- Environmental and Social Impacts often refer to goods and services (natural and social capital) which are not traded in markets or cannot be traded in markets, e.g. no market price is observed.
- Non-market Valuation Methods are used to evaluate intangible impacts, such as climate abatement, pollution costs or common and public goods.
- Calculate the Shadow price for the underlying good or service.
- Several econometric techniques based on the type of good/service.
- Shadow Prices are also defined as the Willingness to Pay for a non-market good or service.



# Hybrid Metrics

## Integrating MWTP to SDG, ESG and Financial Performance



### Energy

EBITDA / CO<sub>2</sub> Intensity



### Crop Nutrition

EBITDA / Yield per Hectare



### Retail

Cost of Goods Sold / Value of Waste Avoided



### Pulp and Paper

Revenue / Tons of CO<sub>2</sub> Sequestered



### Pharma & Medical Devices

EBITDA / Contributions to Daily Adjusted Life Years



### Service Industries

EBITDA / % of Workforce Above Living Wage



### Chemicals and Industrial Production

Cost of Raw Materials / Tons of Recycled Plastics Used



### Financial Services

Revenue per Customer / Financial Well-being

- Hybrid Metrics
  - Combine **Financial KPI's** with **ESG KPI's**
  - Calculate SDG related Risks in Investment Portfolios
- Integrate **ESG KPIs** to **MWTP** (Marginal Willingness to pay) based metrics

METRIC	FORMULA
Weighted Average Carbon Intensity	$\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{current portfolio value}} \times \frac{\text{company's GHG emissions}_i}{\text{company's mUSD revenue}_i} \right)$
Carbon Footprint	$\frac{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{company's market capitalisation}_i} \times \text{company's GHG emissions}_i \right)}{\text{current portfolio value in mUSD}}$
Carbon Intensity	$\frac{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{company's market capitalisation}_i} \times \text{company's GHG emissions}_i \right)}{\sum_n^i \left( \frac{\text{current value of investment}_i}{\text{company's market capitalisation}_i} \times \text{company's mUSD revenue}_i \right)}$

#### DEFINITIONS:

Current value of investment<sub>i</sub>:  
Current portfolio value:

Market value of an amount of equity of a company i held in an investment portfolio  
Market value of all the equities (or other financial instruments) held in an investment portfolio

# References

Bergman, M., S., et al, 2020, "Introduction to ESG",  
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