

BONDALTI

Leading Climate Transition

Susana de Carvalho | Sustainability and
Climate Transition

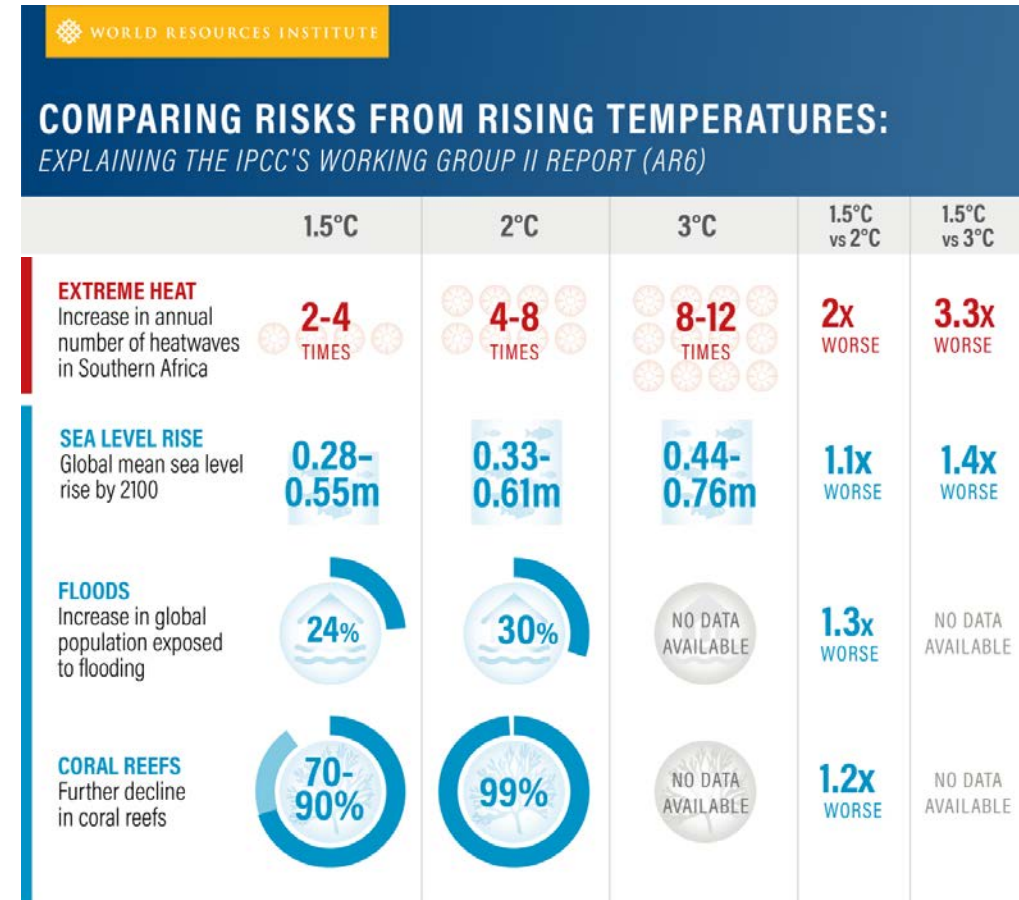
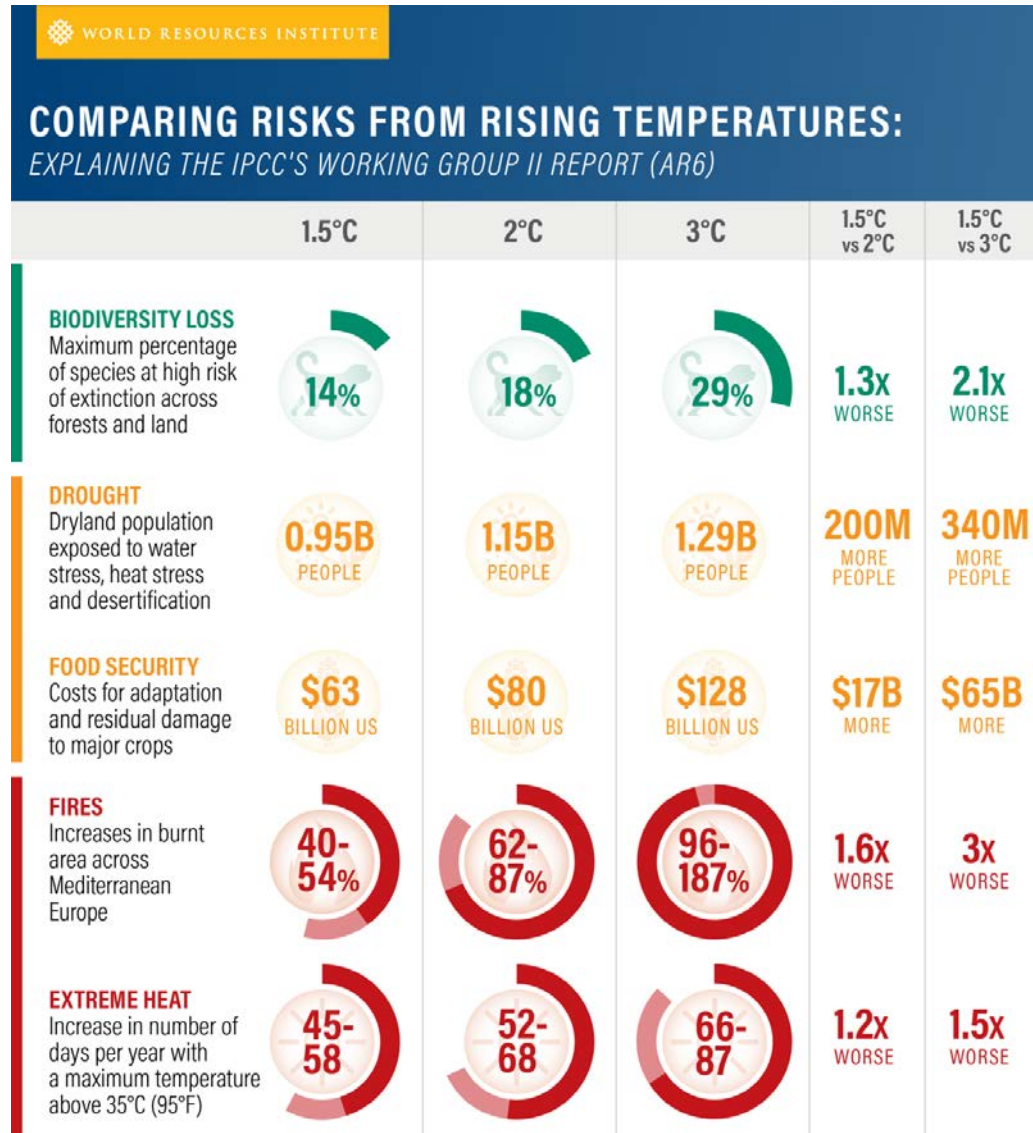
June 2023 | Expoquímia | Barcelona

TOMORROW MATTERS

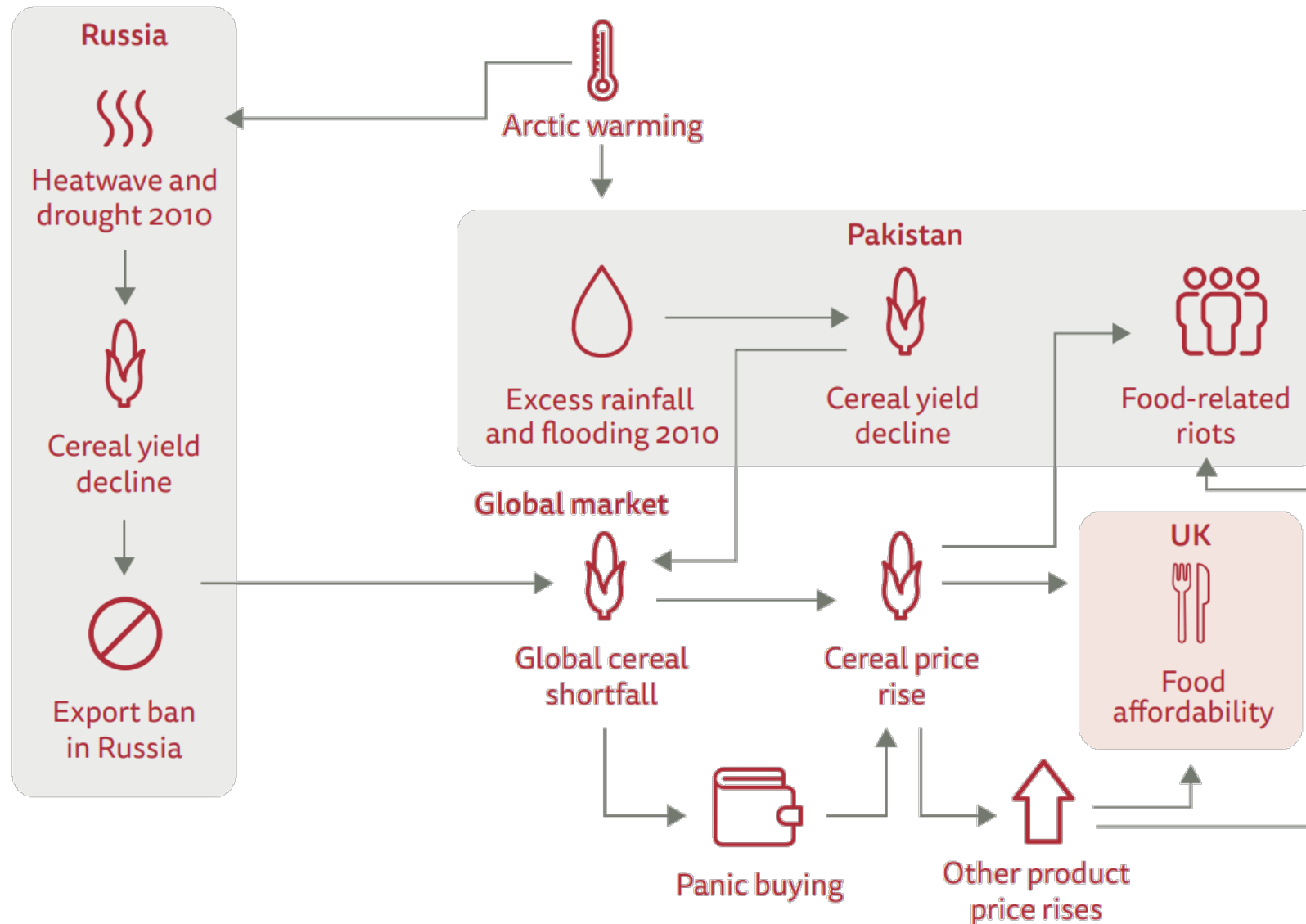




Our new normal is coming around 2030



Note: For climate risks with projected ranges, we used the midpoint of the ranges to compare risks at different temperature thresholds. Sea level rise projections correspond to SSP1-1.9, SSP1-2.6, SSP2-4.5, which are roughly approximate to global warming of 1.5°C, 2°C, and 3°C, respectively. Source: IPCC AR6.





Setting the arena

Teijin Named “Excellent Company For Sustainability” By S&P Global

February 20, 2023

The chemicals industry will play a major role in delivering on net zero

The amount of capital required to achieve net zero in chemicals by 2050 is estimated at \$US3 trillion, and creative financing solutions are needed to achieve this.

Europe turns up heat under chemicals industry to clean up its climate act

- Regulators globally are cracking down on the chemical industry, which is responsible for 5.8% of global greenhouse gas emissions

Transition pathway for the chemical industry

In January 2023, the European Commission published the transition pathway for the chemical industry. The pathway is an actionable plan co-developed by the European Commission with EU countries, chemical industry stakeholders, NGOs and other interested parties. It identifies the actions and conditions needed to achieve the green and digital transition and improve resilience in the chemical industry, in line with the [updated EU industrial strategy](#) EN |

Chemicals: core to a net zero future

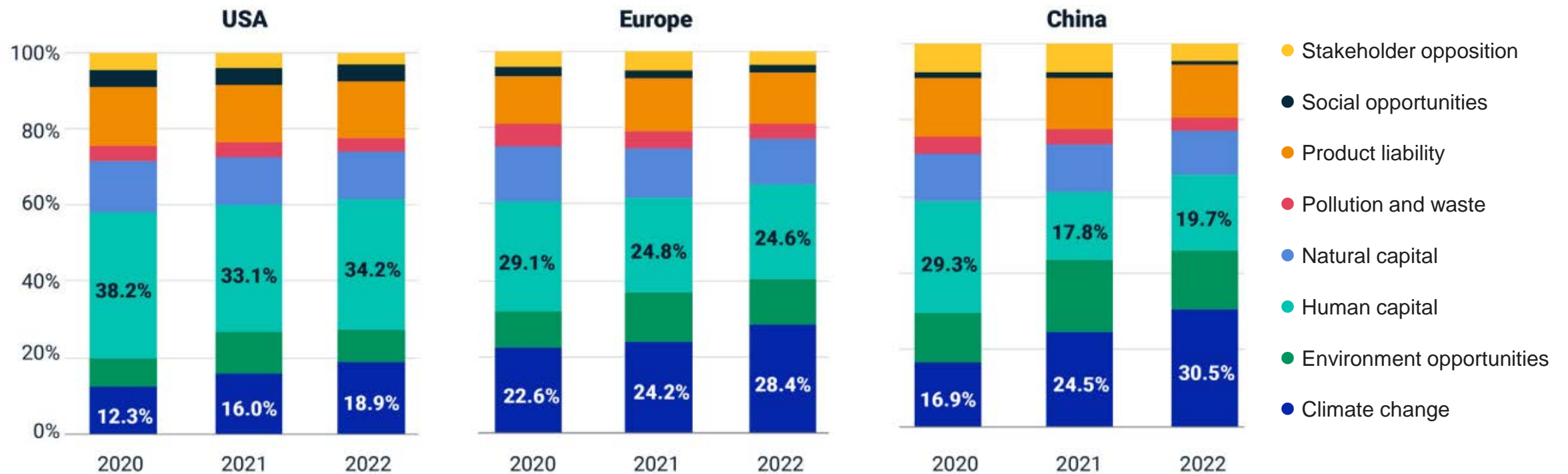
As a major supplier to so many sectors, the industry plays a crucial role in the green transition

- Germany's BASF is among those touting their sustainable energy efforts, launching a new renewable energy subsidiary
- Green hydrogen, greater plastic recycling and reuse, more targeted use of chemical fertilisers and lower-carbon raw materials are other decarbonisation avenues, but have yet to be used at scale

Climate change threatens nearly one third of U.S. hazardous chemical facilities

March 2, 2022 · 4:52 PM ET

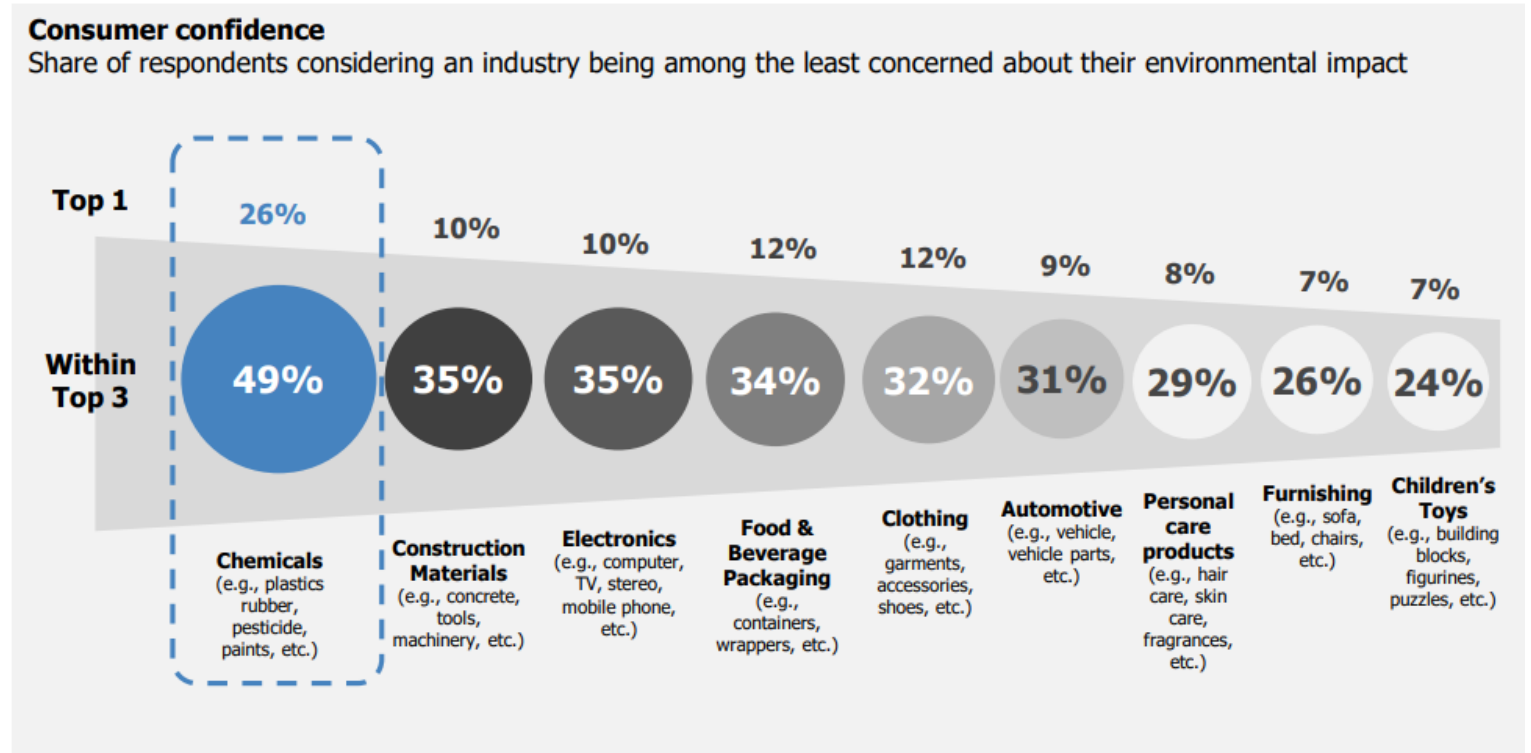
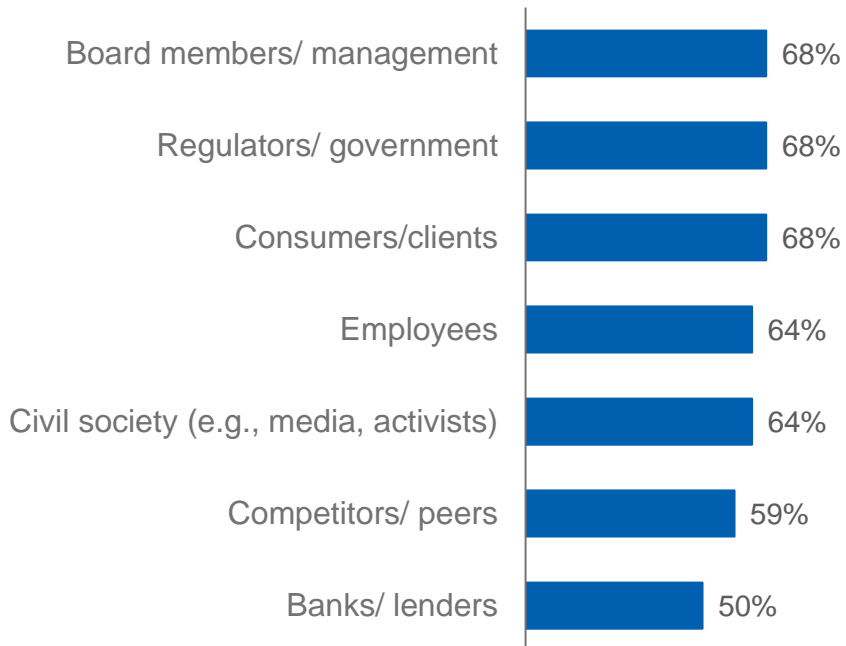
Trends in news mentions globally



Source: [Powering better investment decisions - MSCI](#)

Pressure is rising

To what extent does your company feel pressure to act on climate change from your stakeholders?

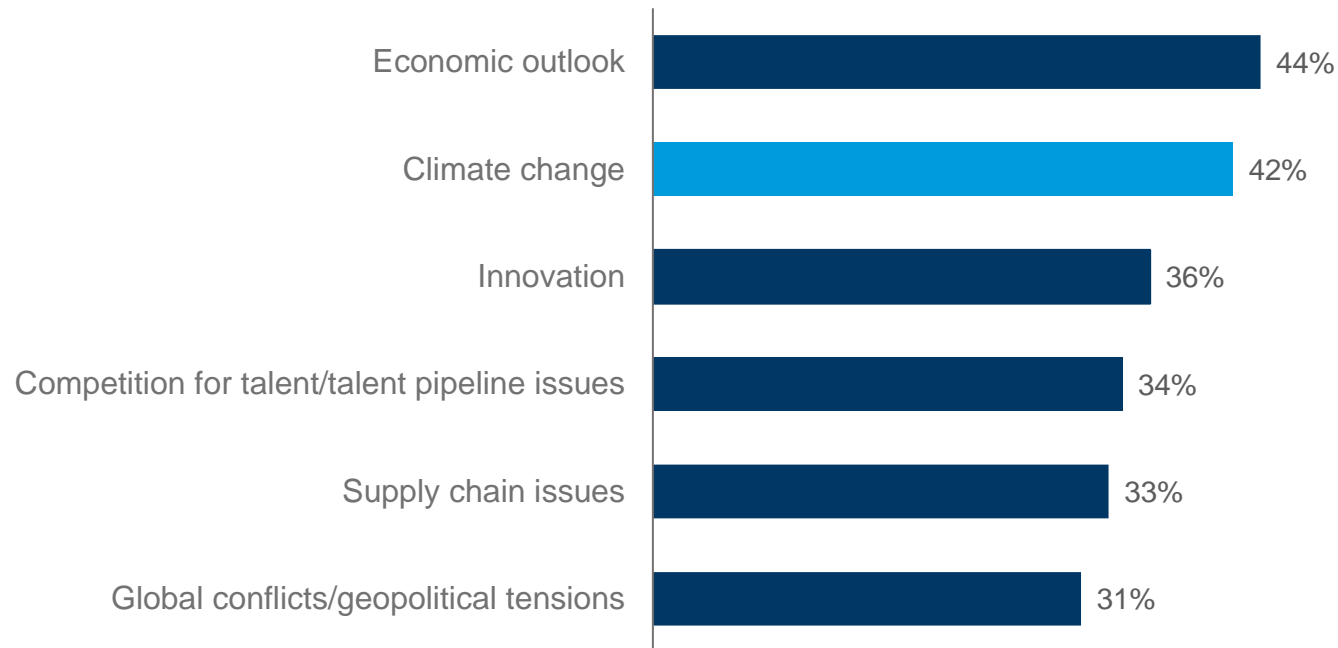


Source: [Deloitte 2023 CxO Sustainability Report](#)

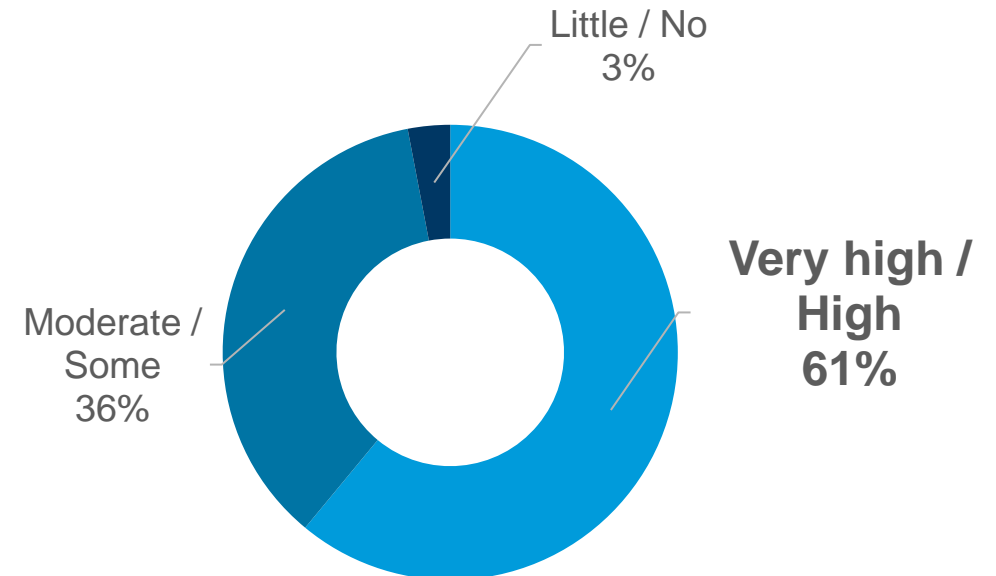
Source: SITRA, 2020, Sustainable and circular business models for the chemical industry

Impacting strategy and operations

What does your organization see as the most pressing issues to focus on over the next year?
(% ranked in the Top 3)



To what degree do you expect climate change to impact your company's strategy and operations over the next three years?



How are we handling?

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Top actions taken (+50%)

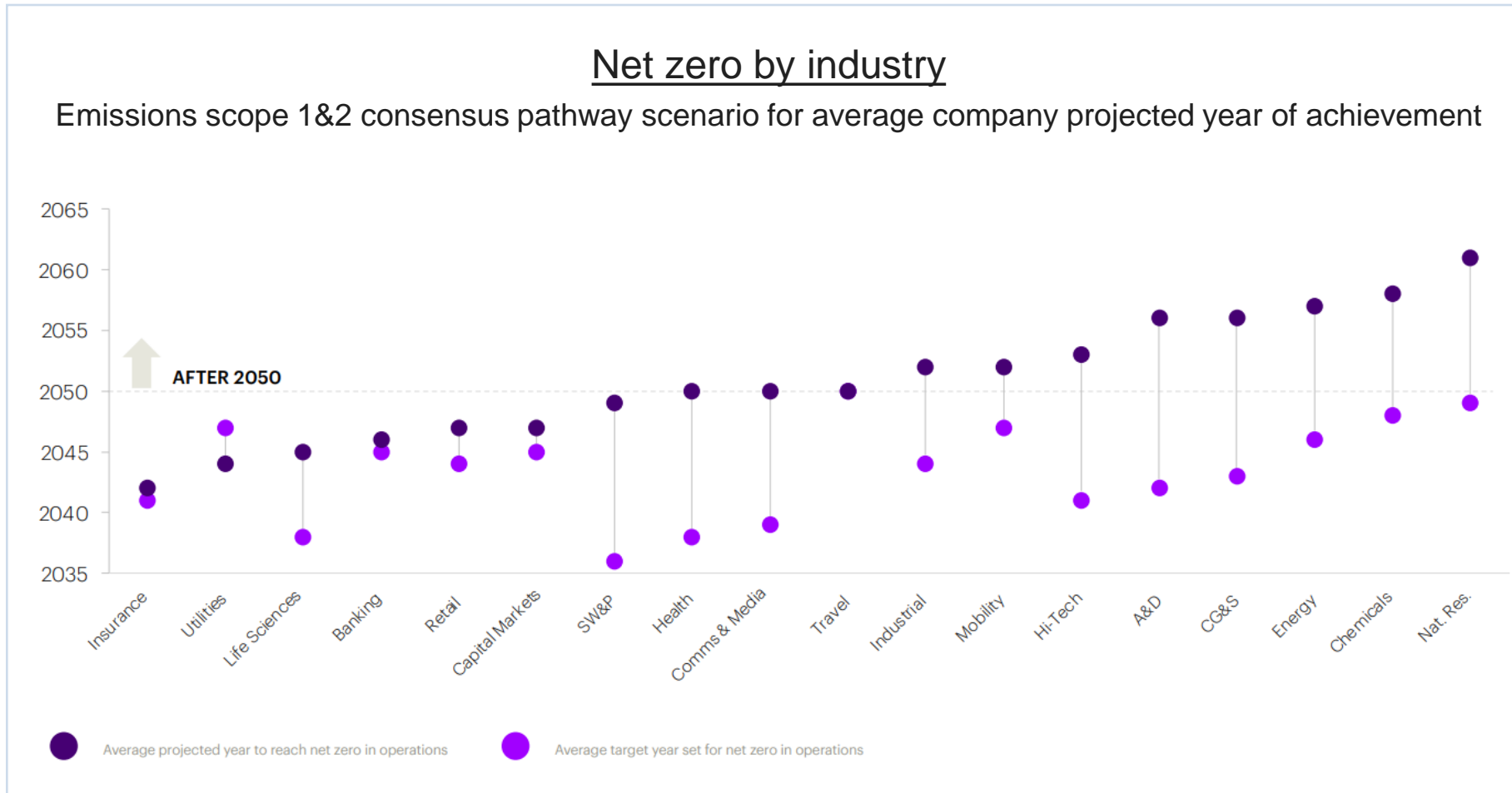
1. Using more **sustainable materials** (e.g., recycled materials, lower emitting products)
2. Increasing the **efficiency of energy use** (e.g., energy efficiency in buildings)
3. Using energy efficient or climate-friendly **machinery, technologies**, and equipment
4. **Training employees** on climate change actions and impacts

Top 5 obstacles (~20%)

1. Difficulty **measuring** environmental impact
2. Too **costly**
3. Focus on **near-term** business issues/demands from investors/ shareholders
4. Lack of **political support** and action for necessary change
5. Insufficient supply of **low emissions inputs** (e.g., renewable energy)

Source: [Deloitte 2023 CxO Sustainability Report](#)

29% said they believe the private sector is “very” serious about addressing climate change



Many industries are not on track to meet net zero by 2050 and need to accelerate.

Even on consensus pathway, in which projected emissions reduction speeds double over the next decade, many industries will still fail to meet net zero by 2050

Source: [Accelerate Global Companies Toward Net Zero by 2050 | Accenture](#)



**How can
organizations
lead the way?**

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Organizations with stronger Sustainability DNA are more likely to deliver financial value and sustainable impact

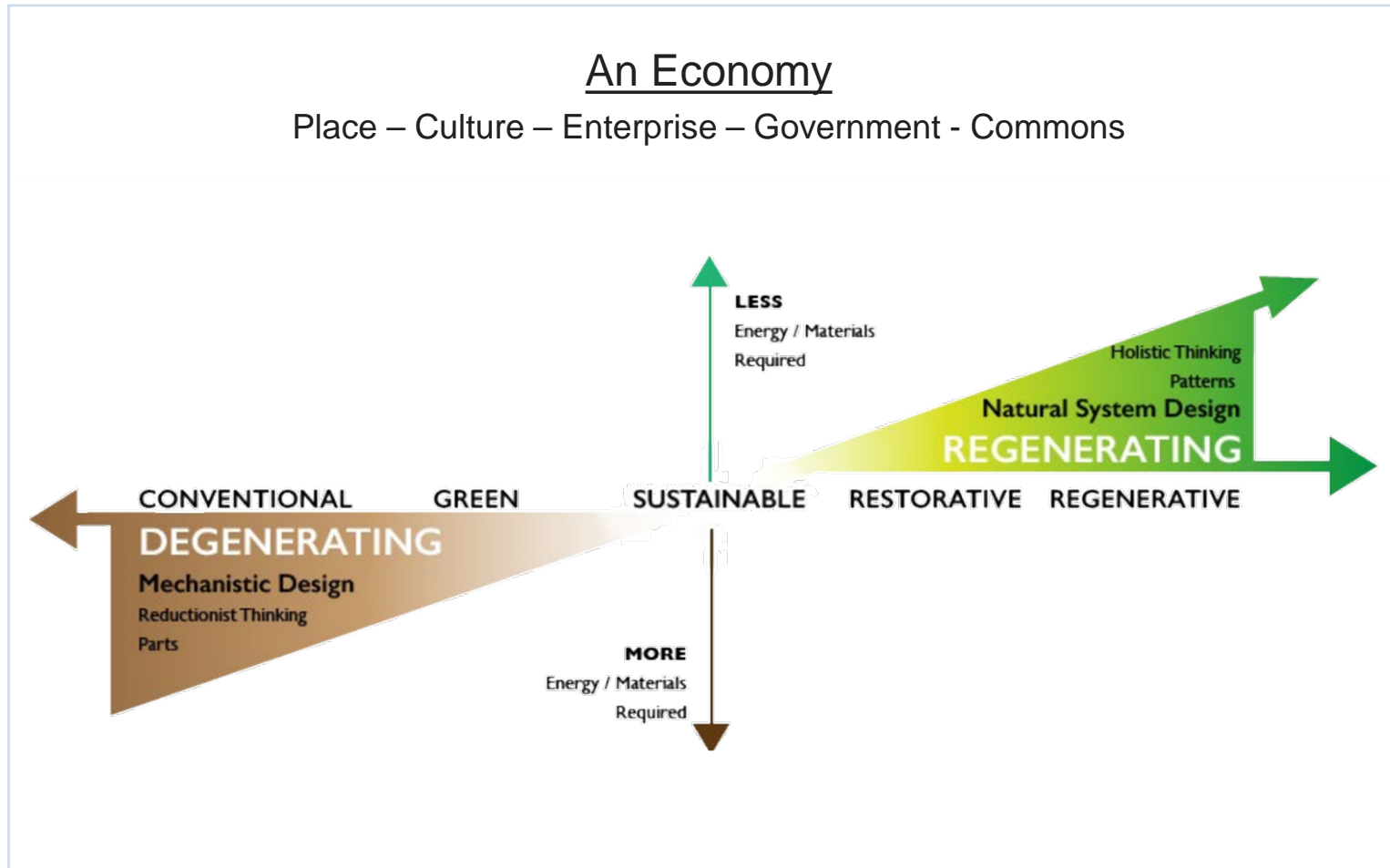


Source: [Building Sustainable Organizations | Accenture](#)

Companies with stronger Sustainability DNA are more likely to deliver financial and a lasting positive impact on society and the environment

The EBITDA margin of top quartile companies on our Sustainable Organization Index is 21% higher (+3.4 percentage points) compared with the bottom quartile. Their sustainability performance is also 21% higher (+9.2 index points).





1. In Right Relationship
2. Views Wealth Holistically
3. Innovative, Adaptive, Responsive
4. Empowered Participation
5. Honors Community and Place
6. Edge Effect Abundance
7. Robust Circulatory Flow
8. Seeks Balance

Source: Fullerton, J. *Regenerative Capitalism*; Capital Institute: Greenwich, CT, USA, 2015.



Source: [S&P Global \(spglobal.com\)](https://www.spglobal.com)

1. Disclosure

Sustainability disclosure standards will pressure companies and investors to respond and adapt

2. Risk

Companies and investors will navigate the increasing risk of litigation related to sustainability (in)actions

3. Trade Off

Climate strategies will be reconsidered in the face of energy security and affordability concerns

4. Adaptation & Resilience

The rising costs from physical climate risks will accelerate investments in adaptation and resilience

5. Workforce

Employment practices adapting to new workforce dynamics will be tested in the face of economic and labor-market uncertainty

Sustainability Trends 2023: Goodbye Greenwashing, Hello Business Results

1. Data

Getting accurate, quality ESG data

2. Connectivity and interrelations

Connected data provides organizational accountability

3. Embedded in business

Sustainability translates to business currency

4. Sustainable Innovation

Innovating sustainable business models

Source: [Sustainability Trends 2023: Goodbye Greenwashing, Hello Business Results \(forbes.com\)](https://www.forbes.com)

Transition Pathway for the Chemical Industry

European Commission 2023

International Competitiveness

DRIVE INTERNATIONAL COMPETITIVENESS



Long term impacts



KPI & sustainable development indicators



Promote EU environmental & safety standards

PROMOTE THE MARKET FOR SUSTAINABLE PRODUCTS



Safe and sustainable by design substances and materials

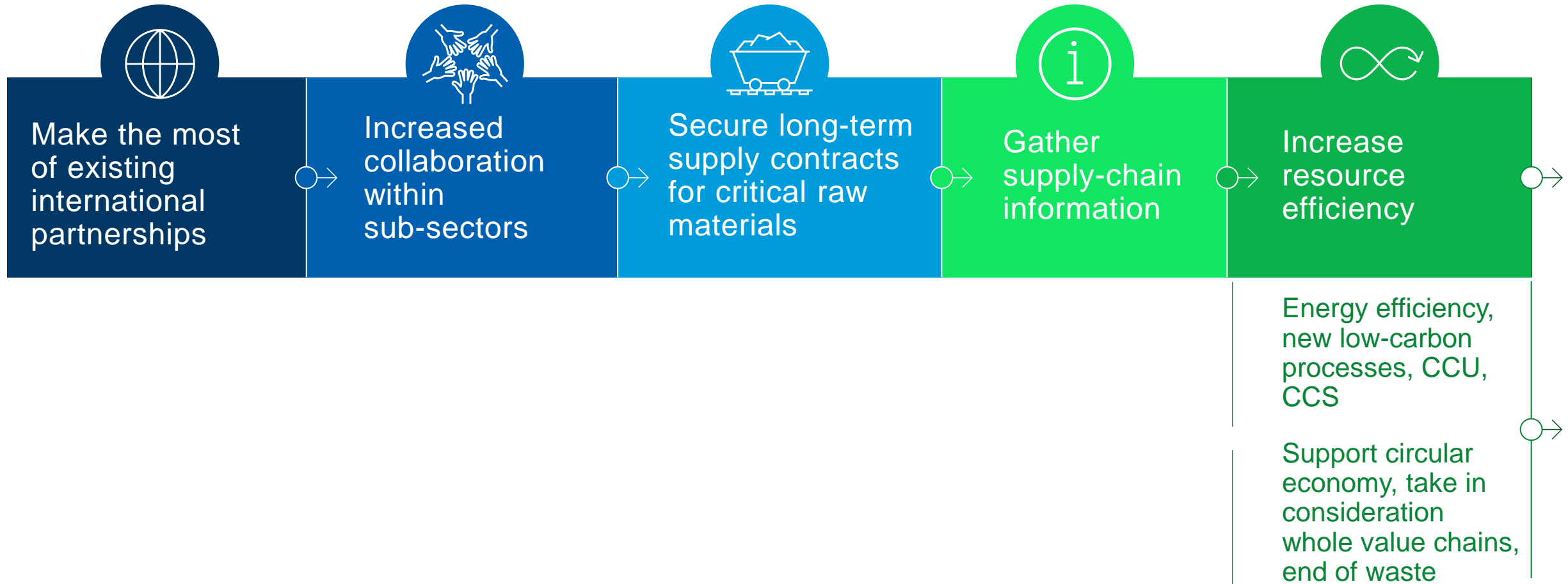


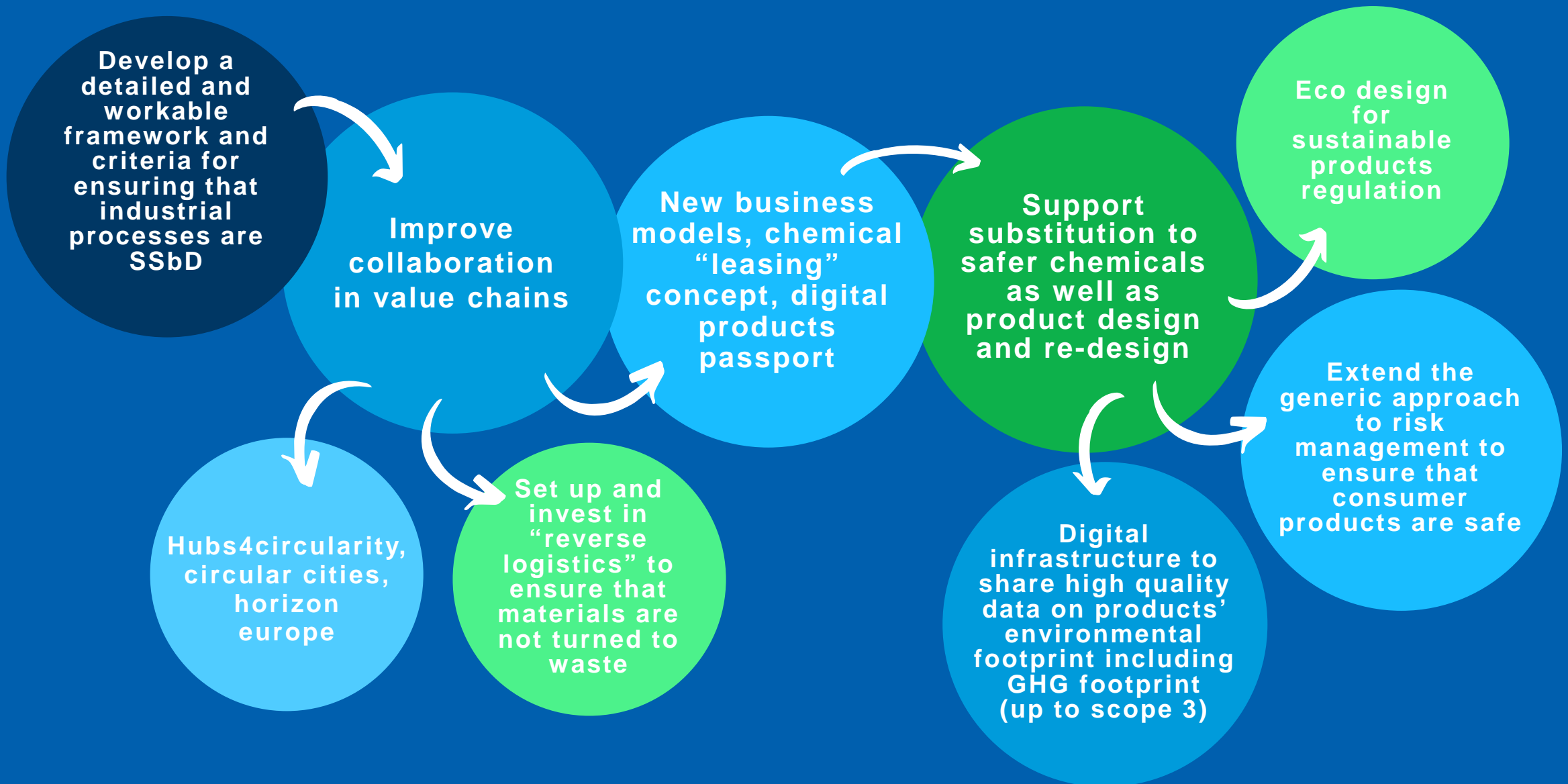
Hazardous chemicals excluded for export



Incentives to purchase sustainable products with higher costs

Reduction of substitutable dependencies and supply chain vulnerabilities

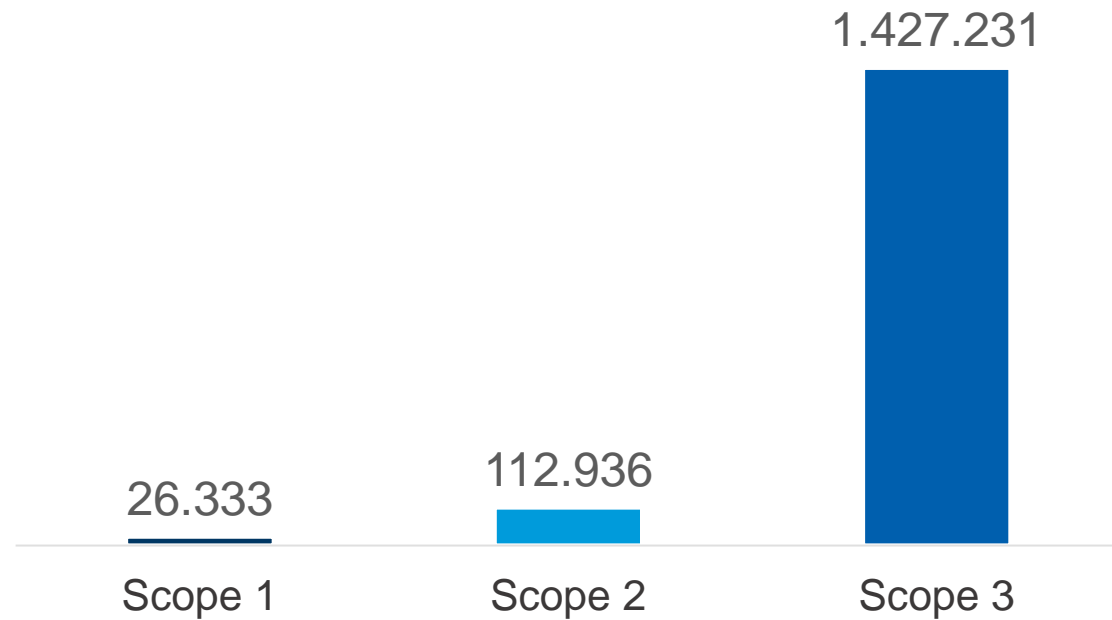




Climate Transition Journey

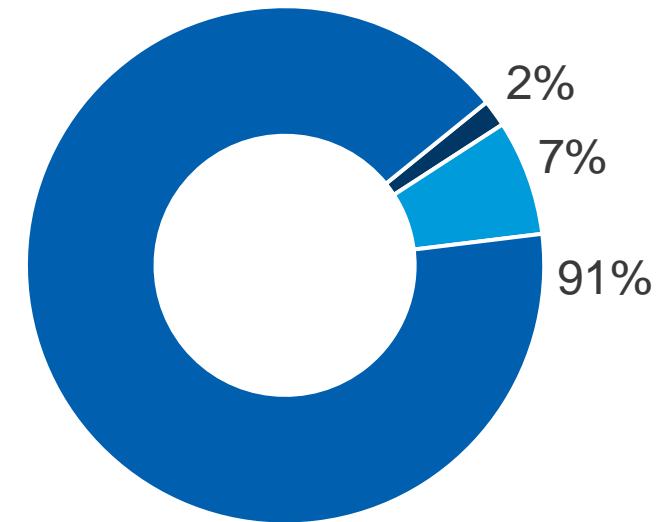


Total ton. of CO₂ emitted
(Chemicals)



Total share of CO₂ emissions
(Chemicals)

■ Scope 1 ■ Scope 2 ■ Scope 3



Strategy on Climate Transition

Transform

- Consumption reduction and energy efficiency
- Decarbonization of energy sources
- Technological innovation and digital

Value

- LCA, bio products & low CO₂ products
- Certify new products
- Process circularity
- New circular business models
- Green, Social & Sustainability Bonds
- Carbon Markets
- Investment based on ESG criteria

Adapt

- Carbon off-setting
- Carbon Capture and Storage
- Climate Risk Oversight
- Sites and Operations adaptation to climate and water stress

Engage & Evolve

- Responsible Buying Strategy
- Supplier engagement
- Due diligence
- Strategic partnerships for Sustainable Innovation
- Reporting and Compliance
- Employee awareness and engagement



Clean Development Mechanism (CDM)



BioHYCO

BioHigh – High performance synthetic fuels from biogas, for the production and separation of hydrogen (H₂) and pure and dry carbon monoxide (CO).

Ambition and expected results



- + product efficiency in value chains
- + food security & quality
- + precision technologies in agrifood , forest & phishery sectors



- + waste valorization
- + circular models
- + green hydrogen
- + decarbonization



- + biogas market value

New Technological and Industrial Platform, with application in the sectors of mining and refining, production of components and cells, assembly of packs and integration and application of batteries.



Ambition and expected results

New models of recycling and reuse of materials contributing to increasing the sustainability of their value chains



ENVIRONMENTAL

- Reduce greenhouse gas (GHG) emissions by 50% in refining processes
- Develop new end-of-life processes for the reuse of resources



SOCIAL

- Create 200 new technical-scientific jobs
- Leverage the entrepreneurship ecosystem and promote higher education



ECONOMIC

- Increase the production of advanced lithium-based batteries
- Assemble 8 pilot lines of industrial production

E-NOx

An innovative technology that allows the valorization of by-products from the production of nitric acid, converting it into raw materials. Also recovering greenhouse gases N_2O and NOx , through their electrochemical processing.



Nitric acid, given its importance in the fertilizers industry, is one of the most important chemical commodities on an international scale, with an annual production volume of around 55 million tons (2014) and a market value close to 13 billion USD (2016).



INNOVATION

- Efficient use of resources and reduction of environmental impact in production processes
- Development of sustainable processes, materials and systems with higher added value



CIRCULAR ECONOMY

- Industrial modernization through Circular Economy
- Reduction and reuse of industrial waste in all industries that produce and use nitric acid in their processes



DECARBONIZATION

- Eliminate the release of greenhouse gases N₂O and NO_x, promoting their reincorporation into the production process generating electrical and thermal energy



**The journey
starts in you**

T O M O R R O W M A T T E R S



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