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Understanding and Navigating Climate Risk at the Asset Level

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Companies are increasingly exposed to risks from climate change. This includes physical risks from the impact of extreme weather events, and transition risks from the impact of policies aimed at moving to a low-carbon economy. Each company will be affected differently by climate risk depending on the geographic and sectoral distribution of its assets. Enhanced climate analytics that consider different scenarios are beneficial in order to conduct better assessments both at the company and asset level.

The Task Force on Climate-related Financial Disclosures (TCFD) is helping to increase transparency of climate risks across capital markets, so participants have the information they need to help make better decisions. The initiative is changing how companies and investors think about climate issues and the potential impacts on financial returns. There are challenges, however, including those associated with transition risks, such as:

- Changing policies and regulations that could increase the cost of carbon.
- Technologies that vary in terms of their cost-effectiveness.
- Evolving market dynamics with implications for product and service offerings, such as shifting consumer demand.
- Reputational risk from being perceived as not supporting green trends.

Of course, there are opportunities, as well. The aim of the TCFD is to put companies and investors in a stronger position to understand the risks in their portfolios and business models. This will enable them to make necessary changes to build resilience, which will be increasingly important going forward.

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Growing support for the TCFD

The TCFD has built strong support with both companies, investors, and government entities. In June of 2019 there were 785 different signatories, of which 374 were financial, 297 non-financial, 36 central banks, and five government entities.[1] As of February 2020, the number of signatories had increased to 1,027. This represents a market capitalization of $12 trillion USD, making the TCFD a mainstream initiative. There has been a significant uptake in Asia, particularly in Japan.[2]

In 2019, the TCFD issued a status report that looked at the progress companies and investors had made in terms of understanding and reporting on climate-related financial risks. The report showed that there had been a significant increase in disclosures since 2016, but gaps still remained. For example:

- More clarity is needed on the potential financial impact of climate-related issues on companies.
- Companies are struggling with the use of scenarios and, for those that do use them, the majority do not disclose information on the resilience of their strategies.
- Elevating climate-related issues to be on par with other operational risks requires the involvement of multiple business functions across an organization, which calls for education and training on what climate risks mean from a business perspective.

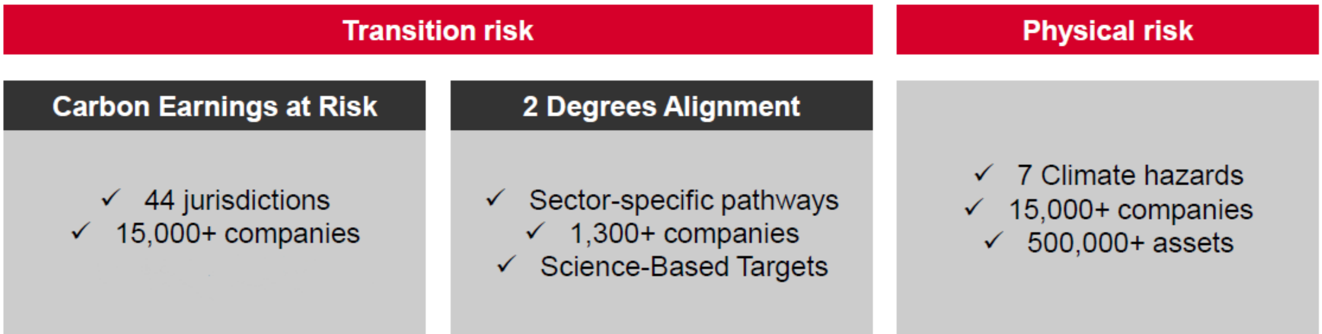
Evaluating climate risks in practice

Trucost, part of S&P Global, has been looking at these gaps to determine how best to help its clients evaluate climate risks. As with any assessment of the financial resilience of a company, there is also a need to look at a range of metrics to understand climate resilience. Valuable data sets include information on:

- Carbon footprints/emissions related to a company or its investments.
- A company's preparedness for future carbon pricing.
- Physical risks and the exposure of an asset base to climate-related issues.
- Exposure to fossil fuels and stranded assets.

Trucost has synthesized numerous data sets to make the analysis of climate risks more straightforward. It has also developed different scenarios, as shown in Figure 1, to help clients with stress testing their organization.

Figure 1: Trucost Scenarios



Source: Trucost, as of May 2020. For illustrative purposes only.

[1] TCFD Status Report, June 2019, www.fsb-tcfd.org/wp-content/uploads/2019/06/2019-TCFD-Status-Report-FINAL-053119.pdf
[2] TCFD Supporters, accessed on 21 May 2020, www.fsb-tcfd.org/tcfd-supporters/

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One of the key policy levers to meet carbon reductions is to implement a price for carbon, which could include taxation policies or trading schemes. The goal is to increase the cost of carbon and change the cost-benefit dynamics. Trucost's Carbon Earnings at Risk analysis provides an assessment of the potential exposure a company faces with respect to a future increase in carbon pricing. To assess potential risks for different industries and countries, Trucost undertook an analysis of the price of carbon today versus in future scenarios to identify the gap that existed. Looking at this relative to earnings before interest and taxes (EBIT) provides a measure of profit at risk, while other types of financial analyses help understand value at risk.

Transition Risk: 2 Degrees Alignment

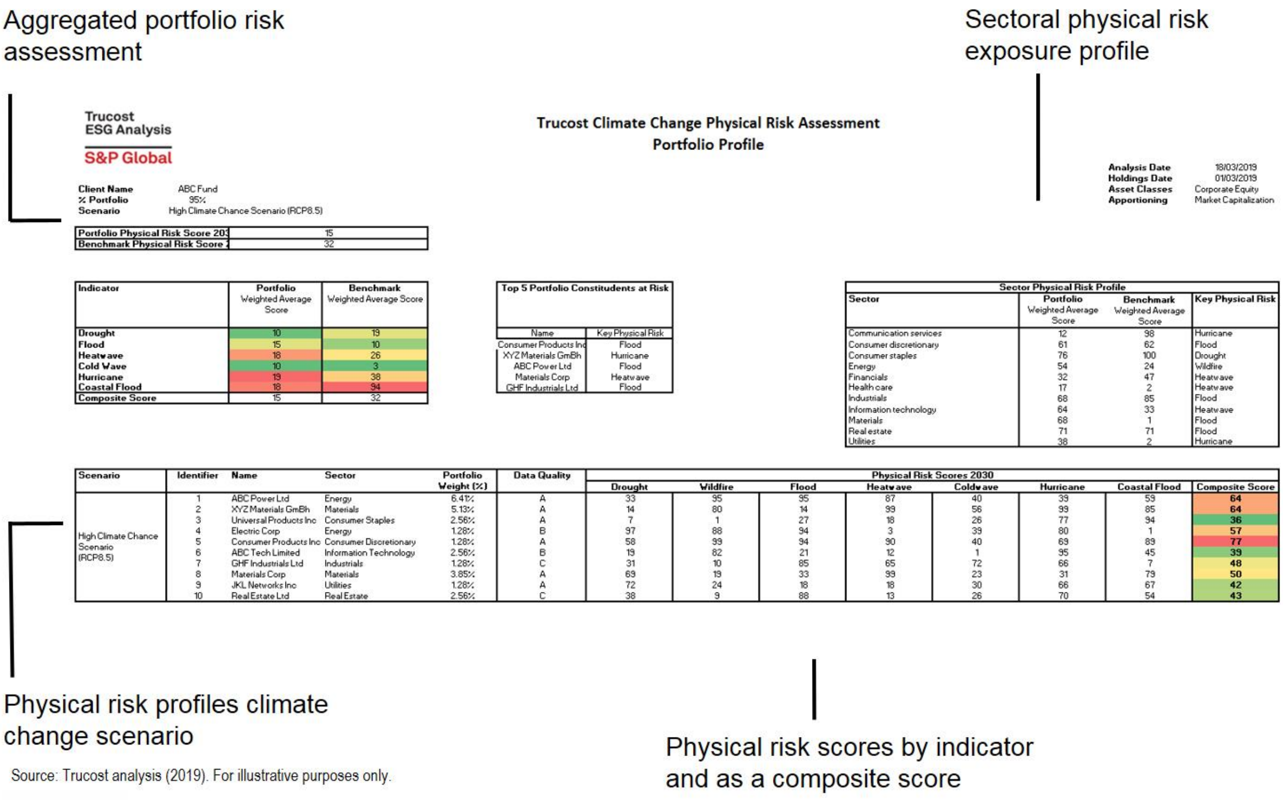
Trucost also developed a 2 Degree Alignment scenario that considers what the world needs to look like in the future and how a company's or investor's portfolio is aligned with this view.

Physical Risk

Finally, Trucost's Physical Risk assessment looks at seven different climate hazards (including heatwaves, wildfires, and droughts) to understand their potential impact on different assets over different timelines.

Trucost also developed tools for companies and investors to look at risks through the lens of their own asset base or portfolio. Figure 2 shows an example of output for an investor analysis. Users can see the different companies in their portfolio and the physical risks for seven climate hazards. This includes score indicators to identify which investments potentially pose the greatest climate-related threats.

Figure 2: Example Output for an Investor Analysis



Portfolio Physical Risk Score 203	15
Benchmark Physical Risk Score 2	32

Indicator	Portfolio Weighted Average Score	Benchmark Weighted Average Score
Drought	10	19
Flood	15	10
Heatwave	18	26
Cold Wave	10	3
Hurricane	19	38
Coastal Flood	18	94
Composite Score	15	32

Top 5 Portfolio Constitudents at Risk	
Name	Key Physical Risk
Consumer Products Inc	Flood
XYZ Materials GmBh	Hurricane
ABC Power Ltd	Flood
Materials Corp	Heatwave
GHF Industrials Ltd	Flood

Sector Physical Risk Profile			
Sector	Portfolio Weighted Average Score	Benchmark Weighted Average Score	Key Physical Risk
Communication services	12	98	Hurricane
Consumer discretionary	61	62	Flood
Consumer staples	76	100	Drought
Energy	54	24	Wildfire
Financials	32	47	Heatwave
Health care	17	2	Heatwave
Industrials	68	85	Flood
Information technology	64	33	Heatwave
Materials	68	1	Flood
Real estate	71	71	Flood
Utilities	38	2	Hurricane

Scenario	Identifier	Name	Sector	Portfolio Weight (%)	Data Quality	Physical Risk Scores 2030							
						Drought	Wildfire	Flood	Heatwave	Coldwave	Hurricane	Coastal Flood	Composite Score
High Climate Chance Scenario (RCP8.5)	1	ABC Power Ltd	Energy	6.41%	A	33	95	95	87	40	39	59	64
	2	XYZ Materials GmBh	Materials	5.13%	A	14	80	14	99	56	99	85	64
	3	Universal Products Inc	Consumer Staples	2.56%	A	7	1	27	18	26	77	94	36
	4	Electric Corp	Energy	1.28%	B	97	88	94	3	39	80	1	57
	5	Consumer Products Inc	Consumer Discretionary	1.28%	A	58	99	94	90	40	69	89	77
	6	ABC Tech Limited	Information Technology	2.56%	B	19	82	21	12	1	95	45	39
	7	GHF Industrials Ltd	Industrials	1.28%	C	31	10	85	65	72	66	7	48
	8	Materials Corp	Materials	3.85%	A	69	19	33	99	23	31	79	50
	9	JKL Networks Inc	Utilities	1.28%	A	72	24	18	18	30	66	67	42
	10	Real Estate Ltd	Real Estate	2.56%	C	38	9	88	13	26	70	54	43

Source: Trucost analysis (2019). For illustrative purposes only.

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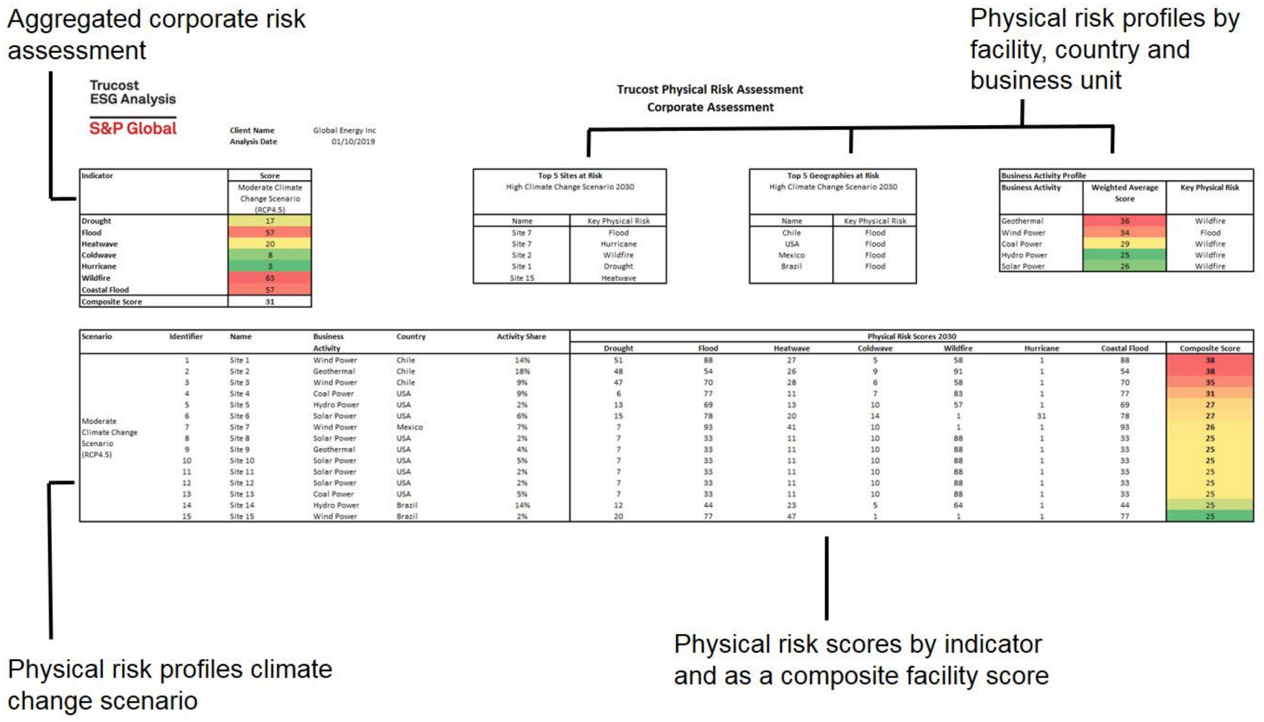
Ultimately, clients want to use the information to better optimize their portfolios. By knowing where risks might lie, they can help increase portfolio resilience, identify alpha, and reduce the potential downside. The introduction of green taxonomies for investors and banks helps provide an understanding of how to manage capital resources deployed in green assets. Figure 3 shows a similar example of output for a company analysis.

Figure 3: Example Output for a Company Analysis



Source: Trucost analysis (2019). For illustrative purposes only.

This information helps companies with their decision making. Understanding carbon pricing now and how it might change in the future provides important insights into future costs, location choices for new projects that are carbon intensive, and possible risks to the current asset base. Companies are starting to consider carbon prices as they revaluate their supply-chains to account for potential climate-related risks in order to help build resilience in their operations. This same analysis can be used at banks, as it is possible to look at private assets as long as the latitude/longitude location coordinates are available.

In Focus: Metals and Mining

A specific example is Metals & Mining. Trucost has extensive asset data for this industry and has evaluated the water risk of mines at different locations, since mines are inherently water intensive and a lack of water poses risks. Assets in Chile are the most at risk, as shown in Figure 4.

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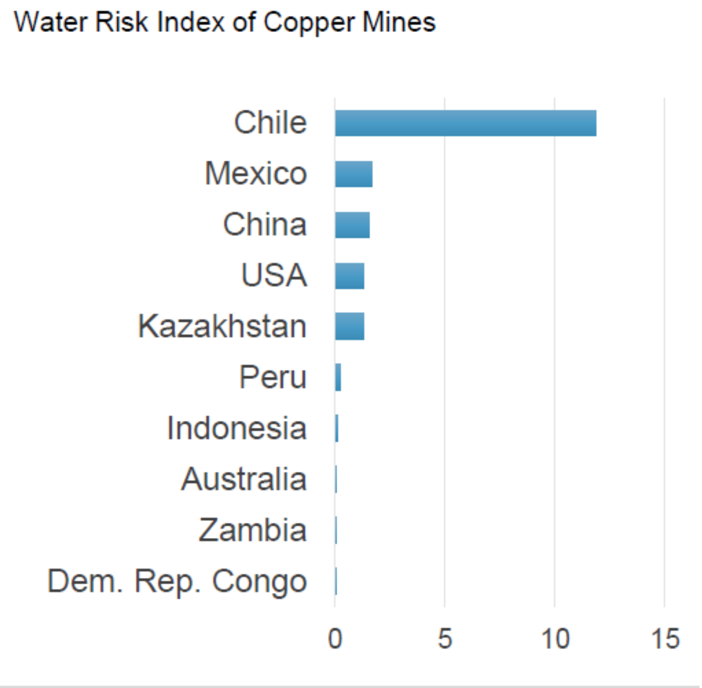
Figure 4: Water Risk in Copper Mines



Source: Trucost Analysis; World Resource Institute (2020)

Other physical risk indicators were also analyzed for the industry, as well as the future alignment of commodities, since many green technologies require particular metals and minerals to be effective. Demand for the minerals shown in Figure 5 is expected to rise in a low-carbon transition, and the magnitude of the change will depend on the intensity of climate action taken by governments and the private sector. Trucost analysis shows that, for the top 25 producers, 76% of the mines have revenues that are considered to be "future-aligned"[3].

[3] Source: Trucost, as of 31 December 2019.

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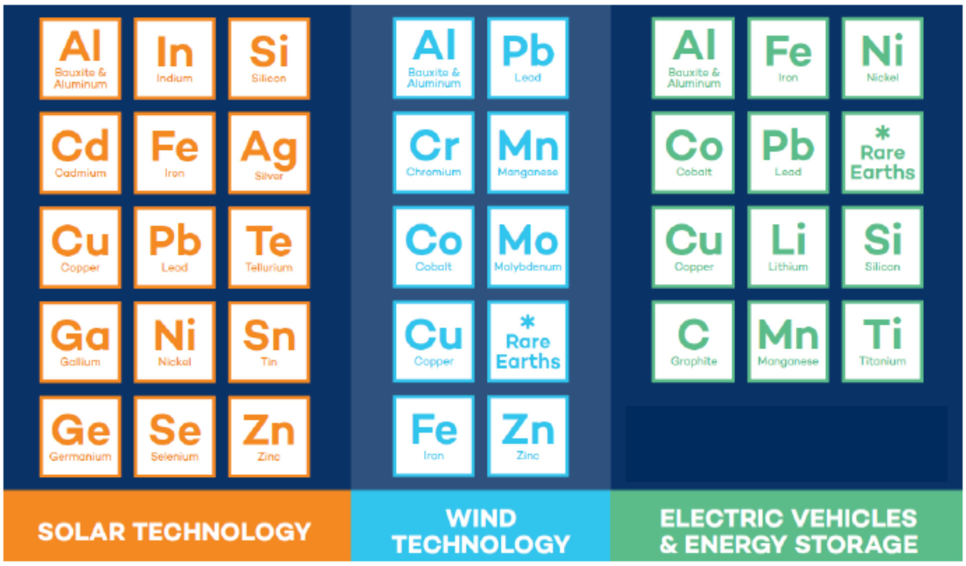
Figure 5: Minerals Required for Green Technologies



Source: International Institute of Sustainable Development (IISD), 2018, https://www.iisd.org/library/green-conflict-minerals-fuels-conflict-transition-low-carbon-economy

Conclusion

Corporate Social Responsibility is also more important than ever before to provide all stakeholders with a broader understanding of their responsibility to society. Companies should consider articulating what they are doing about the environment and the steps they are taking to create resilience. On this front, S&P Global has signed up to the TCFD and is producing its own TCFD reports.

Companies are increasingly exposed to risks from climate change and a deep analysis is needed to understand the impacts based on the geographic and sectoral distribution of assets. Enhanced climate analytics that look into the future and consider different scenarios can help companies and investors improve their decision making and increase the transparency of climate-related issues in capital markets.

For more information on S&P Global Market Intelligence ESG analysis, please visit: www.spglobal.com/marketintelligence/esg

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