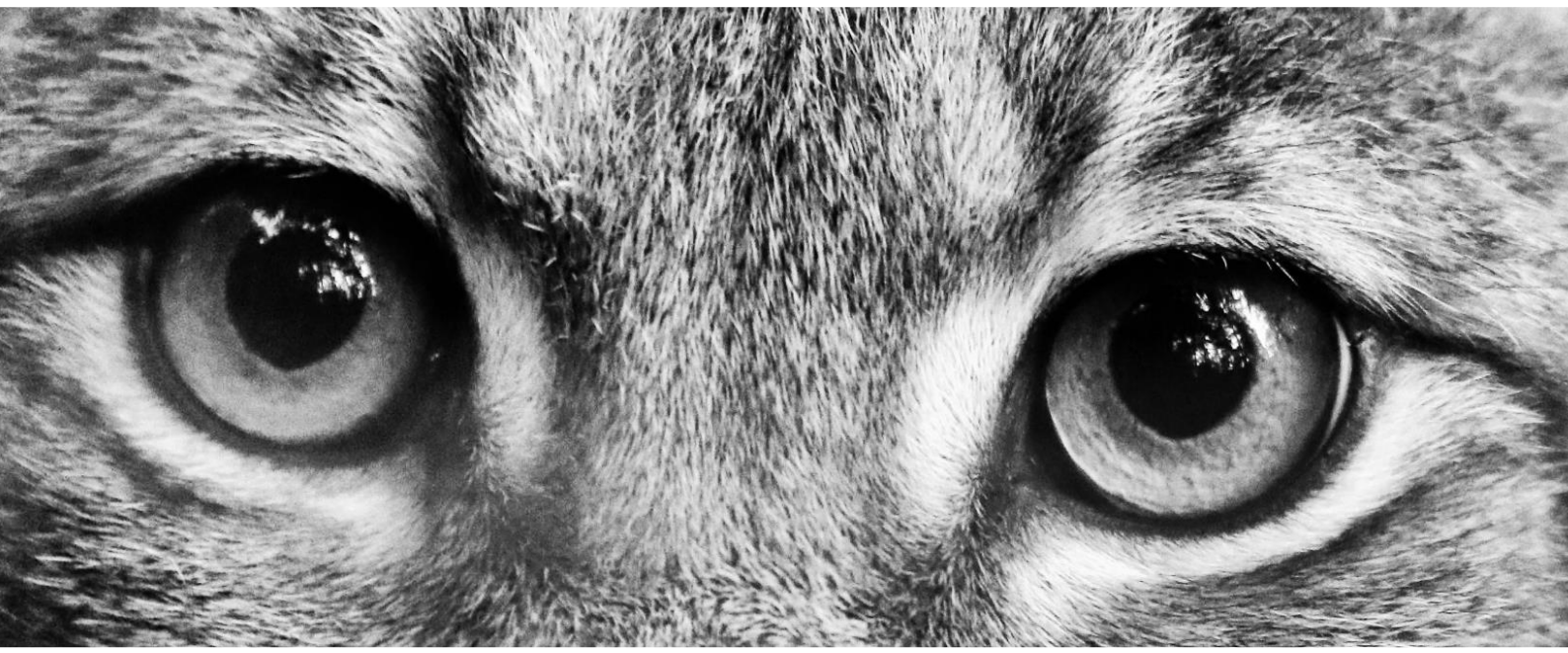


The Global Sustainable Competitiveness Index 2022

About this Report

The Sustainable Competitiveness Report, ***11th edition***

November, 2022

Methodology, data gathering, calculation, & report compilation by SolAbility.

Acknowledgements

The compilation and calculation of this Index would not have been possible without the data and time series made available by the World Bank Indicator database, various UN agencies (UNDP, UNEP, UNICEF, FAO, WHO, WMO, www.data.un.org), the International Monetary Fund (IMF), and other non-governmental organisations (including Transparency International, Reporters without Borders, The New Economics Foundation, The Institute for Economics and Peace, The Fund For Peace, the Joint Global Change Research Institute, the V-Dem Project).

About SolAbility

SolAbility is an independent sustainability think-tank with a fairly successful history in sustainable management implementation in large corporations.

SolAbility is the publisher of the Global Sustainable Competitiveness Index and the maker of 3 DJSI Super-Sector Leaders.

SolAbility Sustainable Intelligence
Zurich, Seoul
www.solability.com
contact@solability.com

The 11th edition of the Global Sustainable Competitiveness Index

New GSCI model & new commercial GSCI portal

Since its first publication in 2012, the Global Sustainable Competitiveness Index (GSCI) – the first Index to measure country ESG performance globally - has been a non-commercial project. Nevertheless, we have invested considerable resources and heart-blood into the development of the methodology and the tools in the background to evaluate country-level sustainable competitiveness. Thanks to good Google page ranking, we have been able to attract considerable interest; we are very happy that the 2021 GSCI Report 2021 has been downloaded more than 6'000 times. We also see a considerable amount of daily web-traffic. In addition – and in line with the traction that ESG themes are finally receiving – we are receiving an increasing number of requests for background data by financial institutions, creditors, insurers, and researchers.

Motivated by the attention we have been able to generate, we have undertaken a more in-depth analysis of our methodology than usual, and extended and refined our model, increased the number of analysed indicators from 135 to 188, and back-calculated the GSCI based on the new methodology, resulting in more than 1.5 million single data-points.

It is our believe that national "success" needs to be measured in a more comprehensive and integrating way in comparison to the still prevailing focus on economic parameters. We will therefore keep publishing the GSCI in its current form available in a non-commercial basis.

To make the wealth of macro-economic sustainability data in the background, we are in the process of developing a commercial data portal with the project name "Global Country RiCS" (Risks, Competitiveness, and Sustainability). Scheduled to be available in early 2023. In addition to the more than 1.5 million single data points, we also have developed a risk and opportunity framework that will allow players from the financial industry, government agencies and researchers to evaluate and identify ESG-related risk exposure and opportunities based on the most comprehensive available ESG-focused SWOT analysis by country, activity, and sector – based on nearly 60 million total data points.

The Global Sustainable Competitiveness Report 2022 provides a comprehensive overview of the current State of the World – global, regional, and national - on the six sustainable competitiveness pillars: Natural Capital, Resource Intensity-Efficiency, Intellectual Capital, Economic Sustainability, Social Capital and Governance Performance.

We hope you will find this information helpful.

November 2022

Table of Contents

1 Global Sustainable Competitiveness in 2022

1.1 In short: Sustainable Competitiveness

Sustainable competitiveness is the ability to generate and sustain inclusive wealth without diminishing the future capability of sustaining or increasing current wealth levels.

The Global Sustainable Competitiveness Index (GSCI) is

- Grouped into the pillars of development: natural capital, resource efficiency, social capital, intellectual & innovation capital, economic sustainability, and governance performance;
- Based on purely quantitative indicators;
- Taking into account 188 indicators derived from recognised global data sources (World Bank, various UN agencies, IMF);
- Evaluating latest available data points and trends over time to better reflect future potential

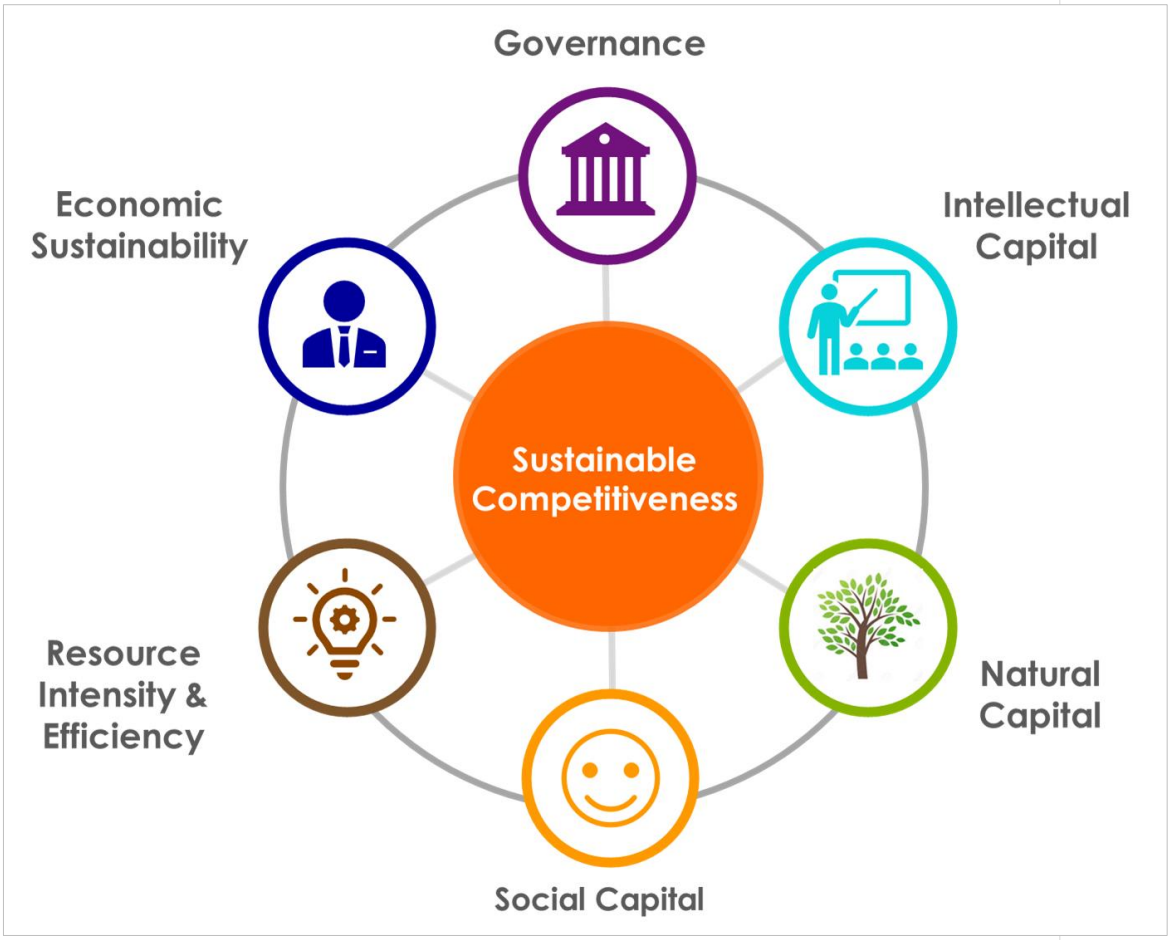
Why Sustainable Competitiveness?

The Gross Domestic Product (GDP) is still the most commonly used parameter to express the power (total GDP) or the wealth (GDP per capita) of a nation. However, the functioning of a nation-state is a highly complex mechanisms influenced by numerous factors. Current measurements do not do justice to this complexity:

- The GDP is a measurement based on purely macro-economic factors.
- GDP does not take into account the "intangibles" that contribute a significant part of the final outcome
- Similarly, sovereign bond ratings and other country ratings – which determine the interest rate on the international financial markets – are based on macro-economic indicators, fiscal status, and - often subjective - political risk definition
- Neither GDP nor credit ratings GDP therefore reflect performance, status, risks and opportunities
- There is a lack of comprehensive, integrated SWOT analysis for countries on a global level

The integration of all relevant dimensions of competitiveness leads to a broader and more accurate reflection of nation-economies. We believe the Global Sustainable Competitiveness Index is the currently most comprehensive and accurate measurement of the competitiveness of nation-states and their future potential – as a general measurement, for creditors seeking to evaluate country-specific risks, and other relevant players to evaluate both risk and opportunities in specific sectors.

The Sustainable Competitiveness Model



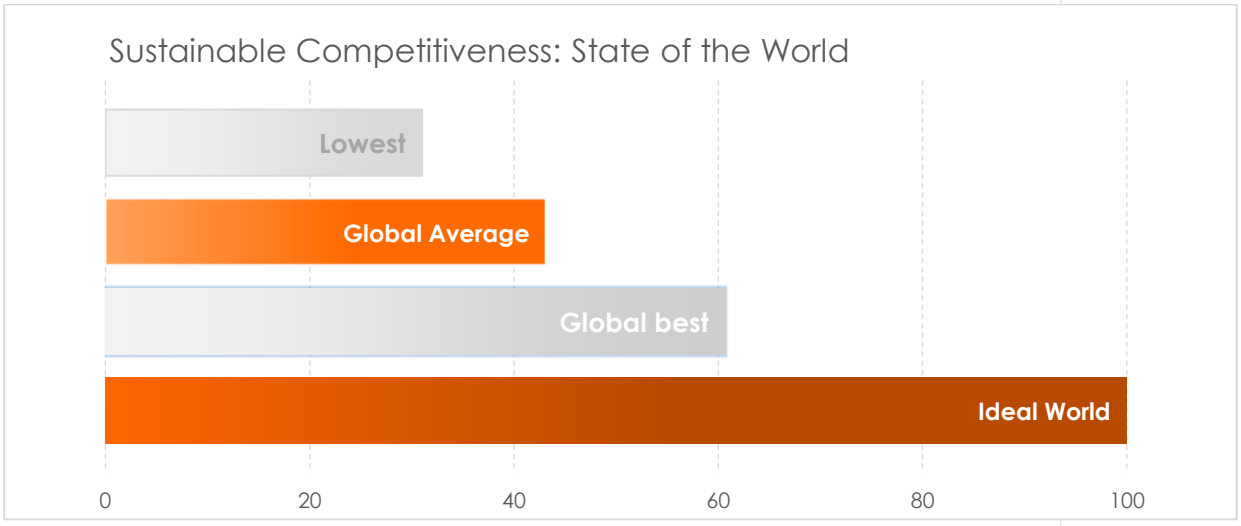
The Sustainable Competitiveness Index is based on 5 pillars of equal importance:

- **Natural Capital**: the given natural environment, including the availability of resources, and the level of the depletion of those resources.
- **Resource Efficiency**: the efficiency of using available resources as a measurement of operational competitiveness in a resource-constraint World.
- **Social Capital**: health, security, freedom, equality and life satisfaction, facilitating development.
- **Intellectual Capital**: the capability to generate wealth and jobs through innovation and value-added industries in the globalised markets.
- **Economic Sustainability:** Economic Sustainability & Competitiveness reflects the ability to generate wealth through sustainable economic development
- **Governance Performance** is the provision of a framework for sustained and sustainable wealth generation trough resource allocation, infrastructure, market and employment structure guidance.

1.2 State of the World 2022

The Global Competitiveness Index shows that, in fact, the World is not in a very good state:

- The Global average Sustainable Competitiveness score in 2022 is 43.1 – out of a possible maximum of 100.
- The gap to a perfect sustainable competitive World is 57 – we are far away from an inclusive and circular society that lives in equilibrium with the natural environment.
- In the Natural Capital dimension, 60% of all indicators globally are pointing the wrong way. Unfortunately, we need to expect further decline of the natural environment.
- The current pace of small positive changes in Resource Efficiency is most likely insufficient to avoid climate disaster. We need to up our game. The necessary technology is available, but there seems to be zero political will to direct the markets.
- The corporate world is driven by competition and cost-benefit considerations – and is therefore far ahead of politics (e.g. actual roadmaps to net-zero by 2025-2030)
- The large gap between low and high performers in Intellectual Capital dimension raises the question: is education the key to development, or the result of development?
- Trend analysis shows small but positive developments in Social and intellectual Capital, and Governance Efficiency where slow but steady development could be expected in the right circumstances
- Tribalism, struggles over perceived power, and armed conflict initiated bs individuals are complicating (if not preventing) the implementation of simple, efficient and readily available solutions.
- There is still immense untapped potential. Policies geared to maximise efficiency improvements could lead to significant positive developments throughout all dimensions

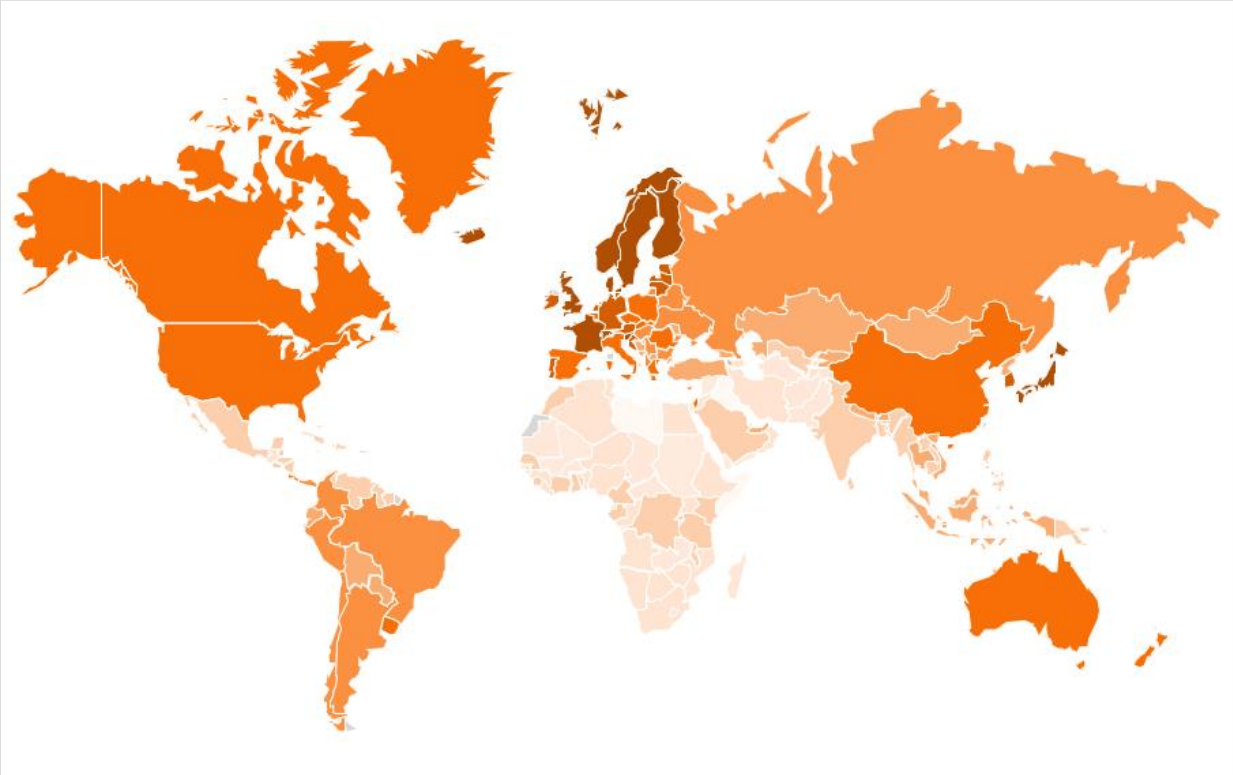


Global average, lowest and highest country score. GSCI 2022

1.3 Country-Level: GSCI Highlights 2022

- Scandinavia continues to top the ranking: Sweden is leading the Sustainable Competitiveness Index, followed by all other Scandinavian nations. Only Switzerland on 3rd is breaking in;
- The top 20 are dominated by Northern European countries.
- Only two countries in the Top 20 are not European: – Japan on 10, and South Korea on 12;
- The USA is ranked 30. The US ranks particularly low in resource efficiency and social capital – potentially further undermining the global status of the US in the future;
- China is ranked 31 – very strong in Intellectual Capital, but low on Natural Capital;
- The UK ranks 7, France 8, and Germany 16;
- Brazil ranks 46, India 120, and Nigeria – Africa's most populous nation – 126;
- Some of the least developed nations have a considerable higher GSCI ranking than their GDP would suggest (e.g. Nepal, Bhutan, Bolivia, Belize, …)
- Asian nations (South Korea, Japan, Singapore, and China) lead the Intellectual Capital Index – the basis of innovation. However, achieving sustained prosperity is potentially compromised by Natural Capital constraints and increasing resource consumption.
- The Social Capital Index ranking is headed by Northern European (Scandinavian) countries, the result of economic growth combined with a commonly accepted social consensus
- The GSCI relies on historical data – we are not yet able to reflect the impact of Russia's war against Ukraine. Calculated estimations suggest Russia's score would drop by roughly 10 in 2022. Russia is therefore not included in the 2022 Index

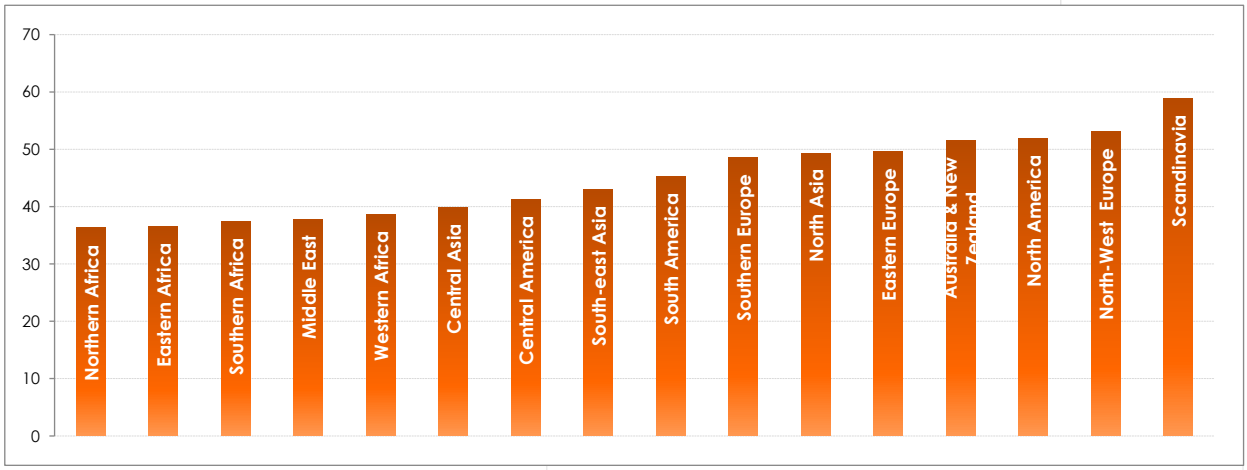
Sustainable Competitiveness World Map 2022



Regional breakdown

The regional differences on development level are not fully unexpected, with a few exceptions:

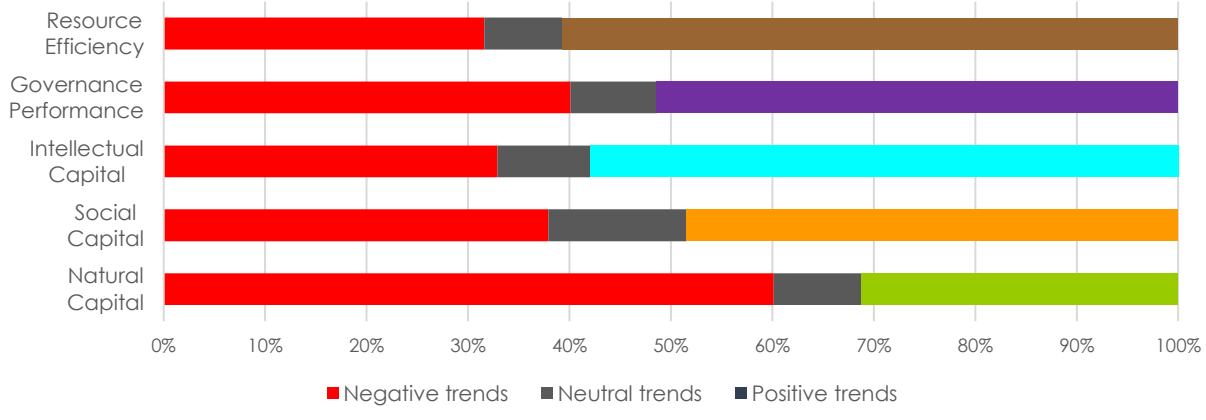
- Scandinavia scores highest in sustainable competitiveness, before Western Europe, North America, and North-East Asia
- Africa and the Middle East are lowest in sustainable competitiveness score
- North-East Asia score is significantly affected by North Korea's low score. Without NK, East Asia scores equal to Western Europe
- Asia is leading Europe in Intellectual Capital, Europe in Social Capital and Resource Efficiency



Sustainable Competitiveness score by region. GSCI 2021

Trend Analysis: Natural Capital Declining

- Intellectual Capital has the highest percent of positive drivers (59%), mostly driven by Asian Nations. Positive development can therefore be expected in the future. However, these developments take time to translate into sustainable growth.
- Resource Intensity, Social Capital and Governance trends are small but positive
- Natural Capital trends are 50% negative. Unfortunately, we have to expect further decline of the natural environment in the future.

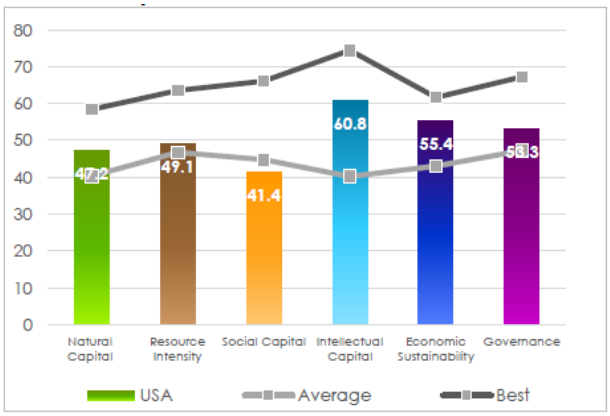


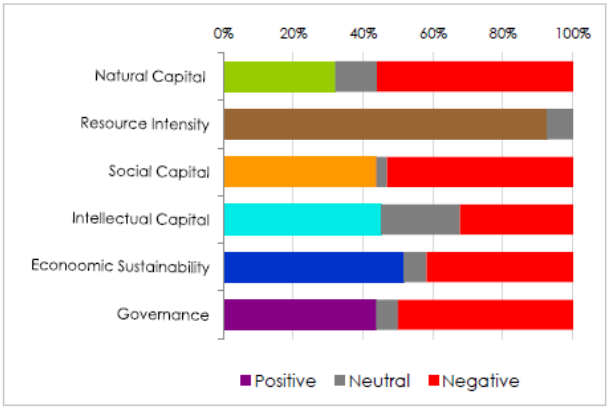
Percentage of positive/negative developing indicators. GSCI

1.4 Sustainable Competitiveness 2022 of Selected Countries

USA

Rank 30/180; Score:51.2 (84% of best)



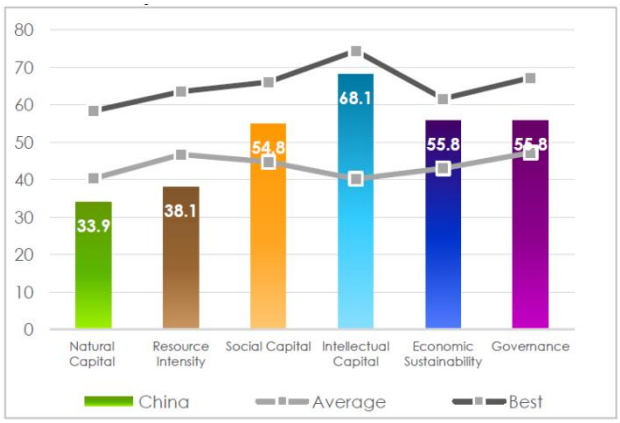


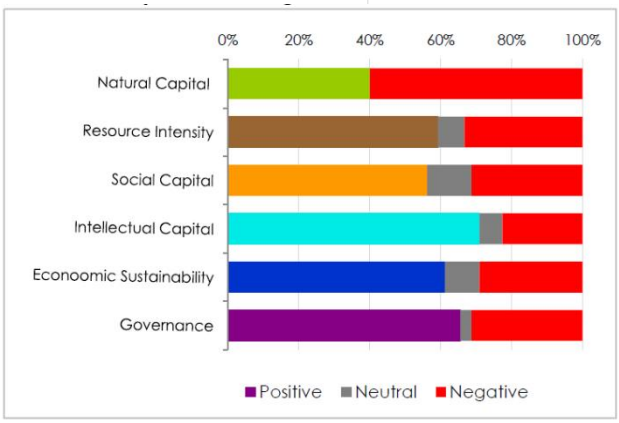
The US is scoring in line or slightly above the global average in 4 of the 6 dimensions –, resource efficiency, social capital, and governance performance – reflecting a somewhat mediocre performance. The fact that the US scores comparable high in intellectual capital - the key dimension to maintain competitiveness in an innovation-driven global economy – shows that all hope is not yet lost. A look at the trends reveals a mixed picture: while resource efficiency is improving, more than 50% of indicators in governance, social capital and natural capital show declining trends.

GSCI performance reports for all countries are [available on our website](#).

China

Rank 31/180; Score: 51.1 (84% of best)

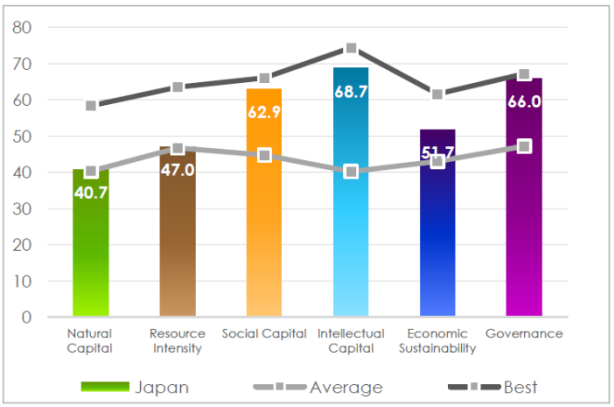


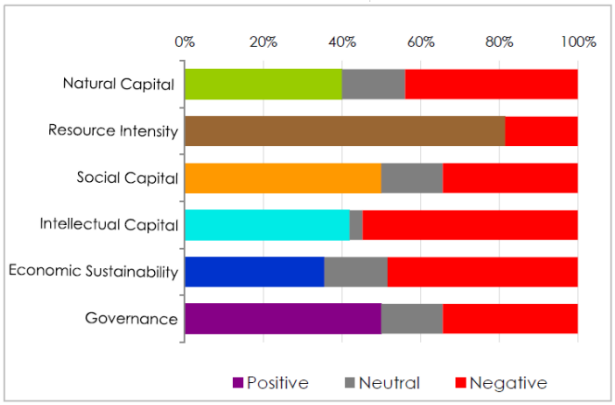


China scores above global averages in social capital, governance performance, economic sustainability, and is ranked 2nd globally in intellectual capital. On the other hand, China's development could be negatively affected by low (significantly below global average) scores in both natural capital and resource efficiency. However, a majority of trends in natural capital and resource efficiency are positive, indicating that these dimensions could improve into the future. Trends in social capital, intellectual capital and governance performance show the right direction, indicating that China is on a path to improve its sustainable competitiveness in the future.

Japan

Rank 10/180; Score: 56.2 (92.6% of best)

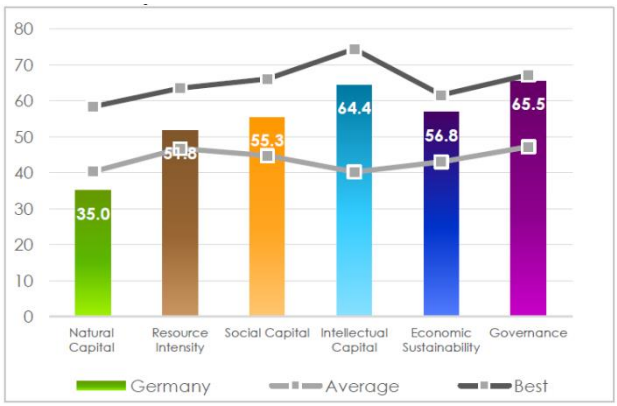


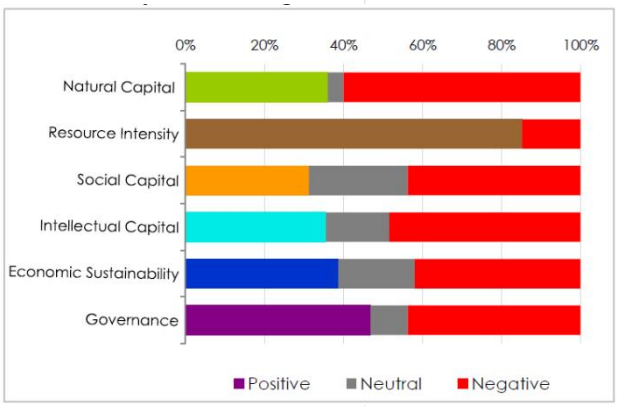


Japan ranks average scores in both natural capital and resource efficiency, while scoring above average in social capital and is amongst the global leaders in intellectual capital and governance. On the positive side, nearly 90% of indicators in resource efficiency are going the right direction, indicating that Japan could improve its standing over time with increased efforts in circular economy and renewable energy.

Germany

Rank 16/180; Score:54.8 (93.1% of best)

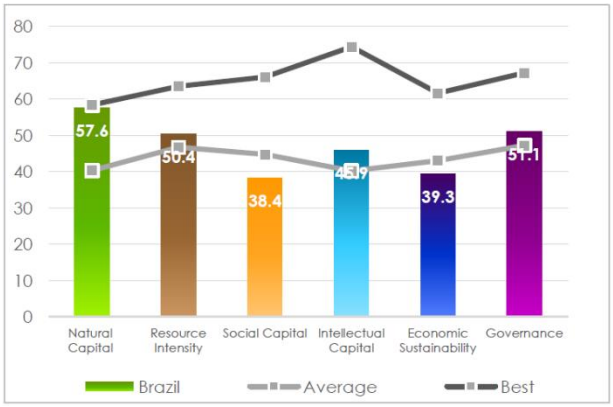


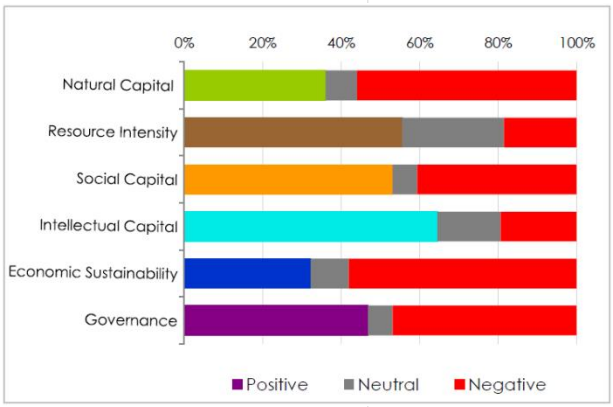


Germany shows a good performance in social capital, intellectual capital, governance performance, and economic sustainability while being in the global average in natural capital & resource intensity. In addition, a significant proportion of natural capital trends are negative, adding further pressure. What is more worrying, however, is the percentage of not-improving and negative trends in intellectual capital in an economy that is based on exporting high-tech and quality goods,

Brazil

Rank 46/180; Score: 47.1 (77.7% of best)

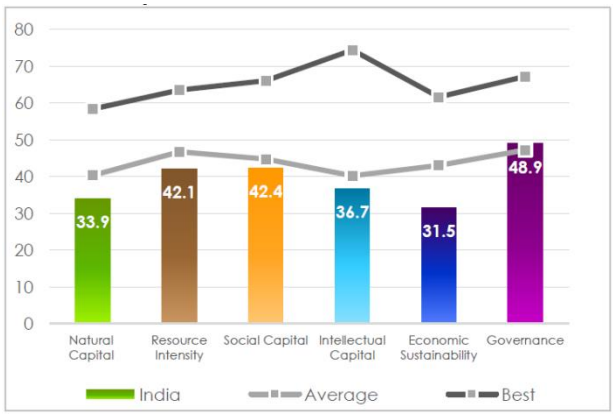


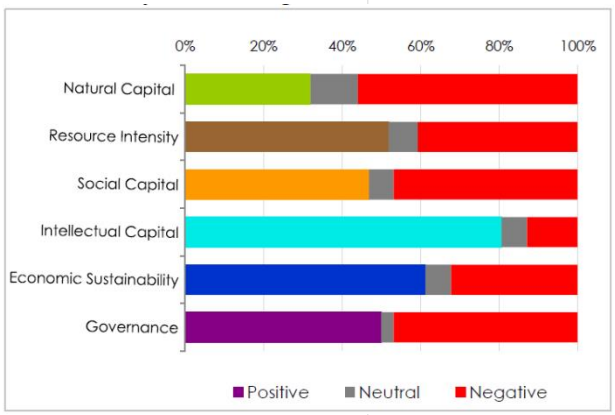


Brazil's performance is in line with global averages in resource efficiency, but below in social capital and economic sustainability. Thanks to a rich and diverse natural environment the natural capital score is amongst the highest. However, nearly 60% of natural capital indicators are negative, indicating that Brazil is chipping away on its main resource, the natural capital. On a positive side, intellectual capital indicators are mostly positive, hopefully translating into improved sustainable competitiveness performance over time.

India

Rank 120/180; Score: 39.3(64.7% of best)





India performs in the average in resource efficiency and governance, but significantly below in natural capital, social capital and intellectual capital, resulting in low global ranking. In addition, a majority of natural capital indicators are negative, putting further strain on the densely populated country. On a positive note, more than 70%% of intellectual capital indicators are positive, raising hopes that the country can improve its future standing through improved education

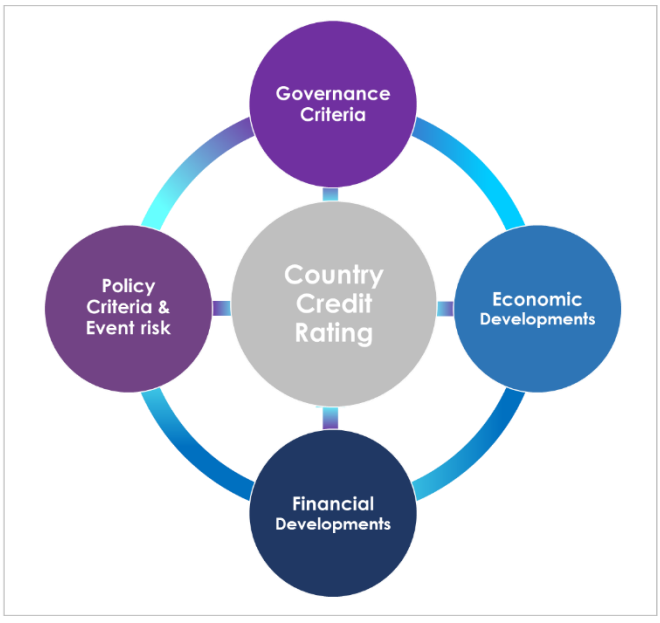
Individual overview and score sheets for all countries are available on our website.

1.5 Sovereign Bond Ratings Need to go ESG - Now

The sovereign bond rating of a country – commonly referred to as credit rating - determines the level of interest a country has to pay for loans and credits on the financial markets. It is therefore a very important parameter for every economy – it defines the level of capital cost for new investments, and the cost of debt. Credit ratings also affect the risks investors are willing to take in overseas investments.

The sovereign risk rating market is dominated by the "three sisters": Moody's, S&P, and Fitch. Sovereign risks are calculated based on a mix of economic, political and financial risks. All of these criteria represent current risks that, like GDP calculations, do not take into account the actual causes that generate the current situation. They do not consider the wider environment – the education availability, the ability and motivation of the workforce, the health, well-being and the social fabric of a society, the physical environment (natural and man-made) that are the fundament of the current situation. Credit ratings describe symptoms, they do not look at the root causes. It is therefore questionable whether credit ratings truly reflect investor risks of investing in a specific country, in particular for long-term bonds and investments.

Sustainable vs. conventional country credit rating; Comparison of country risk & performance evaluation models:



Model and influences used to calculate conventional credit ratings

The GSCI model – including all influences that shape the success of a nation

The Global Competitiveness Model is based on 5 pillars, aiming to cover & evaluate performance of all elements that make economic development (the root). Conventional ratings are based on 4 areas of results. Conventional credit ratings rate the outcome (the end-result); the GSCI the root cause of the outcome.

Rating comparisons and implications

In order to test the implications of the conventional applied sovereign bond ratings, a virtual sustainability-adjusted credit rating was calculated. The sustainability-adjusted rating is equally based on GSCI ratings and conventional ratings (average of Moody's, S&P, and Fitch).

Credit ratings vs Sustainable Ratings of selected countries:

Country	Current Credit Rating Average Moody's, S&P, Fitch	GSCI ESG Rating	ESG vs. Current Rating
Ireland	AA-	AA	2
Japan	A+	AA	2
Kuwait	A+	B	-10
Luxembourg	AAA	A+	-4
Malaysia	A-	BBB-	-3
Maldives	B-	BB+	6
Mongolia	B	BBB-	5
Saudi Arabia	A+	BB+	-6
Slovenia	A	AA	4
Spain	A-	A+	2
Suriname	CCC-	BBB-	9
United Kingdom	AA-	AA	1

Country	Current Credit Rating Average Moody's, S&P, Fitch	GSCI ESG Rating	ESG vs. Current Rating
Australia	AAA	A	-5
Bolivia	B	BBB	6
Brazil	BB	BBB+	5
Canada	AAA	A+	-4
China	A+	A	-1
Denmark	AAA	AA+	-1
France	AA	AA	0
Germany	AAA	AA-	-3
Ghana	CCC+	BB+	7
India	BBB-	BB-	-3
Indonesia	BBB	BBB+	1
Italy	BBB	A+	4

Based on sustainable competitiveness, countries dependent on exploitation of natural resources would receive a significant lower credit rating. On the other hand, some developing nations would receive higher ratings (and therefor lower interest rates) based on their development potential.

In the asset management world, it is now standard procedure to integrate "E, S and G" into financial investment risk/opportunity evaluation, while credit ratings do exclude ESG risks - and therefore do not cover all investor risks. Key observations:

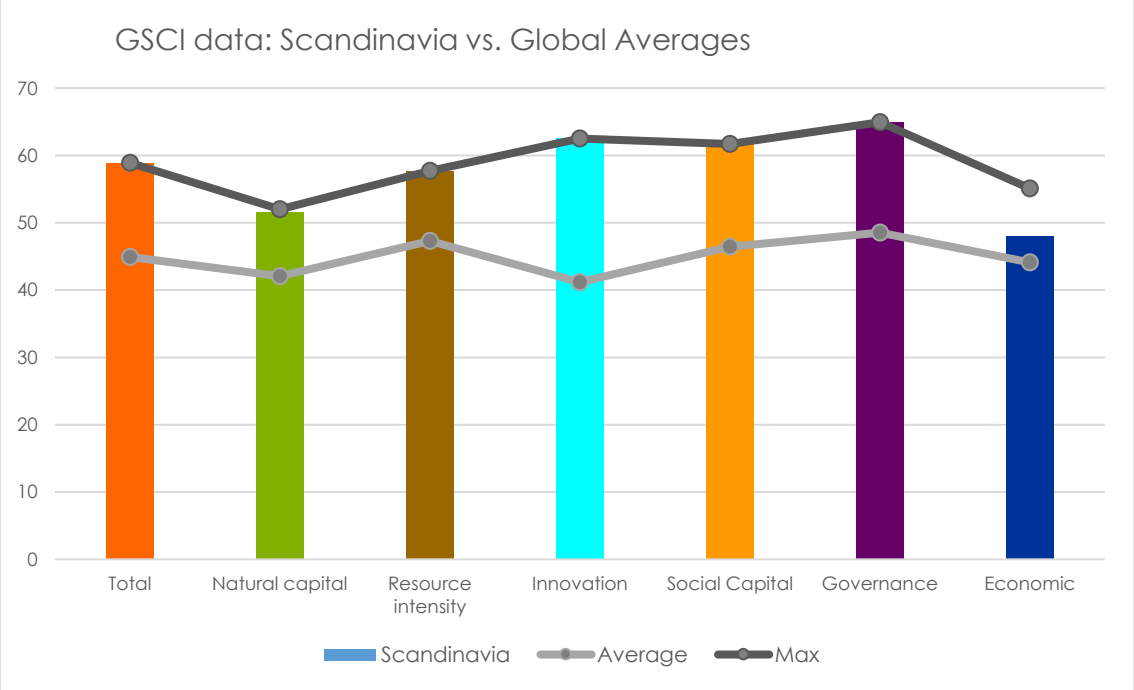
- Sovereign bond ratings show a high correlation to GDP/capita levels: ***Poor countries have to pay higher interest rates than rich countries.***
- Sovereign bond ratings do not reflect the non-tangible risks and opportunities associated with nation economies
- ***Sustainable adjusted ratings and conventional ratings show significant differences.*** Under a sustainability-adjusted credit rating, countries with high reliance on exploitation of natural resources would be rated lower, while poor country with a healthy fundament (biodiversity, education, governance) would receive higher ratings.

It is high time that credit ratings include sustainability in their risk calculations.

1.6 Why always Scandinavia?

Why is Scandinavia leading most country indexes?

Scandinavian nations have topped the Global Sustainable Competitiveness Index since its inception in 2012. Scandinavian countries also tend to be found on the top of non-financial rankings, such as the now defunct Happiness Index, life satisfaction, and environmental indexes. How come…? What are Scandinavian countries doing differently?



Scandinavian averages vs, other World regions across all GSCI scores, 2022

Based on GSCI data, we can see that Scandinavia tops in all dimensions that form sustainable competitiveness, except for economic sustainability, which suggests the success is based on a combination of factors.

Natural Capital & Resource Intensity: Scandinavia is comparably sparsely populated, and has large areas covered by forests, as well as abundant water resources, allowing for agricultural production despite the comparable cold climate, and the production of hydro-electricity – all countries (except Denmark) cover a large percentage of their domestic energy needs through CO2-free hydroelectricity. In combination with a highly developed high-tech industry leads to high scores in both Natural Capital and Resource Intensity/Efficiency

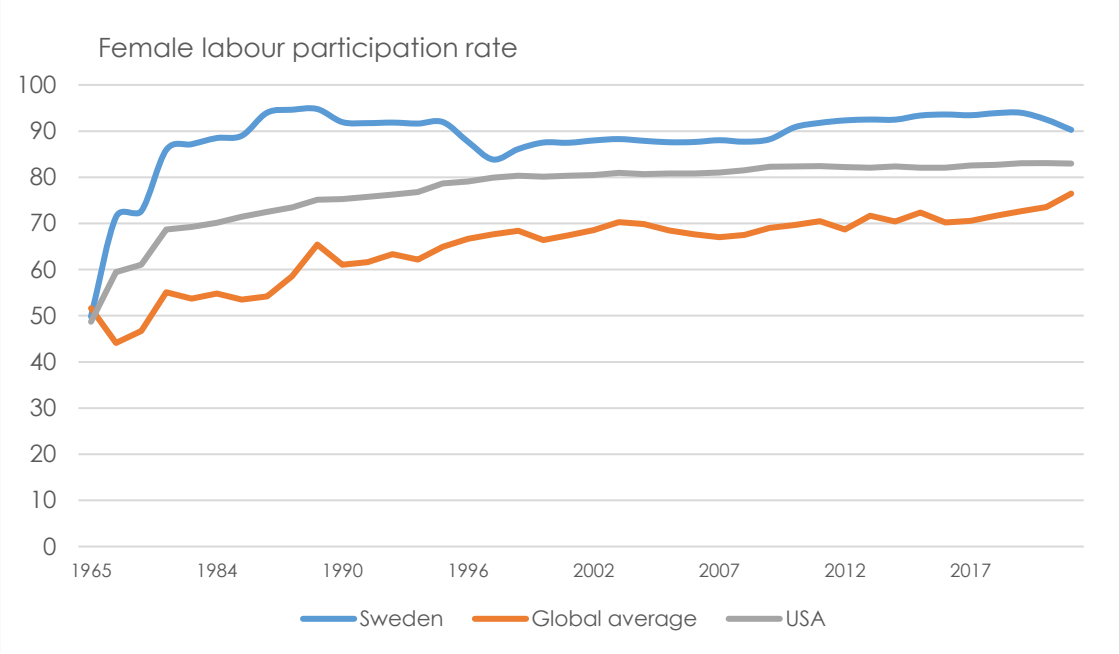
Everything else is somewhat more difficult to explain.

However, when looking for individual indicators in which Scandinavia has consistently excelled over time, there are three outstanding observations:

- Female integration in all aspects of life, including the labour markets
- Consistent outspending on education
- Comparable small income differences and disparity

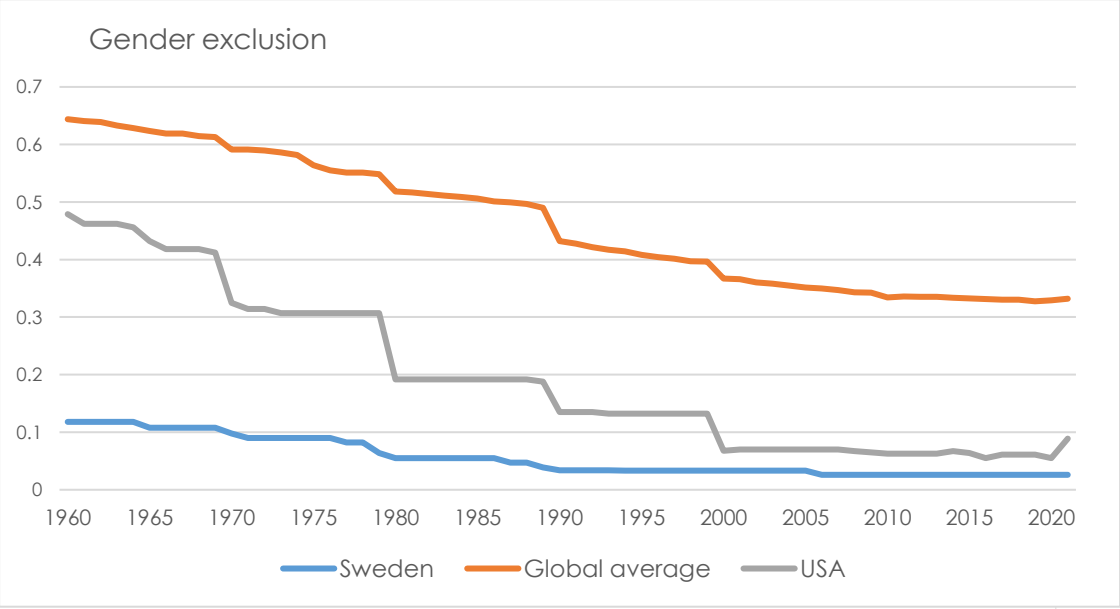
Female integration

Scandinavia is famous for a long-standing state-provided or supported child care, including day-care for small children. The provision of these facilities allowed new mothers to stay in the labour markets, which is reflected in female labour participation rates far above the global average and other developed economies since the 1960s:



Female labour participation rate, Sweden vs USA vs global average, 1968-2020, Data courtesy of ILO/World Bank 2022

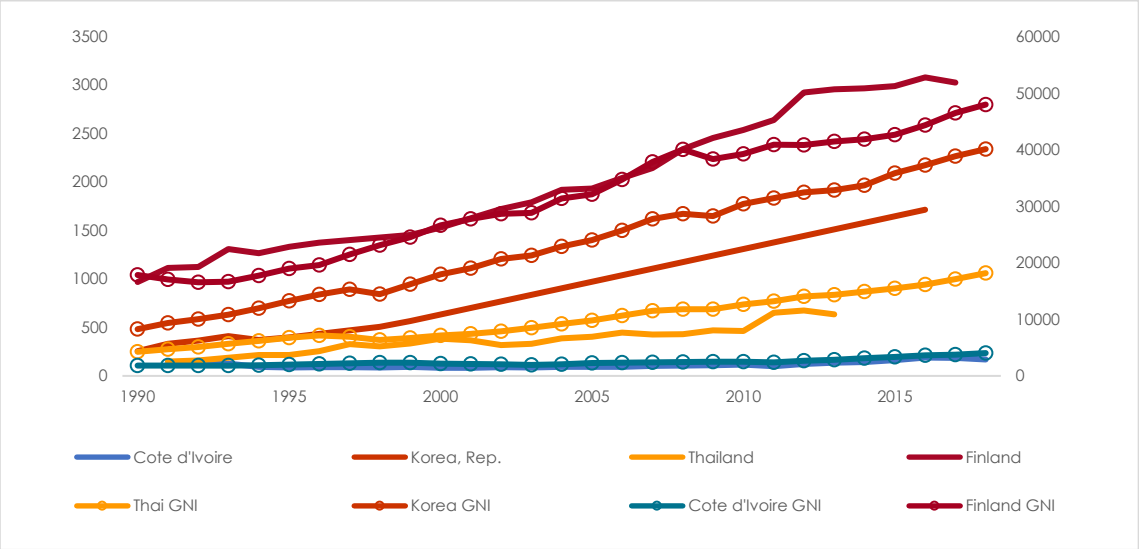
Maybe as a consequence of the above, or maybe due to cultural factors, the exclusion of women in Scandinavia is far below the global average, as shown in the gender exclusion indicators across all aspects of society (not limited to labour, but including politics, management, and the role of women in general):



Female exclusion index, 1960-2021, Sweden vs USA vs global average. Data courtesy of V-Dem Project

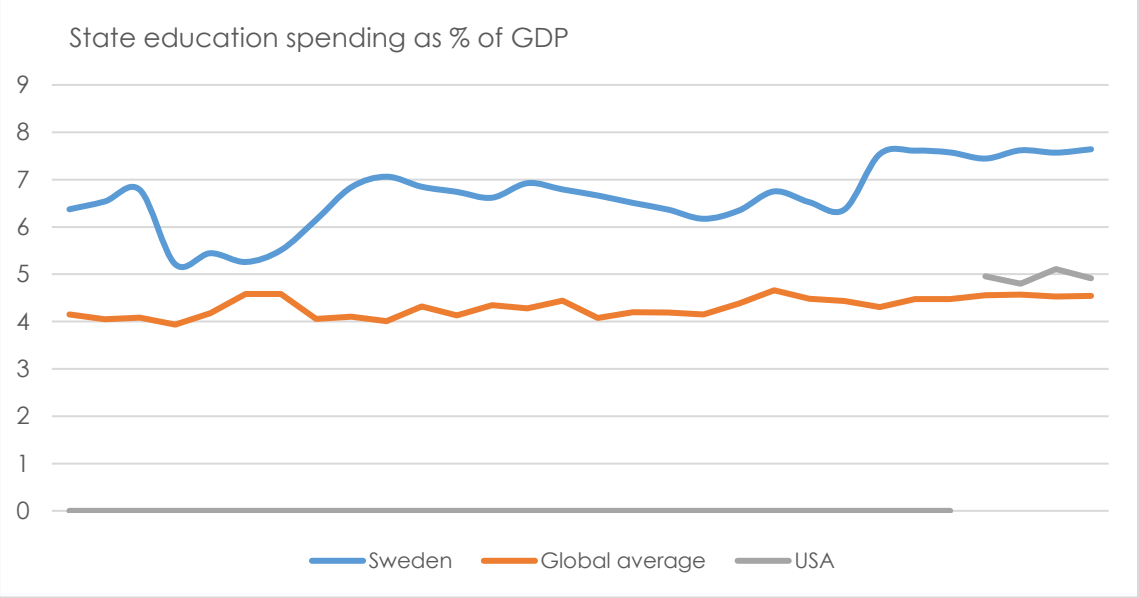
Public Education

Education is a key element for sustained and integrated development (see also the following section). The correlation between educational spending and growth can be observed globally:



Education spending and GDP/capita development for selected countries, 1980-2020 Data: World Bank, UNESCO

Scandinavian countries have long allocated considerable resources to public education. While the total per-capita spending (including private expenses) might be higher in some other countries in absolute terms, education in mostly free in Scandinavia.

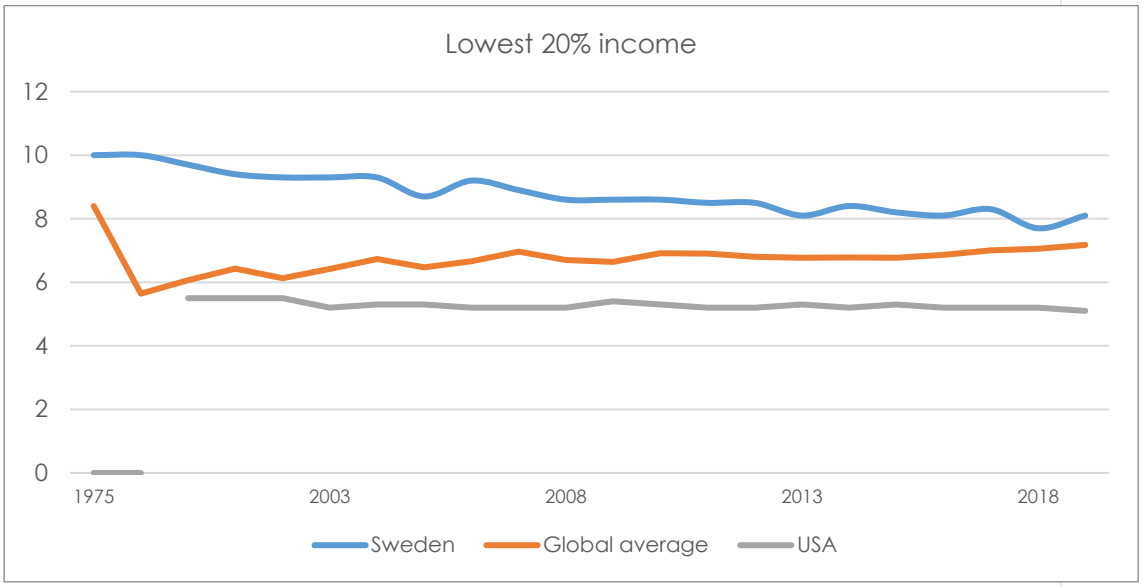


Government education spending, Sweden, USA, global average, 1980-2020. Data: World Bank

Sweden's government spending on education is almost double the World average -measured as percentage of GDP - and significantly higher than most other advanced nations. Higher education spending, combined with accessibility of education for all, leads to a higher qualified work-force, and more innovation down the line, as reflected in Scandinavia's high standing in the high-tech sectors.

Income disparity

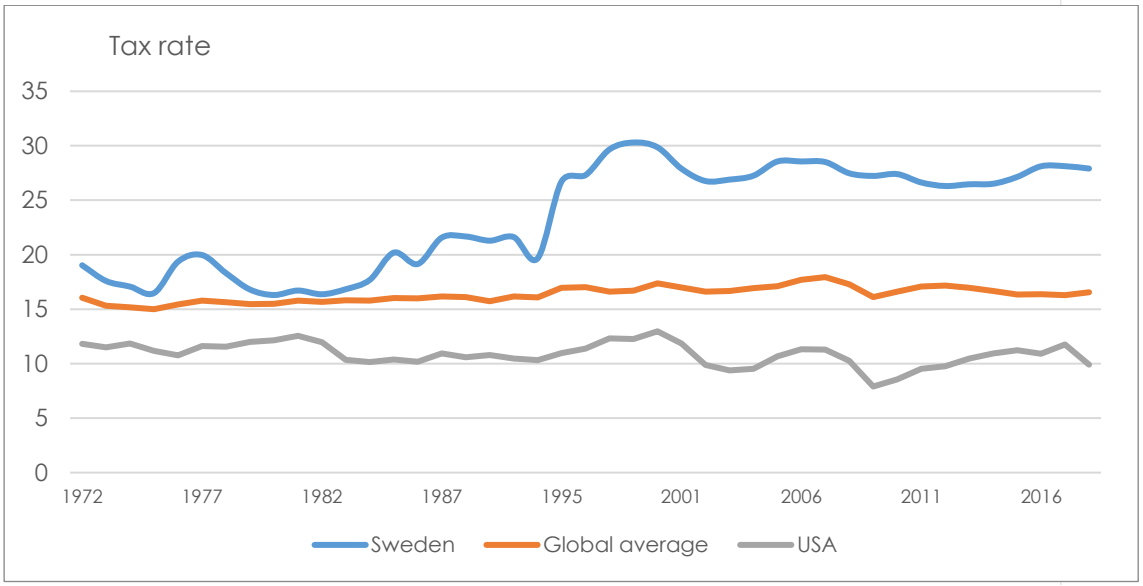
While the connection between GSCI, GDP and income disparity is complex – is one of them a precursor to the other? – the observation is clear: in comparison to the global average and most developed economies, income disparity in Scandinavian countries is significantly smaller.



Income share of the lowest 20%, Sweden, USA, global average, 1975-2020. Data: World Bank

Or is it the tax rate, in the end?

Apart from the above 3 observations, Scandinavia also has a significantly higher total tax rate compared to the global average as well as compared to most developed economies:



Tax rates, Sweden, USA, global average, 1970-2020. Data: World Bank

In the Scandinavia system, many services are state-provided and most free – education, child care, health care, explaining the higher tax rate. In addition, the state budget allows for the provision and maintenance of the built and technical infrastructure – and, as a side effect, leads to lower income disparity.

1.7 GSCI vs GDP: measuring green growth

Development that is not sustainable is not development.

Conventional country comparisons, rankings and ratings are based on economic and/or financial indicators. However, economic and financial indicators - *at best* - reflect current economic success. They do not look at or explaining what makes the economic success possible. They also fail to account for current developments – financial and non-financial - that shape future success or decline.

GDP and other measurements are solemnly based on financial and economic indicators do not fully reflect the current state. To counter the lack of integral competitiveness measurement of nations, the GSCI integrates all three dimensions of sustainable development: the environment, the society, the economy.

In addition, economic activities have adverse side-effects on the environment and societies: pollution and depletion of natural resources, climate change, health impacts, inequality and impacts on the socio-cultural fabric of a country. Neglect of these factors can diminish the very basis of current economic output and success measured in conventional ratings.

Economic and financial indicators are therefore insufficient measurements for risk and investment analysis – or credit ratings. In other words: "competitiveness" in its current meaning and commonly used financial/industrial indicators, e.g. **the GDP, is an insufficient basis for making policy and investment decisions.**

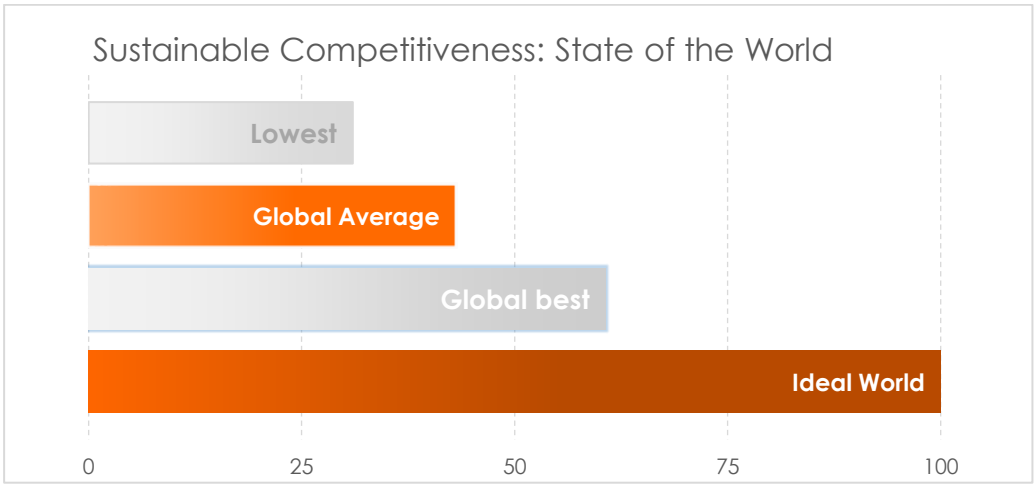
The Global Sustainable Competitiveness Index: Measuring Green Growth since 2012

There is talk of green new deal all over the World – even if the details of everyday implementation are still lacking. The Sustainable Competitiveness Index is based on a model that integrates economic and financial indicators with the pillars that make the business success possible in the first place. It is based purely on comparable and measurable performance data collected by recognised international agencies, therefore excluding all subjectivity. We believe that the Index presents the currently most accurate basis to compare countries amongst each other. In essence, the Global Sustainable Competitiveness measures green growth - with all the shades that are required for implementation of "Green Deals". The tracking of green growth throughout all dimensions facilitates the identification of gaps and policy insufficiencies.

1.8 Challenges are opportunities: the untapped potential

The GSCI translates performance data to a sustainability/competitiveness score based on realistic possible best practice. In other words – real sustainable competitiveness is only achieved by perfect score of 100.

The average Sustainable Competitiveness score across all countries in 2022 is 43.1; the highest score, achieved by Sweden, is 60.7.



The current global gap to an ideal World is 56.9 points. The World is not doing particularly well. In other words: there are countless opportunities and there is endless potential. Not even imagination is a frontier.

However – politics currently seems to be stuck in tribalism, in many parts of the world, as well as on the international stage. Tribalism blocks the implementation of efficient solutions that would be readily available. Tribalism and power-grabbing is stifling the huge potential of new technologies, markets, and positive, inclusive development across all pillars of sustainable competitiveness. Countries that fall into the tribalism trap have their energy trapped, and therefore are likely to lose ground relative to more competitive economies. Which doesn't make much business sense.

In Resource Intensity, even the highest ranked countries score comparable low, indicating a) that the World as a whole is not very environmentally sustainable at the moment, and b) the requirement to apply market tools in the form of real costing.

At the same time, business have progressed far beyond politics, e.g. in terms of implementing actual roadmaps to net-zero by 2025 or 2030, as a significant number of large companies are doing. They calculate in risks and costs. Wherever there is cost – i.e. when a resource becomes scarcer or more expensive – innovation jumps in. Businesses react.

Real costing of external costs – to the environment to the climate, to human health, equally and globally applied according scientific calculation of external cost – will unleash innovation and direct the economy to a win-win path across all dimension and. The economy is not stupid. Real costing is the way towards innovation-based sustainable competitiveness.

1.9 Education & Sustainable Competitiveness

The chicken or the egg?

Sustainable competitiveness means that current wealth levels are not in danger of being reduced or diminished through over-exploitation of resources (i.e. natural and human resources), the lack of innovation investments required to compete in the globalised markets (i.e. education), or the discrimination, marginalisation or exploitation of segments of a society.

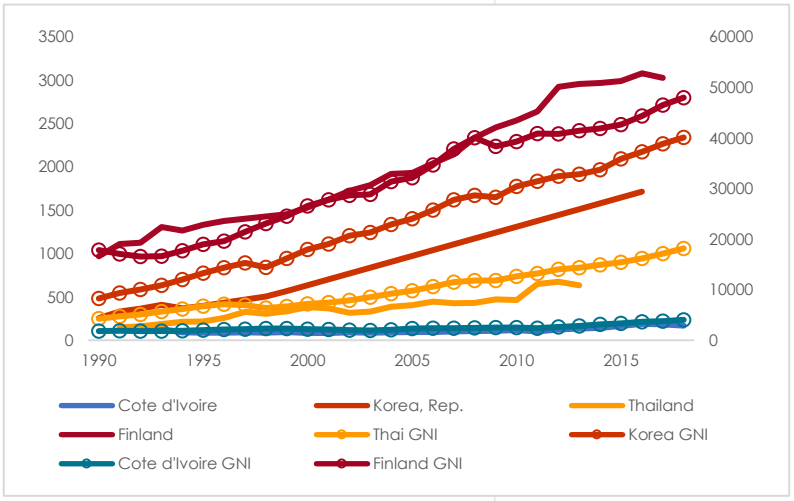
GDP/capita and sustainable competitiveness

The leading nations on the GSCI ranking are mostly high-income countries, suggesting a certain correlation between Sustainable Competitiveness score and GDP per capita, or income levels (high income = high sustainability). The same is true when visualizing average deviations of GDP per capita and the sustainable competitiveness score.

However, the correlation is superficial and refuted by too many exceptions to the rule. Resource economies (e.g. Sadia Arabia, Kuwait) are ranked significantly below their GDP ranks. This indicates that **the correlation is** not from GDP to sustainable competitiveness, but rather **from sustainable competitiveness to income levels**. In other words: higher sustainable competitiveness can be associated with higher income levels.

The presence of large natural resources allows for exploitation of the natural capital (e.g. the oil-rich countries of the Middle East). However, such wealth is highly unsustainable and the wealth generated will diminish with depletion of the resources in the absence of an adequate alternative development and fostering of all 5 pillars.

The GSCI reveals a large gap in Intellectual Capital between average and high-scoring countries, reflecting the north-side divide: the "rich" countries in the north have better public education. Or are they richer because they have had public education for a much longer time, and can now afford to provide more resources for education?



Education spending and GNI development show a very strong corelation – regardless of the development state of a country

The influence of sustainable competitiveness on GDP is not immediate; it is time-deferred. Policy decisions therefore have to be made in light of sustainable competitiveness to achieve desired results at a later stage.

In other words:

Sustainability is the chicken *AND* the egg.

1.10 12 Points Towards Sustainable Competitiveness

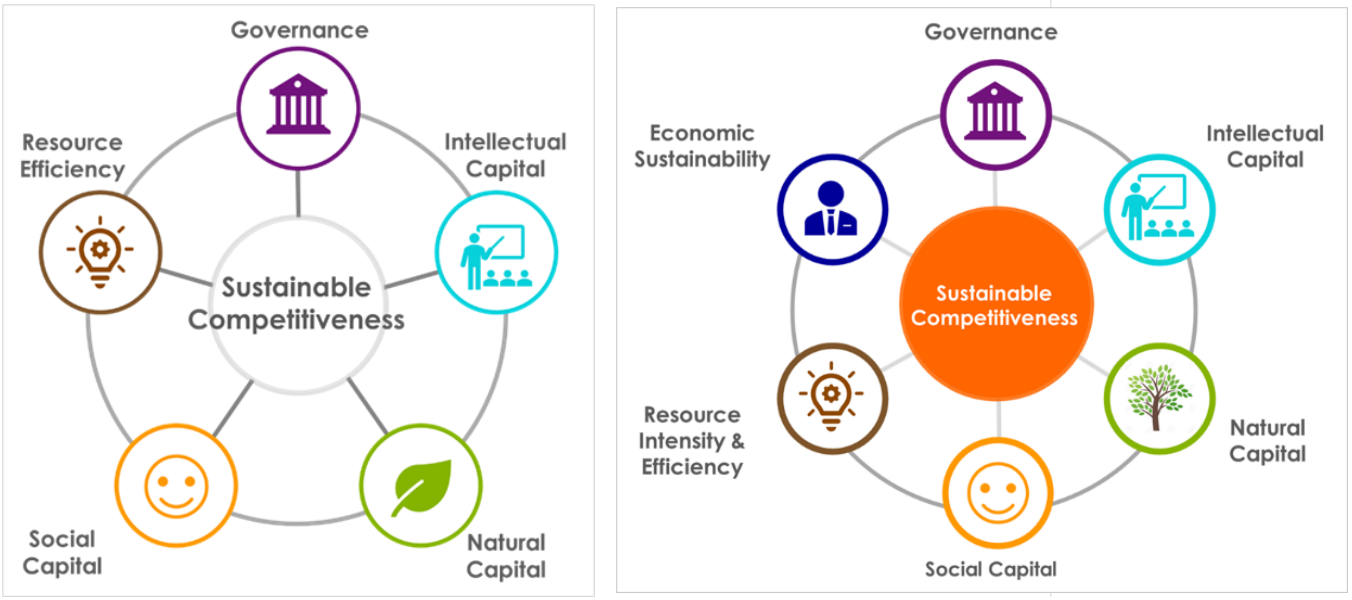
1. **A global climate tax.** Climate change is a gigantic market failure. We need a global climate tax - introduced in phases, paid back to the people in cash and reinvested in a renewable energy infrastructure - to avoid disaster. Now.
2. **More democracy.** In the 21st century, it is not possible that individuals decide over whole countries. The people need to be consulted on policy and law changes through mandatory referenda, and the possibility to induce issues on the governing agenda. And - it is not possible that people have to stand in line to vote in the 21st century.
3. **Better governance.** It's silly to assign responsibility for an entity as complex a country to a single individual. Winner-takes-it-all-systems allow minorities to govern. We need proportional representation systems everywhere to better represent the people. Ministries should be assigned according to national voter share, cabinet meetings are chaired by one of the ministers, in turns. The same applies in the corporate World: we don't need presidents and we don't need CEOs; we need teams of decision makers.
4. **Real market economy.** Markets only work when all costs are incorporated. The environmental costs of substances, materials and processes have to be integrated in the market price – based on a globally agreed level. The taxes generated need to be fiscally neutral (cash-back and/or used to offset the environmental cost).
5. **Quality education for all.** We need quality education, equal for all; taxed and re-distributed at the national level so the same resources are available to each student
6. **Working financial markets.** We need financial markets that support the real economy, and not vice-versa. We created the markets, we can direct them to support development that is sustainable and competitive (e.g. starting with transaction taxes on, minimal holding period for all financial instruments) while providing a soft landing from the current exacerbations
7. **Health care and social security for all.** We need affordable basic health care for all – paid for as percentage of income, directly deducted, with the choice of additional insurance for more luxurious health care. The same applies to social security (pensions, unemployment support)
8. **Impartial and efficient justice system accessible to all.** The justice system has to work fast, efficient, accessible to all while minimising abuse. Judges need to be completely impartial, appointed through a process that is safeguarded from any political influence.
9. **Unitary Taxing.** We need a global approach to tax multi-national corporations (e.g. by a combination of revenues/employees/sourcing per country), as well as private tax. These are not normal times. A wealth tax on the rich, maybe for a limited time, needs to be seriously considered.
10. **Fact-based, impartial information.** We need impartial, science- and fact-based information, not opinions. Financed through taxes, but safe-guarded against any control attempts by governments/politicians.
11. **Freedom for, and from, religion.** Faith is a choice. Science is not. Everybody is free to practice their faith, and nobody shall have their individual freedom impaired by faith. Faith is an individual choice. There is a need for a total separation of state governance and religions.
12. **Total equality.** It is a shame that this has to be mentioned in the 21st century – but we need total equality. Between genders, races, regions, wea

1.11 Changes to the GSCI Methodology 2022

Since its first inception in 2012, we have constantly updated the methodology and the model leading to the Global Sustainable Competitiveness Index – we have prioritised accuracy over consistency. While we strongly believe that the GSCI results have become more accurate over time, the year-on-year values cannot be 100% compared due to the changes in the methodology.

Given the increased demand by researchers, risk specialists and financial institutions, we have decided to d a green-field review of our methodology and the underlying indicators. As a result, we have expanded and improved the methodology significantly.

The GSCI has evolved from a 5-dimensional model to a 6-dimensional model, extracting specific indicators from the "Governance" and "Intellectual Capital" dimension into a new dimension, "Economic Sustainability".



The Old and the New GSCI Model.

In addition to the changes model, we also have extended the indicators used from 135 to a total of 188 indicators. We also have reviewed refined and improved all calculations conducted in the background, such as trend and forecasting analysis, and developed a supporting risk framework that allows for industry and activity-specific risk/opportunity evaluation. The additional data not visible in this report will be made available through a commercial data portal in early 2023

1.12 The 2021 Global Index Rankings

Previous indexes and data can be downloaded from the SolAbility website.

Rank	Country	Score	Rank	Country	Score	Country	Rank	Score	Country	Rank	Score
1	Sweden	60.7	46	Brazil	47.1	Uzbekistan	91	41.7	West Bank and	136	38.1
2	Finland	59.3	47	Panama	47.0	Mexico	92	41.6	Azerbaijan	137	37.8
3	Switzerland	58.3	48	Argentina	46.9	Nicaragua	93	41.6	South Africa	138	37.6
4	Denmark	58.1	49	Ukraine	46.9	Dominica	94	41.6	Guatemala	139	37.6
5	Norway	57.6	50	Colombia	46.6	Cote d'Ivoire	95	41.5	Botswana	140	37.5
6	Iceland	57.1	51	Serbia	46.4	Kenya	96	41.3	Egypt	141	37.5
7	United	56.4	52	Belarus	46.3	Gabon	97	41.3	Gambia	142	37.4
8	France	56.3	53	Fiji	46.2	Tanzania	98	41.3	Guinea-Bissau	143	37.4
9	Slovenia	56.3	54	Cyprus	46.1	Maldives	99	41.2	Zimbabwe	144	37.4
10	Japan	56.2	55	Solomon	45.9	Ghana	100	41.2	Lesotho	145	37.3
11	Austria	55.9	56	Timor-Leste	45.7	Grenada	101	41.0	Benin	146	37.2
12	South Korea	55.9	57	Indonesia	45.7	Saudi Arabia	102	40.8	Algeria	147	37.2
13	Ireland	55.6	58	Paraguay	45.5	Sierra Leone	103	40.8	Angola	148	37.2
14	Latvia	55.4	59	Turkey	45.1	Rwanda	104	40.6	Bahamas	149	37.1
15	Portugal	54.8	60	Ecuador	45.1	Brunei	105	40.5	Djibouti	150	37.1
16	Germany	54.8	61	Moldova	45.0	Dominican	106	40.5	Iran	151	37.1
17	Estonia	54.5	62	Montenegro	45.0	Micronesia	107	40.4	Trinidad and	152	37.0
18	Lithuania	54.2	63	Bosnia and	44.8	Sri Lanka	108	40.4	Mozambique	153	37.0
19	Netherlands	53.9	64	Thailand	44.7	Morocco	109	40.3	Kuwait	154	36.9
20	Croatia	53.4	65	Georgia	44.5	Malawi	110	40.2	Republic of	155	36.8
21	Luxembourg	53.3	66	Tonga	44.5	Senegal	111	40.1	Niger	156	36.8
22	Italy	52.8	67	Mauritius	44.4	Honduras	112	40.0	St. Kitts and	157	36.3
23	Slovakia	52.7	68	Vietnam	44.2	Cameroon	113	39.8	Madagascar	158	36.0
24	Canada	52.5	69	Kyrgistan	44.0	Cambodia	114	39.8	Zambia	159	35.9
25	Czech	52.4	70	North	44.0	Bangladesh	115	39.7	Central African	160	35.8
26	New Zealand	52.3	71	Bolivia	43.8	Venezuela	116	39.7	Burkina Faso	161	35.7
27	Belgium	51.7	72	Nepal	43.6	Togo	117	39.3	Equatorial	162	35.6
28	Spain	51.7	73	Kazakhstan	43.5	Laos	118	39.3	Eswatini	163	35.6
29	Poland	51.2	74	Kiribati	43.5	Democratic	119	39.3	Bahrain	164	35.4
30	USA	51.2	75	Malaysia	43.1	India	120	39.3	Haiti	165	35.3
31	China	51.1	76	Bhutan	43.1	Papua New	121	39.0	Turkmenistan	166	35.3
32	Australia	50.6	77	United Arab	43.1	Qatar	122	38.9	Comoros	167	35.3
33	Uruguay	50.6	78	Armenia	43.1	Namibia	123	38.8	Mauritania	168	35.2
34	Costa Rica	49.9	79	Mongolia	43.1	Ethiopia	124	38.8	Pakistan	169	34.8
35	Greenland	49.9	80	Burma	42.9	Uganda	125	38.7	Chad	170	34.7
36	Romania	49.4	81	El Salvador	42.8	Nigeria	126	38.7	Lebanon	171	34.5
37	Israel	49.3	82	Sao Tome and	42.7	Guinea	127	38.7	Burundi	172	34.3
38	Greece	49.0	83	St. Vincent and	42.6	Tajikistan	128	38.7	Afghanistan	173	34.0
39	Malta	48.5	84	Vanuatu	42.0	Oman	129	38.6	Yemen	174	33.9
40	Singapore	48.5	85	Belize	41.9	Tunisia	130	38.6	Mali	175	33.6
41	Peru	47.8	86	Philippines	41.9	Jordan	131	38.5	Syria	176	32.8
42	Hungary	47.7	87	Guyana	41.8	Cape Verde	132	38.4	Sudan	177	32.7
43	Albania	47.7	88	Cuba	41.8	Jamaica	133	38.3	Iraq	178	32.1
44	Chile	47.3	89	Suriname	41.8	Liberia	134	38.2	South Sudan	179	31.7
45	Bulgaria	47.2	90	Samoa	41.7	Seychelles	135	38.2	Eritrea	180	31.3

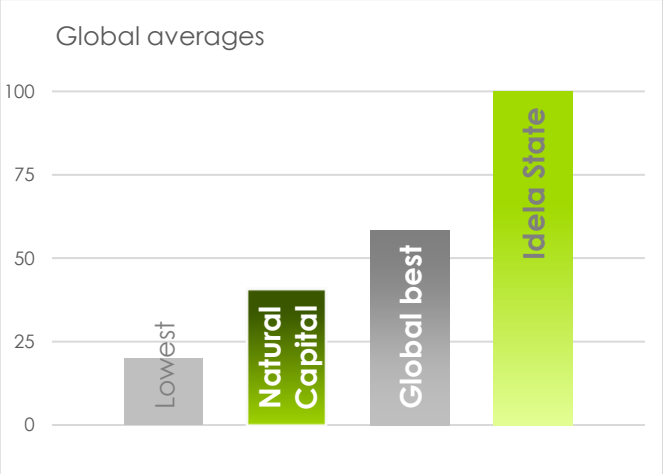
Natural Capital Index

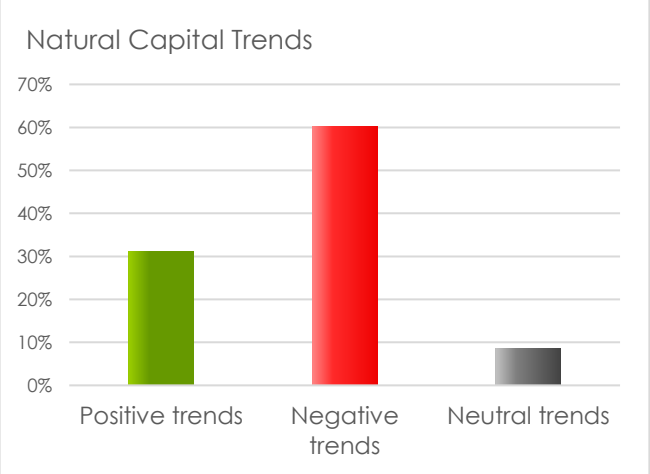
2 Natural Capital Index

Natural capital is the basis on which a country is built: the physical environment and climatic conditions, combined with the extent of human activities that have or will affect the natural environment. The Natural Capital of a country reflects its ability to sustain the population and the economy, now and into the future.

A nation's natural capital is a given value – it is as it is – i.e. there are limitations to human ability to improve or change the availability of natural capital. However, continuing exploitation and extension of human activities diminish the existing Natural Capital.

State of the World: Natural Capital





The average global score in Natural Capital is 45.2 – 55 points off the ideal state. Natural Capital is under stress, almost everywhere on the World. The large gap between the lowest (less than 25) and the best performance (72) reflects the unequal distribution of biodiversity across the globe.

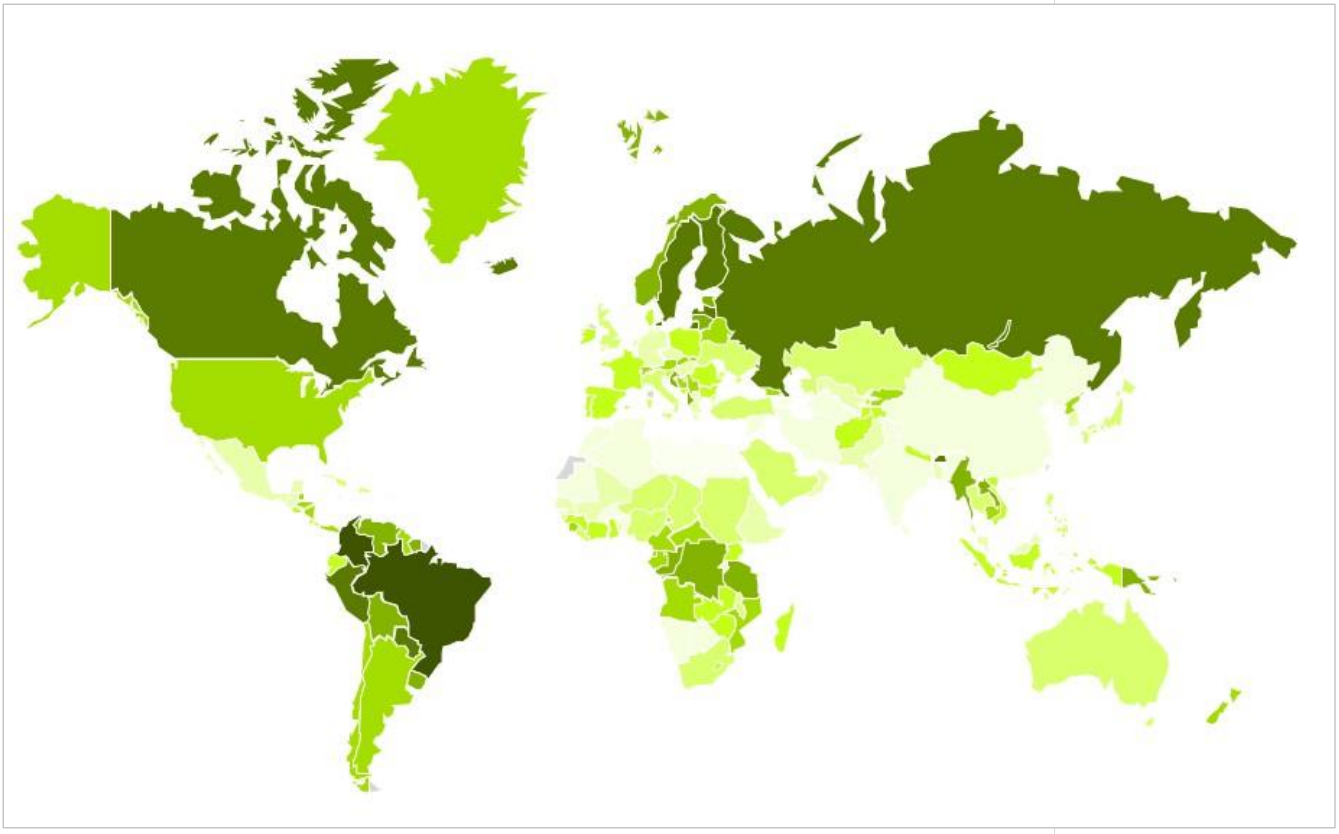
However, what is more worrying is the large percentage of negative trends across all indicators: 49% of all indicators show further deteriorating developments, while only 34% are positive. Given the absence of meaningful policies that protect the remaining biosphere and incentivises green alternatives and finally attaches a cost tag to collateral environmental destruction, we unfortunately have to expect a further decline of environmental parameters into the future – which in term will affect other pillars of sustainable competitiveness.

The Natural Capital Index 2022 – Key Take-aways

High-ranking countries are characterised by abundant water availability, the source of a rich biodiversity. Many of the highest scoring countries are located in tropical areas. While some of these countries currently may lack social, intellectual and governance capital, their Natural Capital would allow them to develop sustainable competitive economies over time. A certain correlation with the level of human activities and population density can also be observed: large countries with a comparably small population density and rich biodiversity tend to score higher.

- The Natural Capital Index 2022 is topped by Colombia, followed by Brazil, Bhutan and Latvia
- South America nations, with their large biodiversity pool, score high in Natural Capital
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water are all ranked in the top 20s,
- Canada is ranked 9, the US 44
- African countries in the tropical belt are ranked fairly high – including the 2 Congo's, Gabon, and Cameroon
- The two most populated countries, China (138) and India (137) are both affected by a combination of arid climate, high population density and depletion levels, raising concerns over those countries' ability to self-sustain their large populations in the long term.

Natural Capital Index World Map

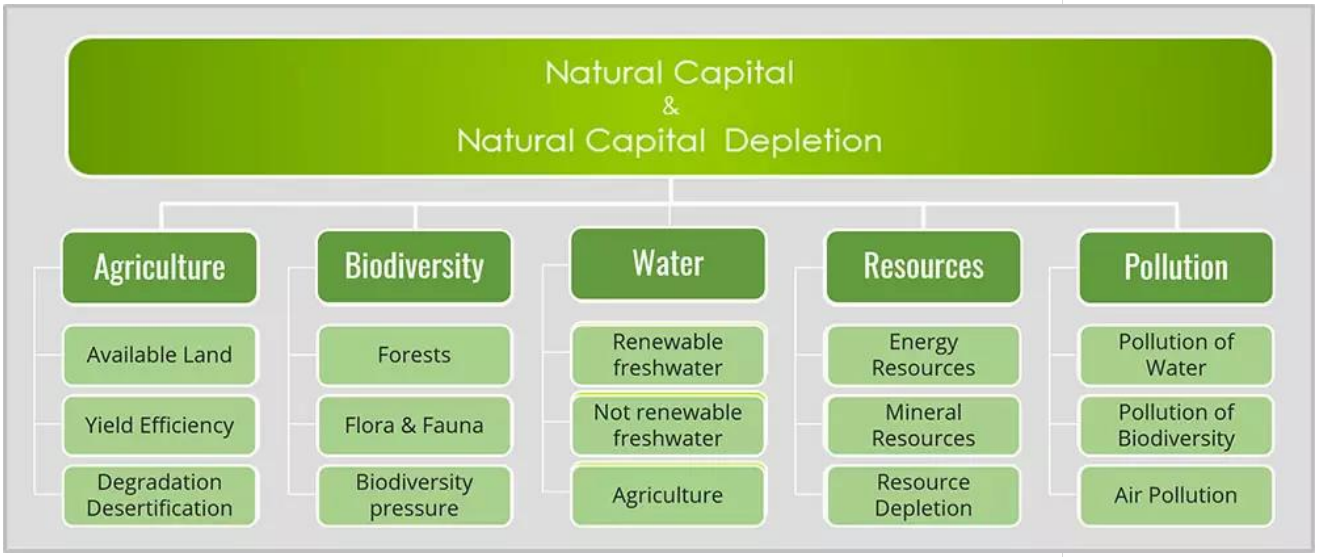


The Natural Capital World Map. Dark areas indicate high, light areas low levels of natural capital

Natural Capital Components

The Natural Capital of a country is defined by the natural physical environment. The Natural Capital model incorporates the essence of resources available that allow a country to be completely self-sustaining: land, water, climate, biodiversity, food production and capacity, as well as renewable and non-renewable energy and mineral resources. In addition, the level of depletion or degradation of those resources that could endanger future self-sufficiency are taken into account to reflect the full picture of the available natural capital.

The number of data points related to natural capital available from a variety of sources is nearly endless. The main challenge is to select the most relevant and meaningful indicators amongst the wealth of available data. In order to define meaningful and relevant, the core issues affecting the sustainable use of natural capital have been defined in the natural capital model below:



Key elements of competitiveness drivers in the Natural Capital Sub-Index

Natural capital indicators

Based on the definition of the key natural capital areas, data series are chosen as indicators that reflect the sustainable competitiveness of a country based on its natural resources (natural capital).

The indicators have been analysed for the latest data point available as well as their development over time, reflecting the current status and the future outlook in relation to the size and population of a country. In addition, indictors that measure the depletion or degradation of the natural resources have been taken into account. The combination of these indicators reflects the current status as well as the ability to sustain the population and the national economy.

As some of the above key areas are difficult to express in numerical values, some quantitative scores compiled by UN agencies have been used for certain indicators, such as biodiversity potential, resource depletion, and the ecological footprint.

Natural Capital Index 2020

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Colombia	1	58.4	Nicaragua	46	46.9	South Sudan	91	39.9	Burkina Faso	136	33.9
Brazil	2	57.6	Argentina	47	46.8	Mauritius	92	39.8	India	137	33.9
Bhutan	3	56.3	Angola	48	46.8	Guinea-Bissau	93	39.8	China	138	33.9
Latvia	4	55.8	Equatorial	49	46.8	Dominica	94	39.8	Turkmenistan	139	33.7
Sweden	5	55.7	Serbia	50	46.7	Brunei	95	39.7	Vanuatu	140	33.5
Finland	6	55.5	Gabon	51	46.5	Samoa	96	39.4	Eswatini	141	33.4
Canada	7	55.3	Greenland	52	46.5	South Africa	97	38.9	Algeria	142	33.4
Peru	8	55.3	Belize	53	46.1	Saudi Arabia	98	38.8	Sao Tome and	143	33.3
Paraguay	9	55.0	Romania	54	46.0	Tonga	99	38.7	Mauritania	144	33.1
Iceland	10	54.0	Bulgaria	55	45.9	Thailand	100	38.5	Iran	145	32.9
Democratic	11	53.7	France	56	45.8	Luxembourg	101	38.5	Botswana	146	32.5
Uruguay	12	53.6	Zimbabwe	57	45.7	Malawi	102	38.3	Morocco	147	32.5
Tanzania	13	53.6	Ghana	58	45.6	Turkey	103	38.3	Syria	148	32.4
Albania	14	53.4	Portugal	59	45.3	Australia	104	38.3	Djibouti	149	31.9
Laos	15	53.3	Uganda	60	45.0	Sudan	105	38.2	Maldives	150	31.6
Papua New	16	53.1	Lesotho	61	44.9	Liberia	106	38.1	Haiti	151	31.6
Bolivia	17	53.0	Nepal	62	44.7	Philippines	107	38.1	Gambia	152	31.6
Venezuela	18	52.2	Montenegro	63	44.4	North	108	37.7	Moldova	153	31.4
Lithuania	19	52.0	Tajikistan	64	44.3	Togo	109	37.6	Malta	154	31.4
Croatia	20	51.7	Poland	65	44.0	South Korea	110	37.6	Egypt	155	31.2
Suriname	21	51.6	Vietnam	66	44.0	Mexico	111	37.5	Seychelles	156	31.0
Norway	22	51.5	Costa Rica	67	44.0	Czech Republic	112	37.4	Belgium	157	30.9
Estonia	23	51.2	Cote d'Ivoire	68	44.0	Netherlands	113	37.4	Micronesia	158	30.8
Burma	24	51.0	Ecuador	69	43.9	Hungary	114	37.3	Libya	159	30.7
Republic of	25	51.0	Ireland	70	43.9	Uzbekistan	115	37.2	Comoros	160	30.6
Panama	26	49.9	Zambia	71	43.8	Mali	116	36.9	Eritrea	161	30.5
Cambodia	27	49.6	Slovenia	72	43.7	Jamaica	117	36.9	Iraq	162	29.7
Fiji	28	49.2	Denmark	73	43.4	Malaysia	118	36.9	Grenada	163	29.6
Georgia	29	49.2	El Salvador	74	43.2	Oman	119	36.9	Cyprus	164	29.2
Kyrgistan	30	49.1	Madagascar	75	43.0	Rwanda	120	36.8	Israel	165	29.2
Cameroon	31	49.1	Mongolia	76	42.7	Guatemala	121	36.7	Trinidad and	166	29.1
Guyana	32	48.5	Indonesia	77	42.6	Ethiopia	122	36.5	Qatar	167	28.9
Mozambique	33	48.5	Afghanistan	78	42.6	Greece	123	36.3	Kenya	168	28.6
New Zealand	34	48.4	Spain	79	42.3	St. Vincent and	124	36.1	Kuwait	169	28.5
Chile	35	48.3	Guinea	80	42.0	Bangladesh	125	35.6	Yemen	170	28.4
Belarus	36	48.0	Niger	81	41.9	Burundi	126	35.5	Singapore	171	28.3
Switzerland	37	48.0	Ukraine	82	41.3	Senegal	127	35.5	United Arab	172	28.2
Austria	38	47.9	Cuba	83	41.1	Pakistan	128	35.5	Bahamas	173	28.1
Sierra Leone	39	47.8	Chad	84	41.0	Timor-Leste	129	35.0	Kiribati	174	27.3
Honduras	40	47.8	Nigeria	85	40.9	Germany	130	35.0	Bahrain	175	26.9
Slovakia	41	47.7	Kazakhstan	86	40.8	Namibia	131	35.0	Jordan	176	26.4
Bosnia and	42	47.6	Japan	87	40.7	Azerbaijan	132	34.9	Tunisia	177	25.5
Central African	43	47.5	United Kingdom	88	40.6	Armenia	133	34.6	Somalia	178	24.5
USA	44	47.2	Italy	89	40.2	Benin	134	34.4	Cape Verde	179	23.8
Solomon Islands	45	47.2	Dominican	90	39.9	Sri Lanka	135	34.0	Lebanon	180	22.1

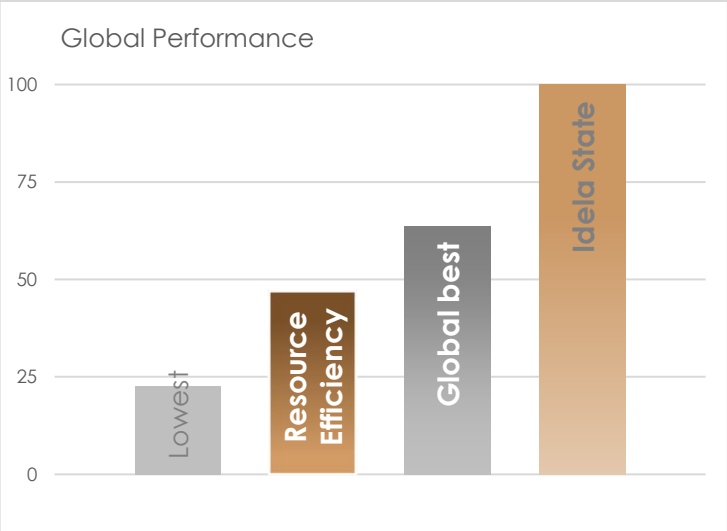
Resource Efficiency Index

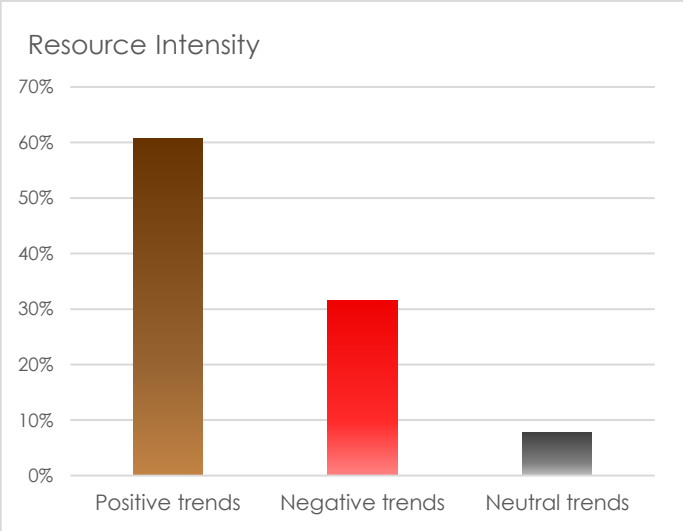
3 Resource Efficiency Index

Resource efficiency determines the ability to manage the available resource (natural capital, human capital, financial capital) efficiently – regardless of whether the capital is scarce or abundant. Whether a country does or does not possess resources within its boundaries (natural and other resources), efficiency in using resources is a cost factor affecting the competitiveness and in extension the wealth of nations. Over-exploitation of existing natural resources also affects the natural capital of the country, i.e. the ability of a country to support its population and economy with the required resources into the future.

In addition, non-renewable resources that are used today might be scarce and therefore expensive tomorrow, affecting competitiveness, wealth and the quality of life in the future. A number of factors are pointing to rising cost for resources in the future, in particular natural resources: scarcity and depletion of energy, water, and mineral resources, increasing consumption (particular in non-OECD countries), financial speculation on raw materials, and possibly geo-political influences. The objective of the resource efficiency index is therefore to evaluate a country's ability to deal with rising cost and sustain economic growth in the face of rising prices in the global commodity markets, manage scarcity of other natural resources (in particular: water), while protecting the natural environment.

State of the World – Resource Efficiency/Intensity

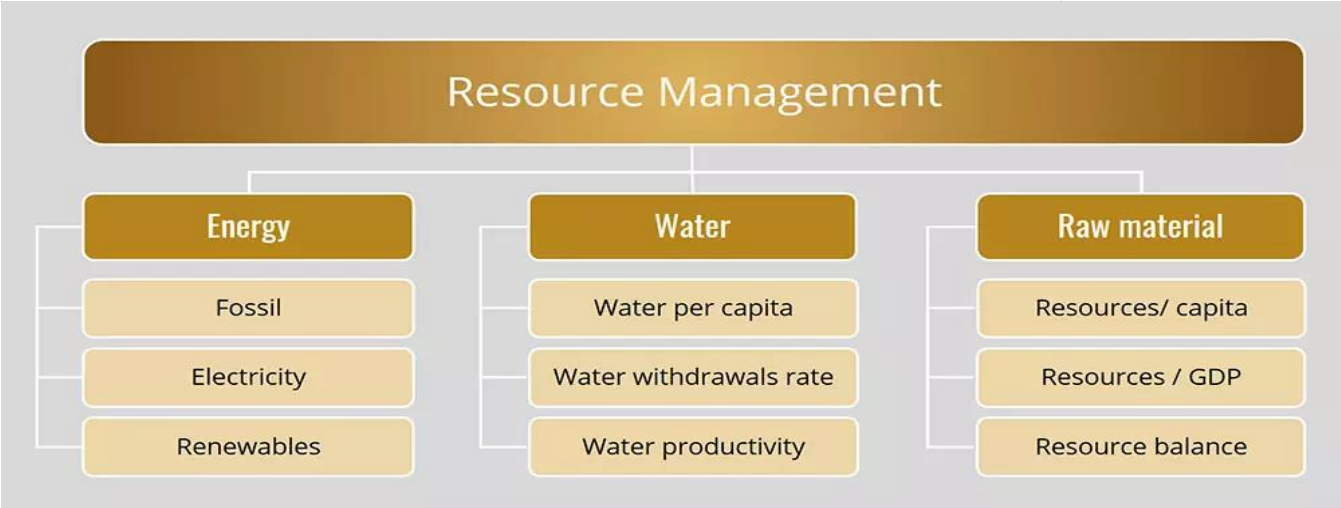




The global average in resource intensity is 46, while the highest achieved is 64. Even the best performing countries are a long way from being sustainable competitive, i.e. achieving net-zero in a circular economy. However, the large represents immense potential – for new business, and cost reduction.

On the positive side, roughly 60% of all indicators across all countries show positive development; we therefore can expect slow but steady improvements into the future. However, the current pace of changes is most likely insufficient to avoid climate disaster.

Measuring Resource Efficiency



Key elements of competitiveness drivers in the Resource Efficiency Index

Vital natural resources include water, energy, and raw materials. Most of the resources used today are non-renewable, or only partly renewable: fossil-based energy, and minerals. Water aquifers and other natural products (e.g. wood) are renewable, as long as their capacity is not overused and the replacement patterns are not drastically altered, e.g. trough depletion, biodiversity loss, pollution, or climate change.

The availability of accurate global data is not as wide as in other criteria, particularly in terms of usage of raw materials. Other than steel & cement usage, reliable raw material usage statistics are not readily available on a global level. The focus is therefore on energy, energy sources, water, steel & cement usage, as well as GHG emission intensity and productivity. For the full list of indicators, refer to the methodology section.

Resource efficiency index indicators are evaluated both in terms of intensity (per capita) and efficiency (relative GNI). The scores are calculated relative to population (e.g. GHG per capita) as well as relative to economic output (e.g. energy consumption per GDP). Indicators measured against population (per capita) clearly favour countries with low resource and raw material consumption (i.e. less developed countries), while indicators scored relative to GDP measure economic efficiency.

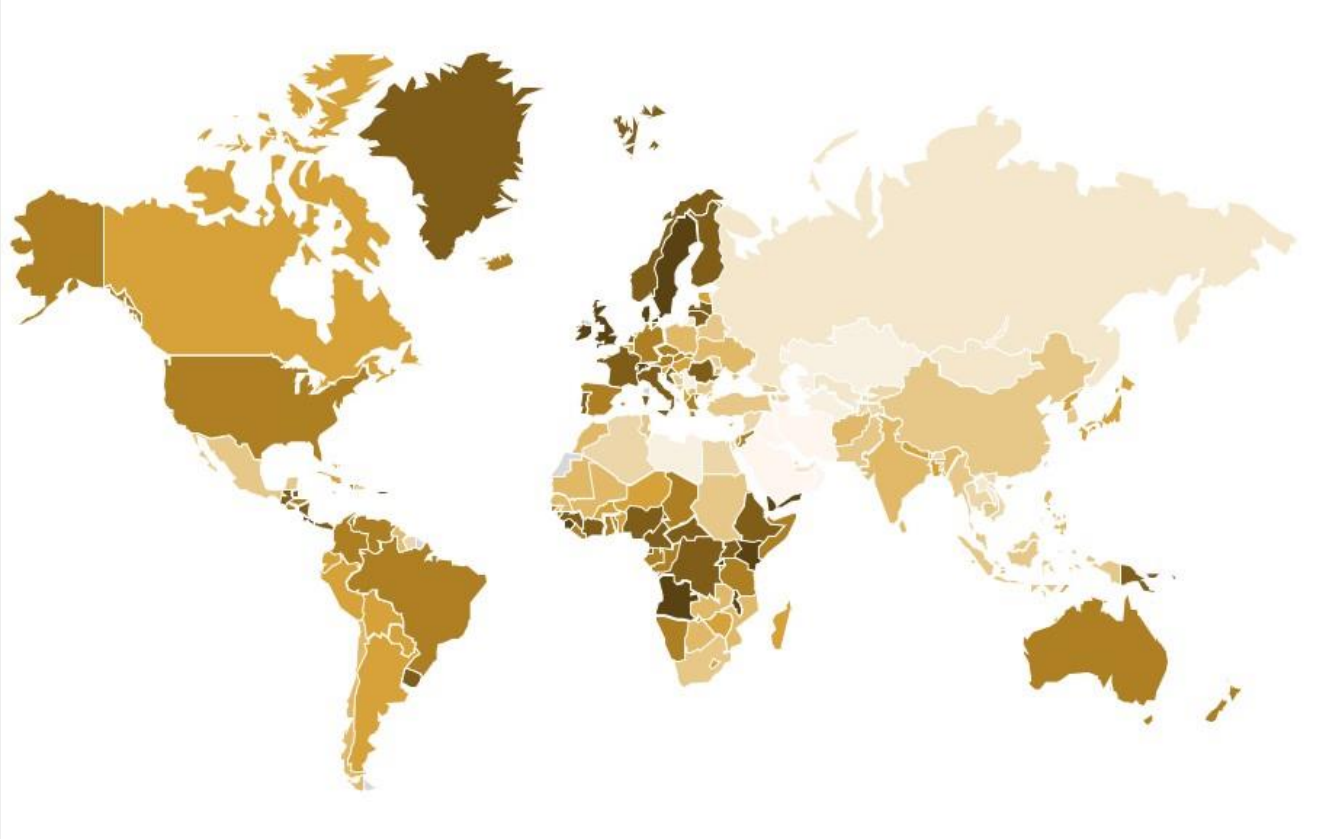
The resource intensity map shows that the resource intensity of less developed countries seems to be – generally speaking - lower than that of higher developed economies. However, indicators are measured both against economic output (GNI/GDP) and against per-capita performance. While the per-capita intensity is naturally lower in less developed economies, the per-output performance in efficient developed countries is lower than in the developing countries.

Resource Intensity/Efficiency Index – Key Take-Aways

The Resource Intensity & Efficiency Index is based on both per-capita measurement (intensity) and measurement against total economic output, per- e.g. water usage per unit of GDP (economic efficiency; resource usage per unit of value generated)). The countries with low resource consumption – per capita and per $ – achieve a higher score. As a result, the Resource Intensity /Efficiency sees both developed and lesser developed nation on the top:

- The resource efficiency Index is topped by the UK, followed by Sweden and Costa Rica.
- Congo, Malawi, Rwanda and the Central African Republic are all ranked in the top 20
- Also highly developed economies achieve high rankings – UK, Sweden, Switzerland, Ireland and Denmark are all ranked in the top 20. Germany is ranked 60, the US 80, and Japan 96
- China is ranked on the bottom at 154 – both due to the presence of heavy industries, construction activities, but also due to low resource efficiency

The main implications of a high or low score in resource efficiency/intensity is related to stability and sustained economic growth. Should global prices for raw materials and energy rise significantly in the future (as trends and the majority of available research suggests), the countries in the lower ranks will face substantial higher costs and challenges to maintain their growth compared to countries with higher efficiency and intensity scores.



The Resource Intensity World Map. Dark areas indicate low, light areas indicate high Resource Efficiency/Intensity scores.

Resource Efficiency Index 2021

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
United Kingdom	1	63.5	Netherlands	46	53.0	Albania	91	47.5	Sudan	134	41.1
Sweden	2	62.5	Togo	47	53.0	Liechtenstein	183	0.0	Montenegro	135	41.1
Costa Rica	3	61.4	Iceland	48	52.8	North Korea	183	0.0	Mexico	136	41.0
Sierra Leone	4	60.1	Chad	49	52.6	Bangladesh	92	47.4	Bosnia and	137	40.9
Switzerland	5	60.1	El Salvador	50	52.5	Bolivia	93	47.3	Burma	138	40.3
Ireland	6	60.0	Haiti	51	52.5	Benin	94	47.2	Turkey	139	40.2
Denmark	7	59.9	Guinea-Bissau	52	52.4	Zimbabwe	95	47.0	Moldova	140	40.0
Malawi	8	59.7	Austria	53	52.3	Japan	96	47.0	Micronesia	141	40.0
Kenya	9	59.7	Spain	54	52.2	Lesotho	97	47.0	Armenia	142	39.9
Yemen	10	58.5	Ghana	55	52.1	Estonia	98	47.0	Pakistan	143	39.8
Rwanda	11	58.1	Tanzania	56	52.1	Ecuador	99	46.8	Cambodia	144	39.4
Angola	12	57.9	Gambia	57	52.0	Timor-Leste	100	46.8	Tunisia	145	39.3
Djibouti	13	57.7	Somalia	58	52.0	Cuba	101	46.5	Malaysia	146	39.1
Uruguay	14	56.9	Gabon	59	51.9	Israel	102	46.5	West Bank and	147	38.9
Solomon Islands	15	56.7	Germany	60	51.8	Nepal	103	46.4	Georgia	148	38.8
Central African	16	56.3	Liberia	61	51.7	Hungary	104	46.4	Belarus	149	38.7
Latvia	17	56.2	Honduras	62	51.5	Peru	105	46.2	South Africa	150	38.6
Democratic	18	56.1	Eritrea	63	51.3	Burkina Faso	106	46.2	South Korea	151	38.5
Belize	19	55.9	Fiji	64	51.2	Poland	107	45.9	Lebanon	152	38.4
Cote d'Ivoire	20	55.7	Venezuela	65	51.2	Mali	108	45.8	Brunei	153	38.1
Panama	21	55.5	Malta	66	51.1	Eswatini	109	45.8	China	154	38.1
Luxembourg	22	55.2	New Zealand	67	51.1	Botswana	110	45.7	Mauritius	155	37.9
Comoros	23	55.2	Australia	68	51.0	Cyprus	111	45.5	Syria	156	37.9
Nigeria	24	55.2	Slovakia	69	50.9	Sri Lanka	112	45.0	Suriname	157	37.7
Finland	25	54.9	Vanuatu	70	50.7	Afghanistan	113	44.8	Thailand	158	37.5
France	26	54.8	Namibia	71	50.4	Ukraine	114	44.8	Egypt	159	37.5
Croatia	27	54.6	Brazil	72	50.4	Morocco	115	44.7	Azerbaijan	160	36.9
Romania	28	54.6	Czech Republic	73	49.9	Chile	116	44.4	Bahrain	161	36.7
Equatorial	29	54.5	Greece	74	49.8	Mozambique	117	44.4	Kyrgistan	162	36.7
Kiribati	30	54.4	Colombia	75	49.7	Zambia	118	44.4	Qatar	163	36.4
Lithuania	31	54.3	Sao Tome and	76	49.6	Senegal	119	44.0	Algeria	164	36.4
Dominica	32	54.1	Jordan	77	49.4	Bahamas	120	43.8	Tajikistan	165	36.1
St. Vincent and	33	54.0	Burundi	78	49.3	Samoa	121	43.7	Bhutan	166	35.9
Ethiopia	34	53.9	Republic of	79	49.1	Philippines	122	43.7	Vietnam	167	35.5
Greenland	35	53.9	USA	80	49.1	Mauritania	123	43.5	Singapore	168	34.6
Nicaragua	36	53.8	Tonga	81	49.1	Maldives	124	43.1	Kuwait	169	34.0
Papua New	37	53.7	Paraguay	82	48.9	North	125	43.0	Seychelles	170	33.8
Grenada	38	53.6	Canada	83	48.7	Guyana	126	42.6	Laos	171	33.6
Cameroon	39	53.6	Belgium	84	48.3	St. Kitts and	127	42.5	Uzbekistan	172	33.5
Norway	40	53.4	South Sudan	85	48.1	Jamaica	128	42.5	United Arab	173	33.1
Guinea	41	53.3	Cape Verde	86	48.0	India	129	42.1	Mongolia	174	33.0
Uganda	42	53.3	Slovenia	87	47.9	Indonesia	130	41.9	Russia	183	0.0
Italy	43	53.1	Madagascar	88	47.8	Dominican	131	41.6	Serbia	175	31.7
Guatemala	44	53.1	Argentina	89	47.7	Bulgaria	132	41.6	Kazakhstan	176	31.6

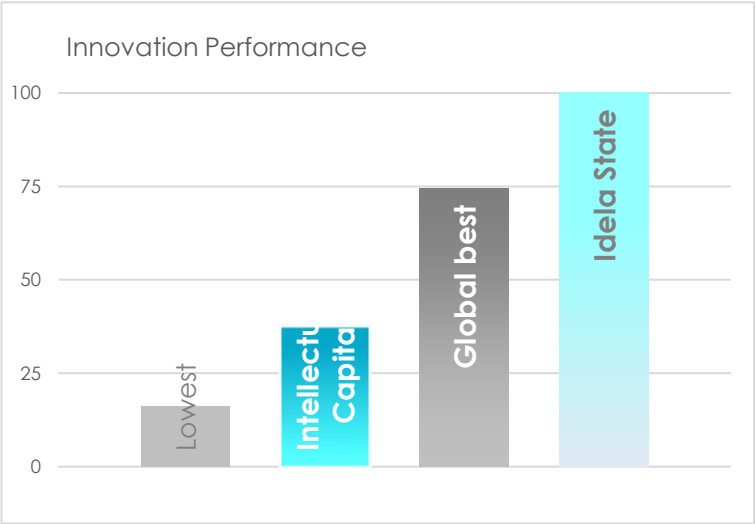
Intellectual Capital Index

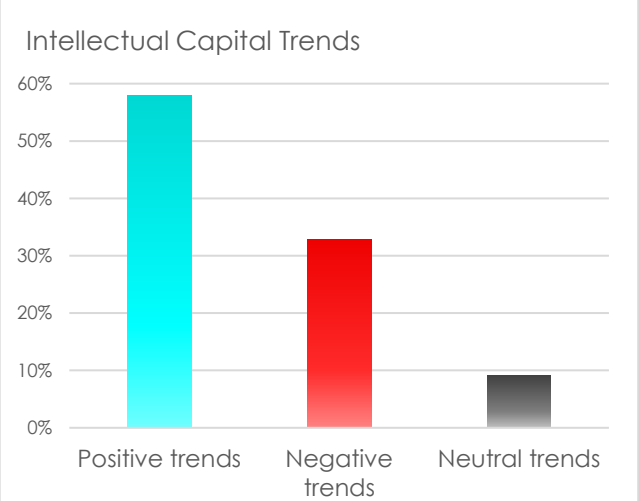
4 Intellectual Capital & Innovation Index

In order to create and sustain wealth, jobs and income for the population are required. Providing jobs requires producing goods and providing services that people or businesses, domestically or abroad, are willing to buy. This in turn requires products and services to be competitive in the global market in terms of quality and price. To maximise the domestic benefits, the value chain is ideally covered within the boundaries of a national economy - the largest share of adding value is contained in processing raw materials and/or parts to finished products.

Sustainable competitiveness therefore requires high R&D capabilities (based on solid education), and business entrepreneurship. In addition, sustained economic success requires a healthy balance between service and manufacturing sectors. Over-reliance on the service sector sooner or later leads to diminishing growth potential and loss of knowledge.

State of the World – Intellectual & Innovation Capital

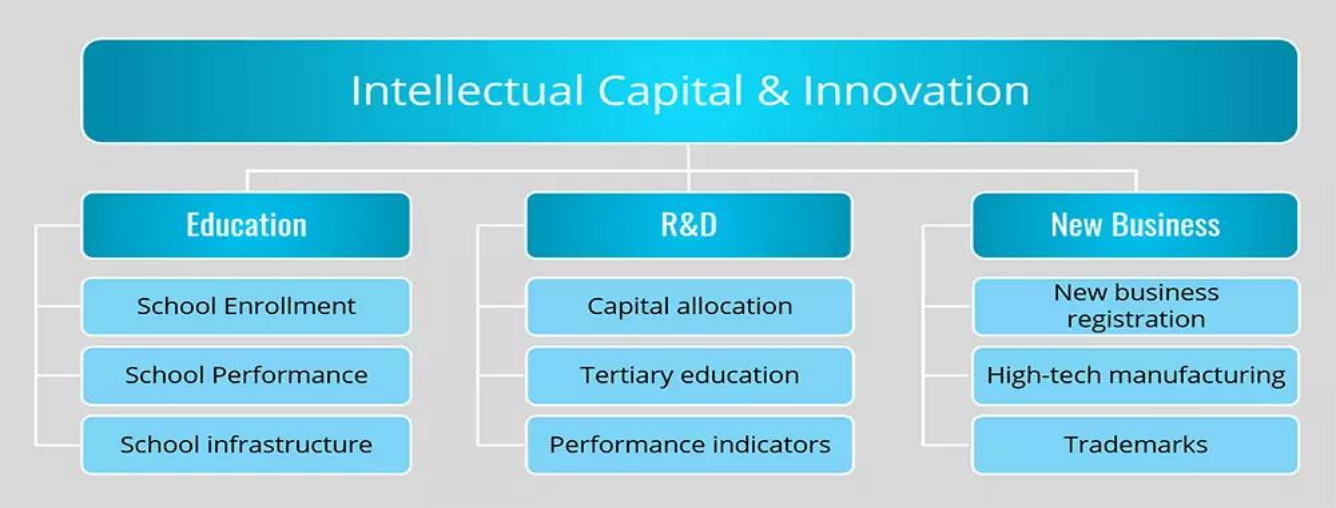




The global average in the Intellectual Capital Index is 40 – the gap to a perfect World 60. The Difference between low-performing countries (lowest: 15) and the highest score (78) is striking, and reflects – even stronger than a GNI comparison – the North-South reflect. A high score in the Intellectual Capital Index is the basis for future innovation and therefore economic success. Unfortunately, poor countries also score poor in Intellectual Capital, raising the fear that large parts of Africa will remain trapped in poverty.

On a positive note, nearly 60% of all indicators show positive development globally. However, most of the improvements seem to be originating in Europe, Far & South-East Asia, and Americas (excluding Central America).

Measuring Innovation



Key elements of competitiveness drivers in the Intellectual Capital (innovation capabilities) Sub-Index

Quality and availability of education in the past are an indication for today's R&D and innovation capabilities, and today's education performance reflect future innovation capabilities. Strength and depth of R&D activities is the basis for the development of value-added technologies and services. Educational performance indicators are therefore highly important to estimate the ability for sustained innovation and competitiveness.

Additional indicators include performance data on R&D activities and new business development indicators.

Further indicators relate to the actual business entrepreneurship – new business registration, trademark applications, and the health of the balance between agricultural, industrial and service sectors of an economy.

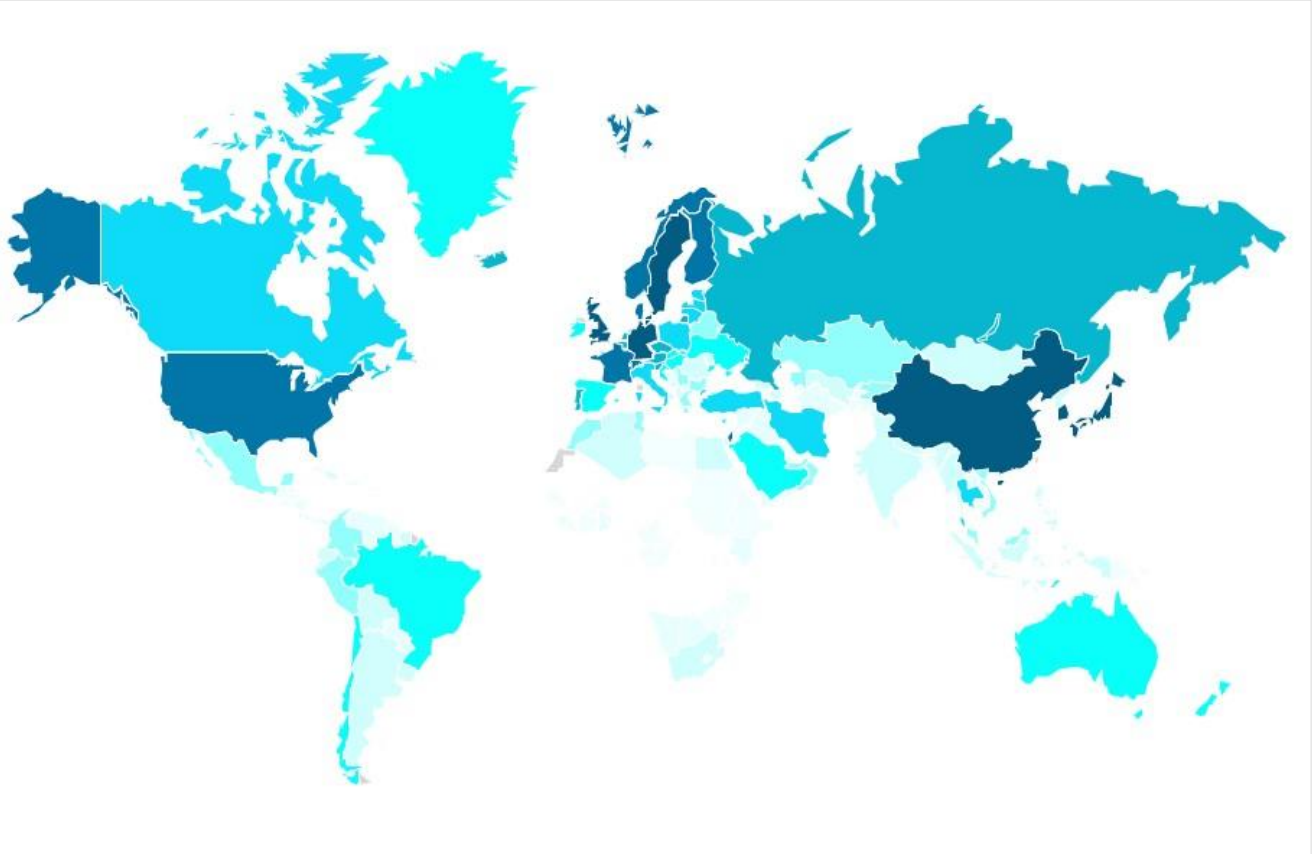
All indicators used to assess the innovation capability and sustainable competitiveness have been scored against size of the population and/or against GNI in order to gain a full picture of the competitiveness, independent of the size of a country. In addition, developments (trend analysis) of performance indicators have also been taken into account.

For the full list of indicators used, please refer to the methodology section.

The Intellectual Capital Index 2022

Countries with a high score in this ranking are more likely than others to develop (or sustain) successful economies through research and know-ledge driven industries, i.e. high-value added industries, and therefore achieve higher growth rates. Key observations include:

- The Innovation ranking continues to be topped by South Korea – by a considerable margin.
- China is ranked 2nd – the US 13
- North-Eastern Asian nations (S. Korea, China, Japan, Singapore) dominate the intellectual capital sub-index of the GSCI.
- North-East Asia trend show a faster development than their counterparts in "The West"
- Scandinavian Nations are all within the top ten, as is Israel
- The UK is ranked 4h, Germany 5
- Brazil is ranked 46, and India 89.
- Tunisia (61), Morocco (68) and Algeria (70) are the highest ranked nation on the African continent
- Most of Africa is unfortunately still underperforming in the global intellectual capital comparison, raising fear of prolonged entrapment in poverty



The Intellectual Capital World Map. Dark areas indicate high, light areas low availability of Intellectual Capital

Intellectual Capital Index 2022

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
South Korea	1	74.4	Brazil	46	45.9	Qatar	91	36.6	Lesotho	136	27.4
Japan	2	68.7	Croatia	47	45.8	Dominica	92	36.4	Senegal	137	27.3
China	3	68.1	Peru	48	44.1	Philippines	93	36.4	Trinidad and	138	27.0
United Kingdom	4	67.0	Colombia	49	44.0	Suriname	94	35.9	Libya	139	26.8
Germany	5	64.4	Malaysia	50	44.0	St. Vincent and	95	35.8	Gabon	140	26.8
Sweden	6	64.1	Kiribati	51	43.6	Romania	96	35.4	Zimbabwe	141	26.7
Switzerland	7	62.8	Greece	52	43.4	South Africa	97	35.2	Honduras	142	26.4
Norway	8	62.7	United Arab	53	43.3	Nepal	98	35.1	Republic of	143	26.4
Israel	9	62.3	Vietnam	54	43.2	Vanuatu	99	34.5	Cambodia	144	25.7
Finland	10	61.7	Solomon Islands	55	43.1	Bahrain	100	34.2	Cote d'Ivoire	145	25.4
Denmark	11	61.6	Samoa	56	43.1	Belize	101	34.2	Guatemala	146	25.2
France	12	61.5	Belarus	57	42.7	Sri Lanka	102	33.9	Cameroon	147	25.1
USA	13	60.8	Fiji	58	42.4	Guyana	103	33.7	Liberia	148	25.1
Singapore	14	59.7	Tonga	59	42.3	North	104	33.6	Papua New	149	25.0
Netherlands	15	58.9	Kyrgistan	60	41.7	Armenia	105	32.8	Bangladesh	150	24.8
Austria	16	58.5	Tunisia	61	41.5	Bosnia and	106	32.6	Jordan	151	24.6
Iceland	17	58.3	Serbia	62	41.4	Yemen	107	32.6	Burkina Faso	152	24.3
Portugal	18	57.3	West Bank and	63	41.2	Turkmenistan	108	32.3	Djibouti	153	24.2
Belgium	19	57.2	Kazakhstan	64	41.1	Lebanon	109	32.3	Haiti	154	24.0
Slovenia	20	56.5	Oman	65	41.1	Jamaica	110	32.1	Ethiopia	155	23.7
Czech Republic	21	55.5	Bulgaria	66	40.9	Kenya	111	32.0	Burundi	156	23.2
Iran	22	54.9	Micronesia	67	40.7	Tajikistan	112	31.4	Sudan	157	23.2
Italy	23	53.8	Morocco	68	40.7	Cape Verde	113	31.2	Malawi	158	23.1
Estonia	24	53.6	Mexico	69	40.7	St. Kitts and	114	31.1	Mozambique	159	22.6
Turkey	25	52.6	Algeria	70	40.0	Seychelles	115	30.6	Nigeria	160	22.5
Poland	26	52.4	Mongolia	71	39.7	Dominican	116	30.6	Pakistan	161	22.2
Malta	27	52.4	Uruguay	72	39.7	Namibia	117	30.4	Gambia	162	22.1
Canada	28	52.3	Georgia	73	39.7	Eswatini	118	30.2	Democratic	163	22.0
Luxembourg	29	51.0	Indonesia	74	39.3	Bhutan	119	30.0	Mali	164	21.4
Latvia	30	50.9	Costa Rica	75	39.3	Laos	120	29.6	Tanzania	165	21.1
Thailand	31	50.7	Ecuador	76	39.3	Botswana	121	29.5	Somalia	166	20.7
Lithuania	32	50.1	Brunei	77	38.9	El Salvador	122	29.4	Guinea-Bissau	167	20.6
Slovakia	33	49.9	Sao Tome and	78	38.8	Venezuela	123	29.4	Comoros	168	20.5
Australia	34	49.7	Azerbaijan	79	38.7	Syria	124	29.3	Benin	169	20.5
Cyprus	35	49.7	Argentina	80	38.6	Iraq	125	29.3	Central African	170	20.4
New Zealand	36	49.1	Moldova	81	38.5	Sierra Leone	126	29.0	Niger	171	20.2
Greenland	37	49.0	Uzbekistan	82	38.3	Grenada	127	28.9	Zambia	172	20.0
Ireland	38	48.8	Egypt	83	38.2	Togo	128	28.8	Mauritania	173	19.9
Timor-Leste	39	47.9	Bolivia	84	38.0	Nicaragua	129	28.8	Equatorial	174	19.6
Hungary	40	47.9	Burma	85	37.4	Panama	130	28.7	Chad	175	19.3
Ukraine	41	47.3	Cuba	86	37.4	Rwanda	131	28.2	Guinea	176	18.7
Spain	42	47.2	Albania	87	37.1	Maldives	132	27.9	South Sudan	177	18.5
Mauritius	43	46.9	Kuwait	88	36.8	Paraguay	133	27.8	Eritrea	178	18.4
Chile	44	46.7	India	89	36.7	Ghana	134	27.6	Angola	179	17.6
Saudi Arabia	45	46.6	Montenegro	90	36.6	Bahamas	135	27.4	Afghanistan	180	16.9

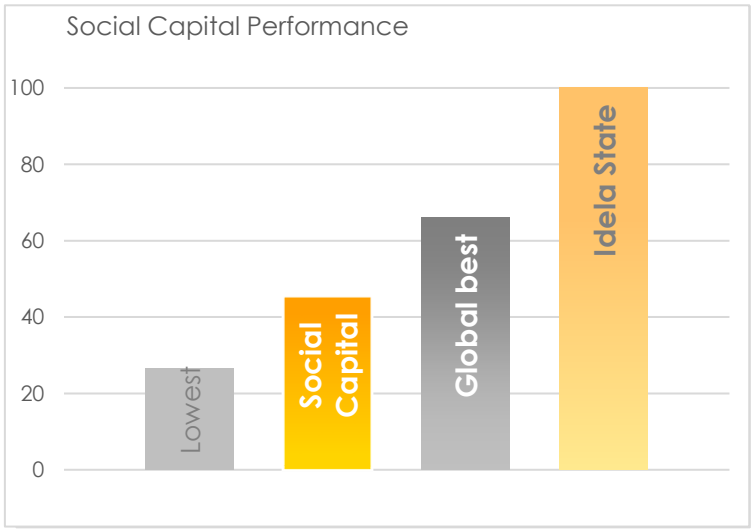
Social Capital Index

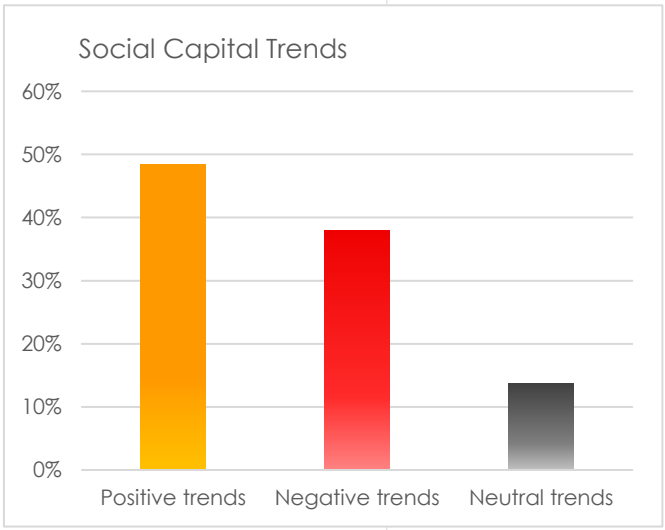
5 Social Capital Index

The Social Capital of a nation is the sum of social stability and the well-being (perceived or real) of the entire population. Social Capital generates social cohesion and a certain level of consensus, which in turn delivers a stable environment for the economy to thrive, and prevents natural resources from being over-exploited. Social Capital is not a tangible value and therefore hard to measure and evaluate in numeric values. In addition to local historical and cultural influences, the social consensus in a specific society is affected by several factors: health care systems and their universal availability/affordability (physical health); income and asset equality, which are correlated to crime levels; demographic structure (to assess the future generational balance within a society); freedom of expression and freedom from fear; and the absence of violent conflicts that are required for businesses to be able to generate value.

While a direct connection of social cohesion to creating wealth and sustain economic development might be difficult to establish scientifically, a certain degree of equality, adequate health systems, freedom from fear and equal opportunities (without which no American Dream ever would have been possible) are pre-requisites to achieve the same. The absence or deterioration of social cohesion in turn leads to lower productivity (health), rising crime rates, and potentially social unrest, paralysing economic development and growth.

State of the World – Social Capital

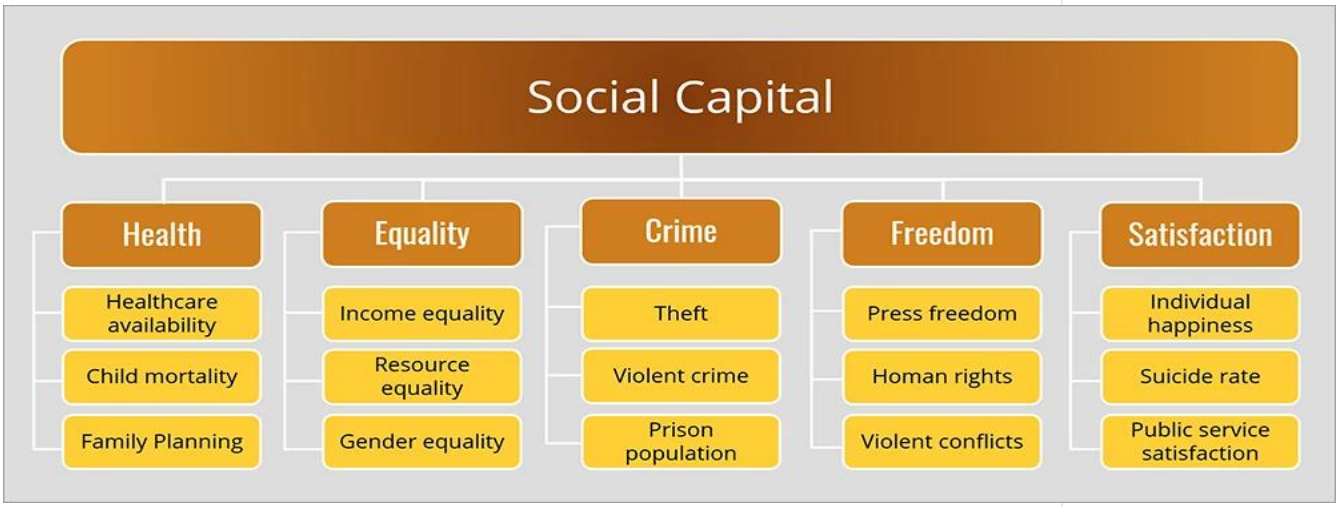




The global average Social Capital Score is 44; the global best 64 – a gap of 56 to a perfect state. Not surprisingly, the nations in the North (particularly Scandinavia) are significantly ahead of countries in the South (particular Africa and Central Asia).

48% of all indicators across all nations show positive development, while 38% are negative, while 14% do not show a clear trend in either direction. Given that nearly 50% of the indicators show positive development, we can expect small positive changes in the future.

Measuring Social Capital



Key elements of competitiveness drivers in the Social Capital Sub-Index

The indicators selected to measure social cohesion have been selected from the 5 themes above (health, equality, crime, freedom and age structure).

Some of these indicators (e.g., "happiness") are qualitative, i.e., not based on performance data that can be measured. Instead, qualitative indicators from surveys and other sources compiled by recognised organisations were used to measure the qualitative aspects of social cohesion, including single indicators from the Happy Planet Index (New Economics Foundation), the Press Freedom Index (Reporters Without Borders), and the Global Peace Index (Institute for Economics and Peace).

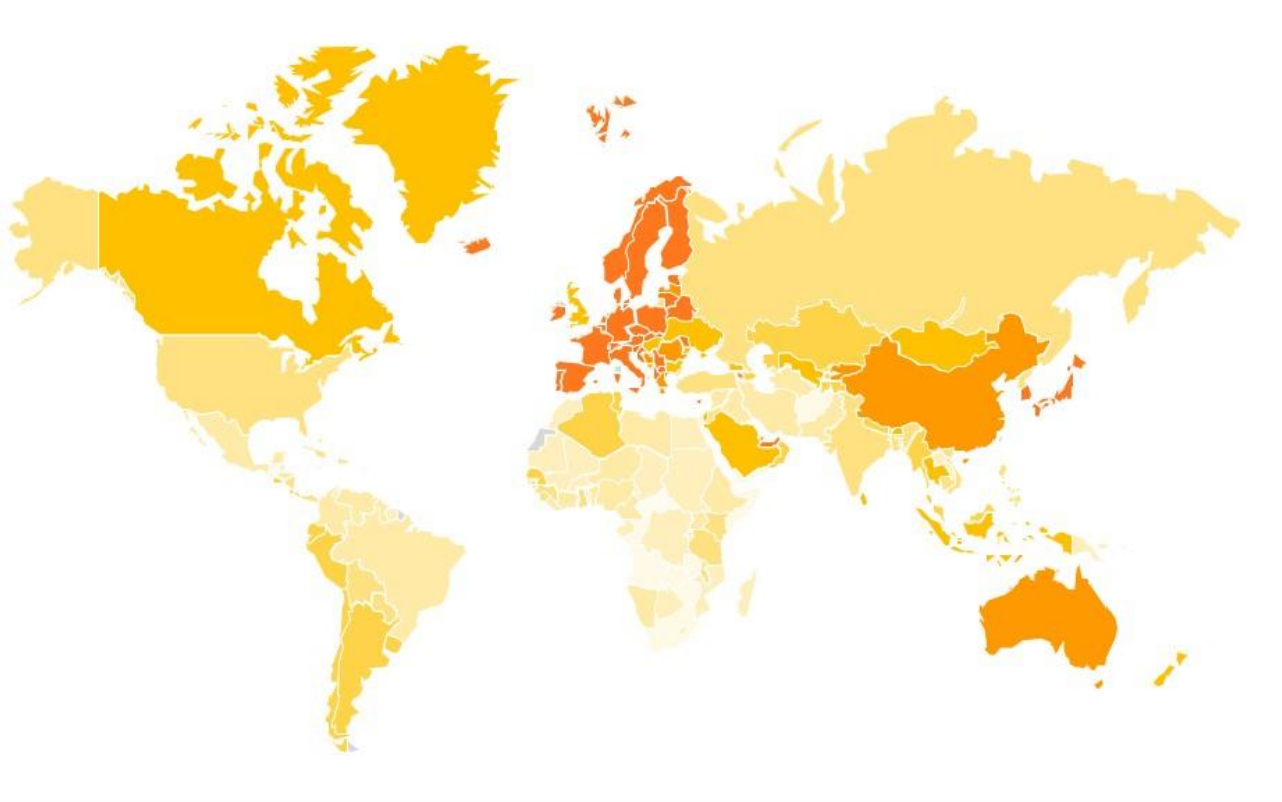
The indicators used to calculate the Social Capital score of countries is composed of health and health care factors (availability and affordability), the quantitative equality within societies (income, assets, and gender equality), freedom indicators (political freedom, freedom from fear, individual happiness), crime levels, and demographic indicators. As with all other indicators in the GSCI, original data has been normalised per capita and/or GNI. In addition, a trend analysis has been conducted for each indicator, influencing the final score.

Social Capital Index World Map

A certain level of social balance or social consensus is required to maintain a stable environment in which economic activities can take place. The higher the social capital of a country, the better the economy can flourish. The higher the social consensus, the higher the motivation of individuals to contribute to the wider good, i.e. the sustainable development of the nation – and the less likely they are to fall off the track into illegal paths of wealth generation that eventually hurt the wider legal economy.

Key observations include

- The Social Capital Index is topped by the Scandinavian nations
- The top 20 in the Social Capital sub-index is dominated by Western European countries and the Baltics – except for South Korea (3), Japan (6), and the United Arab Emirates (9)
- The USA, due to comparable high crime rates, low availability of health services, and rising inequality, is ranked 111, just below Nicaragua and above Ghana.
- The UK is ranked 51, reflecting the deteriorating social fabric.
- China is ranked 37, India 102, Nigeria 119, and Brazil 136
- The highest ranked South American countries are Chile (68), followed by Peru (69), Uruguay (70) and Argentina (72); the highest-ranking African nations are Tunisia (84), Algeria (85) and Malawi (88)
- Most African nations, particular within and south of the Sahel zone, are at the bottom of this list, due to a combination of low availability of health care services and child mortality, limited freedom of expression, and unstable human rights situation



The Social Capital World Map. Dark areas indicate high, light areas low maturity of Social Capital

Social Capital Index 2021

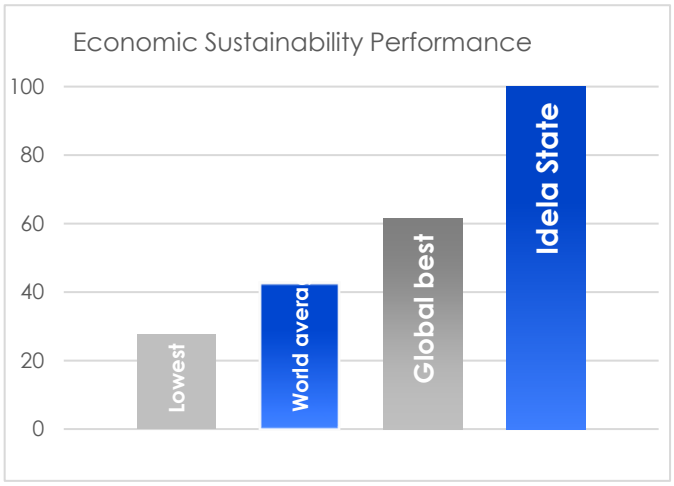
Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Iceland	1	66.0	Greenland	46	51.7	Tanzania	91	43.9	Brazil	136	38.4
Finland	2	63.6	Canada	47	51.7	Trinidad and	92	43.8	Libya	137	38.4
Japan	3	62.9	Montenegro	48	51.7	Bangladesh	93	43.5	Turkmenistan	138	38.3
Slovenia	4	62.8	New Zealand	49	51.6	Jordan	94	43.4	Burundi	139	37.9
Norway	5	62.7	Indonesia	50	51.3	Panama	95	43.4	Samoa	140	37.9
South Korea	6	61.9	United Kingdom	51	50.8	Turkey	96	43.4	Iraq	141	37.6
Portugal	7	61.3	Uzbekistan	52	50.7	Kenya	97	43.3	Colombia	142	37.1
Denmark	8	60.4	Israel	53	50.3	Dominican	98	42.9	Bahamas	143	37.1
United Arab	9	60.3	Mongolia	54	50.3	Guinea	99	42.7	Syria	144	37.1
Sweden	10	60.2	Ukraine	55	50.1	Paraguay	100	42.6	Gabon	145	36.8
Netherlands	11	60.1	Hungary	56	50.0	West Bank and	101	42.4	Suriname	146	36.7
Austria	12	60.0	Bulgaria	57	49.7	India	102	42.4	Mozambique	147	36.6
Armenia	13	59.8	Seychelles	58	49.6	Vanuatu	103	42.3	Micronesia	148	36.6
Italy	14	59.7	Thailand	59	49.4	Bahrain	104	42.2	St. Kitts and	149	36.5
Estonia	15	58.9	Bhutan	60	49.4	Cuba	105	42.1	Togo	150	36.2
Belgium	16	58.5	Sri Lanka	61	49.3	Bolivia	106	42.0	Laos	151	36.2
Spain	17	58.5	Kuwait	62	49.1	Grenada	107	41.8	Mauritania	152	36.2
Poland	18	58.4	Saudi Arabia	63	49.1	Sierra Leone	108	41.8	Madagascar	153	36.2
Cyprus	19	58.1	Georgia	64	49.1	Cambodia	109	41.7	Morocco	154	36.2
Maldives	20	58.1	Senegal	65	48.9	Nicaragua	110	41.5	Mali	155	35.6
Luxembourg	21	57.9	Burma	66	48.7	USA	111	41.4	Chad	156	35.6
Slovakia	22	57.9	Oman	67	48.5	Ghana	112	41.2	Belize	157	35.5
Czech Republic	23	57.4	Chile	68	48.5	Kiribati	113	41.1	Burkina Faso	158	35.4
Croatia	24	57.4	Peru	69	48.1	Solomon Islands	114	41.0	Papua New	159	35.3
France	25	57.3	Uruguay	70	48.0	Cameroon	115	40.8	Democratic	160	34.6
Albania	26	57.1	Mauritius	71	48.0	Benin	116	40.5	Dominica	161	34.5
Singapore	27	57.0	Argentina	72	47.6	Ethiopia	117	40.4	Lesotho	162	34.3
Lithuania	28	56.8	Malaysia	73	47.3	Rwanda	118	40.3	Sudan	163	33.6
Switzerland	29	56.7	Azerbaijan	74	47.2	Nigeria	119	40.0	Egypt	164	33.4
North	30	56.5	Kazakhstan	75	47.2	Liberia	120	40.0	Djibouti	165	33.4
Moldova	31	56.3	Ecuador	76	47.1	Gambia	121	39.9	Botswana	166	33.2
Serbia	32	55.8	Nepal	77	47.1	Mexico	122	39.9	Zimbabwe	167	33.0
Germany	33	55.3	Sao Tome and	78	46.5	St. Vincent and	123	39.6	Zambia	168	32.9
Ireland	34	55.2	Lebanon	79	46.3	Cote d'Ivoire	124	39.5	Comoros	169	32.8
Belarus	35	55.0	Brunei	80	46.2	Niger	125	39.4	Angola	170	32.3
Kyrgyzstan	36	54.8	El Salvador	81	46.0	Pakistan	126	39.4	Equatorial	171	32.3
China	37	54.8	Costa Rica	82	45.8	Venezuela	127	39.2	Yemen	172	32.2
Latvia	38	54.0	Cape Verde	83	45.7	Guyana	128	39.1	Guatemala	173	32.0
Bosnia and	39	53.5	Algeria	84	45.6	Guinea-Bissau	129	38.9	South Africa	174	32.0
Greece	40	53.5	Tunisia	85	45.3	Fiji	130	38.9	Haiti	175	31.9
Timor-Leste	41	53.4	Tajikistan	86	45.2	Namibia	131	38.8	Afghanistan	176	31.6
Australia	42	53.3	Tonga	87	45.0	Honduras	132	38.8	Republic of	177	31.5
Romania	43	53.1	Malawi	88	44.8	Uganda	133	38.5	South Sudan	178	31.1
Malta	44	52.6	Vietnam	89	44.6	Jamaica	134	38.4	Somalia	179	30.5
Qatar	45	52.3	Philippines	90	44.5	Iran	135	38.4	Eritrea	180	29.9

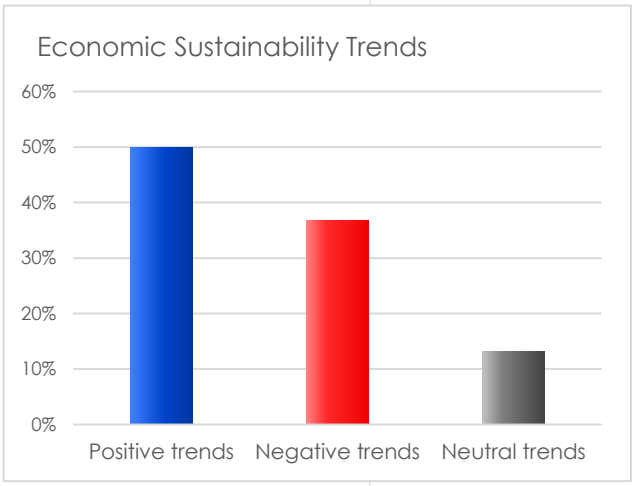
Economic Sustainability Index

6 Economic Sustainability Index

"Economy" stems from the Greek terms oikos (meaning "house") and nomos ("custom" or "law") and means "household management". Economics is the social science that studies the factors which determine the production, distribution and consumption of goods and services. The ultimate goal of economics is to improve the living conditions of people in their everyday life; the level of economic development is how "success" and the status of a nation is defined.

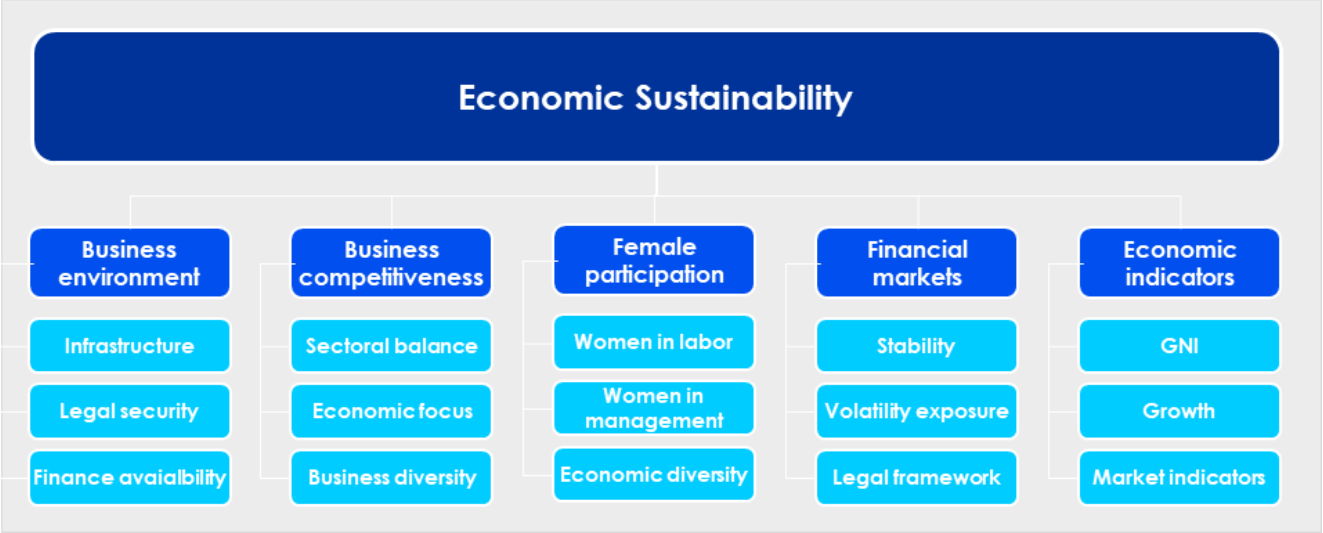
Economic Sustainability reflects the ability to generate wealth through sustainable and inclusive economic development. The global average level of economic sustainability in 2022 is 41, the highest achieved score is 62. 50% of all trends are positive, while 37% are pointing the wrong direction.





Measuring Economic Sustainability

For the purpose of the GSCI, economic sustainability is measured through a combination of economic and business indicator related to sustainability.

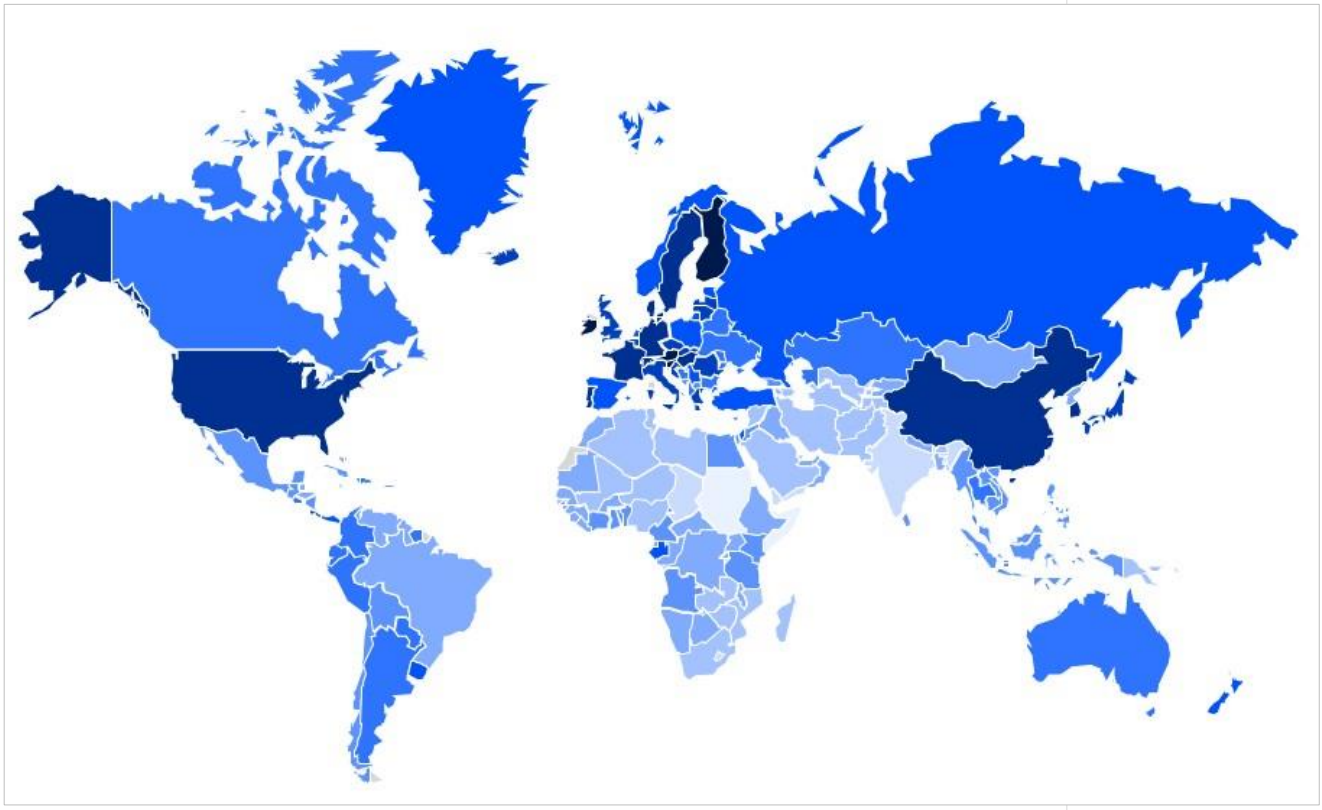


Economic Sustainability Index World Map

Key take-aways of Economic Sustainability Index 2022:

- Slovenia tops the Economic Sustainability Index 2022
- The top of the Economic Sustainability Index is dominated by European nations
- China (8), South Korea (9), the US (12) and Costa Rica (20) are the only non-European countries in the top 20The top 20
- Germany is ranked 5, the UK 17, and Japan ranks 27,
- Brazil is ranked 115, Nigeria is ranked 149, India 174
- The highest ranked South American country is Costa Rica (20), followed by Uruguay (39) and Colombia (57)
- The highest ranked African nations are Gabon (31), and Angola (70), Cameroon (87) and Cote d'Ivoire (89)

Economic Sustainability World Map



Economic Sustainability Scores

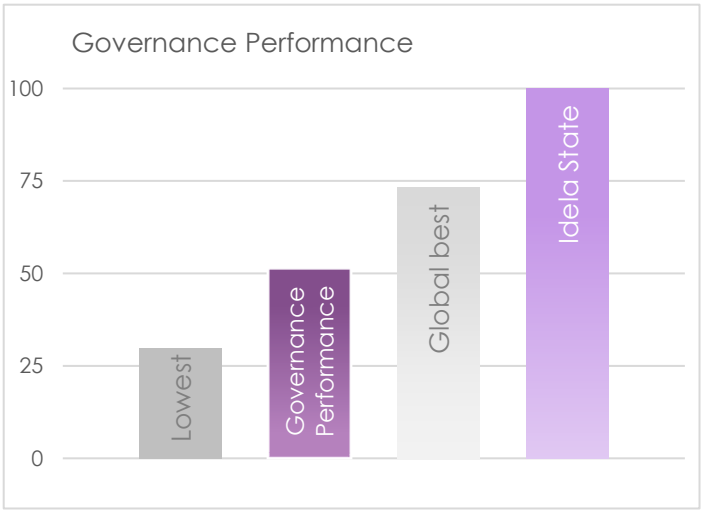
Ran	Country	Score	Ran	Country	Score	Ran	Country	Score	Ran	Country	Score
1	Slovenia	61.6	46	Bulgaria	47.1	91	Nicaragua	41.6	136	Central	37.0
2	Ireland	60.6	47	Australia	47.0	92	Samoa	41.5	137	Comoros	37.0
3	Austria	58.0	48	Kazakhstan	47.0	93	Vanuatu	41.4	138	Lebanon	36.8
4	Finland	57.8	49	Paraguay	46.9	94	Guatemala	41.2	139	Brunei	36.8
5	Germany	56.8	50	Fiji	46.8	95	Timor-Leste	41.2	140	Iraq	36.7
6	Denmark	56.7	51	Malta	46.8	96	Sri Lanka	40.9	141	Oman	36.7
7	Hungary	55.9	52	Canada	46.6	97	Benin	40.9	142	Jamaica	36.5
8	China	55.8	53	Kiribati	46.3	98	Haiti	40.8	143	Burkina Faso	36.5
9	South Korea	55.5	54	Tonga	46.2	99	Ghana	40.4	144	Malawi	36.3
10	Portugal	55.5	55	Albania	46.0	100	Georgia	40.4	145	Nepal	36.3
11	Switzerland	55.4	56	Moldova	46.0	101	St. Kitts and Nevis	40.3	146	Niger	35.8
12	USA	55.4	57	Colombia	45.9	102	Egypt	40.2	147	Zimbabwe	35.8
13	Sweden	55.4	58	Argentina	45.8	103	North Macedonia	40.2	148	Tajikistan	35.7
14	France	54.1	59	El Salvador	45.7	104	Cuba	40.2	149	Nigeria	35.7
15	Lithuania	53.7	60	Belarus	45.0	105	Tanzania	40.0	150	Tunisia	35.7
16	Italy	53.5	61	Thailand	44.6	106	Guinea	40.0	151	Saudi Arabia	35.6
17	United	53.4	62	Grenada	44.6	107	Republic of	39.9	152	Zambia	35.6
18	Iceland	53.3	63	Peru	44.5	108	United Arab	39.9	153	Bhutan	35.5
19	Croatia	53.2	64	Suriname	44.4	109	Rwanda	39.8	154	Afghanistan	35.5
20	Costa Rica	53.1	65	Dominican	44.3	110	Morocco	39.8	155	Mozambique	35.4
21	Czech	52.6	66	Bosnia and	44.0	111	Democratic	39.8	156	Gambia	34.8
22	Latvia	52.4	67	St. Vincent and	43.9	112	Bangladesh	39.8	157	Pakistan	34.7
23	Slovakia	52.3	68	Mexico	43.8	113	Namibia	39.4	158	Trinidad and	34.6
24	Singapore	52.1	69	Malaysia	43.5	114	Belize	39.3	159	Madagascar	34.1
25	Greece	52.1	70	Angola	43.4	115	Brazil	39.3	160	Uzbekistan	34.0
26	Belgium	52.1	71	Laos	43.2	116	Dominica	39.2	161	Papua New	33.7
27	Japan	51.7	72	Kenya	43.1	117	Eswatini	39.2	162	Turkmenistan	33.6
28	Romania	51.6	73	Philippines	43.1	118	Guyana	39.2	163	Libya	33.5
29	Luxembourg	51.5	74	Cyprus	42.9	119	Armenia	39.1	164	Azerbaijan	33.5
30	Greenland	51.0	75	Montenegro	42.8	120	Mongolia	39.0	165	South Sudan	33.4
31	Gabon	50.9	76	Cambodia	42.7	121	Cape Verde	38.9	166	South Africa	33.0
32	Israel	50.7	77	Burma	42.7	122	Maldives	38.8	167	Bahrain	32.9
33	Panama	50.6	78	Djibouti	42.6	123	Uganda	38.7	168	Seychelles	32.6
34	Norway	50.5	79	Jordan	42.6	124	Botswana	38.7	169	Syria	32.4
35	Estonia	50.5	80	West Bank and	42.5	125	Honduras	38.5	170	Mali	32.2
36	Netherlands	50.3	81	Bolivia	42.5	126	Ethiopia	38.4	171	Algeria	32.2
37	Turkey	50.3	82	Indonesia	42.5	127	Senegal	38.4	172	Qatar	32.2
38	Poland	50.0	83	Togo	42.4	128	Guinea-Bissau	38.3	173	Iran	32.0
39	Uruguay	49.7	84	Sao Tome and	42.0	129	Sierra Leone	38.2	174	India	31.5
40	New	49.1	85	Bahamas	42.0	130	Solomon Islands	38.1	175	Eritrea	31.4
41	Serbia	48.5	86	Mauritius	42.0	131	Venezuela	38.0	176	Burundi	31.1
42	Spain	48.4	87	Cameroon	41.9	132	Mauritania	38.0	177	Lesotho	31.0
43	Ukraine	47.5	88	Vietnam	41.9	133	Kyrgistan	37.5	178	Chad	30.6
44	Ecuador	47.4	89	Cote d'Ivoire	41.9	134	Equatorial Guinea	37.1	179	Yemen	30.4
45	Micronesia	47.1	90	Chile	41.6	135	Liberia	37.1	180	Sudan	28.4

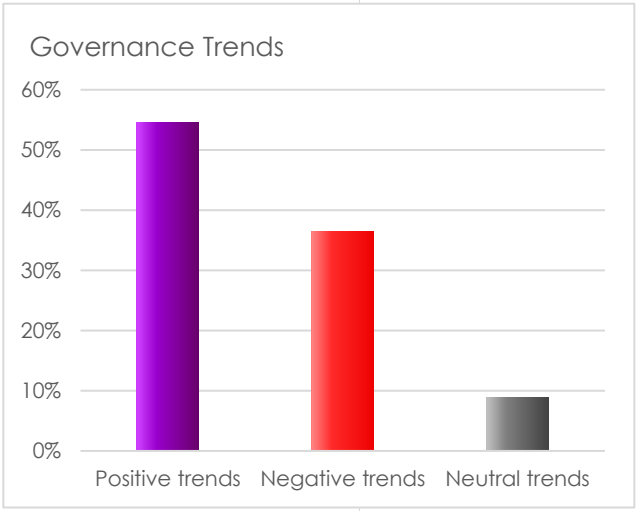
Governance Index

7 Governance Performance Index

Governance outcomes define the environment the society – individual and businesses – operate in. The Governance Sub-Index of the Global Sustainable Competitiveness Index is based on quantitative data series – i.e., *not* based on qualitative evaluation of government systems and policies. In addition, some aspects of government direction impacts (such as human rights, freedom of press, etc.) are assigned to the Social Capital Index. The Governance Sub-Index aims at evaluating the performance of a country's regulatory framework and infrastructure environment to facilitate sustainable competitiveness. The regulatory and infrastructure framework should enable an environment in which the country's natural, social and intellectual capital can flourish to generate new and sustain existing wealth.

Governance Index – State of the World





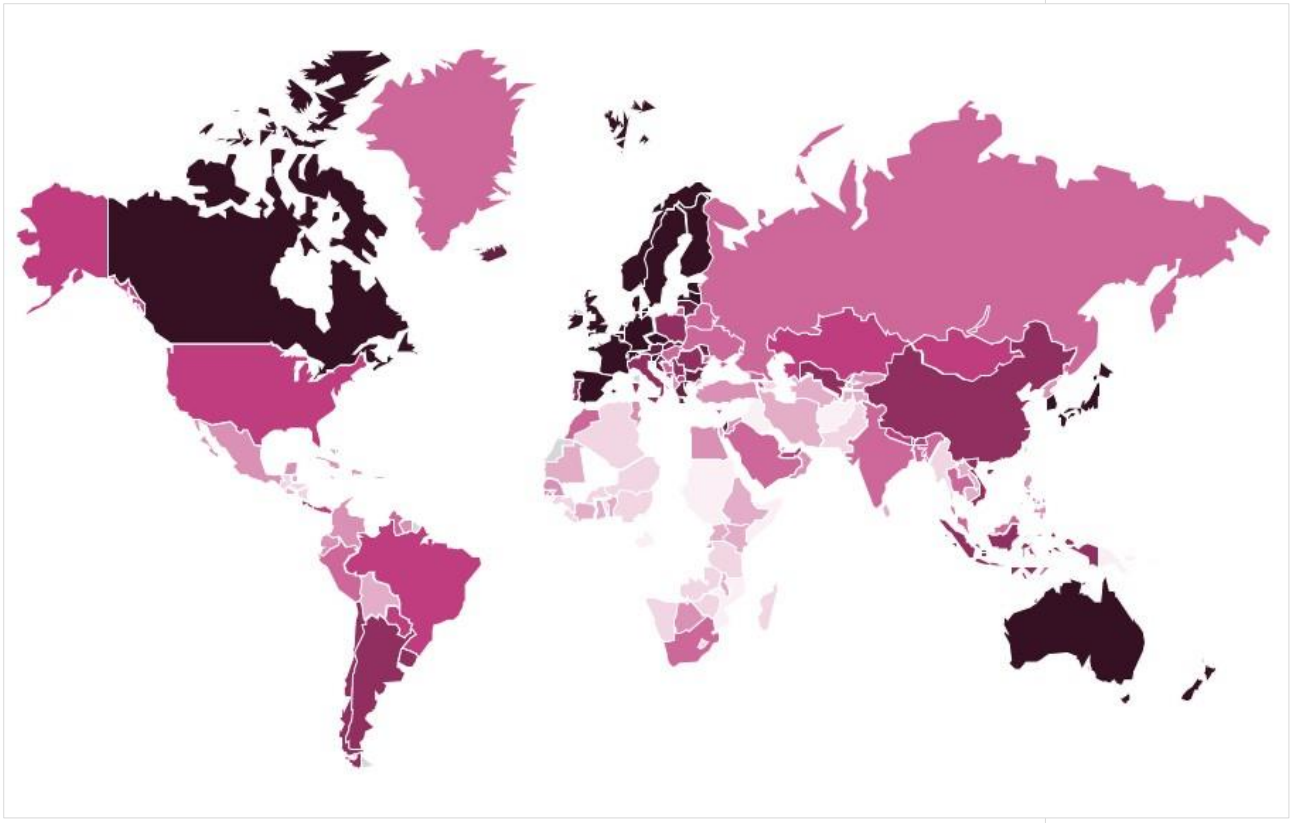
The Global average in Governance Performance is 51 – the highest of all five dimensions considered in the Global Sustainable Competitiveness Index. However, discrepancies are rather large from 27 (lowest) to 74 (highest).

55% of indicators are showing a positive development, while 36% are negative. In the sum, we can expect positive – if small – developments for the global average in Governance Performance

The Governance Performance index 2022:

- The Governance Ranking is topped by South Korea, followed by Switzerland, Denmark, Sweden, and Estonia
- Japan is ranked 6th, Germany 8
- The ranking is dominated by Central European nations, except for New Zealand (11) and Australia (13)
- The UK is ranked 17, the US only 51.
- China is ranked 41
- Brazil is ranked 60, India 68, and Nigeria 139
- The map shows a clear north-South gap: all African countries score comparable low (except for South Africa)

The Governance World Map

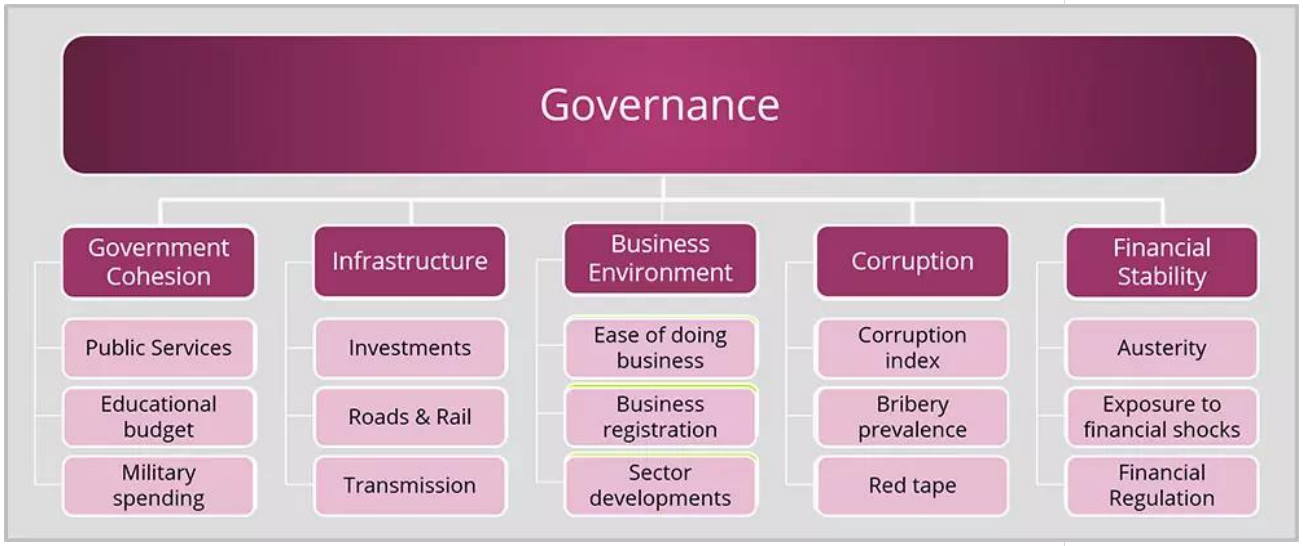


The Governance World Map. Dark areas indicate high, light areas low levels of Governance quality

Governance = National Development: Shaping Social and Economic Capital

The base of the Sustainable Competitiveness Pyramid – the Natural Capital of a country, is given. Everything else – the society, the economy - is shaped by the legal, regulatory and physical (human built) framework. This framework – the environment in which society exists and businesses operate - is developed, maintained and updated by authorities and institutions, most often government bodies. The Governance Sub-Index therefor encompasses all aspects that shape the framework of society (the Social Capital), and in which the economy (Intellectual Capital, Resource Management) operates. Key aspects of the Governance aspects include:

- Strategic direction of government-led development (the balance between the key elements of government spending: health, education, infrastructure, security).
- The built physical environment (infrastructure) required for smooth operation of the society and businesses, the availability and quality of public services,
- The framework provided to businesses (formal in terms of business regulations, and informal in terms of red tape and corruption negatively affecting businesses),
- Exposure to volatility in terms of government balance sheets, and exposure to volatility shocks as posed by financial market fluctuations.



Key elements of competitiveness drivers in the Governance Sub-Index

Measuring Governance

The result of qualitative governance quality & strategy evaluation depends very much on the evaluator. The Sustainable Competitiveness Index therefore relies on purely quantitative data series to exclude all subjectivity in evaluating and calculating the Governance Sub-Index. In addition, some qualitative indicators (perceived quality of public services and perceived levels of corruption determined through reliable and international surveys) have been incorporated.

For the full list of indicators used, please refer to the methodology section.

Governance Performance Index 2021

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Estonia	1	73.2	Cyprus	46	57.8	Morocco	91	52.3	Rwanda	136	44.2
Ireland	2	71.7	Greece	47	57.8	Montenegro	92	52.1	Comoros	137	44.2
Czech Republic	3	69.7	Italy	48	57.7	Ethiopia	93	52.1	Laos	138	43.9
Finland	4	66.3	Sweden	49	57.6	Kiribati	94	51.6	Nicaragua	139	43.4
Germany	5	65.0	Egypt	50	57.4	Jordan	95	51.6	Honduras	140	43.4
Japan	6	64.7	North	51	57.2	Malaysia	96	51.0	Guinea	141	43.4
New Zealand	7	64.4	Belarus	52	57.2	Ecuador	97	50.8	Iraq	142	43.4
Liechtenstein	8	64.2	Russia	53	57.1	Grenada	98	50.6	Uganda	143	43.3
Iceland	9	64.1	Bangladesh	54	57.1	Colombia	99	50.5	Cameroon	144	43.2
Austria	10	64.0	Israel	55	57.1	Micronesia	100	50.5	Afghanistan	145	43.1
Denmark	11	64.0	Seychelles	56	57.0	Trinidad and	101	50.4	Eswatini	146	42.2
Uzbekistan	12	63.8	Bhutan	57	56.8	Nigeria	102	50.4	Mauritania	147	42.1
Spain	13	63.7	Mongolia	58	56.4	Bahrain	103	50.4	Namibia	148	42.0
Slovenia	14	63.7	Singapore	59	56.2	Timor-Leste	104	50.4	Haiti	149	42.0
Croatia	15	63.6	Kuwait	60	56.0	Tajikistan	105	50.2	Sao Tome and	150	41.5
Malta	16	63.4	Cote d'Ivoire	61	55.9	Burma	106	50.2	Mali	151	41.5
Latvia	17	62.6	United Kingdom	62	55.7	Tonga	107	50.2	Niger	152	41.5
Luxembourg	18	62.5	Brunei	63	55.5	Samoa	108	50.2	Sierra Leone	153	41.4
Poland	19	62.3	Costa Rica	64	55.4	Oman	109	50.0	Belize	154	41.2
Switzerland	20	62.2	Paraguay	65	55.4	Qatar	110	49.7	Lebanon	155	40.8
Georgia	21	62.0	Senegal	66	54.9	Tunisia	111	49.6	South Africa	156	40.4
Moldova	22	61.7	Panama	67	54.8	Thailand	112	49.2	Djibouti	157	40.4
Kazakhstan	23	61.7	Saudi Arabia	68	54.6	Algeria	113	49.0	Guinea-Bissau	158	40.0
Bulgaria	24	61.7	Australia	69	54.6	Azerbaijan	114	49.0	Democratic	159	39.8
Romania	25	60.9	Philippines	70	54.5	Burkina Faso	115	49.0	Zimbabwe	160	39.1
Portugal	26	60.9	El Salvador	71	54.4	Kenya	116	49.0	Central African	161	38.7
South Korea	27	60.8	Chile	72	54.4	Vanuatu	117	48.7	Madagascar	162	38.6
Armenia	28	60.7	Ghana	73	54.3	Dominica	118	48.5	Lesotho	163	38.5
Slovakia	29	60.7	Uruguay	74	54.3	Pakistan	119	48.4	Burundi	164	38.4
Serbia	30	60.5	Iran	75	54.2	India	120	48.3	Brazil	165	38.3
Belgium	31	60.4	Botswana	76	54.2	Canada	121	48.3	Malawi	166	37.8
Sri Lanka	32	60.0	Argentina	77	53.9	Tanzania	122	47.9	Syria	167	37.3
Norway	33	59.9	Cambodia	78	53.9	Guyana	123	47.4	Sudan	168	37.0
Netherlands	34	59.7	Fiji	79	53.6	Gambia	124	47.3	Mozambique	169	36.9
Bosnia and	35	59.4	Bahamas	80	53.6	Solomon Islands	125	46.9	Venezuela	170	36.8
Lithuania	36	59.3	Dominican	81	53.6	Guatemala	126	46.4	Papua New	171	36.1
United Arab	37	59.2	Mexico	82	53.6	Cuba	127	46.4	Libya	172	36.1
Hungary	38	59.1	Kyrgistan	83	53.1	Bolivia	128	46.1	Angola	173	35.7
Turkey	39	59.1	Benin	84	53.1	Jamaica	129	45.5	Eritrea	174	34.6
St. Kitts and	40	59.0	Turkmenistan	85	53.0	Maldives	130	45.5	Chad	175	33.7
Mauritius	41	58.9	USA	86	53.0	Suriname	131	45.3	Republic of	176	33.4
Indonesia	42	58.7	Peru	87	52.9	Gabon	132	45.1	Liberia	177	33.1
Nepal	43	58.6	Albania	88	52.8	Togo	133	45.0	Equatorial	178	32.5
France	44	58.3	Ukraine	89	52.7	Zambia	134	45.0	Somalia	179	31.5
China	45	58.2	Vietnam	90	52.6	West Bank and	135	44.9	South Sudan	180	31.4

Sustainable Competitiveness

8 Sustainable, Competitive

12 Key Points to achieve sustainable competitiveness

1. **A global climate tax.** Climate change is a gigantic market failure. We need a global climate tax - introduced in phases, paid back to the people in cash and reinvested in a renewable energy infrastructure - to avoid disaster. Now.
2. **More democracy.** In the 21st century, it is not possible that individuals decide over whole countries. The people need to be consulted on policy and law changes through mandatory referenda, and the possibility to induce issues on the governing agenda. And - it is not possible that people have to stand in line to vote in the 21st century.
3. **Better governance.** It's silly to assign responsibility for an entity as complex a country to a single individual, and winner-takes-it-all-systems allow minorities to govern. Ministries should be assigned according to national voter share, cabinet meetings are chaired by one of the ministers, in turns. The same applies in the corporate World: we don't need presidents and we don't need CEOs; we need teams of decision makers.
4. **Real market economy.** Markets only work when all costs are incorporated. The environmental costs of substances, materials and processes have to be integrated in the market price – based on a globally agreed level. The taxes generated need to be fiscally neutral (cash-back and/or used to offset the environmental cost).
5. **Quality education for all.** We need quality education, equal for all; taxed and re-distributed at the national level so the same resources are available to each student
6. **Working financial markets.** We need financial markets that support the real economy, and not vice-versa. This can be achieved through a transaction tax on, and/or minimal holding periods for all financial instruments.
7. **Health care and social security for all.** We need affordable basic health care for all – paid for as percentage of income, directly deducted, with the choice of additional insurance for more luxurious health care.
8. **Impartial and efficient justice system accessible to all.** The justice system has to work fast, efficient, accessible to all while minimising abuse. Judges need to be completely impartial, appointed through a process that is safeguarded from any political influence.
9. **Unitary Taxing.** We need a global approach to tax multi-national corporations (e.g. by a combination of revenues/employees/sourcing per country), as well as private tax. These are not normal times. A wealth tax on the rich, maybe for a limited time, needs to be seriously considered.
10. **Fact-based, impartial information.** We need impartial, science- and fact-based information, not opinions. Financed through taxes, but safe-guarded against any control attempts by governments/politicians.
11. **Freedom for, and from, religion.** Faith is a choice. Science is not. Everybody is free to practice their faith, and nobody has their freedom impaired by other people's faith We need a total separation of state governance and religion.
12. **Total equality.** It is a shame that this has to be mentioned in the 21st century – but we need total equality. Between genders, races, regions, wealth.

8.1 Achieving Sustainable Competitiveness

The GSCI evaluates the competitiveness of nation-economies. But what actually is competitiveness?

Policy and investment decision in all pillars of competitiveness are inter-acting and affect the competitiveness of a country:

- The availability and state of **natural capital** does not affect short-term economic development or recovery – unless the capital in question is oil or other commodities in demand on the global market. Exploitation of natural resources (natural capital) can bring short-term economic benefits, but is often accompanied by diminishing the basis of future development (e.g. in the case of forest exploitation)
- **Resource intensity** is cost. The higher the resource efficiency, the higher the competitiveness of an economy. However, resource intensity is not directly linked to short-term economic development. While resource usage is increasing with initial development, efficiency tends to increase with higher development and investments. However, economic decline (as has occurred in Greece since 2010), leads to lower resource consumption.
- **Social capital** is negatively affected by economic decline. A declining economy leads to fewer financial resources available for social capital aspects (health, community development, integration, …), and leads to higher criminality as well as individual despair – all of which negatively affects the competitiveness of a nation-economy on the long term.
- There seems to be a fairly direct connection of **Intellectual capital** availability and positive/negative economic development. All countries that have cut investments (including, but not restricted to, innovation, R&D and education), have seen a slower recovery or even further decline since the financial crisis – and vice versa. While it may look sensible at first glance to cut expenditure to reduce deficits, cuts do not work because they also cut the required base to kick-start growth. Cutting investments is unsustainable competitive, i.e. not sustainable competitive. Sustainable competitiveness means: analysing the likely outcome of measurements before they are implemented – i.e. calculating not only the cuts, but also the cost of cuts. A majority of policy makers these days seem to be blind to the long-term cost of cuts and benefits of investments. They do not look ahead.
- The analysis of individual indicators suggests a fairly straightforward connection between the **Governance framework** provided to the economy: countries who cut investments (infrastructure, general investments), countries with a large (uncontrolled) domestic financial investment market, and a low industrial base have all declined more and recovered slower than countries with higher investments, smaller domestic financial markets and a better industrial base. It also seems straightforward that a steep increase of financial market size in short term seems to be the indication of an imminent burst of a bubble.

In a sustainable efficient entity, powers are balanced. Imbalance in power between individuals, groups, and entities always lead to lower efficiency over time. Low efficiency means higher overall cost, less benefits. What might appear competitive now (e.g. the exploitation of natural non-renewable resources), but is not into the future, is not competitive. Competitiveness that is not sustainable is not competitive.

In a sustainable entity, the economy does not run against nature and/or communities/society. All dimensions of an entity are all running in parallel in win-win interactions. The fundamentals hat make an economy, a society, and the natural environment in which both of the above operate/live in, are balanced interacting:

The Sustainable Competitiveness Framework:

Sustainable competitiveness only requires two fundamentals as its base:

- Equal opportunities, everywhere
- Decision-making based on science and sustainable cost-benefit analysis that lead to l**ow-cost, high-benefit solutions** (**LCHB**s)

8.2 Requirements for Sustainable Competitiveness

Sustain able competitive economies/nation-states are characterised by high efficiency – i.e. systems and policies that enable and foster efficiency. We need efficient systems of governance, free of any religious, political or special interest views

Sustainable governance

- Efficient governance systems that have built-in guarantees against authorism with clear assigned and shared responsibilities
- Direct democracy (citizens can not only elect politicians, but also vote on legislation and policies)
- Efficient legal framework and judicial system that is available and equal for and to all
- Financial markets that serve the real economy, not vice-versa
- Simple tax regime that taxes all forms of income equally. Public services, including health, education and infrastructure, are financed through progressive income taxes
- Harmonised tax rates across regions and countries
- Efficient and well-maintained transport infrastructure, and other public infrastructure (health, education, recreation)
- Corruption prevention
- Wise allocation of state resources, balancing social, environmental and economic interests

Innovation

- Equal quality education for all, constantly adjusted to changing requirements, including vocational training
- A national/regional economic development strategy/vision supported by government policies, co-ordination, and incentives
- An environment that supports and rewards investment in R&D
- Curbing the power of monopoly-like entities

Social cohesion

- Universal public health services for all, with additional private health services beyond the basics
- Respected law enforcement deeply integrated in local communities and related services to curb crime
- Treatment of diseases as diseases, not as crimes (e.g. drug addiction)
- Equal opportunities for all genders, races and minority groups
- New models of employment and public participation in public services in light of increasing automatization (robotics and artificial intelligence)

Resource intensity

- Introducing sustainable balance-sheets for all economic activities (integration of externalities): polluter pays principle for all substances and activities. Cost to the environment and/or society are factored into the cost of all products and services

- Harmonised global taxing of greenhouse gases, to be reinvested in renewable energy technologies and climate change impact mitigation
- Resource efficiency – supporting the development of the circular economy
- Improvement and streamlining of organic food production

Natural capital

- Legal protection of the leftover natural biodiversity
- Restoring biodiversity where possible through sustainable agriculture and land management
- Reforestation
- Protection of waterways, investment in desalination facilities

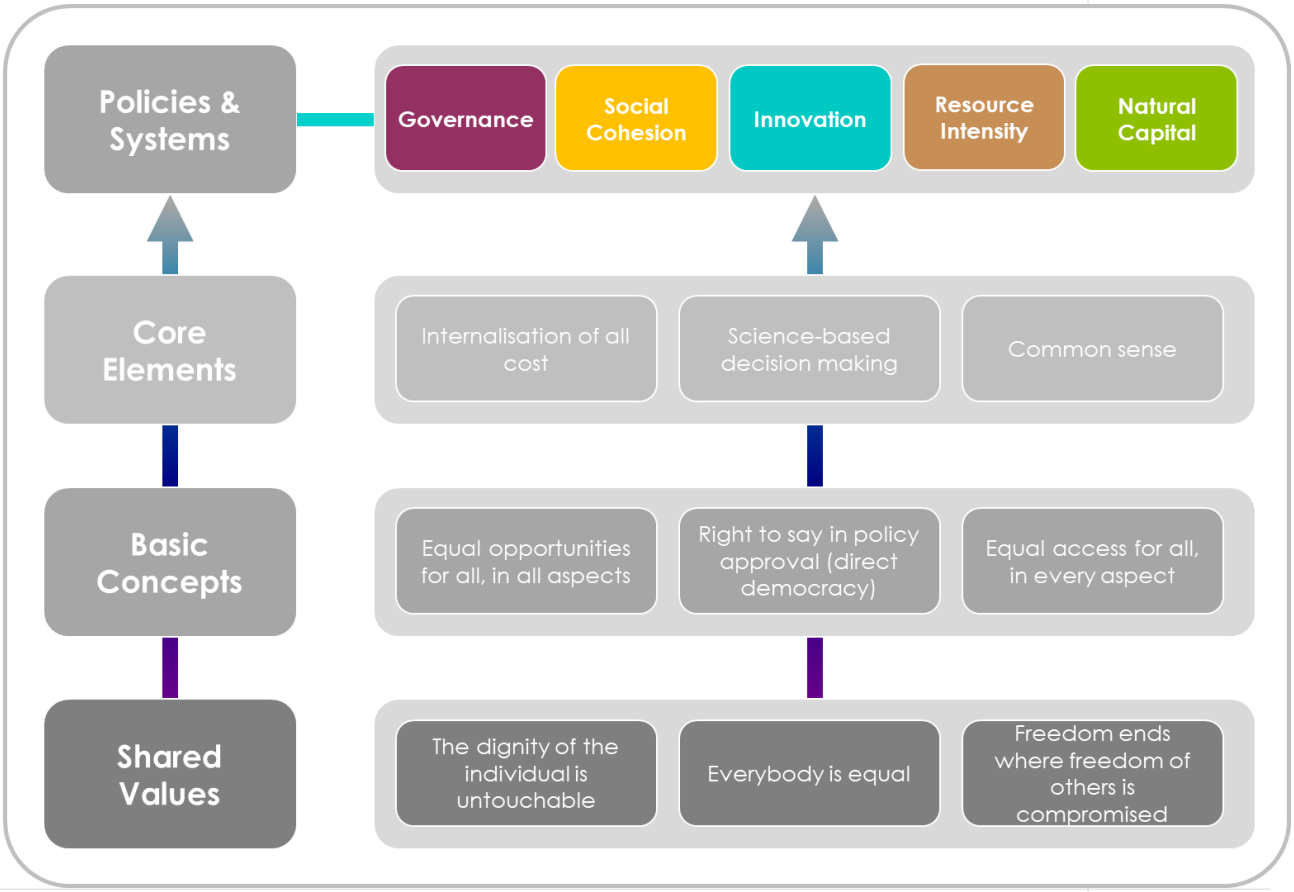
8.3 Shared Values

At the base of sustainable economy, we need simple shared values:

- The dignity of the individual is untouchable.
- All individuals are free. The freedom of an individual (or group) ends where the freedom of others is compromised.

The economics of sustainable competitiveness is equally simple:

- Provision of equal opportunities and equal access for all.
- Internalising all cost, tangible and intangible, in the balance sheets – of products, services, and in project and policy appraisal.



8.4 Outlining Sustainable Governance

The following is a rough outline of issues to be considered when aiming for a real sustainable & competitive framework:

1. A global climate tax
2. More democracy
3. Better governance
4. Real market economy
5. Education, education, education - quality education for all
6. Working financial markets
7. Health care and social security for all
8. Impartial and efficient justice system accessible to all
9. Unitary Taxing
10. Fact-based, impartial information
11. Freedom for, and from, religion.
12. Total equality

- **Governance update**: Our current systems were designed when monarchies were the going power structures: elected presidents replace the king. It is stupid to concentrate power in a single pair of hands, be that in a company, an organisation, local authorities or on the state level. We don't need kings, presidents, prime ministers and CEOs. We need teams of decision makers.
- **Democracy upgrade**; We currently have systems that allow us to choose between different versions of jokes every couple of years. That is not democracy. We need real democracy – we need systems that allow citizens to vote on policy and regulation changes on a regular basis.
- **Legal equality:** As is, justice is for the rich and powerful. Suing for your legal rights and defending yourself in court requires significant financial resources. If you don't have financial resources, you are seriously restricted in obtaining your legal rights, and being sued can ruin you. The justice system has to be available to all, while there should be barriers for people/entities that sue for the sake of suing.
- **Financial markets reboot**: The real economy (the producing economy) currently serves as collateral for the rent seeking/gambling industry that we call "the financial markets". We need financial markets that serve for what they were initially intended: provide money transfer and provision of capital for innovation and production.
- **Taxing re-start**
  There will and should always be different levels of wealth. But the: discrepancies have gone completely out of hand, with taxing favouring those that already have. Being at the right place at the right time or being a CEO should be neither grounds for amassing millions/billions, nor for yielding influence and power.
- **Integrating the environment in the economy**: If pollution dos not have a price, pollution does happen. We need a system that quantifies pollution, and then can be integrated into the price of resources and materials. The price has to be paid before the pollution occurs. For example - we need a global climate tax. Now.

- **The role of the state:** Privatisation of infrastructure-based public services (railroad services, water provision, electricity, gas, health care provision) has lead to lower quality, more frequent disruption, higher prices. The role of the state in provision of infrastructure-based service provision therefore has to be discussed, and frameworks to ensure efficient management and prevention of corruption in public services have to be developed. Or should the state be a player in the markets itself?
- **Economic co-operation:** Countries that have a close relationship and co-ordination (e.g. South Korea, China) have experienced above-average success over the past decades. While such close relationships are not without their own inherited complications, a closer alignment of national development priorities and the private sector can be highly beneficial and should be more closely scrutinised.
- **Intelligent investment:** Investment decisions need to be based on a broader assessment of impacts – both negative and positive – and further into the future. In addition, they should be aligned with a clear development strategy, to allocate the limited resources at the highest possible return for society, the economy, the environment and the countries
- **Harvesting on technology:** New technologies potentially can bring huge benefits to humanity – clean energy technologies, nano-technologies, artificial intelligence, robotics, further digitalisation. A clear strategy is required to prioritise and support beneficial technologies and applications leads to guided development that is beneficial
- **Labour markets and labour security:** Digitalisation, robotics and artificial intelligence are expected to substitute a significant percentage of today's labour. It is highly likely that there will not be jobs for everybody into the future. Alternative models of labour – for example through a base salary tied to work in organic agriculture, elderly care and other community services, to name a few – need to be evaluated and discussed timely.
- **Public service upgrades**: The private sector has completely failed to deliver efficient services in monopolistic distribution environments (e.g. running water, rail transport, electricity, …). We need systems that guarantee efficient management of public infrastructure and services.
- **Freeing the press**: lies and conspiracy theories is not free speech, it is spreading lies and conspiracy theories. Pushing the opinions of owners of media companies is also not free speech. We need a completely independent fact-based press. Less opinions, more facts. Easy in theory, very complex in reality.
- **Education update**: We need better and adequate education for all, including practical skills. Vocational training needs to be increased and improved, and curriculums updated regularly based on technology and societal developments.
- **Health re-loaded**
  Basic health care has to be available to all, paid for by all. That probably: requires state-guided policies, state-managed insurance, and state-managed health services
- **Greening agriculture:** Industrial agriculture is based on the use of fertilisers, pesticides, and managing land in mono-cultures. All three of these have to be replaced with organic approaches. However, organic agriculture is inevitably more labour intensive. Solutions to keep the cost of food product within reasonable scope for the wider public therefore have to be discussed.

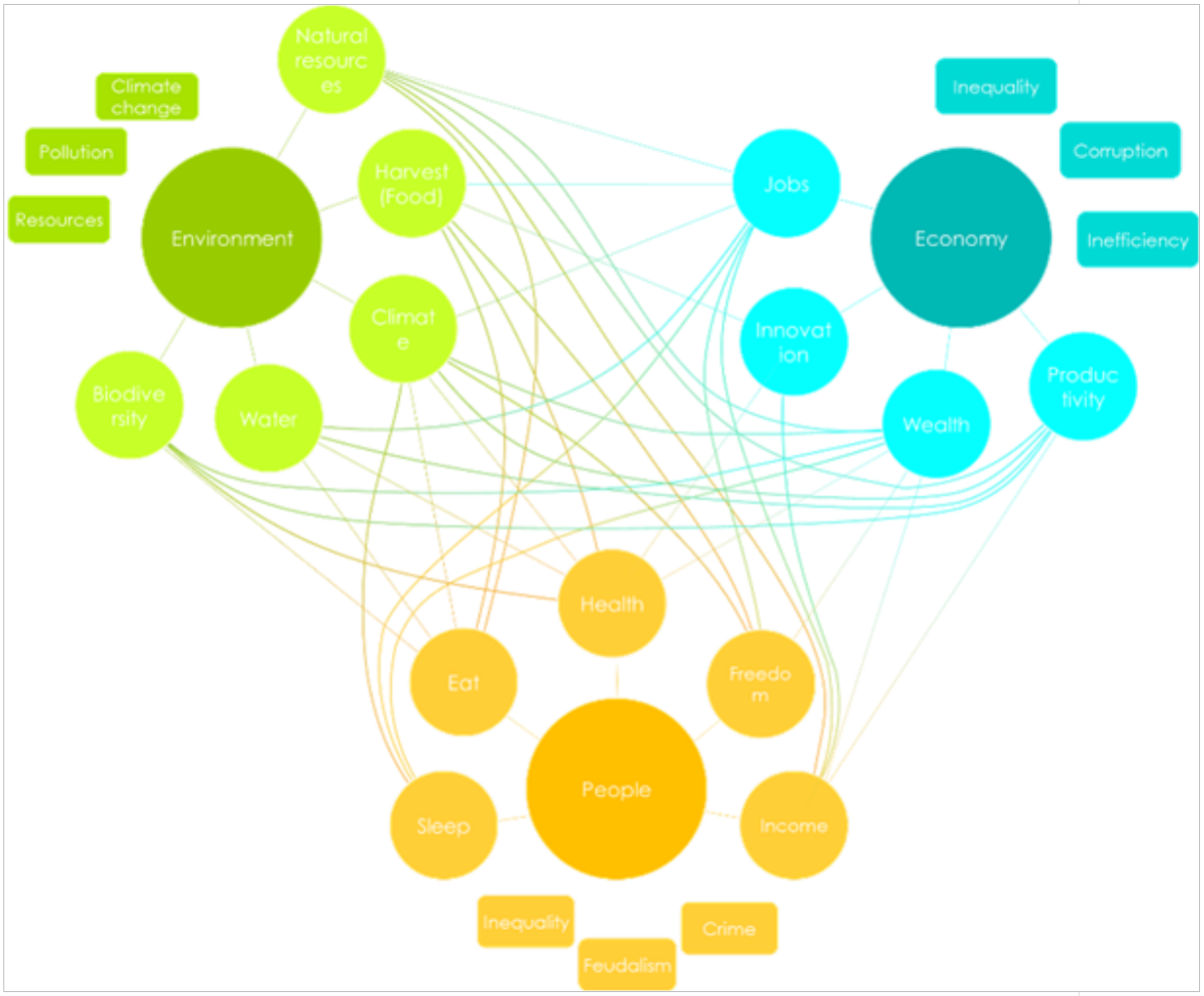
- **Saving the biosphere:** We need more protection for vital eco-systems, such as the Amazon and other rain-forests. However – it is not only the rainforests. We need more biodiversity across this World – in all countries, in all regions. More land needs more land to be protected as parks, and sustainable management of the resources has to be implemented in line with the communities living in these areas. Water is vital to the survival of humanity; waterways ned to be protected better.

Methodology

9 Model & Index Methodology

9.1 The Sustainable Competitiveness Model

The three-dimensional sustainability model of reconciling the economy, the environment and the society is often used and applied in the corporate world to evaluate and manage sustainability issues and performance, now mostly referred to as "ESG"-



The ESG model

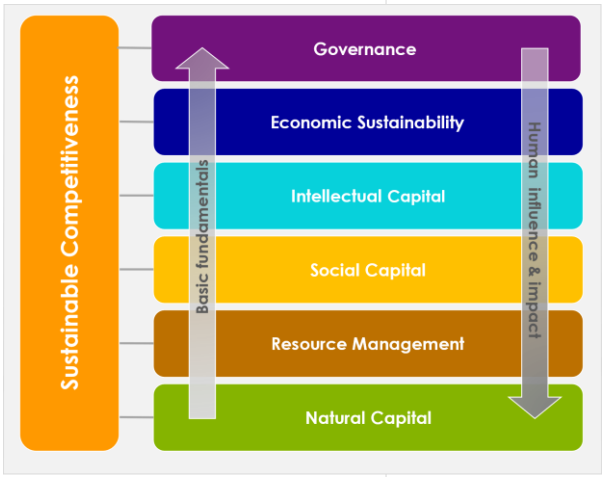
However, corporations are entities that operate in very different boundaries and with different goals than states and nation-economies. The elements of the model therefore have to be adapted to the characteristics of nations and their fundament of sustained prosperity.

While corporate or economic entities (depending on the nature of their business) are working with natural capital, they do not depend on the location of the capital (natural, human, financial) they utilize, and therefore can move their operations to where the external conditions are most favourable, both in terms of physical location (offices/factories) and markets, as well as in terms of business fields. Transport and international trade have made countries and people less dependent on their immediate environment through international trade of resources, including water. However, countries and population cannot simply

move should fundamental resources (water, agricultural output) become scarce or the country inhabitable due to climate change. At the end of the day people rely on, and life off, the natural capital of their environment for better or worse.

The Sustainable Competitiveness Pyramid

Sustainable competitiveness - they ability to generate and sustain inclusive wealth and dignifying standard of life for all citizens in a globalised world of competing economies, consists of 5 key elements that interact and influence each other: natural capital (the given natural environment and climate, minus human induced degradation and pollution), social capital, intellectual capital (the ability to compete in a globalised market through sustained innovation), resource management (the ability to extract the highest possible value from existing resources (natural, human, financial), and governance (the framework given, normally by government policies & investments, in which a national economy operates).

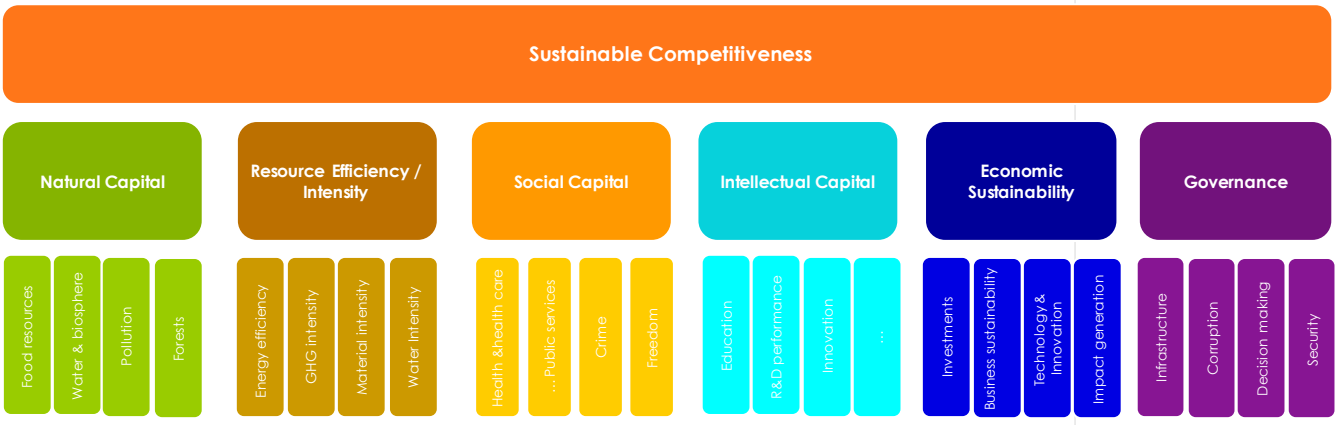


The Sustainable Competitiveness Pyramid

It is now widely accepted that economic activities have adverse impacts or side-effects on the non-financial assets of a country. The negative impacts of economic activities - including negative impacts on the social fabric and cohabitation within a society - can undermine or even reverse future growth and wealth creation. Due to the omission of key non-financial indicators and performance that are fundamental to sustain economic activities, conventionally used measurements to measure wealth of nations such as the GDP have limited informative value for the future development of a country.

Sustainable competitiveness means the ability of a country to meet the needs and basic requirements of current generations while sustaining or growing the national and individual wealth into the future without depleting natural and social capital.

The Sustainable Competitiveness Index is built and calculated based on the sustainable competitiveness model that covers 106 data indicators grouped in5 pillars:



Social Cohesion is the fundamental stability required to maintain interruption-free economic activities: the health of populations, equality, security and freedom within a country

- Natural Capital is the base to sustain a society and economic activities: the given natural environment within the frontiers of a country, including availability of resources, and the level of the depletion of those resources.
- Resource Intensity is a measurement of efficiency, and thus an element of competitiveness: the efficiency of using available resources (domestic or imported) as a measurement of operational competitiveness in a resource-constraint World.
- Social Cohesion is the fundamental stability required to maintain interruption-free economic activities: the health of populations, equality, security and freedom within a country
- Sustainable Innovation is key to sustain economic development in the globalised market: the capability of a country to generate wealth and jobs through innovation and value-added industries in the globalised markets
- The Governance framework is the environment businesses and a national economy are operating in. It is key to future development, not only for software, but also hardware.

Methodology Development

The competitiveness of a nation is influenced by a wide range of factors, i.e. is a complex matter. We are striving to develop a model that can reflect all aspects that define the level of competitiveness. The methodology for the Sustainable Competitiveness is therefore constantly reviewed and has evolved over time. The changes to the Sustainable Competitiveness Model and indicators have been undertaken based on past experiences, new research, data availability, and back-track analysis.

We prioritise accuracy over consistency. Due to changes in methodology, year-on-year comparison of rankings have a somewhat limited informative value. From an index point of view, it might be preferable to base rankings on the same methodology and data. However, we believe that delivering the most accurate result possible is more important than direct of year-on-year rankings comparison. The main changes that have been implemented as a result of the methodology review include changes to the model of competitiveness on which the calculation is based, and further adaptation to availability of congruent data series.

The sustainable competitiveness model has been adapted to better reflect the elements that characterise and influence sustainable competitiveness of nation-economy, and how those elements influence and impact each other. The model used for the first Index consisted of 4 key elements – Natural Capital, Resource Intensity, Sustainable Innovation, and Social Cohesion. Since 2014, the Sustainable Competitiveness model is based on a pyramid with 5 levels. In 2022, the methodology was further extended to 6 dimensions to better reflect the reality of a ntion-economy. The basic conditions form the basis of the pyramid, on which the next level is built. Vice-versa, the higher levels of the pyramid are influencing the performance of the levels below.

- The base level of the Pyramid is the **Natural Capital** (the given physical environment and resources) – the resources that feed the population, provide energy, and materials
- The second level is **Resource Efficiency** – the ability to use available resources at the highest possible efficiency - natural resources, human resources, intellectual resources, financial resources.
- The third level is the **Social Capital** of a country, the cohesion between generations, genders, income groups and other society groups. Social cohesion is required for the prosperous development of human capital, i.e. Social Capital is the provision of a framework that facilitates the third level of the pyramid
- The fourth level is the **Intellectual Capital**, the fundament for the ability to compete and generate wealth in a globalised competitive market through design and manufacturing of value-adding products and service. It is the basis for management capabilities
- The fifth level is the **Business Sustainability**, encompassing all elements that allow businesses to develop in a sustainable and competitive manner.
- The sixth and highest level is **Governance Performance**– the direction and framework provided by government interventions, expenditure, and investments. Government policies (or the absence of such policies) have strong influence and or impact on all lower levels of the Sustainable Competitiveness Pyramid.

9.2 Competitiveness Elements

The sustainable competitiveness model is based on a pyramid, where each level is required to support the next higher level. In the top-down direction, the different levels of the pyramid influence the state of the lower levels.

Natural Capital

The natural capital is the base of the pyramid, and is defined by the characteristics of the given physical environment of a country. The natural capital consists of a mixture of size, population, geography, climate, biodiversity and availability of natural resources (renewable and non-renewable), as well as the level of depletion/degradation of the available resources. The combination of these **factors and the level of depletion of the non-renewable resources due to human activity and climate change represents the potential for sustaining a prosperous** livelihood for the population and the economy of a nation into the future.

Resource Intensity

The more efficient a nation is using resources (natural, human, financial), the more wealth the country is able to generate. In addition, higher efficiency means smaller negative impacts of potential supply scarcity of resources (food, energy, water, minerals). Higher efficiency is also equal to lower cost per production unit throughout all sectors, private and public. Efficient use of resources and energy is an indicator for a nation's ability to maintain or improve living standard levels both under a future business-as-usual Indicators used cover water usage and intensity, energy usage, intensity and energy sources, climate change emissions and intensity as well as certain raw material usage. However, global data availability for raw materials consumption other than steel is limited and therefore could not be included.

Indicators used cover water usage and intensity, energy usage, intensity and energy sources, climate change emissions and intensity as well as certain raw material usage. However, global data availability for raw materials consumption other than steel is limited and therefore could not be included.

Social Capital

The economy requires stability to operate smoothly. Nations and societies therefore need a minimum level of social cohesion, coherence, and solidarity between different regions, between authorities and the people, between different interest groups, between income levels, between generations, and between individuals. A lack of social cohesion in any of the above aspects results in social gaps that eventually lead to increased crime, violence and insecurity that can seriously undermine the stability the economy requires as a basis to thrive in the long run.

Indictors used cover health performance indicators, birth statistics, income differences, equal opportunities (gender, economic), freedom of press, human

rights considerations, the level of crime against both possession and humans, and perceived levels of well-being and happiness.

Intellectual Capital

The backbone of sustained economic success is the ability to continuously improve and innovate on all levels and throughout all institutions (not limited to the private sector). Sustaining competitiveness also requires a long-term view beyond momentary political interests or opinions, and long-term investments in crucial areas (education, infrastructure). Economies that are being deprived from investments sooner or later face decline, as some nations of the formerly "leading" West are currently learning the hard way. Indicators used for the innovation capability sub-index cover education levels, R&D performance indicators, infrastructure investment levels, employment indexes, and the balance of the agricultural-industrial-service sectors.

Economic Sustainability

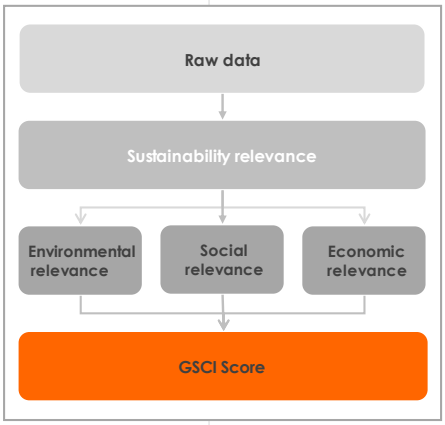
Economic Sustainability reflects the ability to generate wealth through sustainable and inclusive economic development.

Governance Index

With the given physical environment and conditions in place, the sustained competitiveness of a country is determined by what the society and the economy is able to extract from available resources. This, in turn, is characterized by the framework provided by authorities. The framework of a country provides the basis for businesses and the social consensus. Governance indicator consist of both physical indicators (infrastructure) as well as non-physical attributes (business legislation, level of corruption, government investments, exposure to business and volatility risks, exposure to financial risks, etc.)

9.3 Index calculation

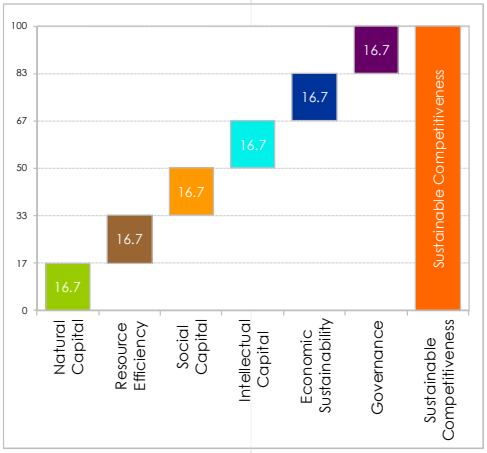
The raw data consist of numerical values. While values can be ranked against each other, they cannot be compared or added to other values. It is therefore necessary to extract a scalable and comparable score from the raw data as a first step.



Calculating scores from raw data

When comparing raw data of variables of different countries, an "absolute best" cannot be defined in most cases. Scores therefore often cannot be calculated against a real or calculated best score. For the purpose of this index, the raw data was analysed and ranked for each indicator individually. Trough calculation of the average deviation, the best performing 5% receive the highest score (100), and the lowest 5% receive the lowest possible score (0). Scores between the highest and the lowest 5% are linearly assigned relative to the best 5% and the worst 5%.

In a second step, the relative importance (weight) of the indicator is assessed against their impact on the E, S and G. The resulting weightings are used to calculate weighted scores for the 6 sub-indexes. The Sustainable Competitiveness Index is then calculated based on the sub-indexes, each weighted equally, i.e. at 16.67%.



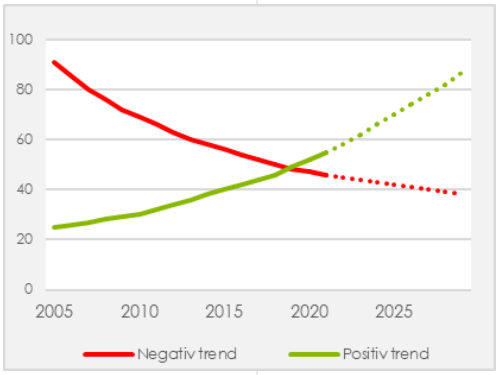
Each level of the Sustainable Competitiveness Pyramid is equally important and therefore equally weighted

Data in perspective

Raw data has to be analysed in perspective: 5000 ha of forest might be a large area for a country like Andorra, but it is a small area in China. Depending on the indicator, the denominator might be the land area, the size of the population, or intensity measurements, e.g. GDP. For certain indicators, (e.g. energy efficiency, but also innovation indicators), the performance is evaluated against two denominators (normally population size and GDP) in order to gain a more altruistic picture of the national sustainability performance that incorporates economic and human efficiency.

Trend analysis: Integrating recent developments

Current data limits the perspective to a momentary picture in time. However, the momentary status is not sufficient to gain a true picture of the sustainable competitiveness, which is, by definition, forward-looking. Of equal importance are therefore the trend developments. Analysing trends and developments allow for understanding of where a country is coming from – and, more importantly - indicates the direction of future developments. Increasing agricultural efficiency, for example, indicates a country's capability to feed an increasing population in the future, or the opposite if the trends are decreasing. Where sufficient data series are available, the trend was calculated for the latest 5 years available and scored to evaluate the current level as well as the future outlook and sustainability potential of a country based on recent developments.



In order to reflect a dynamic performance picture, performance trends are analysed, scored and integrated in the Sustainable Competitiveness Index

Data Sources

Over 90% of the sustainable competitiveness indicators are purely quantitative performance indicators. Data sources were chosen according to reliability and availability of global data. The largest percentage of indicators was derived from the World Bank's indicator database, followed by data sets and indicators provided by various UN agencies. Index calculation

Data reliability & accuracy

The accuracy of the index relies on the accuracy of the underlying data. Given the many individuals and agencies involved in data collected around the World, it cannot be excluded that some of the data is not completely accurate. Data sources chosen for this Index (World Bank, UN agencies, OECD, IEA) are considered reasonably reliable. Raw data from the various databases was used as a basis for calculation as-is, i.e. without verifying the actual data.

Limitations of quantitative analysis

In order to exclude subjectivity, only quantitative data has been taken into account. However, quantitative indicators sometimes are not able to differentiate or express real and actual levels of quality. High spending on health care for example does not necessarily guarantee high quality health care system available for the average citizen. Equally, the percentage of school enrolment (on all levels, form primary levels to college and universities) is not necessarily an expression of the quality of the education. However, for some indicators, quality is equally important to quantity from a sustainability viewpoint. For such indicators, quantitative indicators have limited informative value and serve as a proxy.

While explanatory power of quantitative indicators is limited, conducting a qualitative evaluation of the indicators used on the global level would go far beyond the limitations of this index. For indicators with a potentially low correlation between quantity and quality, the weighting has been adjusted accordingly. In order to integrate some qualitative aspects, results of global surveys have been included, e.g. for the quality of public services, or perceived life satisfaction.

Time frame of data used

The Sustainable Competitiveness Index 2020 is based on the latest available data. For most data series, the latest data available dates 2019. Where 2019 data is not available, the latest available data pint is used.

Availability of data

For some indicators data is not available for all countries (in particular for the less or least developed economies). If non-available data points would be converted to a 0 (zero) score, the rankings would be distorted. In order to present a balanced overall picture, the missing data points from those countries have been replaced with calculated values, extrapolated based on regional averages, income and development levels, as well as geographical features and climatic averages.

9.4 Data Tables – Global Sustainable Competitiveness Index

Rank	Country	Score	Rank	Country	Score	Country	Rank	Score	Country	Rank	Score
1	Sweden	60.7	45	Bulgaria	47.2	Cuba	88	41.8	Jamaica	133	38.3
2	Finland	59.3	46	Brazil	47.1	Suriname	89	41.8	Liberia	134	38.2
3	Switzerland	58.3	47	Panama	47.0	Samoa	90	41.7	Seychelles	135	38.2
4	Denmark	58.1	183	Liechtenstein	0.0	Uzbekistan	91	41.7	West Bank and	136	38.1
5	Norway	57.6	48	Argentina	46.9	Mexico	92	41.6	Azerbaijan	137	37.8
6	Iceland	57.1	49	Ukraine	46.9	Nicaragua	93	41.6	South Africa	138	37.6
7	United Kingdom	56.4	50	Colombia	46.6	Dominica	94	41.6	Guatemala	139	37.6
8	France	56.3	51	Serbia	46.4	Cote d'Ivoire	95	41.5	Botswana	140	37.5
9	Slovenia	56.3	52	Belarus	46.3	Kenya	96	41.3	Egypt	141	37.5
10	Japan	56.2	53	Fiji	46.2	Gabon	97	41.3	Gambia	142	37.4
11	Austria	55.9	54	Cyprus	46.1	Tanzania	98	41.3	Guinea-Bissau	143	37.4
12	South Korea	55.9	55	Solomon Islands	45.9	Maldives	99	41.2	Zimbabwe	144	37.4
13	Ireland	55.6	56	Timor-Leste	45.7	Ghana	100	41.2	Lesotho	145	37.3
14	Latvia	55.4	57	Indonesia	45.7	Grenada	101	41.0	Benin	146	37.2
15	Portugal	54.8	58	Paraguay	45.5	Saudi Arabia	102	40.8	Algeria	147	37.2
16	Germany	54.8	59	Turkey	45.1	Sierra Leone	103	40.8	Angola	148	37.2
17	Estonia	54.5	60	Ecuador	45.1	Rwanda	104	40.6	Bahamas	149	37.1
18	Lithuania	54.2	61	Moldova	45.0	Brunei	105	40.5	Djibouti	150	37.1
19	Netherlands	53.9	62	Montenegro	45.0	Dominican	106	40.5	Iran	151	37.1
20	Croatia	53.4	63	Bosnia and	44.8	Micronesia	107	40.4	Trinidad and	152	37.0
21	Luxembourg	53.3	64	Thailand	44.7	Sri Lanka	108	40.4	Mozambique	153	37.0
22	Italy	52.8	65	Georgia	44.5	Morocco	109	40.3	Kuwait	154	36.9
23	Slovakia	52.7	66	Tonga	44.5	Malawi	110	40.2	Republic of	155	36.8
24	Canada	52.5	67	Mauritius	44.4	Senegal	111	40.1	Niger	156	36.8
25	Czech Republic	52.4	68	Vietnam	44.2	Honduras	112	40.0	St. Kitts and	157	36.3
26	New Zealand	52.3	69	Kyrgistan	44.0	Cameroon	113	39.8	Madagascar	158	36.0
27	Belgium	51.7	70	North	44.0	Cambodia	114	39.8	Zambia	159	35.9
28	Spain	51.7	71	Bolivia	43.8	Bangladesh	115	39.7	Central African	160	35.8
29	Poland	51.2	183	North Korea	0.0	Venezuela	116	39.7	Burkina Faso	161	35.7
30	USA	51.2	72	Nepal	43.6	Togo	117	39.3	Equatorial	162	35.6
31	China	51.1	73	Kazakhstan	43.5	Laos	118	39.3	Eswatini	163	35.6
32	Australia	50.6	74	Kiribati	43.5	Democratic	119	39.3	Bahrain	164	35.4
33	Uruguay	50.6	75	Malaysia	43.1	India	120	39.3	Haiti	165	35.3
34	Costa Rica	49.9	76	Bhutan	43.1	Papua New	121	39.0	Turkmenistan	166	35.3
35	Greenland	49.9	77	United Arab	43.1	Qatar	122	38.9	Comoros	167	35.3
36	Romania	49.4	78	Armenia	43.1	Namibia	123	38.8	Mauritania	168	35.2
37	Israel	49.3	79	Mongolia	43.1	Ethiopia	124	38.8	Pakistan	169	34.8
38	Greece	49.0	80	Burma	42.9	Uganda	125	38.7	Chad	170	34.7
39	Malta	48.5	81	El Salvador	42.8	Nigeria	126	38.7	Lebanon	171	34.5
40	Singapore	48.5	82	Sao Tome and	42.7	Guinea	127	38.7	Burundi	172	34.3
41	Peru	47.8	83	St. Vincent and	42.6	Tajikistan	128	38.7	Afghanistan	173	34.0
42	Hungary	47.7	84	Vanuatu	42.0	Oman	129	38.6	Yemen	174	33.9
43	Albania	47.7	85	Belize	41.9	Tunisia	130	38.6	Mali	175	33.6
183	Russia	0.0	86	Philippines	41.9	Jordan	131	38.5	Syria	176	32.8
44	Chile	47.3	87	Guyana	41.8	Cape Verde	132	38.4	Sudan	177	32.7

Natural Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Colombia	1	58.4	USA	46	47.2	Italy	91	40.2	Benin	136	34.4
Brazil	2	57.6	Solomon Islands	47	47.2	Dominican	92	39.9	Liechtenstein	137	34.1
Bhutan	3	56.3	Nicaragua	48	46.9	South Sudan	93	39.9	Burkina Faso	139	33.9
Latvia	4	55.8	Argentina	49	46.8	Guinea-Bissau	95	39.8	India	140	33.9
Sweden	5	55.7	Angola	50	46.8	Dominica	96	39.8	Sri Lanka	138	34.0
Finland	6	55.5	Equatorial	51	46.8	Mauritius	94	39.8	China	141	33.9
Canada	7	55.3	Serbia	52	46.7	Brunei	97	39.7	Turkmenistan	142	33.7
Peru	8	55.3	Gabon	53	46.5	Samoa	98	39.4	Vanuatu	143	33.5
Paraguay	9	55.0	Greenland	54	46.5	South Africa	99	38.9	Algeria	145	33.4
Russia	10	54.5	Belize	55	46.1	Saudi Arabia	100	38.8	Eswatini	144	33.4
Iceland	11	54.0	Romania	56	46.0	Tonga	101	38.7	Sao Tome and	146	33.3
Democratic	12	53.7	Bulgaria	57	45.9	Thailand	102	38.5	Mauritania	147	33.1
Tanzania	14	53.6	France	58	45.8	Luxembourg	103	38.5	Iran	148	32.9
Uruguay	13	53.6	Zimbabwe	59	45.7	Malawi	104	38.3	Botswana	149	32.5
Albania	15	53.4	Ghana	60	45.6	Turkey	105	38.3	Morocco	150	32.5
Laos	16	53.3	Portugal	61	45.3	Australia	106	38.3	Syria	151	32.4
Papua New	17	53.1	Uganda	62	45.0	Sudan	107	38.2	Djibouti	152	31.9
Bolivia	18	53.0	Lesotho	63	44.9	Liberia	108	38.1	Haiti	154	31.6
Venezuela	19	52.2	Nepal	64	44.7	Philippines	109	38.1	Gambia	155	31.6
Lithuania	20	52.0	Montenegro	65	44.4	Togo	111	37.6	Maldives	153	31.6
Croatia	21	51.7	Tajikistan	66	44.3	South Korea	112	37.6	Moldova	156	31.4
Suriname	22	51.6	Cote d'Ivoire	70	44.0	North	110	37.7	Malta	157	31.4
Norway	23	51.5	Costa Rica	69	44.0	Mexico	113	37.5	Egypt	158	31.2
Estonia	24	51.2	Poland	67	44.0	Netherlands	115	37.4	Seychelles	159	31.0
Burma	25	51.0	Vietnam	68	44.0	Czech Republic	114	37.4	Belgium	160	30.9
Republic of	26	51.0	Ecuador	71	43.9	Hungary	116	37.3	Micronesia	161	30.8
Panama	27	49.9	Ireland	72	43.9	Uzbekistan	117	37.2	Libya	162	30.7
Cambodia	28	49.6	Zambia	73	43.8	Mali	118	36.9	Comoros	163	30.6
Georgia	30	49.2	Slovenia	74	43.7	Jamaica	119	36.9	Eritrea	164	30.5
Fiji	29	49.2	Denmark	75	43.4	Malaysia	120	36.9	Iraq	165	29.7
Cameroon	32	49.1	El Salvador	76	43.2	Oman	121	36.9	Grenada	166	29.6
Kyrgistan	31	49.1	Madagascar	77	43.0	Rwanda	122	36.8	Cyprus	167	29.2
North Korea	33	48.5	Mongolia	78	42.7	Guatemala	123	36.7	Israel	168	29.2
Guyana	34	48.5	Indonesia	79	42.6	Ethiopia	124	36.5	Trinidad and	169	29.1
Mozambique	35	48.5	Afghanistan	80	42.6	Greece	125	36.3	Qatar	170	28.9
New Zealand	36	48.4	Spain	81	42.3	St. Vincent and	126	36.1	Kenya	171	28.6
Chile	37	48.3	Guinea	82	42.0	Bangladesh	127	35.6	Kuwait	172	28.5
Switzerland	39	48.0	Niger	83	41.9	Burundi	128	35.5	Yemen	173	28.4
Belarus	38	48.0	Ukraine	84	41.3	Senegal	129	35.5	Singapore	174	28.3
Austria	40	47.9	Cuba	85	41.1	Pakistan	130	35.5	United Arab	175	28.2
Sierra Leone	41	47.8	Chad	86	41.0	Timor-Leste	131	35.0	Bahamas	176	28.1
Honduras	42	47.8	Nigeria	87	40.9	Germany	132	35.0	Kiribati	177	27.3
Slovakia	43	47.7	Kazakhstan	88	40.8	Namibia	133	35.0	Bahrain	178	26.9
Bosnia and	44	47.6	Japan	89	40.7	Azerbaijan	134	34.9	Jordan	179	26.4
Central African	45	47.5	United Kingdom	90	40.6	Armenia	135	34.6	Tunisia	180	25.5

Resource Intensity Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
United Kingdom	1	63.5	Netherlands	46	53.0	Albania	91	47.5	Sudan	136	41.1
Sweden	2	62.5	Togo	47	53.0	Liechtenstein	92	47.5	Montenegro	137	41.1
Costa Rica	3	61.4	Iceland	48	52.8	North Korea	93	47.4	Mexico	138	41.0
Sierra Leone	4	60.1	Chad	49	52.6	Bangladesh	94	47.4	Bosnia and	139	40.9
Switzerland	5	60.1	El Salvador	50	52.5	Bolivia	95	47.3	Burma	140	40.3
Ireland	6	60.0	Haiti	51	52.5	Benin	96	47.2	Turkey	141	40.2
Denmark	7	59.9	Guinea-Bissau	52	52.4	Zimbabwe	97	47.0	Moldova	142	40.0
Malawi	8	59.7	Austria	53	52.3	Japan	98	47.0	Micronesia	143	40.0
Kenya	9	59.7	Spain	54	52.2	Lesotho	99	47.0	Armenia	144	39.9
Yemen	10	58.5	Ghana	55	52.1	Estonia	100	47.0	Pakistan	145	39.8
Rwanda	11	58.1	Tanzania	56	52.1	Ecuador	101	46.8	Cambodia	146	39.4
Angola	12	57.9	Gambia	57	52.0	Timor-Leste	102	46.8	Tunisia	147	39.3
Djibouti	13	57.7	Somalia	58	52.0	Cuba	103	46.5	Malaysia	148	39.1
Uruguay	14	56.9	Gabon	59	51.9	Israel	104	46.5	West Bank and	149	38.9
Solomon Islands	15	56.7	Germany	60	51.8	Nepal	105	46.4	Georgia	150	38.8
Central African	16	56.3	Liberia	61	51.7	Hungary	106	46.4	Belarus	151	38.7
Latvia	17	56.2	Honduras	62	51.5	Peru	107	46.2	South Africa	152	38.6
Democratic	18	56.1	Eritrea	63	51.3	Burkina Faso	108	46.2	South Korea	153	38.5
Belize	19	55.9	Fiji	64	51.2	Poland	109	45.9	Lebanon	154	38.4
Cote d'Ivoire	20	55.7	Venezuela	65	51.2	Mali	110	45.8	Brunei	155	38.1
Panama	21	55.5	Malta	66	51.1	Eswatini	111	45.8	China	156	38.1
Luxembourg	22	55.2	New Zealand	67	51.1	Botswana	112	45.7	Mauritius	157	37.9
Comoros	23	55.2	Australia	68	51.0	Cyprus	113	45.5	Syria	158	37.9
Nigeria	24	55.2	Slovakia	69	50.9	Sri Lanka	114	45.0	Suriname	159	37.7
Finland	25	54.9	Vanuatu	70	50.7	Afghanistan	115	44.8	Thailand	160	37.5
France	26	54.8	Namibia	71	50.4	Ukraine	116	44.8	Egypt	161	37.5
Croatia	27	54.6	Brazil	72	50.4	Morocco	117	44.7	Azerbaijan	162	36.9
Romania	28	54.6	Czech Republic	73	49.9	Chile	118	44.4	Bahrain	163	36.7
Equatorial	29	54.5	Greece	74	49.8	Mozambique	119	44.4	Kyrgistan	164	36.7
Kiribati	30	54.4	Colombia	75	49.7	Zambia	120	44.4	Qatar	165	36.4
Lithuania	31	54.3	Sao Tome and	76	49.6	Senegal	121	44.0	Algeria	166	36.4
Dominica	32	54.1	Jordan	77	49.4	Bahamas	122	43.8	Tajikistan	167	36.1
St. Vincent and	33	54.0	Burundi	78	49.3	Samoa	123	43.7	Bhutan	168	35.9
Ethiopia	34	53.9	Republic of	79	49.1	Philippines	124	43.7	Vietnam	169	35.5
Greenland	35	53.9	USA	80	49.1	Mauritania	125	43.5	Singapore	170	34.6
Nicaragua	36	53.8	Tonga	81	49.1	Maldives	126	43.1	Kuwait	171	34.0
Papua New	37	53.7	Paraguay	82	48.9	North	127	43.0	Seychelles	172	33.8
Grenada	38	53.6	Canada	83	48.7	Guyana	128	42.6	Laos	173	33.6
Cameroon	39	53.6	Belgium	84	48.3	St. Kitts and	129	42.5	Uzbekistan	174	33.5
Norway	40	53.4	South Sudan	85	48.1	Jamaica	130	42.5	United Arab	175	33.1
Guinea	41	53.3	Cape Verde	86	48.0	India	131	42.1	Mongolia	176	33.0
Uganda	42	53.3	Slovenia	87	47.9	Indonesia	132	41.9	Russia	177	32.9
Italy	43	53.1	Madagascar	88	47.8	Dominican	133	41.6	Serbia	178	31.7
Guatemala	44	53.1	Argentina	89	47.7	Bulgaria	134	41.6	Kazakhstan	179	31.6
Portugal	45	53.1	Niger	90	47.7	Trinidad and	135	41.4	Turkmenistan	180	31.1

Social Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Iceland	1	66.0	Greenland	46	51.7	Tanzania	91	43.9	Brazil	136	38.4
Finland	2	63.6	Canada	47	51.7	Trinidad and	92	43.8	Libya	137	38.4
Japan	3	62.9	Montenegro	48	51.7	Bangladesh	93	43.5	Turkmenistan	138	38.3
Slovenia	4	62.8	New Zealand	49	51.6	Jordan	94	43.4	Burundi	139	37.9
Norway	5	62.7	Indonesia	50	51.3	Panama	95	43.4	Samoa	140	37.9
South Korea	6	61.9	United Kingdom	51	50.8	Turkey	96	43.4	Iraq	141	37.6
Portugal	7	61.3	Uzbekistan	52	50.7	Kenya	97	43.3	Colombia	142	37.1
Denmark	8	60.4	Israel	53	50.3	Dominican	98	42.9	Bahamas	143	37.1
United Arab	9	60.3	Mongolia	54	50.3	Guinea	99	42.7	Syria	144	37.1
Sweden	10	60.2	Ukraine	55	50.1	Paraguay	100	42.6	Gabon	145	36.8
Netherlands	11	60.1	Hungary	56	50.0	West Bank and	101	42.4	Suriname	146	36.7
Austria	12	60.0	Bulgaria	57	49.7	India	102	42.4	Mozambique	147	36.6
Armenia	13	59.8	Seychelles	58	49.6	Vanuatu	103	42.3	Micronesia	148	36.6
Italy	14	59.7	Thailand	59	49.4	Bahrain	104	42.2	St. Kitts and	149	36.5
Estonia	15	58.9	Bhutan	60	49.4	Cuba	105	42.1	Togo	150	36.2
Belgium	16	58.5	Sri Lanka	61	49.3	Bolivia	106	42.0	Laos	151	36.2
Spain	17	58.5	Kuwait	62	49.1	Grenada	107	41.8	Mauritania	152	36.2
Poland	18	58.4	Saudi Arabia	63	49.1	Sierra Leone	108	41.8	Madagascar	153	36.2
Cyprus	19	58.1	Georgia	64	49.1	Cambodia	109	41.7	Morocco	154	36.2
Maldives	20	58.1	Senegal	65	48.9	Nicaragua	110	41.5	Mali	155	35.6
Luxembourg	21	57.9	Burma	66	48.7	USA	111	41.4	Chad	156	35.6
Slovakia	22	57.9	Oman	67	48.5	Ghana	112	41.2	Belize	157	35.5
Czech Republic	23	57.4	Chile	68	48.5	Kiribati	113	41.1	Burkina Faso	158	35.4
Croatia	24	57.4	Peru	69	48.1	Solomon Islands	114	41.0	Papua New	159	35.3
France	25	57.3	Uruguay	70	48.0	Cameroon	115	40.8	Democratic	160	34.6
Albania	26	57.1	Mauritius	71	48.0	Benin	116	40.5	Dominica	161	34.5
Singapore	27	57.0	Argentina	72	47.6	Ethiopia	117	40.4	Lesotho	162	34.3
Lithuania	28	56.8	Malaysia	73	47.3	Rwanda	118	40.3	Sudan	163	33.6
Switzerland	29	56.7	Azerbaijan	74	47.2	Nigeria	119	40.0	Egypt	164	33.4
North	30	56.5	Kazakhstan	75	47.2	Liberia	120	40.0	Djibouti	165	33.4
Moldova	31	56.3	Ecuador	76	47.1	Gambia	121	39.9	Botswana	166	33.2
Serbia	32	55.8	Nepal	77	47.1	Mexico	122	39.9	Zimbabwe	167	33.0
Germany	33	55.3	Sao Tome and	78	46.5	St. Vincent and	123	39.6	Zambia	168	32.9
Ireland	34	55.2	Lebanon	79	46.3	Cote d'Ivoire	124	39.5	Comoros	169	32.8
Belarus	35	55.0	Brunei	80	46.2	Niger	125	39.4	Angola	170	32.3
Kyrgistan	36	54.8	El Salvador	81	46.0	Pakistan	126	39.4	Equatorial	171	32.3
China	37	54.8	Costa Rica	82	45.8	Venezuela	127	39.2	Yemen	172	32.2
Latvia	38	54.0	Cape Verde	83	45.7	Guyana	128	39.1	Guatemala	173	32.0
Bosnia and	39	53.5	Algeria	84	45.6	Guinea-Bissau	129	38.9	South Africa	174	32.0
Greece	40	53.5	Tunisia	85	45.3	Fiji	130	38.9	Haiti	175	31.9
Timor-Leste	41	53.4	Tajikistan	86	45.2	Namibia	131	38.8	Afghanistan	176	31.6
Australia	42	53.3	Tonga	87	45.0	Honduras	132	38.8	Republic of	177	31.5
Romania	43	53.1	Malawi	88	44.8	Uganda	133	38.5	South Sudan	178	31.1
Malta	44	52.6	Vietnam	89	44.6	Jamaica	134	38.4	Somalia	179	30.5
Qatar	45	52.3	Philippines	90	44.5	Iran	135	38.4	Eritrea	180	29.9

Intellectual Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
South Korea	1	74.4	Chile	46	46.7	Kuwait	91	36.8	Paraguay	136	27.8
Japan	2	68.7	Saudi Arabia	47	46.6	India	92	36.7	Ghana	137	27.6
China	3	68.1	Brazil	48	45.9	Montenegro	93	36.6	Bahamas	138	27.4
United Kingdom	4	67.0	Croatia	49	45.8	Qatar	94	36.6	Lesotho	139	27.4
Germany	5	64.4	Peru	50	44.1	Dominica	95	36.4	Senegal	140	27.3
Sweden	6	64.1	Colombia	51	44.0	Philippines	96	36.4	Trinidad and	141	27.0
Switzerland	7	62.8	Malaysia	52	44.0	Suriname	97	35.9	Libya	142	26.8
Norway	8	62.7	Kiribati	53	43.6	St. Vincent and	98	35.8	Gabon	143	26.8
Israel	9	62.3	Greece	54	43.4	Romania	99	35.4	Zimbabwe	144	26.7
Finland	10	61.7	United Arab	55	43.3	South Africa	100	35.2	Honduras	145	26.4
Denmark	11	61.6	Vietnam	56	43.2	Nepal	101	35.1	Republic of	146	26.4
France	12	61.5	Solomon Islands	57	43.1	Vanuatu	102	34.5	Cambodia	147	25.7
USA	13	60.8	Samoa	58	43.1	Bahrain	103	34.2	Cote d'Ivoire	148	25.4
Singapore	14	59.7	Belarus	59	42.7	Belize	104	34.2	Guatemala	149	25.2
Netherlands	15	58.9	Fiji	60	42.4	Sri Lanka	105	33.9	Cameroon	150	25.1
Austria	16	58.5	Tonga	61	42.3	Guyana	106	33.7	Liberia	151	25.1
Iceland	17	58.3	Kyrgistan	62	41.7	North	107	33.6	Papua New	152	25.0
Portugal	18	57.3	Tunisia	63	41.5	Armenia	108	32.8	Bangladesh	153	24.8
Belgium	19	57.2	Serbia	64	41.4	Bosnia and	109	32.6	Jordan	154	24.6
Slovenia	20	56.5	West Bank and	65	41.2	Yemen	110	32.6	Burkina Faso	155	24.3
Czech Republic	21	55.5	Kazakhstan	66	41.1	Turkmenistan	111	32.3	Djibouti	156	24.2
Russia	22	55.5	Oman	67	41.1	Lebanon	112	32.3	Haiti	157	24.0
Iran	23	54.9	Bulgaria	68	40.9	Jamaica	113	32.1	Ethiopia	158	23.7
Italy	24	53.8	Micronesia	69	40.7	Kenya	114	32.0	Burundi	159	23.2
Estonia	25	53.6	Morocco	70	40.7	Tajikistan	115	31.4	Sudan	160	23.2
Turkey	26	52.6	Mexico	71	40.7	Cape Verde	116	31.2	Malawi	161	23.1
Poland	27	52.4	Algeria	72	40.0	St. Kitts and	117	31.1	Mozambique	162	22.6
Malta	28	52.4	North Korea	73	39.8	Seychelles	118	30.6	Nigeria	163	22.5
Canada	29	52.3	Mongolia	74	39.7	Dominican	119	30.6	Pakistan	164	22.2
Luxembourg	30	51.0	Uruguay	75	39.7	Namibia	120	30.4	Gambia	165	22.1
Latvia	31	50.9	Georgia	76	39.7	Eswatini	121	30.2	Democratic	166	22.0
Thailand	32	50.7	Indonesia	77	39.3	Bhutan	122	30.0	Mali	167	21.4
Lithuania	33	50.1	Costa Rica	78	39.3	Laos	123	29.6	Tanzania	168	21.1
Slovakia	34	49.9	Ecuador	79	39.3	Botswana	124	29.5	Somalia	169	20.7
Australia	35	49.7	Brunei	80	38.9	El Salvador	125	29.4	Guinea-Bissau	170	20.6
Cyprus	36	49.7	Sao Tome and	81	38.8	Venezuela	126	29.4	Comoros	171	20.5
New Zealand	37	49.1	Azerbaijan	82	38.7	Syria	127	29.3	Benin	172	20.5
Liechtenstein	38	49.1	Argentina	83	38.6	Iraq	128	29.3	Central African	173	20.4
Greenland	39	49.0	Moldova	84	38.5	Sierra Leone	129	29.0	Niger	174	20.2
Ireland	40	48.8	Uzbekistan	85	38.3	Grenada	130	28.9	Zambia	175	20.0
Timor-Leste	41	47.9	Egypt	86	38.2	Togo	131	28.8	Mauritania	176	19.9
Hungary	42	47.9	Bolivia	87	38.0	Nicaragua	132	28.8	Equatorial	177	19.6
Ukraine	43	47.3	Burma	88	37.4	Panama	133	28.7	Chad	178	19.3
Spain	44	47.2	Cuba	89	37.4	Rwanda	134	28.2	Guinea	179	18.7
Mauritius	45	46.9	Albania	90	37.1	Maldives	135	27.9	South Sudan	180	18.5

Economic Sustainabilty Scores

Ran	Country	Score	Ran	Country	Score	Ran	Country	Score	Ran	Country	Score
1	Slovenia	61.6	46	Bulgaria	47.1	91	Nicaragua	41.6	136	Central	37.0
2	Ireland	60.6	47	Australia	47.0	92	Samoa	41.5	137	Comoros	37.0
3	Austria	58.0	48	Kazakhstan	47.0	93	Vanuatu	41.4	138	Lebanon	36.8
4	Finland	57.8	49	Paraguay	46.9	94	Guatemala	41.2	139	Brunei	36.8
5	Germany	56.8	50	Fiji	46.8	95	Timor-Leste	41.2	140	Iraq	36.7
6	Denmark	56.7	51	Malta	46.8	96	Sri Lanka	40.9	141	Oman	36.7
7	Hungary	55.9	52	Canada	46.6	97	Benin	40.9	142	Jamaica	36.5
8	China	55.8	53	Kiribati	46.3	98	Haiti	40.8	143	Burkina Faso	36.5
9	South Korea	55.5	54	Tonga	46.2	99	Ghana	40.4	144	Malawi	36.3
10	Portugal	55.5	55	Albania	46.0	100	Georgia	40.4	145	Nepal	36.3
11	Switzerland	55.4	56	Moldova	46.0	101	St. Kitts and Nevis	40.3	146	Niger	35.8
12	USA	55.4	57	Colombia	45.9	102	Egypt	40.2	147	Zimbabwe	35.8
13	Sweden	55.4	58	Argentina	45.8	103	North Macedonia	40.2	148	Tajikistan	35.7
14	France	54.1	59	El Salvador	45.7	104	Cuba	40.2	149	Nigeria	35.7
15	Lithuania	53.7	60	Belarus	45.0	105	Tanzania	40.0	150	Tunisia	35.7
16	Italy	53.5	61	Thailand	44.6	106	Guinea	40.0	151	Saudi Arabia	35.6
17	United	53.4	62	Grenada	44.6	107	Republic of	39.9	152	Zambia	35.6
18	Iceland	53.3	63	Peru	44.5	108	United Arab	39.9	153	Bhutan	35.5
19	Croatia	53.2	64	Suriname	44.4	109	Rwanda	39.8	154	Afghanistan	35.5
20	Costa Rica	53.1	65	Dominican	44.3	110	Morocco	39.8	155	Mozambique	35.4
21	Czech	52.6	66	Bosnia and	44.0	111	Democratic	39.8	156	Gambia	34.8
22	Latvia	52.4	67	St. Vincent and	43.9	112	Bangladesh	39.8	157	Pakistan	34.7
23	Slovakia	52.3	68	Mexico	43.8	113	Namibia	39.4	158	Trinidad and	34.6
24	Singapore	52.1	69	Malaysia	43.5	114	Belize	39.3	159	Madagascar	34.1
25	Greece	52.1	70	Angola	43.4	115	Brazil	39.3	160	Uzbekistan	34.0
26	Belgium	52.1	71	Laos	43.2	116	Dominica	39.2	161	Papua New	33.7
27	Japan	51.7	72	Kenya	43.1	117	Eswatini	39.2	162	Turkmenistan	33.6
28	Romania	51.6	73	Philippines	43.1	118	Guyana	39.2	163	Libya	33.5
29	Luxembourg	51.5	74	Cyprus	42.9	119	Armenia	39.1	164	Azerbaijan	33.5
30	Greenland	51.0	75	Montenegro	42.8	120	Mongolia	39.0	165	South Sudan	33.4
31	Gabon	50.9	76	Cambodia	42.7	121	Cape Verde	38.9	166	South Africa	33.0
32	Israel	50.7	77	Burma	42.7	122	Maldives	38.8	167	Bahrain	32.9
33	Panama	50.6	78	Djibouti	42.6	123	Uganda	38.7	168	Seychelles	32.6
34	Norway	50.5	79	Jordan	42.6	124	Botswana	38.7	169	Syria	32.4
35	Estonia	50.5	80	West Bank and	42.5	125	Honduras	38.5	170	Mali	32.2
36	Netherlands	50.3	81	Bolivia	42.5	126	Ethiopia	38.4	171	Algeria	32.2
37	Turkey	50.3	82	Indonesia	42.5	127	Senegal	38.4	172	Qatar	32.2
38	Poland	50.0	83	Togo	42.4	128	Guinea-Bissau	38.3	173	Iran	32.0
39	Uruguay	49.7	84	Sao Tome and	42.0	129	Sierra Leone	38.2	174	India	31.5
40	New	49.1	85	Bahamas	42.0	130	Solomon Islands	38.1	175	Eritrea	31.4
41	Serbia	48.5	86	Mauritius	42.0	131	Venezuela	38.0	176	Burundi	31.1
42	Spain	48.4	87	Cameroon	41.9	132	Mauritania	38.0	177	Lesotho	31.0
43	Ukraine	47.5	88	Vietnam	41.9	133	Kyrgistan	37.5	178	Chad	30.6
44	Ecuador	47.4	89	Cote d'Ivoire	41.9	134	Equatorial Guinea	37.1	179	Yemen	30.4
45	Micronesia	47.1	90	Chile	41.6	135	Liberia	37.1	180	Sudan	28.4

Governance Efficiency Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
South Korea	1	67.2	Serbia	46	54.5	Trinidad and	91	46.0	Zambia	136	38.9
Switzerland	2	66.9	Panama	47	53.9	Ecuador	92	45.8	Namibia	137	38.6
Denmark	3	66.9	Mongolia	48	53.7	Philippines	93	45.7	Madagascar	138	38.3
Sweden	4	66.1	United Arab	49	53.7	Botswana	94	45.6	Nigeria	139	38.0
Estonia	5	66.1	Kazakhstan	50	53.3	Turkey	95	45.5	Burkina Faso	140	37.9
Japan	6	66.0	USA	51	53.3	Tonga	96	45.5	Togo	141	37.7
Luxembourg	7	65.5	Montenegro	52	53.2	Dominica	97	45.4	Burma	142	37.6
Germany	8	65.5	North	53	52.9	Albania	98	45.0	Liberia	143	37.5
Slovenia	9	65.1	Nepal	54	52.3	Samoa	99	44.8	Pakistan	144	37.3
Ireland	10	64.9	Armenia	55	52.2	Kuwait	100	44.7	Honduras	145	37.2
New Zealand	11	64.8	Paraguay	56	51.9	Colombia	101	44.6	Guatemala	146	37.2
Norway	12	64.7	Mauritius	57	51.7	Bahamas	102	44.4	Nicaragua	147	36.9
Australia	13	64.5	Bhutan	58	51.5	Kyrgistan	103	44.4	Tanzania	148	36.9
France	14	63.9	Seychelles	59	51.4	Suriname	104	44.3	Eswatini	149	36.4
Netherlands	15	63.8	Brazil	60	51.1	Tunisia	105	44.3	Zimbabwe	150	36.0
Belgium	16	63.5	Cyprus	61	51.0	Jordan	106	44.2	Niger	151	35.8
United Kingdom	17	63.1	Ukraine	62	50.3	Gambia	107	44.2	Azerbaijan	152	35.6
Latvia	18	63.0	Georgia	63	50.2	Egypt	108	44.1	Algeria	153	35.6
Finland	19	62.1	Bosnia and	64	50.1	Oman	109	43.5	Comoros	154	35.5
Spain	20	62.0	Timor-Leste	65	49.8	Jamaica	110	43.4	Guinea	155	35.3
Czech Republic	21	61.7	Vanuatu	66	49.6	Dominican	111	43.3	Gabon	156	35.0
Canada	22	60.3	Solomon Islands	67	49.2	Cuba	112	43.3	Guinea-Bissau	157	34.5
Singapore	23	59.2	India	68	48.9	Brunei	113	43.0	Mozambique	158	34.2
Greece	24	59.0	Peru	69	48.9	West Bank and	114	42.9	Papua New	159	33.4
Austria	25	58.7	Fiji	70	48.8	Turkmenistan	115	42.7	Djibouti	160	32.9
Lithuania	26	58.3	Hungary	71	48.8	Cote d'Ivoire	116	42.5	Afghanistan	161	32.7
Iceland	27	58.1	Belarus	72	48.5	Cape Verde	117	42.5	Sudan	162	31.6
Bulgaria	28	57.9	Malaysia	73	48.2	Kenya	118	41.3	Iraq	163	31.6
Croatia	29	57.7	South Africa	74	48.1	Iran	119	41.3	Lebanon	164	31.2
Moldova	30	57.6	Kiribati	75	48.0	Mauritania	120	40.7	Somalia	165	31.0
Slovakia	31	57.5	Maldives	76	47.9	Uganda	121	40.6	Haiti	166	30.9
Israel	32	57.1	Morocco	77	47.8	Belize	122	40.5	Democratic	167	29.4
Poland	33	56.7	Saudi Arabia	78	47.8	Ghana	123	40.3	Mali	168	29.3
Malta	34	56.7	Guyana	79	47.6	Rwanda	124	40.2	Chad	169	29.2
Portugal	35	56.6	Grenada	80	47.5	Bolivia	125	40.1	Burundi	170	29.0
Italy	36	56.5	Thailand	81	47.5	El Salvador	126	39.9	Cameroon	171	28.5
Indonesia	37	56.3	Micronesia	82	47.4	Laos	127	39.8	Venezuela	172	28.3
Uzbekistan	38	56.2	Greenland	83	47.2	Benin	128	39.7	Syria	173	28.0
Costa Rica	39	56.0	Bangladesh	84	47.2	Cambodia	129	39.6	Sierra Leone	174	28.0
Vietnam	40	56.0	St. Kitts and	85	47.2	Ethiopia	130	39.6	Central African	175	27.1
China	41	55.8	Qatar	86	46.8	Bahrain	131	39.5	Libya	176	26.2
Uruguay	42	55.7	Mexico	87	46.7	Tajikistan	132	39.1	Eritrea	177	26.2
Romania	43	55.6	Senegal	88	46.5	Malawi	133	39.1	Angola	178	25.0
Argentina	44	54.9	Sao Tome and	89	46.1	Sri Lanka	134	39.0	Equatorial	179	23.4
Chile	45	54.5	St. Vincent and	90	46.1	Lesotho	135	39.0	Republic of	180	23.3

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State of the World 2022

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