the

Global SUSTAINABLE COMPETITIVENESS Index

10th edition

State of the World Report 2021

About this Report

The Sustainable Competitiveness Report, ***10th edition***

October, 2021

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Acknowledgements

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About SolAbility

SolAbility is an independent sustainability think-tank and advisory, with presence in Korea and Switzerland.

SolAbility is the maker of 3 DJSI Super-Sector Leaders. We have designed and implemented the sustainable management for GS Engineering & Construction (DJSI Global Industry leader 2012), Korea Telecom (DJSI Global Industry Leader 2011-2013, 2015), and Lotte Shopping (DJSI Global Industry Leader 2011-2015).

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Welcome to the 10th edition of the Global Sustainable Competitiveness Index

Sustainable Competitiveness finally getting traction

The average global score in the Global Sustainable Competitiveness Index 2021 (GSCI) is 45, out of a possible 100. The state of the World is not particularly good.

We are very happy to see – in time for the 10th edition of the Global Sustainable Competitiveness - the fact that sustainability is competitive is finally getting traction.

The EU has defined "competitive sustainability" as the key policy under which future economic planning and the EU "green deal" are to be developed – even though the details remain to be defined in real life at this point in time. There are people talking about green deals in all major economies – which are partially, based on competitive sustainability. Unfortunately, not on sustainable competitiveness…

Sustainable competitiveness is no revolution - It is a natural evolution. Sustainability is about basing decisions on a better-informed foundation: looking deeper and looking wider. Taking into account all aspects that shape the environment we are and will living and operating in. Sustainability is about anticipating the future and implementing policies, now, that prevent bad outcomes in the future. Or, formulated in sustainable competitiveness terms: implementing policies for a successful future.

The flaw in competitive sustainability and green deals is maybe in its financing – the taxing. Preferably rich individuals and corporations. Understandable, but still taxing – it's a lose-win. The sustainable competitive way would be directly taxing what does harm (… e.g.CO_2) and using the revenue to advance alternative developments. While also saving a lot of admin headache. Creating win-wins.

To bridge the gap from measuring sustainable competitiveness to defining the policies required to achieve a sustainable & competitive outcome – where human, nature and our activities are in symbiosis – SolAbility has published an outline of policies that would support sustainable competitive development.

Because sustainable competitiveness is more competitive that normal competitiveness, the GSCI shows a more accurate picture of the state of the World in the different pillars of sustainable competitiveness. This report gives on overview of the state of the World – global, regional, and national - on the five sustainable competitiveness pillars: Natural Capital, Resource Intensity-Efficiency, Intellectual Capital, Social Capital, and Governance Performance.

We hope you will find this information helpful.

SolAbility Sustainable Intelligence

October 2021

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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) measures the *TRUE* competitiveness of nations. The GSCI is based on 120 *purely quantitative* indicators, derived from reliable sources (World Bank, Un agencies, the IMF), grouped in the 5 pillars of national competitiveness. The GSCI is calculated based on both the latest available performance data *and* the development over the past 10 years of the data indicators.

- Grouped into the pillars of development: natural capital, resource efficiency, social capital, intellectual & innovation capital, governance performance
- Based on purely quantitative indicators
- Taking into account 130 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

The integration of all relevant dimensions that form competitiveness is more accurate representation of nation-economies than, for example, the commonly used GDP. The GSCI is the most comprehensive measurement of the competitiveness of nation-states and their future potential.

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.

Social Capital: health, security, freedom, equality and life satisfaction, facilitating development.

Resource Efficiency: the efficiency of using available resources as a measurement of operational competitiveness in a resource-constraint World.

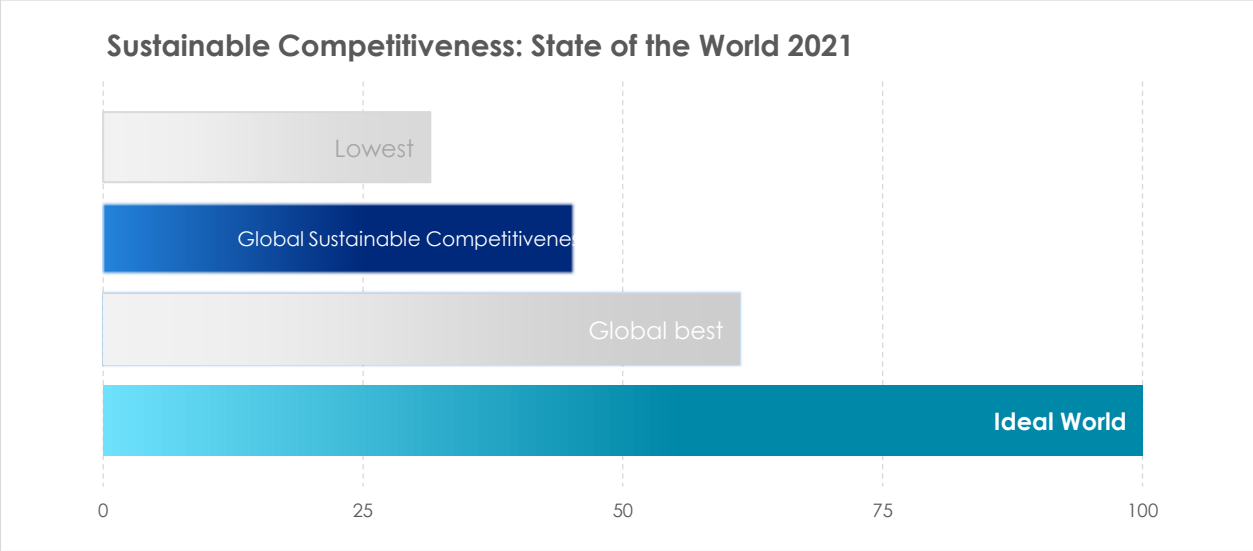
Intellectual Capital: the capability to generate wealth and jobs through innovation and value-added industries in the globalised markets.

Governance Performance is the provision of a framework for sustained and sustainable wealth generation trough resource allocation, infrastructure, market and employment structure guidance.

1.1 State of the World 2021

The Global Competitiveness Index shows that, in fact, the World is not in a very good state. However, a large gap also equals large potential.

- The Global average Sustainable Competitiveness score in 2021 is 45.3.
- The gap to a perfect sustainable competitive World is 55 – we are still far away from a green, inclusive, circular society.
- Large gap between low and high performers in Intellectual Capital subdimension 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
- In Natural Capital, 50% of all indicators are going thew 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.
- Tribalism and struggles over perceived power are complicating (if not preventing) the implementation of simple, efficient and readily available solutions
- The corporate world is driven by competition and cost-benefit considerations – and therefore far ahead politics (e.g. actual roadmaps to net-zero by 2025-2030)
- Technology is evolving. Fast, And will keep evolving.
- There is still immense untapped potential. Policies geared to maximise efficiency improvements could lead to significant positive developments throughout all dimensions

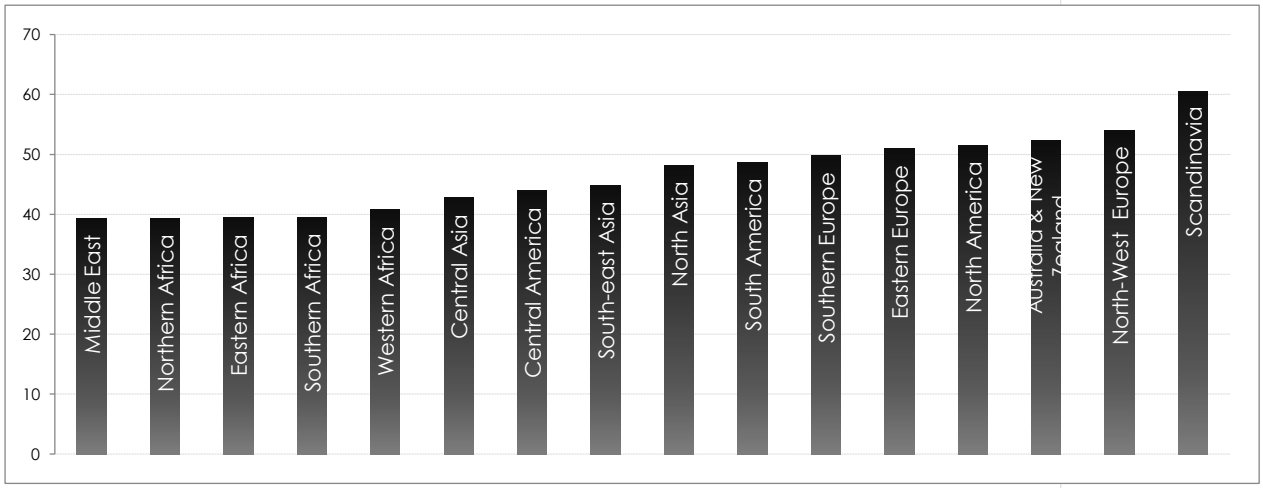


Global average, lowest and highest country score. GSCI 2021

Regional breakdown

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

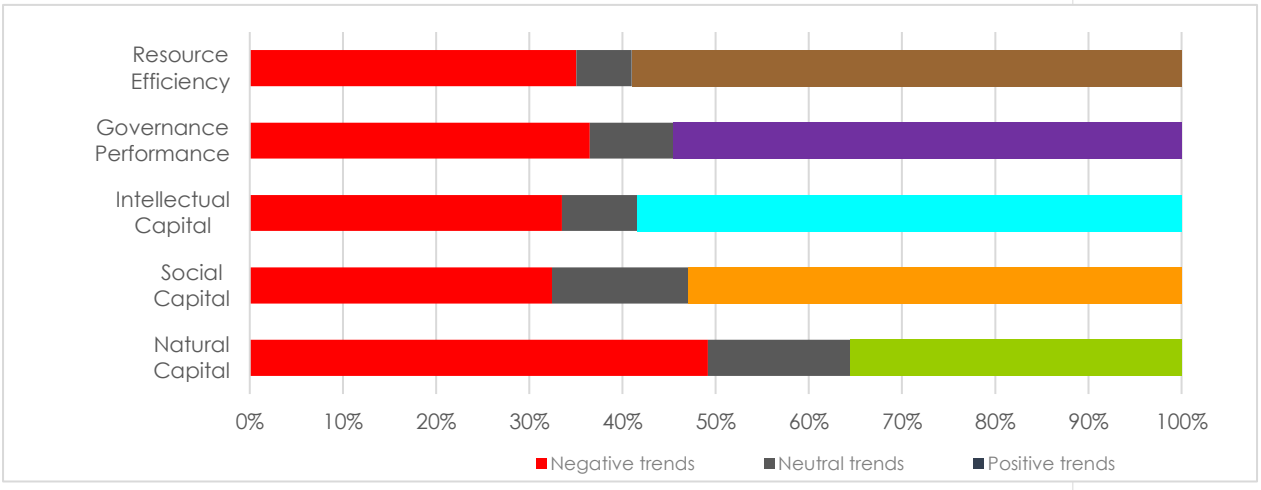
- Scandinavia scores highest in sustainable competitiveness, before Western Europe, North America, and North-East Asia
- North-East Asia score is significantly affected by North Korea's low score. Without NK, East Asia scores equal to Western Europe
- Asia is leading Europe in Intellectual Capital, Europe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



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.

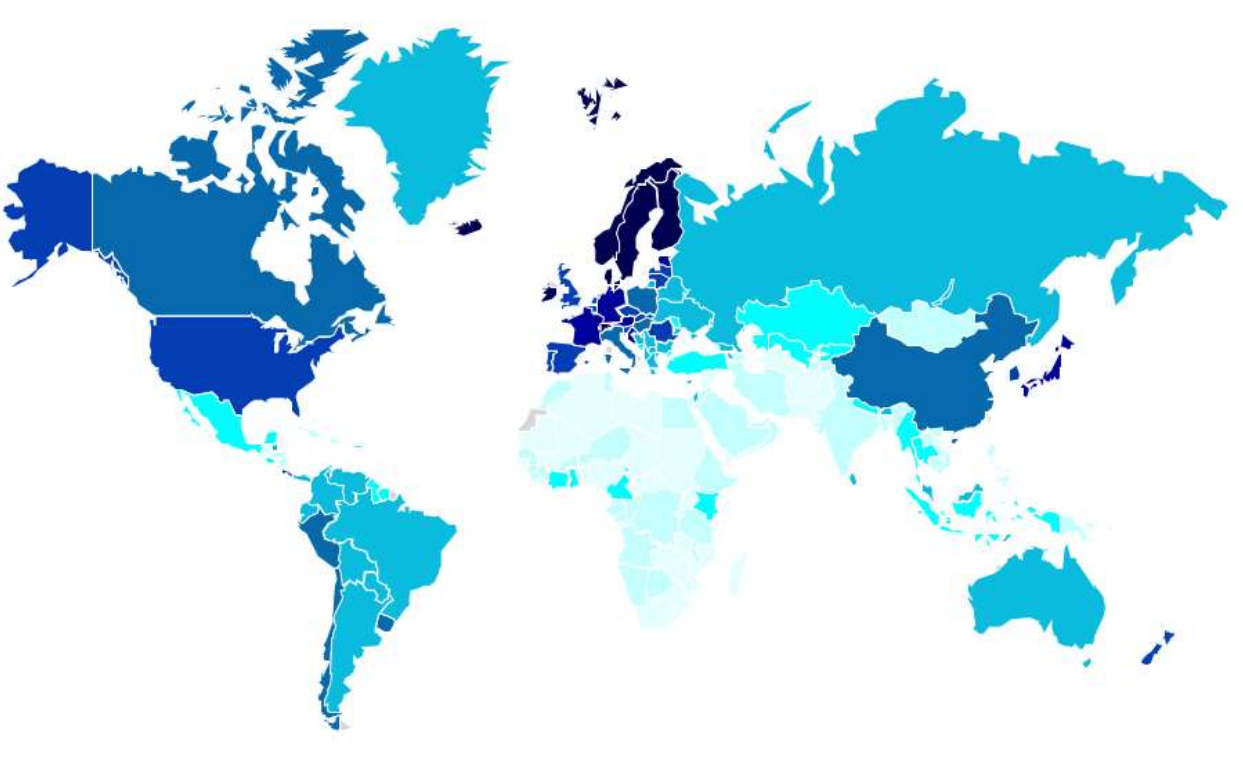


Percentage of positive/negative developing indicators. GSCI

1.2 Country-Level: GSCI Highlights 2021

- 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 13, and New Zealand (14). South Korea follows on 21.
- China is ranked 32 – very strong in Intellectual Capital, but low on Natural Capital
- 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
- Germany ranks 8, the UK 17,
- Brazil 49, Russia 51, and India 130.
- Some of the least developed nations have a considerable higher GSCI ranking than their GDP would suggest (e.g. Nepal, Guyana, Laos, 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 Sustainable Competitiveness World Map 2021



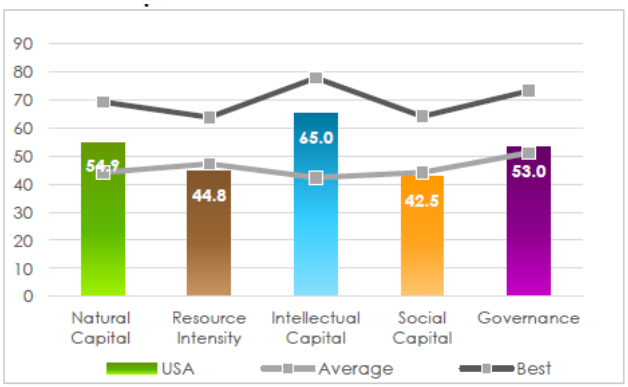
The Sustainable Competitiveness World Map. Dark areas indicate high competitiveness, light areas low competitiveness

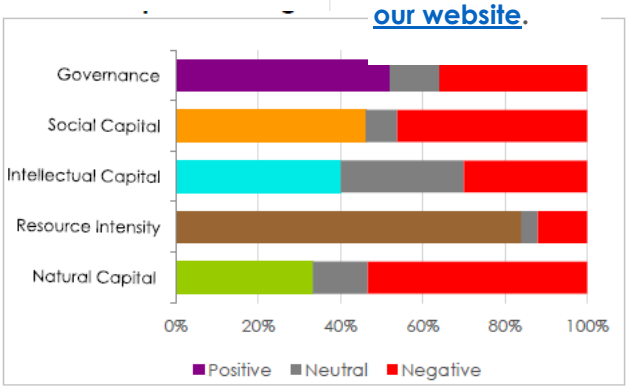
1.3 Sustainable Competitiveness 2021 of Selected Countries

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

USA

Rank 30/180; Score:52.0 (85% of best)

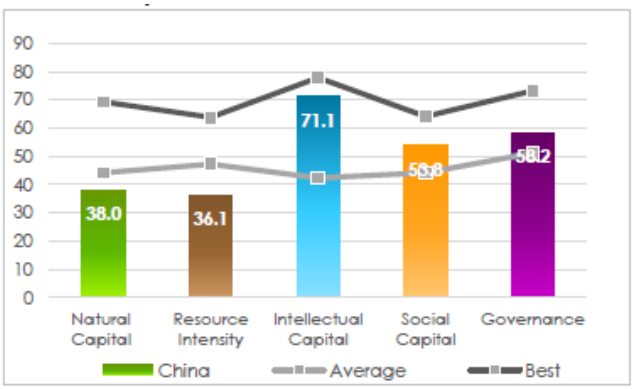


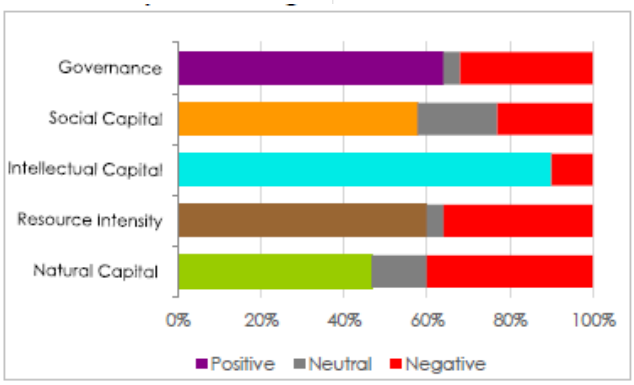


The US is scoring in line or slightly under the global average in 3 of the 5 dimensions –, resource efficiency, social capital, and governance performance – reflecting a somewhat mediocre performance. The fact that the US scores comparable high in intellectual capital - the key dimension to maintain 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 social capital and natural capital show declining trends.

China

Rank 33/180; Score: 51.4 (84% of best)

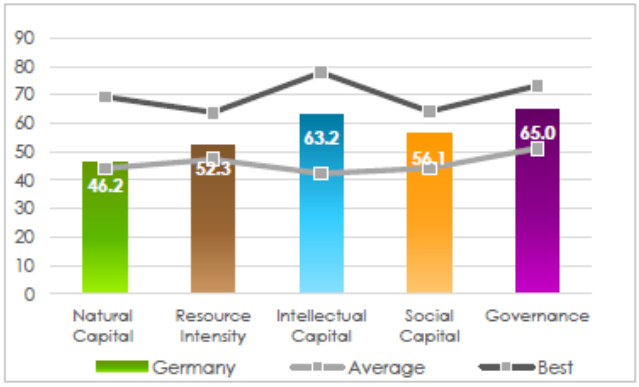


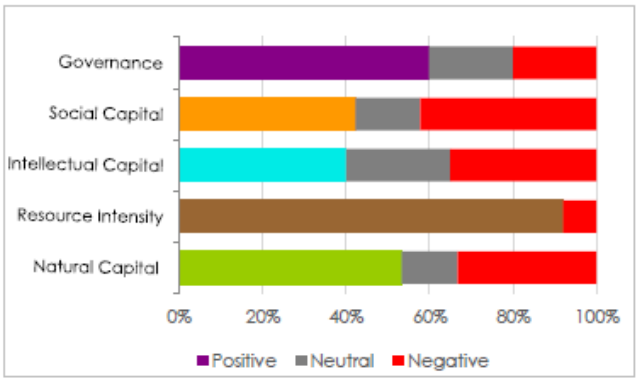


China scores above global averages in social capital and governance performance, and is ranked 2nd globally in intellectual capital. On the other hand, China's development could be negatively affected by low (significantly below global average) scores in both natural capital and resource efficiency. 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.

Germany

Rank 10/180; Score:56.6 (92.4% of best)

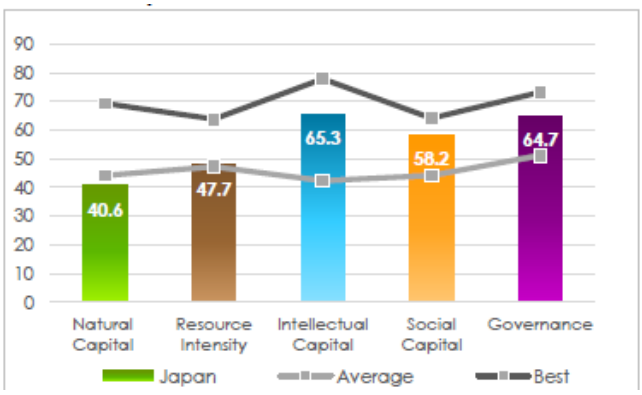


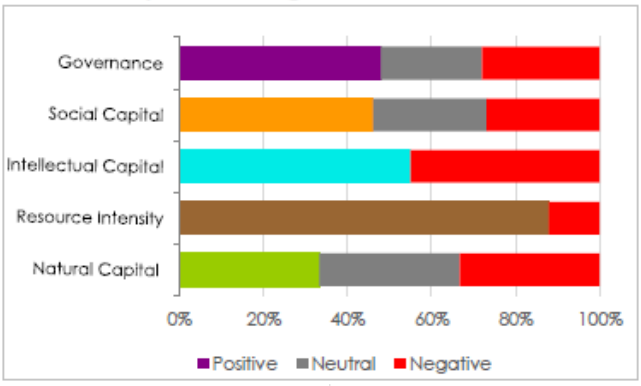


Germany shows a good performance in social capital, governance performance, and intellectual capital, while being in the global average in natural capital & resource intensity. In addition, a significant proportion of natural capital trends are negative, adding further pressure. What is more worrying, 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,

Japan

Rank 13/180; Score: 55.3 (90.4% of best)

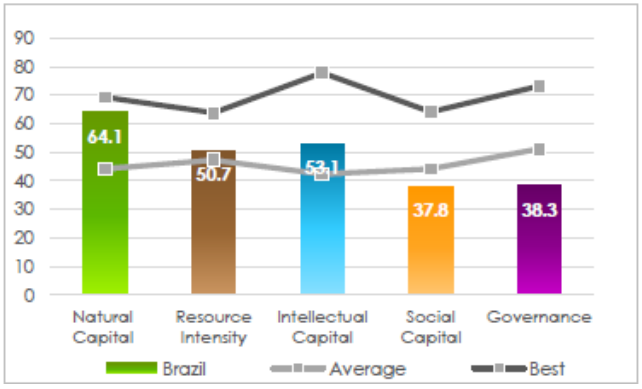


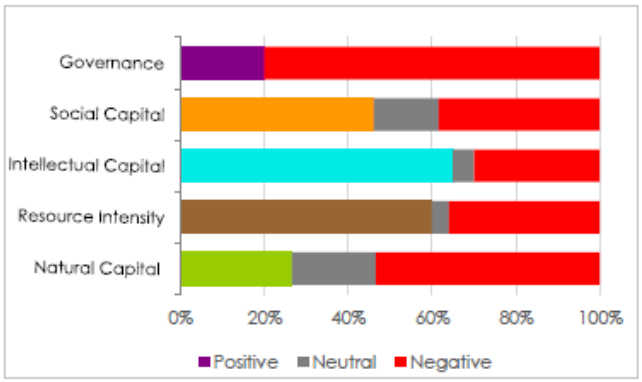


Japan ranks somewhat with below-average scores in both natural capital and resource efficiency, while scoring above average in social capital and amongst the global leaders in intellectual capital. On the positive side, nearly 90% of indicators in resource efficiency are going the right direction, indicating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

Brazil

Rank 52/180; Score: 48.8 (79.8% of best)

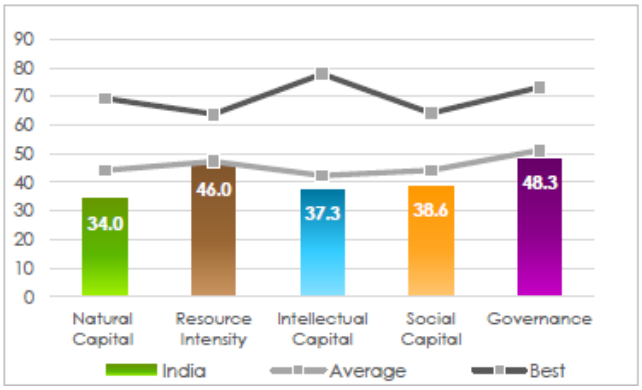


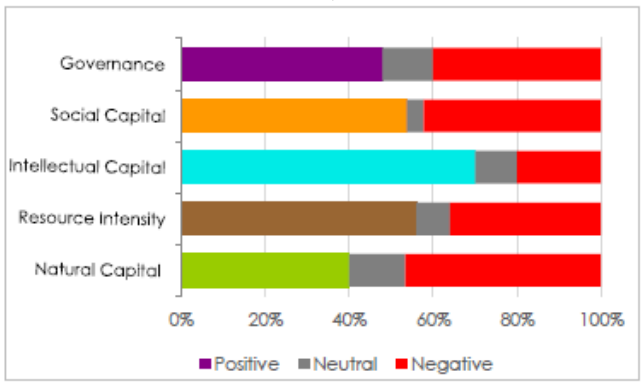


Brazil's performance is in line with global averages in resource efficiency, but below in social capital and governance. Thanks to a rich and diverse natural environment amongst the natural capital score is amongst the highest in natural capital globally. However, nearly 60% of natural capital indicators 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.

India

Rank 133/180; Score: 40.9 (66.8% 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.

1.4 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.

1.5 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	Credit rating (average of Moody's, S&P; Fitch)	GSCI rating	Level difference
Bangladesh	BB-	BB+	1
Belize	CCC+	A+	6
Bolivia	B	A+	5
Laos	CCC+	A-	6
China	A+	AA-	1
Germany	AAA	AA+	0
Kuwait	AA-	BB-	-4
Russia	BBB	A+	3
Saudi Arabia	A+	BB+	-3
USA	AAA	AA-	-2
Vietnam	BB	BB+	0
Burkina Faso	B	BB+	2
Tanzania	B	BB+	2

Country	Credit rating (average of Moody's, S&P; Fitch)	GSCI rating	Level difference
Australia	AAA	A+	-2
Belgium	AA-	AA	1
Brazil	BB	A+	4
Laos	CCC+	A-	6
Canada	AAA	AA-	-2
Denmark	AAA	AAA	0
France	AA	AA+	1
Guatemala	BB	B+	-1
India	BBB-	BB	-1
Iraq	B-	D	-3
Italy	BBB-	AA-	3
Lithuania	A	AA	2
Saudi Arabia	A+	BB+	-3

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 the GSCI is better than the WEF-index

Or: Why the WEF Competitiveness Index is so wrong

The success of nations is mostly expressed in terms of economic output – GDP, GDP per capita, GDP growth. The GDP or GNI, however, are limited to the current economic output, and do not evaluate underlying structures.

Alternatively, there are indexed competitiveness comparisons. The best-know competitiveness ranking is the WEF's Competitiveness Index. Unfortunately, the WEF index is flawed, both methodically and in terms of indicators considered. The WEF Index largely relies on perception survey amongst its considerable network of what the WEF thinks are "leaders" – i.e. politicians, CEOs, and those wanting to be either one of the two. In addition, indicators used in the WEF index do not sufficiently reflect competitiveness. It is therefore not really surprising that the Index results rise eyebrows. For example: we are all fully aware that the US is a big economy – but the 2nd most competitive economy? Please.

Here are selected differences between the WEF-Index rankings and the Global Sustainable Competitiveness Index:

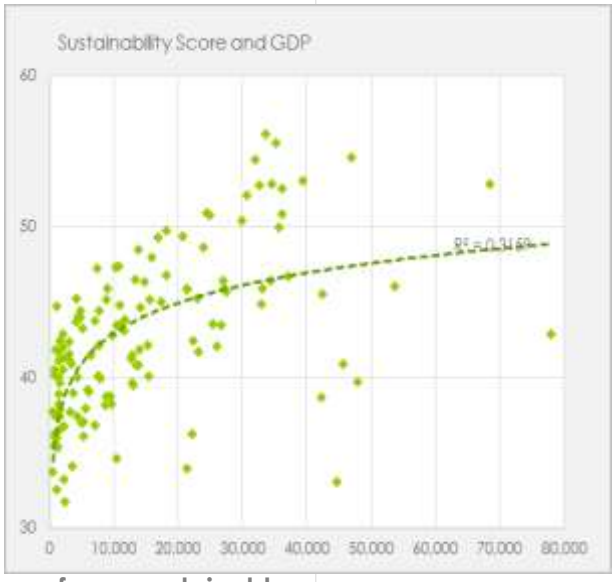
	Rank		
Country	**GSCI**	**WEF**	**+/-**
Sweden	1	8	+7
Iceland	3	26	+23
Switzerland	5	5	-
Latvia	7	41	+34
New Zealand	11	19	+8
United Kingdom	15	9	-6
France	18	15	-3
Germany	22	7	-15
Poland	26	37	+11
Belgium	29	22	-7
USA	32	2	-30
Bulgaria	34	49	+15
China	39	28	-11
Bolivia	46	107	+61
Russia	48	43	-5
Brazil	54	71	+17
Armenia	71	69	-2
Laos	82	113	+31
Turkey	84	61	-23
Saudi Arabia	108	36	-72
India	127	68	-59

We consider the GSCI to be a more balanced and more inclusive index than the WEF Competitiveness ranking. The GSCI measurement of competitiveness delivers a deeper and more accurate picture of the true competitiveness of a nation-economy. For a detailed analysis of the similarities and differences between the GSCI and the WEF index, please refer to the research paper "Sustainable Vs WEF Competitiveness").

1.7 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.

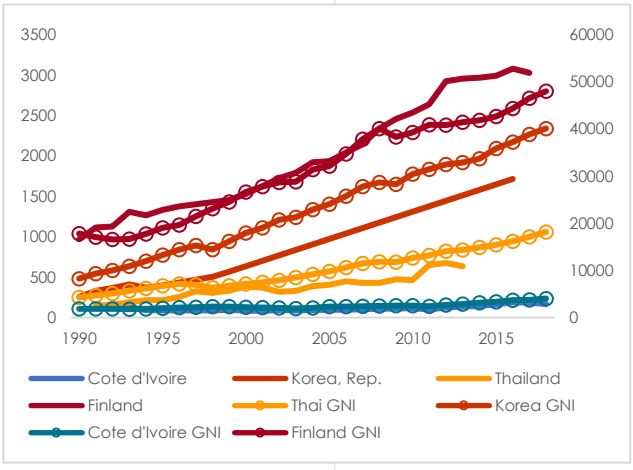


GDP/capita and sustainable competitiveness

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.



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

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?

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.

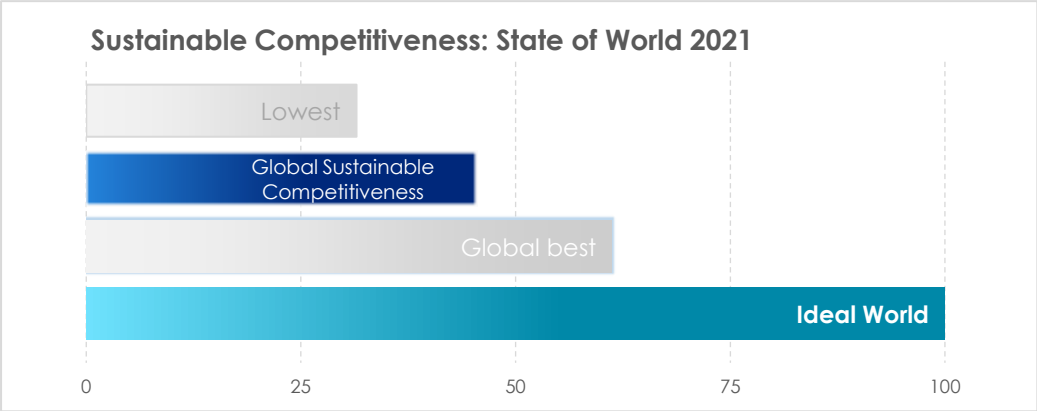
In other words:

Sustainability is the chicken *AND* the egg.

1.8 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 2021 is 45.3; the highest score, achieved by Sweden, is 61.8.



The current global gap to an ideal World is 54.7 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. For reasons somewhat difficult to comprehend when applying business analysis, reason seems to be slightly limited in supply these days. Maybe somewhere down the line the supply chain of logic is broken. Politic seems to be stuck in tribalism, in many parts of the world and 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 best scoring country 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 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, wealth.

1.10 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	61.2	46	Bhutan	49.4	Guyana	91	44.9	Azerbaijan	136	40.7
2	Finland	60.7	47	Australia	49.3	Kenya	92	44.8	Niger	137	40.6
3	Switzerland	60.4	48	Singapore	49.3	Burma	93	44.6	Rwanda	138	40.3
4	Denmark	60.2	49	Bolivia	49.3	Kiribati	94	44.3	Kuwait	139	40.2
5	Norway	59.8	50	Russia	49.2	Dominican	95	44.0	Honduras	140	40.0
6	Iceland	59.8	51	Ecuador	49.1	United Arab	96	43.9	Togo	141	40.0
7	Ireland	57.6	52	Brazil	48.8	Sierra Leone	97	43.6	Republic of	142	40.0
8	France	56.8	53	Panama	48.7	Ethiopia	98	43.4	Turkmenistan	143	39.7
9	Austria	56.6	54	Colombia	48.7	Laos	99	43.4	Algeria	144	39.6
10	Germany	56.6	55	Argentina	48.6	Cuba	100	43.4	Nigeria	145	39.6
11	Estonia	56.1	56	Georgia	48.5	Vanuatu	101	43.2	Qatar	146	39.3
12	Liechtenstein	56.0	57	Belarus	48.5	Namibia	102	43.1	South Africa	147	39.3
13	Japan	55.3	58	Israel	48.2	Morocco	103	43.1	Afghanistan	148	39.3
14	Croatia	55.1	59	Sri Lanka	48.1	Tajikistan	104	43.1	Lesotho	149	39.2
15	New Zealand	54.9	60	Belize	47.6	Cambodia	105	43.0	Benin	150	39.2
16	Portugal	54.8	61	Venezuela	47.6	Botswana	106	42.9	Guatemala	151	39.1
17	United Kingdom	54.6	62	Cyprus	47.5	Gabon	107	42.9	Mali	152	39.0
18	Slovenia	54.3	63	Armenia	47.4	Nicaragua	108	42.8	Guinea-Bissau	153	38.9
19	Luxembourg	53.9	64	Solomon Islands	47.4	Senegal	109	42.7	Madagascar	154	38.8
20	Netherlands	53.9	65	North	47.3	Grenada	110	42.6	Zambia	155	38.7
21	South Korea	53.9	66	Ukraine	47.3	Iran	111	42.5	Zimbabwe	156	38.6
22	Latvia	53.5	67	Malaysia	47.3	Sao Tome and	112	42.4	Trinidad and	157	38.6
23	Slovakia	53.1	68	Bosnia and	47.0	Bangladesh	113	42.3	Gambia	158	38.1
24	Belgium	53.0	69	Timor-Leste	47.0	Saudi Arabia	114	42.3	Comoros	159	38.1
25	Lithuania	53.0	70	Fiji	46.9	Vietnam	115	42.2	Mauritania	160	37.8
26	Czech Republic	52.9	71	Ghana	46.9	Micronesia	116	42.1	Bahamas	161	37.7
27	Spain	52.7	72	Montenegro	46.8	Oman	117	42.1	Uganda	162	37.6
28	Costa Rica	52.4	73	Samoa	46.7	Philippines	118	42.0	West Bank and	163	37.6
29	Romania	52.3	74	Brunei	46.7	Democratic	119	41.8	Djibouti	164	37.6
30	USA	52.0	75	Indonesia	46.5	Tanzania	120	41.7	Central African	165	37.5
31	Malta	51.7	76	Kyrgistan	46.4	Seychelles	121	41.7	Bahrain	166	37.2
32	Italy	51.7	77	Moldova	46.0	Guinea	122	41.6	Liberia	167	37.1
33	China	51.4	78	Tonga	45.9	Mongolia	123	41.6	Mozambique	168	36.8
34	Uruguay	51.3	79	Turkey	45.8	Eswatini	124	41.5	Haiti	169	36.7
35	Poland	51.2	80	Kazakhstan	45.8	Burkina Faso	125	41.5	Pakistan	170	36.7
36	Hungary	50.8	81	Nepal	45.5	Jamaica	126	41.5	Chad	171	36.6
37	Canada	50.6	82	Suriname	45.3	Equatorial	127	41.4	Sudan	172	36.3
38	Chile	50.4	83	Cote d'Ivoire	45.2	Tunisia	128	41.4	Yemen	173	36.2
39	Peru	50.3	84	Uzbekistan	45.2	Papua New	129	41.2	Burundi	174	36.0
40	Albania	49.9	85	Dominica	45.2	St. Kitts and	130	41.1	Lebanon	175	35.7
41	Serbia	49.7	86	Maldives	45.1	Egypt	131	41.0	Syria	176	35.4
42	Greece	49.6	87	El Salvador	45.1	Jordan	132	41.0	Libya	177	35.4
43	Mauritius	49.6	88	Thailand	45.0	Malawi	133	40.9	South Sudan	178	35.0
44	Bulgaria	49.6	89	Mexico	44.9	Angola	134	40.9	Eritrea	179	34.5
45	Paraguay	49.5	90	Cameroon	44.9	India	135	40.9	Somalia	180	32.7

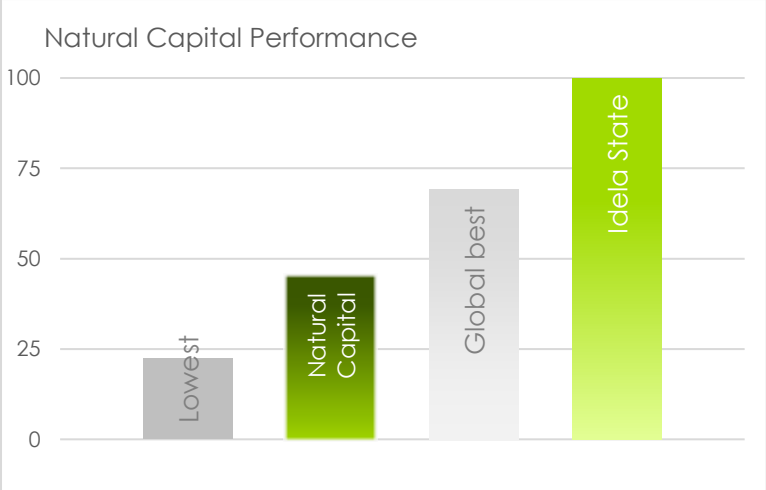
Natural Capital Index

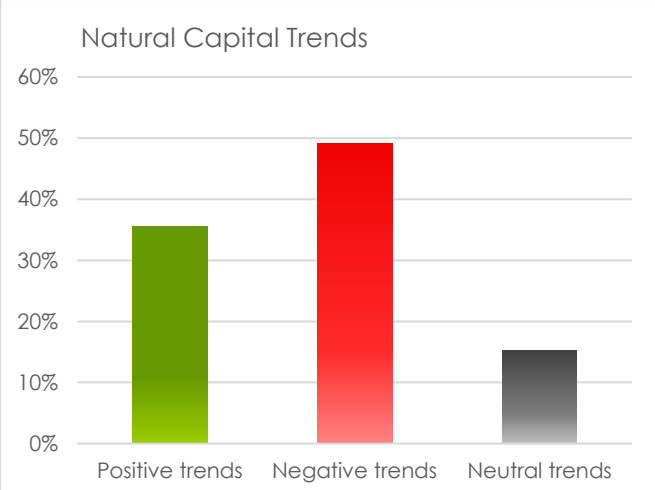
2 Natural Capital Index

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





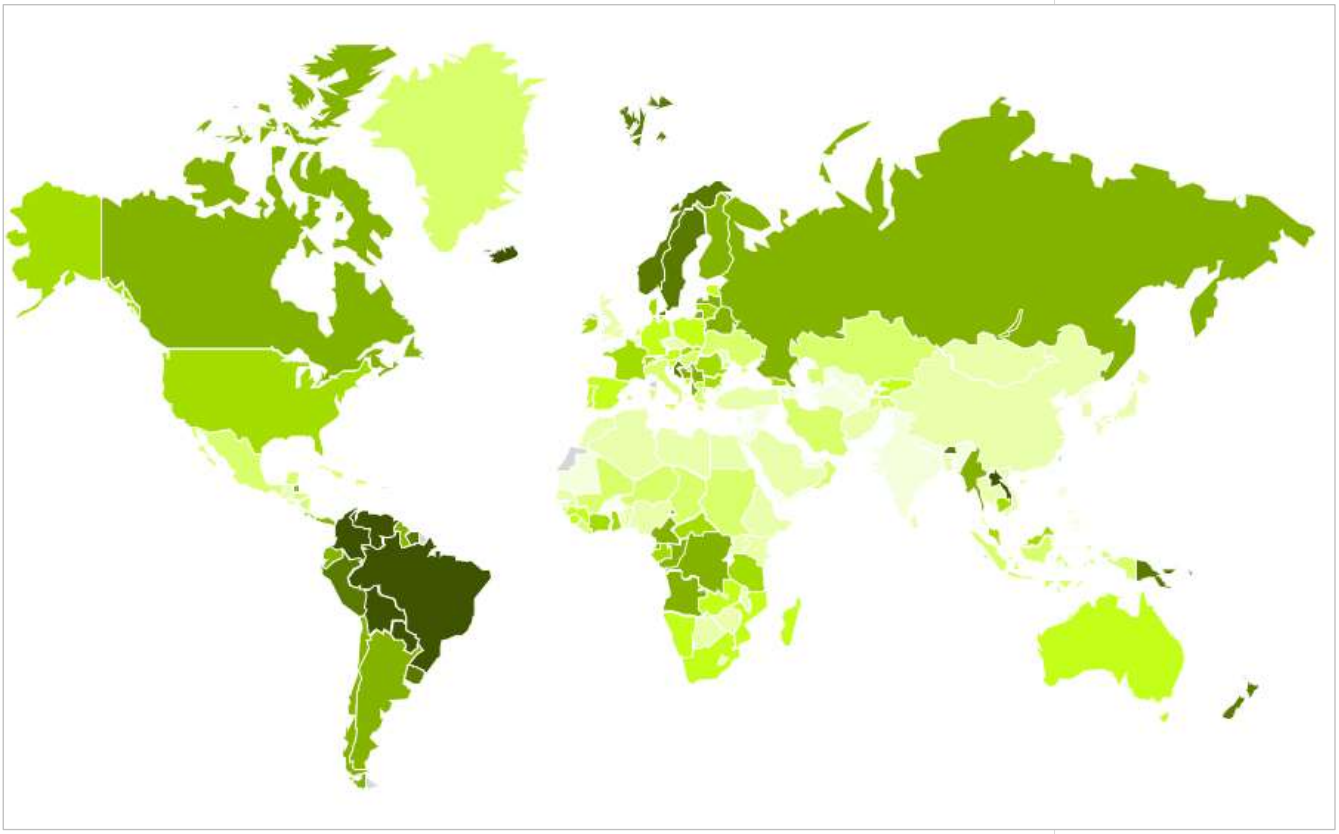
The average global score in Natural Capital is 45.2 – 55 points off the ideal state. Natural Capital is under stress, almost everywhere on the World. The large gap between the lowest (less than 25) and the best performance (72) reflects the unequal distribution of biodiversity across the globe.

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 2021 – 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 2021 is topped by Laos, followed by Colombia, Paraguay, and Bolivia.
- South America, with its large biodiversity pool, score high in Natural Capital
- Scandinavian countries, thanks to low population density, forest coverage and the availability of water are all ranked in the top 20s, as is New Zealand.
- Canada is ranked 31, the US 39
- African countries in the tropical belt are ranked fairly high – including the 2 Congo, Gabon, and Cameroon
- The two most populated countries, China (134) and India (152) 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.

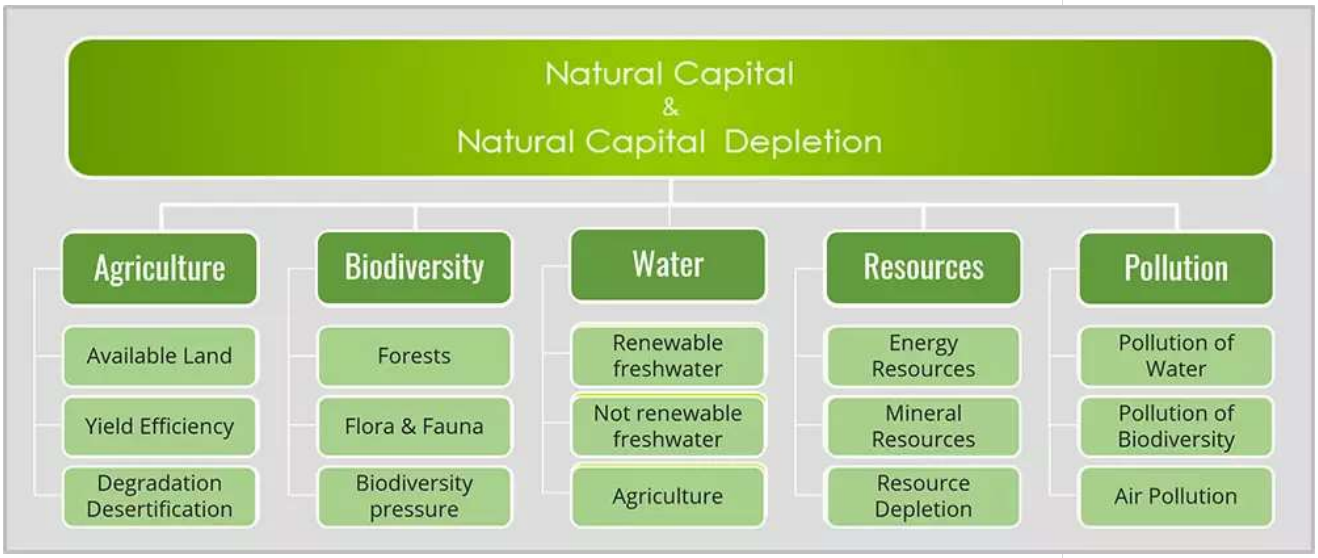


The Natural Capital World Map. Dark areas indicate high, light areas low levels of natural capital

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.

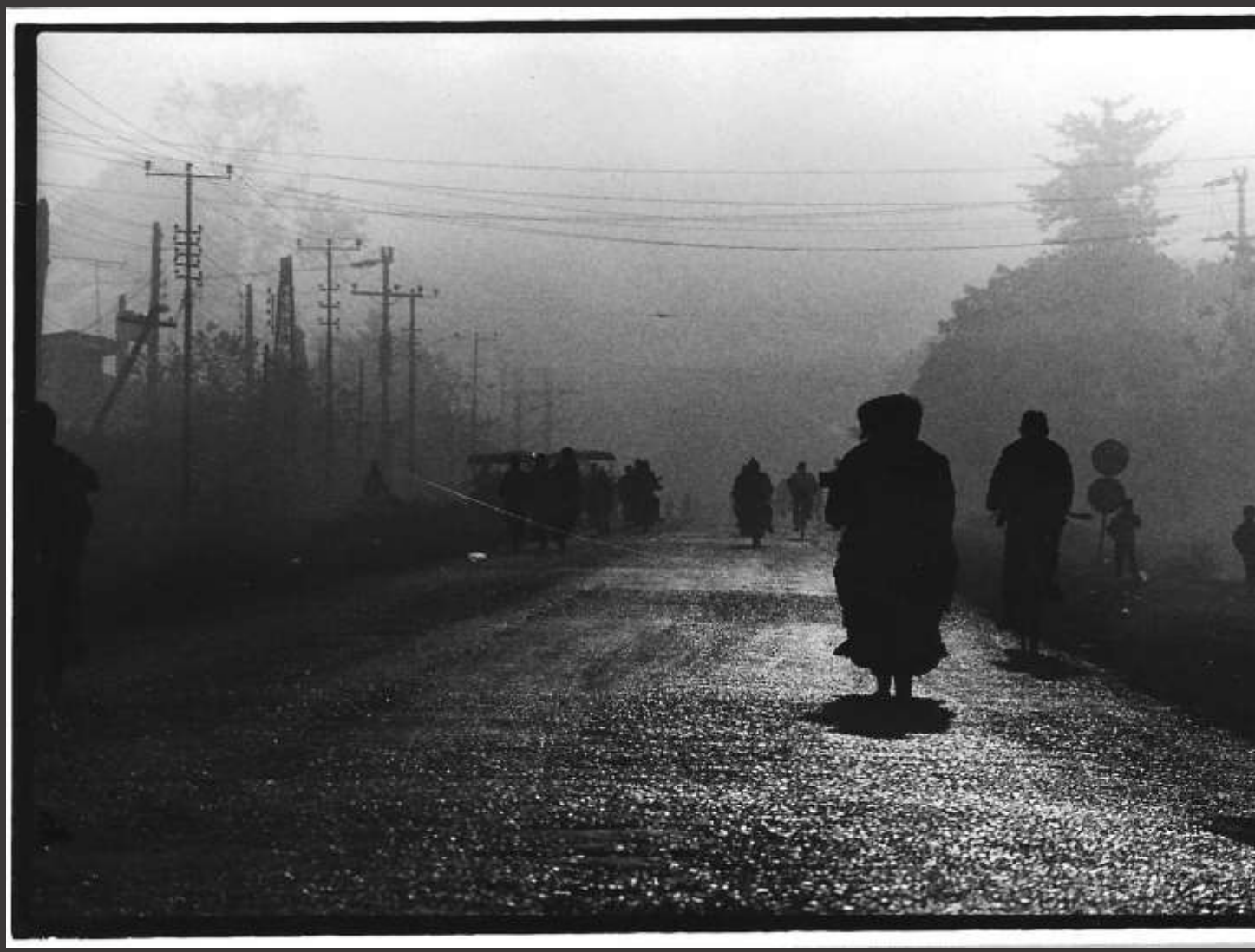
As some of the above key areas are difficult to express in numerical values, some quantitative scores compiled by UN agencies have been used for certain indicators, such as biodiversity potential, resource depletion, and the ecological footprint.

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

Natural Capital Index 2020

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Laos	1	69.2	Solomon Islands	46	52.8	Indonesia	91	44.1	Benin	136	37.5
Colombia	2	69.2	Gabon	47	52.6	Oman	92	43.9	Egypt	137	37.4
Paraguay	3	68.1	Lithuania	48	52.6	Niger	93	43.9	Algeria	138	37.1
Bolivia	4	67.9	Costa Rica	49	52.6	Sudan	94	43.2	South Korea	139	37.0
Venezuela	5	67.1	Malaysia	50	52.5	Honduras	95	43.1	Saudi Arabia	140	36.9
Iceland	6	65.2	Bulgaria	51	51.9	Mali	96	42.9	Belgium	141	36.9
Brazil	7	64.1	Tanzania	52	51.8	Mexico	97	42.9	Senegal	142	36.3
Norway	8	62.5	Cote d'Ivoire	53	51.8	Chad	98	42.7	Togo	143	36.2
Suriname	9	62.4	Ghana	54	51.7	Tajikistan	99	42.4	Zimbabwe	144	36.1
Peru	10	62.4	Luxembourg	55	51.5	Kazakhstan	100	41.8	Nepal	145	35.8
Croatia	11	61.4	Ireland	56	51.4	Iran	101	41.5	Micronesia	146	35.6
Uruguay	12	60.6	Central African Republic	57	51.0	Tonga	102	41.4	Eritrea	147	34.8
Bhutan	13	60.6	Slovakia	58	51.0	Netherlands	103	41.4	Azerbaijan	148	34.6
New Zealand	14	60.2	Brunei	59	50.7	Armenia	104	41.0	Israel	149	34.5
Sweden	15	60.2	Madagascar	60	50.6	Turkey	105	41.0	Bahamas	150	34.2
Papua New	16	60.1	Australia	61	50.6	Sri Lanka	106	41.0	St. Kitts and	151	34.2
Finland	17	59.8	Montenegro	62	50.0	Libya	107	40.9	India	152	34.0
Belarus	18	59.6	Sierra Leone	63	49.6	Vanuatu	108	40.9	Gambia	153	34.0
Belize	19	59.5	Portugal	64	49.5	Morocco	109	40.7	Philippines	154	33.9
Equatorial	20	59.3	Austria	65	49.1	Malawi	110	40.7	Jordan	155	33.7
Albania	21	59.0	Spain	66	49.0	Czech Republic	111	40.7	Uzbekistan	156	33.6
Angola	22	58.8	Mozambique	67	48.9	Japan	112	40.6	Kiribati	157	33.3
Democratic Republic of Congo	23	58.5	Zambia	68	48.8	Ethiopia	113	40.4	Mauritania	158	33.3
Chile	24	58.3	South Africa	69	48.6	Vietnam	114	40.4	United Arab	159	33.3
Serbia	25	58.2	North	70	48.4	Lesotho	115	40.3	Syria	160	33.0
Burma	26	58.1	Liechtenstein	71	48.1	Thailand	116	40.0	Turkmenistan	161	33.0
Russia	27	58.1	Slovenia	72	48.1	Botswana	117	39.7	Qatar	162	32.9
Argentina	28	58.0	Estonia	73	48.1	Eswatini	118	39.7	Rwanda	163	32.9
Ecuador	29	57.9	Namibia	74	47.4	Moldova	119	39.7	Grenada	164	32.4
Latvia	30	57.6	Kyrgistan	75	47.1	Sao Tome and	120	39.5	Kuwait	165	32.2
Canada	31	57.4	Guinea	76	46.2	Timor-Leste	121	39.5	Maldives	166	31.5
Bosnia and Herzegovina	32	57.3	Poland	77	46.2	South Sudan	122	39.5	Yemen	167	31.2
Guyana	33	57.2	Germany	78	46.2	Nigeria	123	39.4	Burkina Faso	168	31.1
Republic of Congo	34	57.0	Ukraine	79	45.8	Mongolia	124	39.2	Djibouti	169	30.5
Cameroon	35	56.7	Guinea-Bissau	80	45.7	El Salvador	125	39.1	Haiti	170	30.0
Panama	36	56.2	Mauritius	81	45.6	Jamaica	126	38.8	Comoros	171	29.5
Georgia	37	55.8	Hungary	82	45.5	Cyprus	127	38.8	Singapore	172	29.1
Switzerland	38	55.4	Nicaragua	83	45.1	Trinidad and	128	38.6	Burundi	173	28.9
USA	39	54.9	Malta	84	45.1	United Kingdom	129	38.6	Seychelles	174	28.6
Romania	40	54.7	Dominica	85	45.0	Uganda	130	38.5	Tunisia	175	28.6
France	41	54.2	Dominican	86	44.7	Afghanistan	131	38.5	Pakistan	176	28.2
Fiji	42	54.0	Greece	87	44.7	Guatemala	132	38.2	Bahrain	177	27.8
Cambodia	43	53.8	Liberia	88	44.4	Bangladesh	133	38.2	Iraq	178	27.4
Samoa	44	53.7	Cuba	89	44.3	China	134	38.0	Lebanon	179	26.4
Denmark	45	53.2	Italy	90	44.2	Kenya	135	37.9	Somalia	180	22.6

Resource Efficiency Index

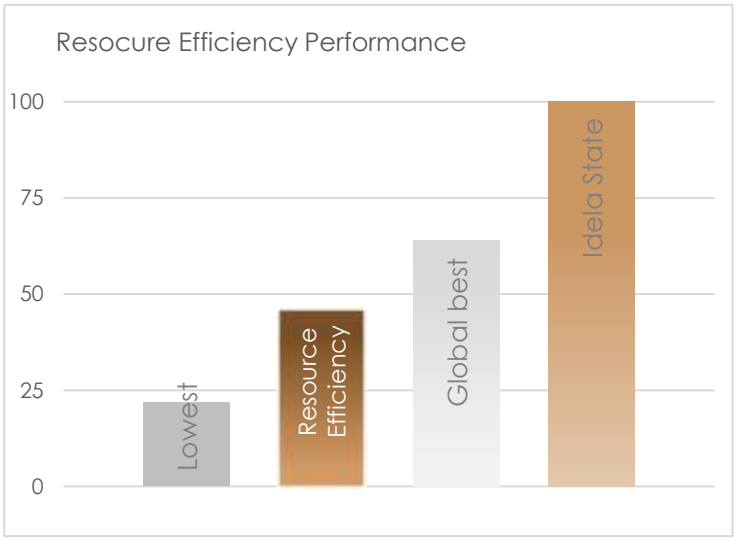


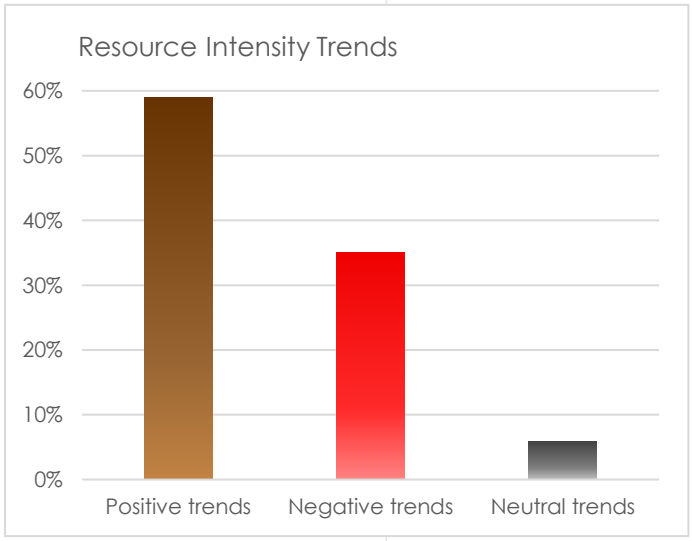
3 Resource Efficiency Index

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

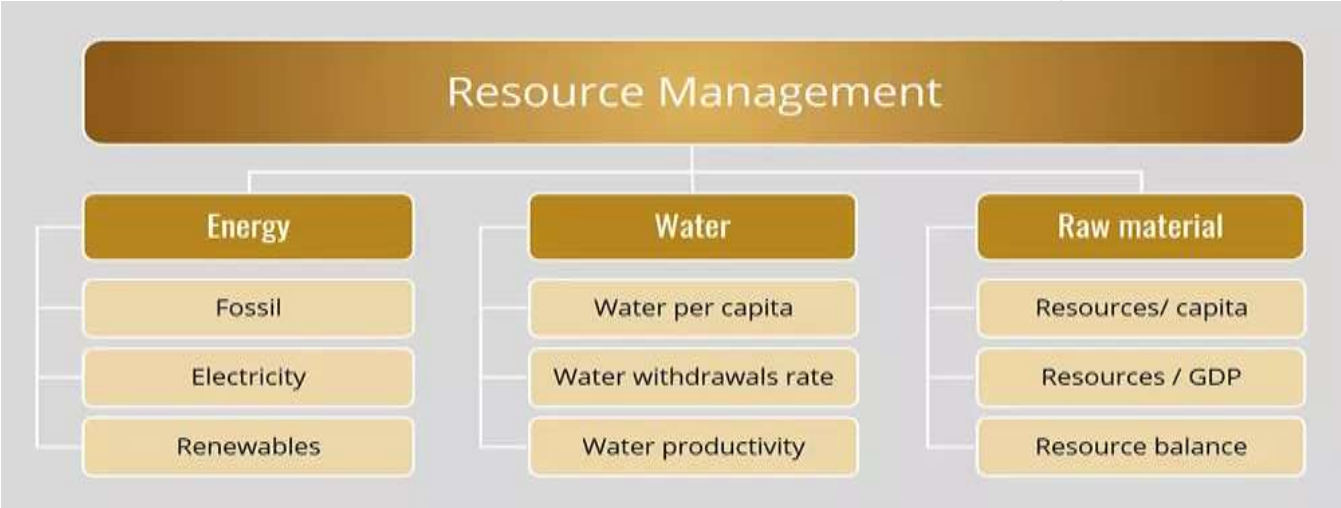




The global average in resource intensity is 46, while the highest achieved is 64. Even the best performing countries are a long way from being sustainable competitive, i.e. achieving net-zero in a circular economy. However, the large represents immense potential – for new business, and cost reduction.

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.

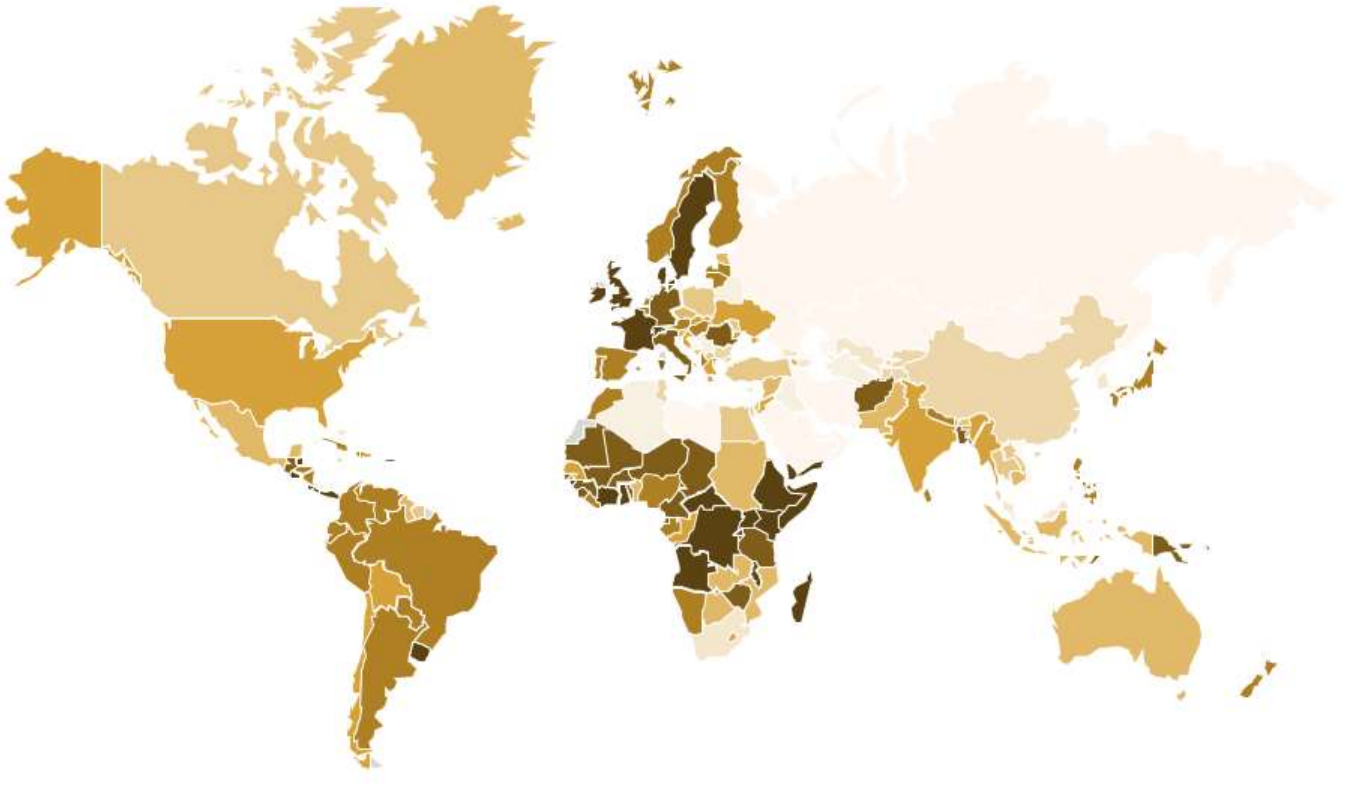
The resource intensity map shows that the resource intensity of less developed countries seems to be – generally speaking - lower than that of higher developed economies. However, indicators are measured both against economic output (GNI/GDP) and against per-capita performance. While the per-capita intensity 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 ranking 2021 is topped by countries associated with a lower level of development, reflected in low per-cqpita consumption of energy and materials. However, the GSCI is based both on per-capita measurements as well as efficiency evaluation (resource consumption per value generated). The countries with low consumption – per capita and per $ – will receive a higher score:

- The resource efficiency Index is topped by Malawi, followed by Kenia and El Salvador
- Also highly developed economies achieve high rankings – Switzerland (4), UK (8). Sweden, France and Ireland are also all ranked in the top 20. Germany is ranked 52
- The US is ranked 92, indicating a distinctive improvement potential for improving sustainable competitiveness and reducing cost
- China is ranked on the bottom at 150 – both due to the presence of heavy industries, construction activities, but also 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
Malawi	1	63.8	Comoros	46	53.5	Ecuador	91	47.8	Thailand	136	39.8
Kenya	2	62.3	Mali	47	53.5	Japan	92	47.7	Moldova	137	39.6
El Salvador	3	61.9	Togo	48	53.2	Argentina	93	47.7	Israel	138	39.3
Switzerland	4	61.8	Bangladesh	49	53.0	Liberia	94	47.6	Bhutan	139	39.1
Democratic Republic of Congo	5	61.4	South Sudan	50	52.9	Hungary	95	47.4	Turkey	140	38.7
Yemen	6	61.3	Tanzania	51	52.4	Eswatini	96	47.3	Suriname	141	38.5
Uruguay	7	61.1	Germany	52	52.3	New Zealand	97	47.2	Laos	142	38.4
United Kingdom	8	61.0	Zimbabwe	53	52.1	Philippines	98	47.1	Poland	143	38.2
Ethiopia	9	60.5	Mauritania	54	51.7	Croatia	99	47.0	North	144	38.1
Belize	10	60.1	Sao Tome and Principe	55	51.6	Mauritius	100	46.7	Bulgaria	145	37.8
Rwanda	11	60.1	Gambia	56	51.4	Senegal	101	46.5	Kyrgistan	146	37.0
Kiribati	12	59.6	Italy	57	51.4	Dominican	102	46.4	St. Kitts and	147	36.9
Solomon Islands	13	59.4	Equatorial Guinea	58	51.3	India	103	46.0	Cyprus	148	36.7
Costa Rica	14	59.0	Timor-Leste	59	51.2	Republic of	104	46.0	Tajikistan	149	36.2
Burundi	15	58.7	Maldives	60	51.1	Jamaica	105	45.8	China	150	36.1
Ghana	16	58.5	Dominica	61	50.9	Lesotho	106	45.7	Tunisia	151	36.0
Angola	17	58.5	Nicaragua	62	50.9	Bolivia	107	45.6	Bahamas	152	35.0
Sweden	18	58.0	Colombia	63	50.9	Jordan	108	45.1	South Korea	153	34.1
Ireland	19	57.7	Sri Lanka	64	50.8	Chile	109	45.0	Singapore	154	33.8
France	20	57.3	Brazil	65	50.7	Slovakia	110	44.9	Uzbekistan	155	33.7
Somalia	21	57.2	Namibia	66	50.7	Ukraine	111	44.9	South Africa	156	33.2
Central African Republic	22	56.9	Finland	67	50.6	USA	112	44.8	Azerbaijan	157	33.0
Guinea-Bissau	23	56.7	Austria	68	50.3	Armenia	113	44.7	Lebanon	158	32.9
Denmark	24	56.4	Haiti	69	50.3	Greece	114	44.7	Georgia	159	32.9
Uganda	25	56.2	Gabon	70	50.1	Burma	115	44.6	Malaysia	160	32.0
Cote d'Ivoire	26	55.9	Netherlands	71	50.1	Estonia	116	43.8	Belarus	161	31.4
Djibouti	27	55.4	Peru	72	49.9	Australia	117	43.3	Serbia	162	31.3
Madagascar	28	55.1	Luxembourg	73	49.8	West Bank and	118	43.2	Iraq	163	30.9
Panama	29	55.0	Spain	74	49.8	Mexico	119	43.0	Seychelles	164	30.2
Vanuatu	30	54.9	Fiji	75	49.7	Iceland	120	43.0	Turkmenistan	165	29.8
Chad	31	54.7	Lithuania	76	49.7	Guyana	121	42.9	Algeria	166	29.7
Niger	32	54.7	Honduras	77	49.3	Sudan	122	42.9	Brunei	167	29.6
Papua New Guinea	33	54.6	Cuba	78	49.2	Zambia	123	42.9	Bosnia and	168	28.8
Sierra Leone	34	54.5	Albania	79	49.0	Benin	124	42.4	Vietnam	169	28.3
Burkina Faso	35	54.4	Norway	80	48.9	Pakistan	125	42.0	Kazakhstan	170	27.9
Guinea	36	54.2	Morocco	81	48.8	Cambodia	126	41.7	Russia	171	27.6
Samoa	37	54.2	Nigeria	82	48.8	Czech Republic	127	41.7	United Arab	172	27.2
Cameroon	38	54.1	Paraguay	83	48.7	Slovenia	128	41.7	Trinidad and	173	26.5
Eritrea	39	54.1	Portugal	84	48.6	Syria	129	41.5	Libya	174	26.2
Romania	40	54.0	Venezuela	85	48.1	Botswana	130	41.4	Saudi Arabia	175	25.9
Liechtenstein	41	53.9	Belgium	86	48.0	Mozambique	131	41.3	Bahrain	176	25.8
Tonga	42	53.9	Malta	87	48.0	Indonesia	132	41.2	Mongolia	177	25.7
Afghanistan	43	53.7	Latvia	88	47.9	Montenegro	133	40.7	Kuwait	178	24.8
Guatemala	44	53.6	Grenada	89	47.9	Canada	134	40.2	Qatar	179	24.6
Micronesia	45	53.5	Nepal	90	47.9	Egypt	135	40.0	Iran	180	23.4

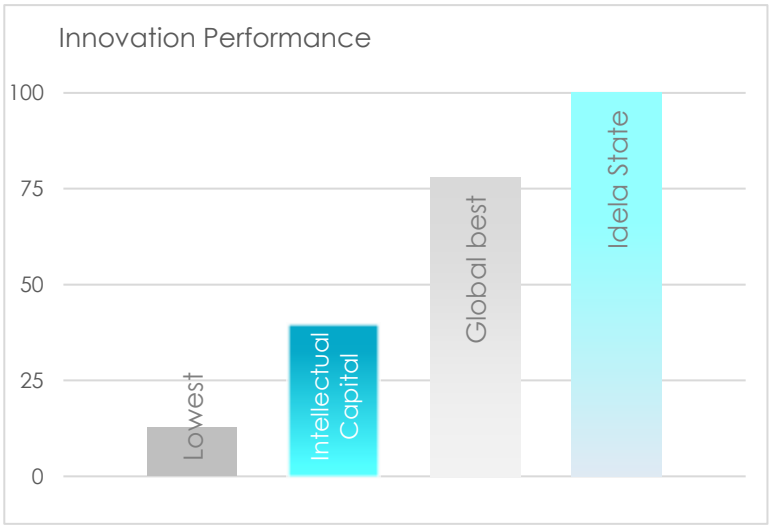
Intellectual Capital Index

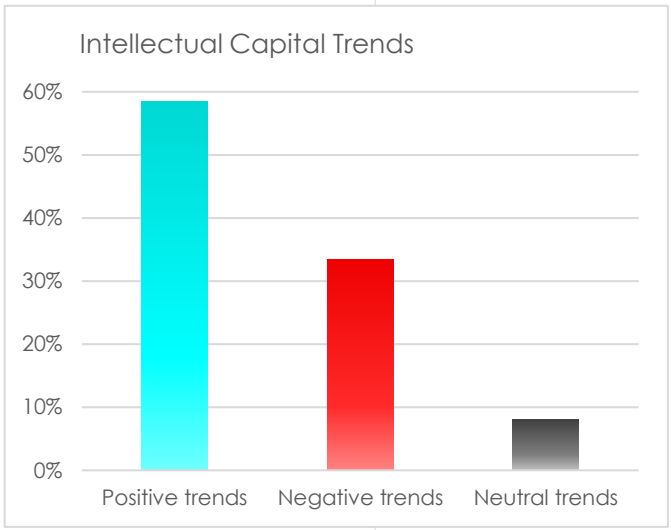
4 Intellectual Capital & Innovation Index

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

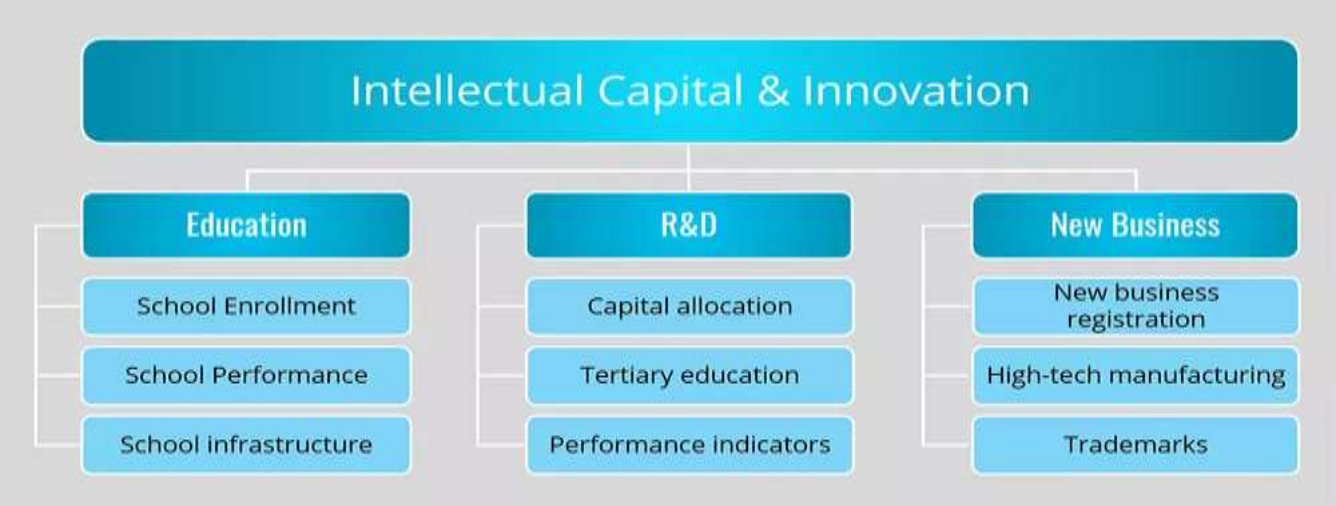




The global average in the Intellectual Capital Index is 40 – the gap to a perfect World 60. The Difference between low-performing countries (lowest: 15) and the highest score (78) is striking, and reflects – even stronger than a GNI comparison – the North-South reflect. A high score in the Intellectual 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 Iinnovation



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.

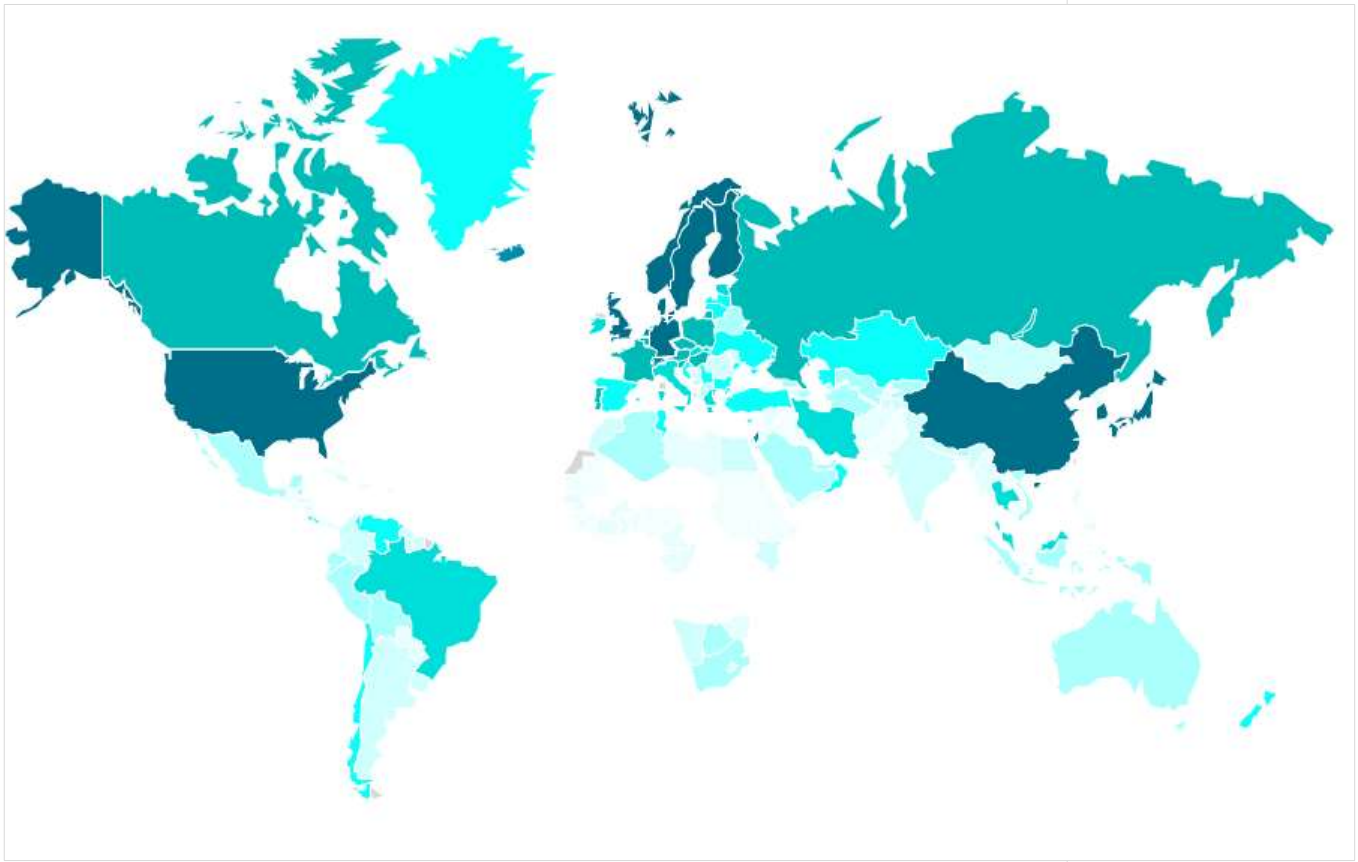
All indicators used to assess the innovation capability and sustainable competitiveness have been scored against size of the population and/or against GNI in order to gain a full picture of the competitiveness, independent of the size of a country. In addition, developments (trend analysis) of performance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

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

The Intellectual Capital Index 2021

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:

- North-Eastern Asian nations (S. Korea, China, Japan, Singapore) and the Scandinavian Nations (Sweden, Denmark) dominate the intellectual capital sub-index of the GSCI.
- North-East Asia trend show a faster development than their counterparts in "The West"
- The innovation and competitiveness ranking continues to be topped by South Korea – by a considerable margin.
- China is ranked 2nd
- The UJ is ranked 6th, the US 8, Germany 11
- Eastern European countries and the Baltic States rank fairly high
- Russia is ranked 16, 33, Brazil 28, and India 103.
- The highest ranked South American Nation are Chile (51) and Brazil (52) and Costa Rica (58)
- Africa is unfortunately still underperforming in the global 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 2021

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
South Korea	1	77.8	Kazakhstan	46	47.5	Fiji	91	39.3	Benin	136	30.4
China	2	71.1	Bulgaria	47	47.4	Bahrain	92	39.3	Ghana	137	30.0
Singapore	3	69.3	Turkey	48	47.3	Tajikistan	93	39.1	Togo	138	30.0
Sweden	4	67.9	New Zealand	49	46.9	Suriname	94	39.0	Afghanistan	139	29.9
Denmark	5	66.8	Chile	50	46.7	Samoa	95	38.8	Comoros	140	29.7
United Kingdom	6	66.6	Oman	51	46.2	Nepal	96	38.7	Bahamas	141	29.2
Japan	7	65.3	Luxembourg	52	46.0	Lesotho	97	38.7	Burkina Faso	142	28.6
USA	8	65.0	Spain	53	45.3	Romania	98	38.7	Yemen	143	28.4
Norway	9	64.4	Costa Rica	54	45.3	Moldova	99	38.3	Djibouti	144	28.3
Finland	10	64.3	Eswatini	55	45.2	Guyana	100	38.2	Gabon	145	28.1
Germany	11	63.2	Serbia	56	45.2	Maldives	101	37.8	Cote d'Ivoire	146	27.6
Switzerland	12	62.7	Mexico	57	44.8	Mongolia	102	37.6	Haiti	147	27.3
Iceland	13	62.5	Vietnam	58	44.6	Armenia	103	37.4	Pakistan	148	27.0
Israel	14	62.3	Georgia	59	44.3	Micronesia	104	37.3	Cambodia	149	26.8
Netherlands	15	60.3	Uzbekistan	60	44.3	India	105	37.3	Laos	150	26.7
Russia	16	59.7	Australia	61	44.1	Qatar	106	37.3	Guinea	151	26.5
France	17	58.7	Saudi Arabia	62	44.0	Argentina	107	37.1	Mauritania	152	26.3
Austria	18	58.7	Seychelles	63	43.9	Kenya	108	37.1	Iraq	153	26.1
Belgium	19	58.5	United Arab Emirates	64	43.8	Cuba	109	36.4	Sudan	154	26.0
Liechtenstein	20	58.1	South Africa	65	43.3	Jamaica	110	36.3	Rwanda	155	25.7
Slovenia	21	57.5	Turkmenistan	66	43.3	Bosnia and Herzegovina	111	36.2	Equatorial Guinea	156	25.6
Hungary	22	56.3	Kyrgistan	67	43.3	Sao Tome and Principe	112	35.9	El Salvador	157	25.4
Czech Republic	23	55.7	Bolivia	68	42.9	Kuwait	113	35.9	Guatemala	158	24.7
Canada	24	55.6	Botswana	69	42.9	Solomon Islands	114	35.8	Ethiopia	159	23.5
Portugal	25	55.5	North Macedonia	70	42.8	Uruguay	115	35.7	Liberia	160	22.8
Poland	26	55.5	Dominica	71	42.7	Colombia	116	35.2	Nigeria	161	22.7
Estonia	27	54.9	Indonesia	72	42.1	Vanuatu	117	35.1	Zambia	162	22.2
Brazil	28	53.1	Montenegro	73	41.9	Trinidad and Tobago	118	34.8	Bangladesh	163	21.5
Slovakia	29	52.8	Bhutan	74	41.6	Dominican Republic	119	34.7	Malawi	164	21.4
Iran	30	52.5	Azerbaijan	75	41.2	St. Kitts and Nevis	120	34.7	Gambia	165	20.4
Malaysia	31	52.1	Belarus	76	41.2	Panama	121	33.6	Tanzania	166	20.3
Ireland	32	51.2	Albania	77	40.6	Paraguay	122	33.4	Somalia	167	19.9
Thailand	33	50.6	Grenada	78	40.5	Sierra Leone	123	32.7	Burundi	168	19.7
Italy	34	50.5	Ecuador	79	40.5	Philippines	124	32.5	Mozambique	169	19.4
Greece	35	50.3	Algeria	80	40.3	Nicaragua	125	32.4	Niger	170	19.2
Lithuania	36	50.0	Belize	81	40.1	Lebanon	126	32.3	Guinea-Bissau	171	18.6
Venezuela	37	49.9	Peru	82	40.1	Zimbabwe	127	32.2	Madagascar	172	17.8
Mauritius	38	49.4	Timor-Leste	83	40.0	Senegal	128	32.2	Angola	173	17.7
Ukraine	39	49.2	West Bank and Gaza	84	40.0	Jordan	129	31.5	Papua New Guinea	174	17.2
Croatia	40	49.1	Tonga	85	39.9	Libya	130	31.5	Chad	175	17.0
Cyprus	41	48.8	Sri Lanka	86	39.8	Cameroon	131	31.0	Mali	176	16.9
Tunisia	42	48.8	Morocco	87	39.8	Syria	132	31.0	Democratic Republic of Congo	177	16.6
Malta	43	48.5	Kiribati	88	39.7	Burma	133	30.8	Eritrea	178	16.2
Latvia	44	48.1	Egypt	89	39.6	Republic of Congo	134	30.6	South Sudan	179	15.8
Brunei	45	48.0	Namibia	90	39.5	Honduras	135	30.4	Central African Republic	180	14.6

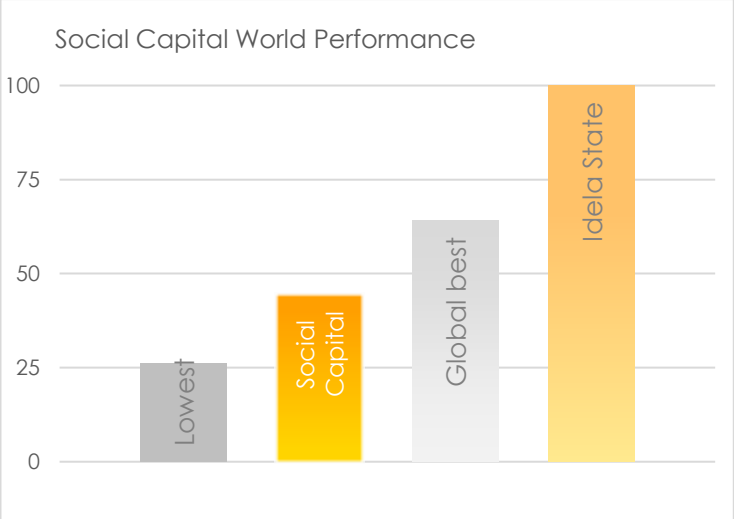
Social Capital Index

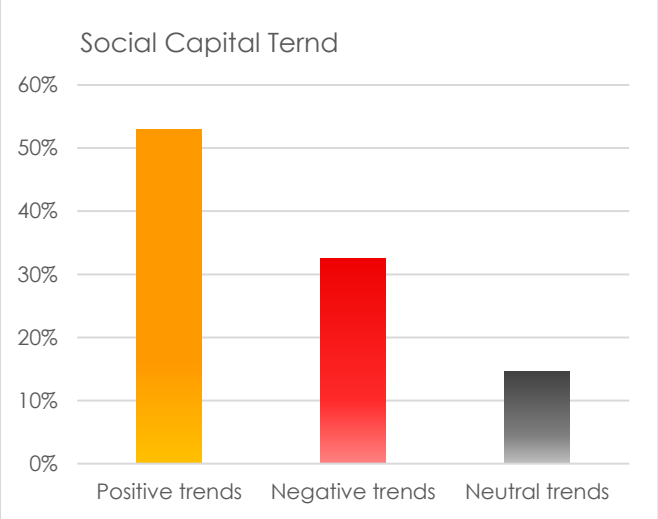
5 Social Capital Index

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

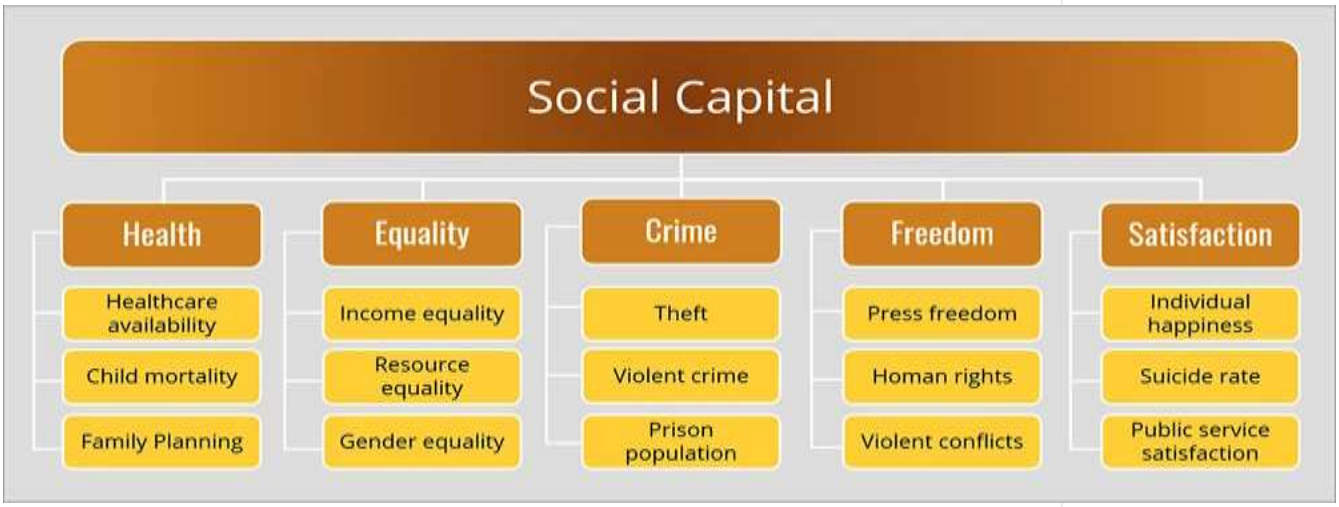




The global average Social Capital Score is 44; the global best 64 – a gap of 56 to a perfect state. Not surprisingly, the nations in the North (particularly Scandinavia) are significantly ahead of countries in the South (particular Africa and Central Asia).

53% of all indicators across all nations show positive development, while 32% are negative, while 25% do not show a clear trend in either direction. Given that more than 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 wit 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.

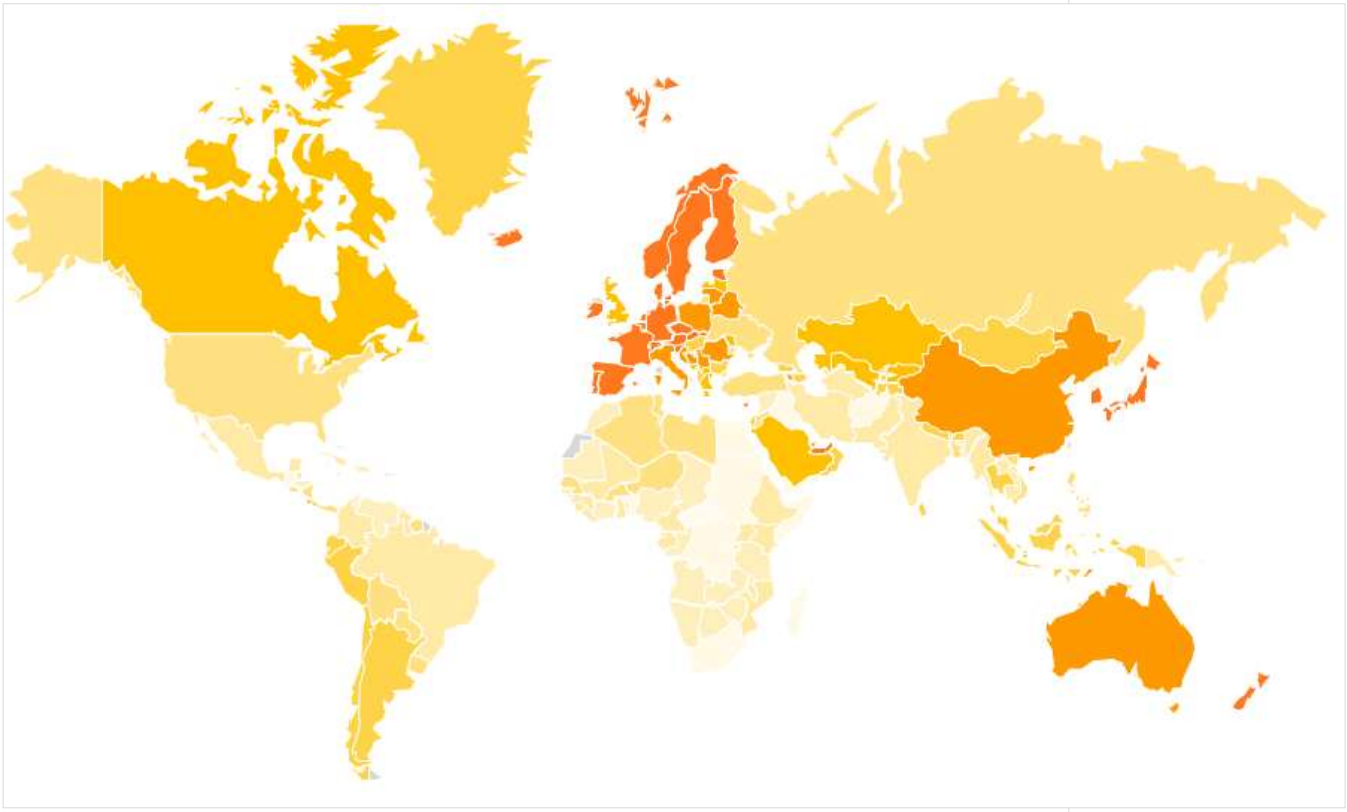
For the full list of used indicators, please refer to the methodology section.

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 – only South Korea (13), Japan (15), and Singapore (16) break into the ranks
- The United Arab Emirates is ranked 23, Saudi Arabia 52
- The USA, due to comparable high crime rates, low availability of health services, and rising inequality, is ranked 95, just below Trinidad.
- The UK is ranked 46, reflecting the deteriorating social fabric.
- China is ranked 32, Russia 88, India 123, and Brazil 128
- The highest ranked South American countries are Costa Rica (54), Ecuador (63) and Chile (68); the highest-ranking African nations are Burkina Faso (81). Niger (84) and Tunisia (86)
- 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

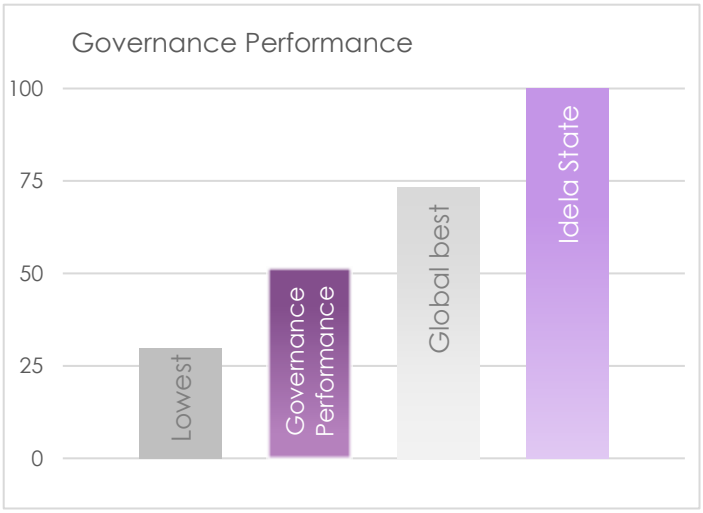
Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Iceland	1	64.1	United Kingdom	46	51.2	Turkey	91	43.2	Mozambique	136	37.4
Norway	2	63.5	Moldova	47	50.9	Jordan	92	43.1	West Bank and	137	37.4
Sweden	3	62.4	Greece	48	50.7	Bahrain	93	42.7	Kiribati	138	37.3
Finland	4	62.3	Uzbekistan	49	50.5	Trinidad and	94	42.6	Belize	139	37.2
Belgium	5	61.2	Kazakhstan	50	50.3	USA	95	42.5	Uganda	140	37.2
Austria	6	60.7	North	51	50.1	Libya	96	42.3	Nigeria	141	36.7
Slovenia	7	60.5	Saudi Arabia	52	50.0	Paraguay	97	42.2	Samoa	142	36.7
Estonia	8	60.4	Brunei	53	49.7	Nicaragua	98	42.2	Bahamas	143	36.5
Denmark	9	60.4	Costa Rica	54	49.7	Algeria	99	42.1	Vanuatu	144	36.4
Luxembourg	10	59.8	Montenegro	55	49.1	Solomon Islands	100	41.9	Botswana	145	36.3
Maldives	11	59.8	Bulgaria	56	49.0	Grenada	101	41.9	Venezuela	146	36.2
Switzerland	12	59.8	Sri Lanka	57	49.0	Bangladesh	102	41.8	Namibia	147	36.2
South Korea	13	59.6	Mongolia	58	48.9	Philippines	103	41.8	Tanzania	148	36.1
Portugal	14	59.4	Bhutan	59	48.8	Suriname	104	41.5	Togo	149	35.7
Japan	15	58.2	Seychelles	60	48.8	Jamaica	105	41.0	Mauritania	150	35.6
Singapore	16	58.2	Malaysia	61	48.8	Iran	106	40.9	South Sudan	151	35.3
Netherlands	17	57.9	Oman	62	48.4	Malawi	107	40.8	Chad	152	35.0
Czech Republic	18	56.7	Ecuador	63	48.4	Cuba	108	40.8	Cote d'Ivoire	153	34.9
Germany	19	56.1	Albania	64	48.2	St. Kitts and	109	40.8	Burundi	154	34.6
New Zealand	20	56.0	Tajikistan	65	47.7	Ethiopia	110	40.7	Zambia	155	34.5
Slovakia	21	56.0	Georgia	66	47.6	Dominican	111	40.5	Syria	156	34.3
Spain	22	56.0	Israel	67	47.6	Mali	112	40.5	Morocco	157	34.0
United Arab	23	55.8	Chile	68	47.5	Mexico	113	40.4	Honduras	158	33.9
Ireland	24	55.8	Mauritius	69	47.3	Sierra Leone	114	39.9	Angola	159	33.9
Liechtenstein	25	55.4	Nepal	70	46.7	Ghana	115	39.8	Haiti	160	33.8
France	26	55.4	Peru	71	46.2	Cameroon	116	39.6	Guinea-Bissau	161	33.7
Cyprus	27	55.4	Lebanon	72	46.2	Burma	117	39.4	Comoros	162	33.6
Italy	28	54.6	Argentina	73	46.1	Turkmenistan	118	39.2	Zimbabwe	163	33.5
Croatia	29	54.5	Indonesia	74	46.1	Cambodia	119	39.0	Micronesia	164	33.4
Timor-Leste	30	54.1	Azerbaijan	75	45.9	Laos	120	38.9	Djibouti	165	33.2
Australia	31	54.1	Hungary	76	45.8	Guyana	121	38.8	Eswatini	166	33.2
China	32	53.8	Thailand	77	45.6	Dominica	122	38.8	Republic of	167	33.0
Poland	33	53.7	Vietnam	78	44.9	India	123	38.6	Lesotho	168	32.7
Bosnia and Herzegovina	34	53.5	El Salvador	79	44.8	Gabon	124	38.6	Eritrea	169	32.7
Malta	35	53.5	Uruguay	80	44.6	Rwanda	125	38.6	Guatemala	170	32.7
Romania	36	53.5	Burkina Faso	81	44.4	Equatorial Guinea	126	38.3	Democratic	171	32.6
Serbia	37	53.4	Tonga	82	44.3	Papua New	127	38.2	Benin	172	32.5
Lithuania	38	53.4	Panama	83	44.0	Brazil	128	37.8	Sudan	173	32.2
Armenia	39	53.4	Niger	84	44.0	Kenya	129	37.8	Somalia	174	32.1
Belarus	40	53.1	Ukraine	85	43.9	Guinea	130	37.8	Madagascar	175	32.1
Qatar	41	52.3	Tunisia	86	43.8	Colombia	131	37.8	Afghanistan	176	31.2
Kuwait	42	52.0	Russia	87	43.7	Pakistan	132	37.7	South Africa	177	31.1
Canada	43	51.7	Bolivia	88	43.7	Fiji	133	37.7	Egypt	178	30.8
Latvia	44	51.4	Senegal	89	43.5	Gambia	134	37.7	Yemen	179	30.4
Kyrgistan	45	51.2	Sao Tome and	90	43.4	Liberia	135	37.5	Iraq	180	29.7

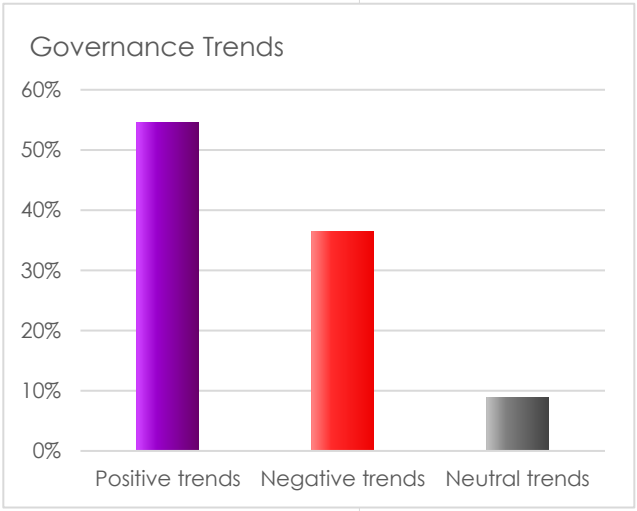
Governance Index

6 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





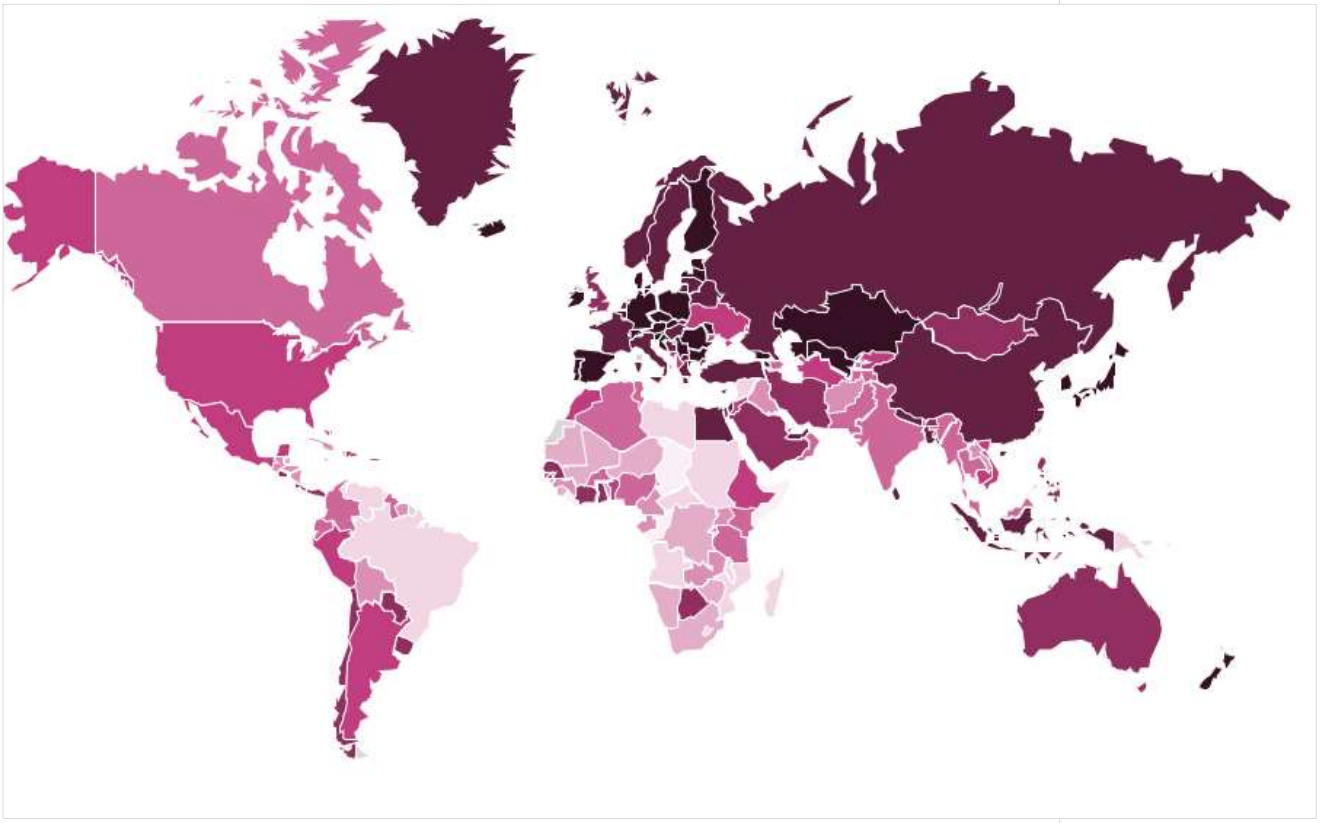
The Global average in Governance Performance is 51 – the highest of all five dimensions considered in the Global Sustainable Competitiveness Index. However, discrepancies are rather large from 27 (lowest) to 74 (highest).

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 2021:

- The Governance Ranking is topped by Estonia, followed by Ireland, Czechia and Finland
- Germany follows on 5, Japan 6
- The ranking is dominated by Central and Eastern European nations
- The UK is ranked 62, the US at 86.
- China is ranked 45
- Of the BRICs, Russia is ranked 53, India 120, and Brazil 165
- The map shows a clear north-South gap: all African countries score comparable low

The Governance World Map

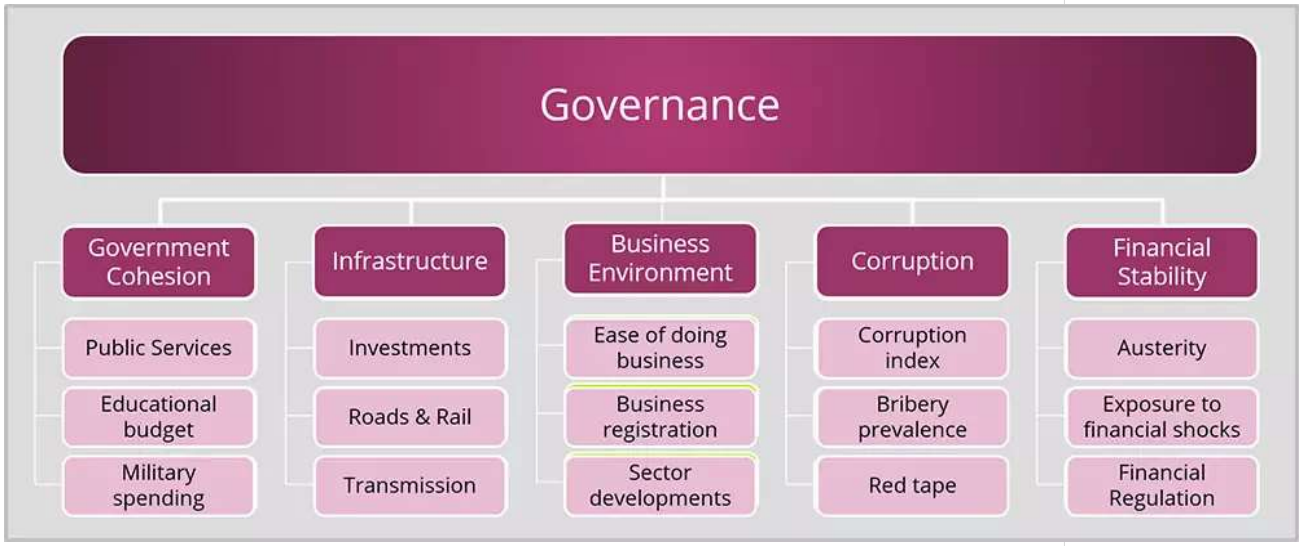


The Governance World Map. Dark areas indicate high, light areas low levels of Governance quality

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

7 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.

7.1 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)

7.2 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

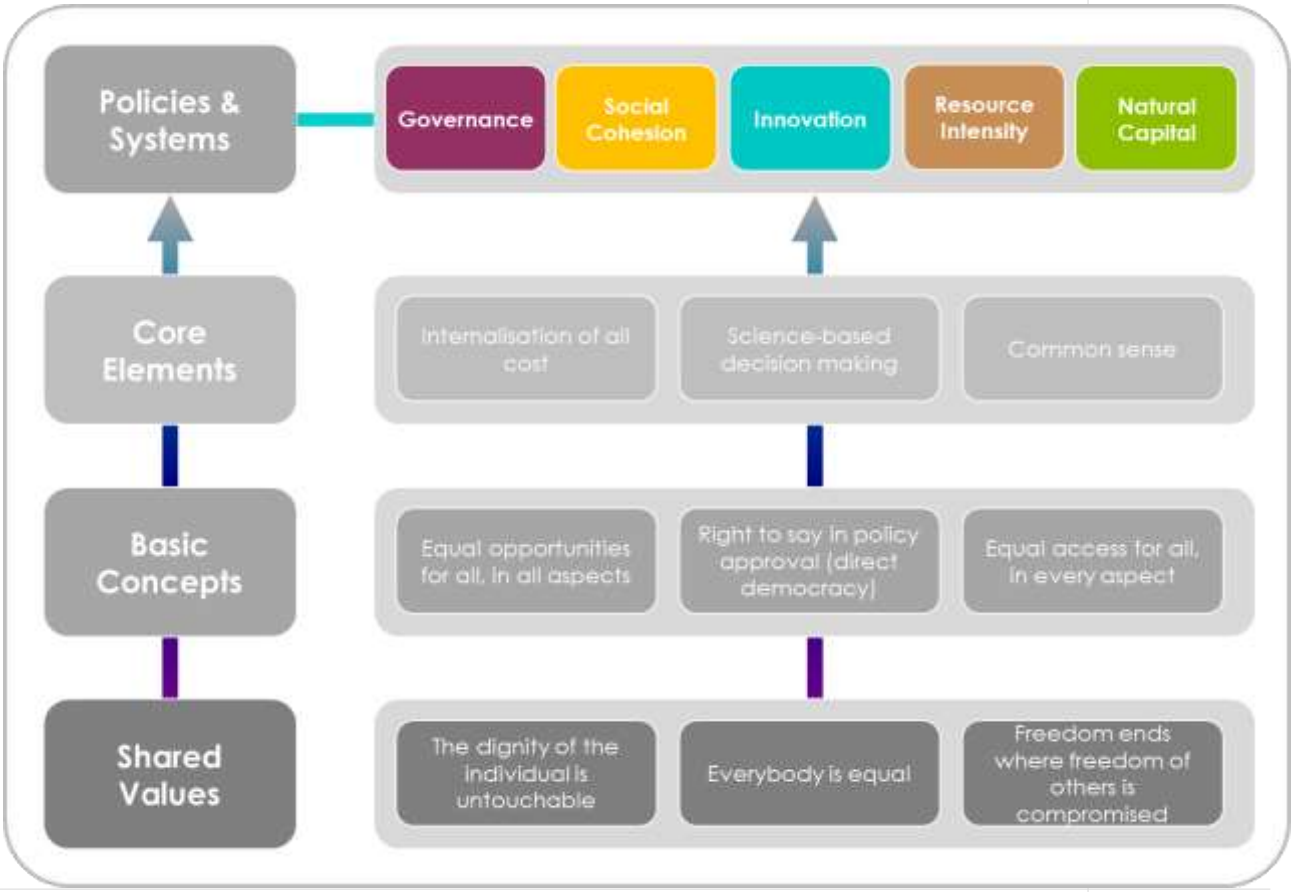
7.3 Shared Values

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.



7.4 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.

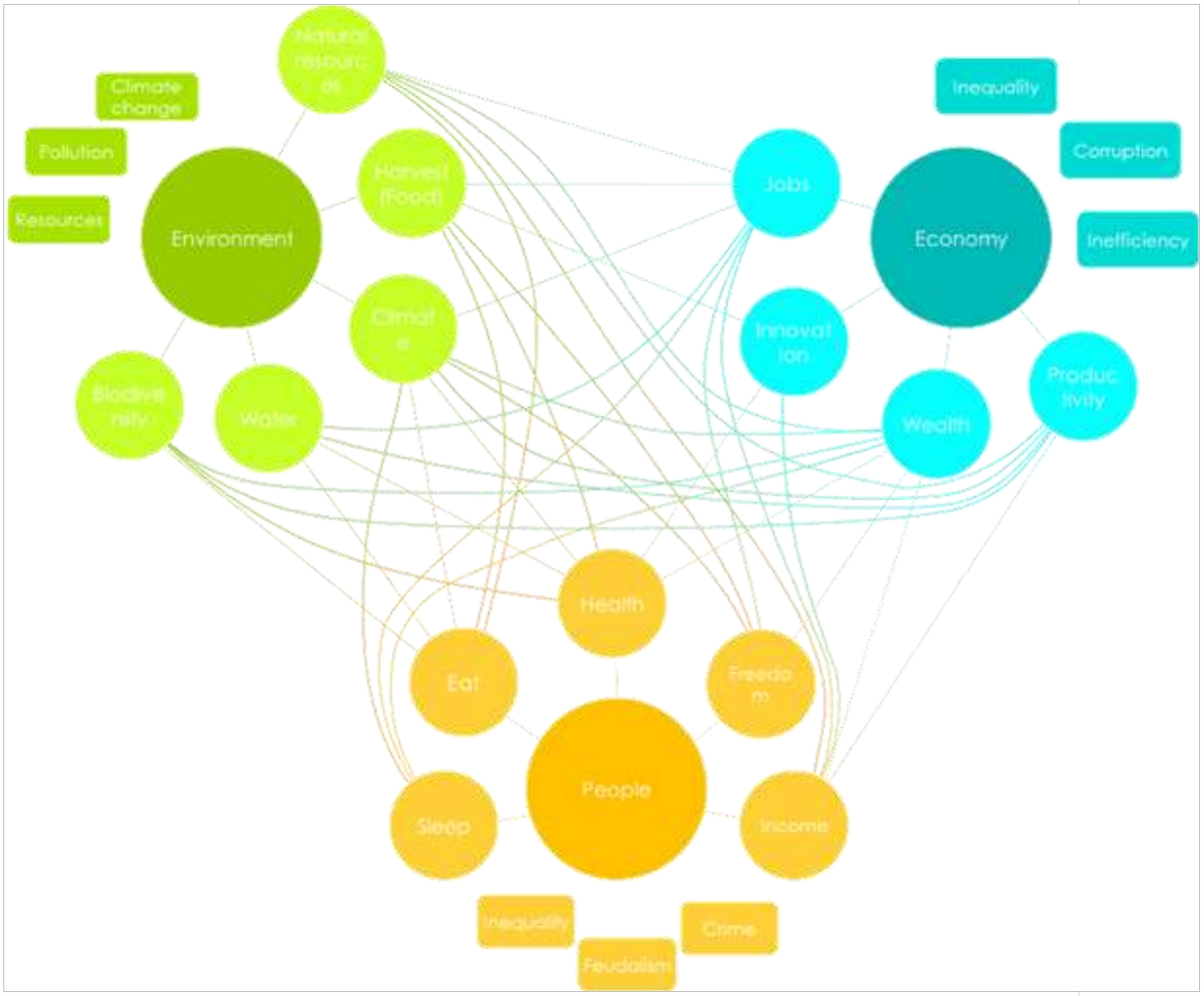
- **Saving the biosphere:** We need more protection for vital eco-systems, such as the Amazon and other rain-forests. However – it is not only the rainforests. We need more biodiversity across this World – in all countries, in all regions. More land needs more land to be protected as parks, and sustainable 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

8 Model & Index Methodology

8.1 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.



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

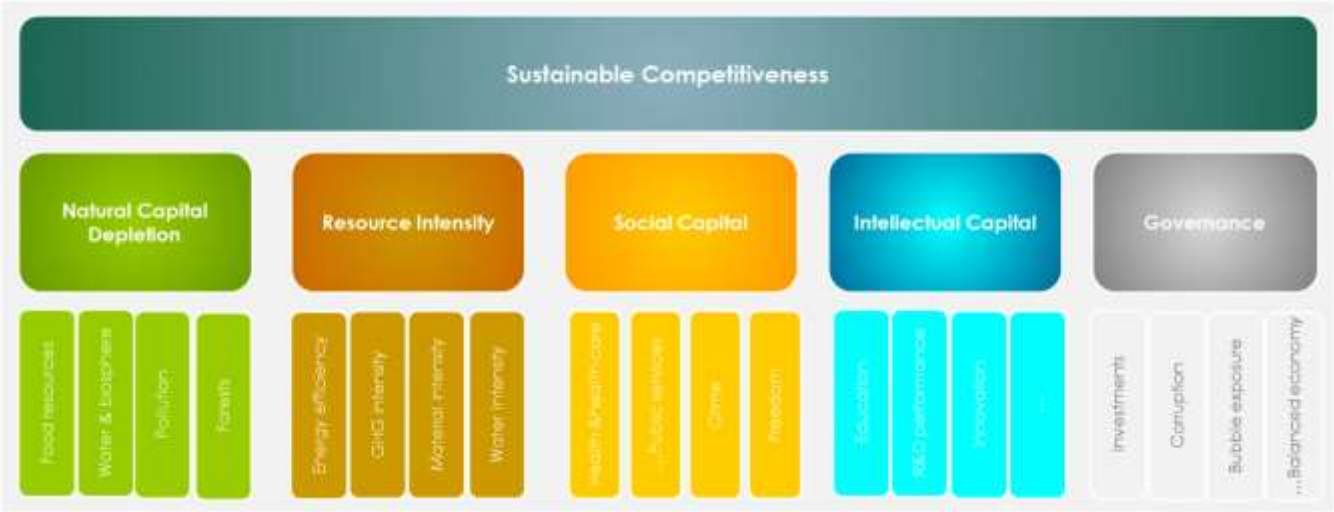
Sustainable competitiveness - they ability to generate and sustain inclusive wealth and dignifying standard of life for all citizens in a globalised world of competing economies, consists of 5 key elements that interact and influence each other: natural capital (the given natural environment and climate, 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. 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 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.

8.2 Competitiveness Indicators

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.

Indicators used encompass water, forest and biodiversity indicators, agricultural indicators, land degradation and desertification, minerals and energy resources, pollution indicators and depletion indicators.

Natural Capital Indicators	
Arable land (ha/capita)	Land at risk of desertification
Average rainfall (mm)	Land degradation (% of total)
Biodiversity Benefit Index (GEF)	Mineral reserves (per GNI and capita)
Cereal yield (kg per hectare)	Natural resource depletion (as percentage of GNI)
Electricity from hydropower (%)	Ocean Health Index
Endangered species	Population density
Energy self-sufficiency	Population living below 5m (% of total)
Extreme weather incidents	Potential arable land (ha/capita)
Fertilizer consumption/ha	Renewable freshwater availability/capita
Food Production Index	Tourist attractiveness
Forest area (% of total)	Land area below 5 m (% of total)
Fossil energy prevalence (% of total)	Climate extremes damages ($/1000 people)

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.

Resource Intensity Indicators	
Air pollution - mean particle concentration	NOx emissions per capita
Air pollution exposure - population	NOx emissions per GDP
CO2 emissions / GDP	Renewable electricity excluding hydro (%)
CO2 emissions /capita	SO2 emission per GNI
Ecological consumption footprint	SO2 emissions per capita
Electricity consumption / GDP	Steel usage (t/capita)
Electricity consumption per capita	Steel efficiency (t/GNI)
Electricity from coal (%)	Waste per capita
Electricity from oil (%)	Waste per GDP
Transmission losses	Hazardous waste per GDP
Energy per capita	GHG emission per capita
Energy per GDP	GHG emissions per GNI
Freshwater withdrawal rate	Cement usage per capita
Water productivity	Cement usage per GNI
Water usage per capita	

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.

Social Capital Indicators	
Aging society	Overweight
Birth per woman	Peace Index
Child mortality (below age 5, death per 1000)	Press Freedom Index
Doctors per 1000 people	Prison population rate (per 100'000 people)
GINI coefficient (income distribution inequality)	Public health expenditure of total expenditure
Homicide rate (per 100'000 people)	Civic disease risk
Hospital bed availability	Suicide rate
Human rights index	Teen moms
Income quintile ratio	Top 10 % income share
Life expectancy	Women in parliament (% of MPs)
Life satisfaction index	Violent assaults/100000
Lower middle class income share (2nd 20%)	Women in management positions
Nurses per 1000 people	Health care efficiency index
Aging society	Drug use prevalence
Birth per woman	Freedom for and from religion
Obesity rate	

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.

Intellectual Capital Indicators	
Primary education completion	Spending on education (% of state expenditure)
Primary student repetitions	Spending per student (% of per capita GDP)
Pupil gender ratio	Cost of business start-up
Pupil-teacher ratio	New business registrations
School dropouts secondary	Trademark applications
Secondary education enrolment	Annual STEM graduates
School dropouts secondary	R&D spending
Females with secondary education	R&D FTEs per million people
Tertiary education enrolment	Patent applications (per GDP)
Pisa Test Results	Patent applications per 1 million people
Education spending (% of GDP)	High tech exports

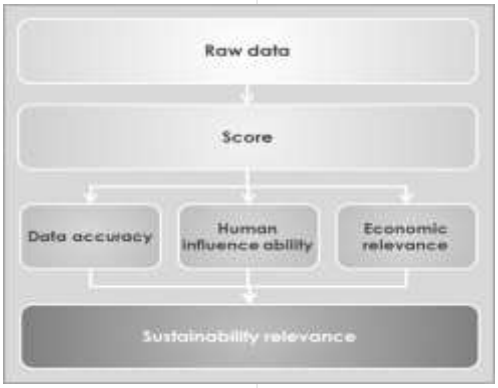
Governance Performance

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.)

Governance Efficiency Indicators	
Access to electricity	Market fluctuation exposure: company value (% of GDP)
Austerity Index	Market fluctuation exposure: stock trading volume (% of GDP)
Bank capital-asset ratio	Military spending (% of total government spending)
Bribery payments - % of businesses	Mobile communication availability
Ease of doing business	Non-renewable resource income dependency
Employment in the manufacturing sector	Population (total)
Employment in the service sector	Poverty development
GNI (total)	Quality of public services
GNI per capita	Rail network per area & population
Government debt	TI CPI Index
Imports (% of GDP)	Unemployment
Internet availability	Debt service (% of government expenditure)
Investments	Democracy Index
Manufacturing value added	Cyber defence readiness

8.3 Index calculation

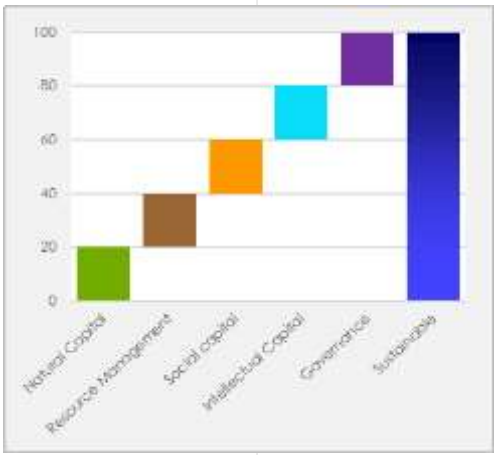
The raw data consist of numerical values. While values can be ranked against each other, they cannot be compared or added to other values (two apples plus three oranges are not equal to five pineapples). It is therefore necessary to extract a scalable and comparable score from the raw data as a first step.



Calculating scores from raw data

When comparing raw data of variables of different countries, an "absolute best" cannot be defined. Scores therefore 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 other indicators to calculate scores for the 5 sub-indexes. The Sustainable Competitiveness Index is calculated based on the sub-indexes, each weighted equally.



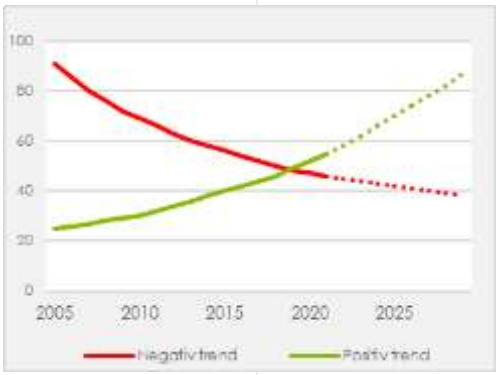
Each level of the Sustainable Competitiveness Pyramid is equally important and therefore equally weighted

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.

8.4 Data Tables – Global Sustainable Competitiveness Index

Rank	Country	Score	Rank	Country	Score	Country	Rank	Score	Country	Rank	Score
1	Sweden	61.2	46	Bhutan	49.4	Guyana	91	44.9	Azerbaijan	136	40.7
2	Finland	60.7	47	Australia	49.3	Kenya	92	44.8	Niger	137	40.6
3	Switzerland	60.4	48	Singapore	49.3	Burma	93	44.6	Rwanda	138	40.3
4	Denmark	60.2	49	Bolivia	49.3	Kiribati	94	44.3	Kuwait	139	40.2
5	Norway	59.8	50	Russia	49.2	Dominican Republic	95	44.0	Honduras	140	40.0
6	Iceland	59.8	51	Ecuador	49.1	United Arab	96	43.9	Togo	141	40.0
7	Ireland	57.6	52	Brazil	48.8	Sierra Leone	97	43.6	Republic of	142	40.0
8	France	56.8	53	Panama	48.7	Ethiopia	98	43.4	Turkmenistan	143	39.7
9	Austria	56.6	54	Colombia	48.7	Laos	99	43.4	Algeria	144	39.6
10	Germany	56.6	55	Argentina	48.6	Cuba	100	43.4	Nigeria	145	39.6
11	Estonia	56.1	56	Georgia	48.5	Vanuatu	101	43.2	Qatar	146	39.3
12	Liechtenstein	56.0	57	Belarus	48.5	Namibia	102	43.1	South Africa	147	39.3
13	Japan	55.3	58	Israel	48.2	Morocco	103	43.1	Afghanistan	148	39.3
14	Croatia	55.1	59	Sri Lanka	48.1	Tajikistan	104	43.1	Lesotho	149	39.2
15	New Zealand	54.9	60	Belize	47.6	Cambodia	105	43.0	Benin	150	39.2
16	Portugal	54.8	61	Venezuela	47.6	Botswana	106	42.9	Guatemala	151	39.1
17	United Kingdom	54.6	62	Cyprus	47.5	Gabon	107	42.9	Mali	152	39.0
18	Slovenia	54.3	63	Armenia	47.4	Nicaragua	108	42.8	Guinea-Bissau	153	38.9
19	Luxembourg	53.9	64	Solomon Islands	47.4	Senegal	109	42.7	Madagascar	154	38.8
20	Netherlands	53.9	65	North	47.3	Grenada	110	42.6	Zambia	155	38.7
21	South Korea	53.9	66	Ukraine	47.3	Iran	111	42.5	Zimbabwe	156	38.6
22	Latvia	53.5	67	Malaysia	47.3	Sao Tome and	112	42.4	Trinidad and	157	38.6
23	Slovakia	53.1	68	Bosnia and	47.0	Bangladesh	113	42.3	Gambia	158	38.1
24	Belgium	53.0	69	Timor-Leste	47.0	Saudi Arabia	114	42.3	Comoros	159	38.1
25	Lithuania	53.0	70	Fiji	46.9	Vietnam	115	42.2	Mauritania	160	37.8
26	Czech Republic	52.9	71	Ghana	46.9	Micronesia	116	42.1	Bahamas	161	37.7
27	Spain	52.7	72	Montenegro	46.8	Oman	117	42.1	Uganda	162	37.6
28	Costa Rica	52.4	73	Samoa	46.7	Philippines	118	42.0	West Bank and	163	37.6
29	Romania	52.3	74	Brunei	46.7	Democratic Republic of Congo	119	41.8	Djibouti	164	37.6
30	USA	52.0	75	Indonesia	46.5	Tanzania	120	41.7	Central African	165	37.5
31	Malta	51.7	76	Kyrgistan	46.4	Seychelles	121	41.7	Bahrain	166	37.2
32	Italy	51.7	77	Moldova	46.0	Guinea	122	41.6	Liberia	167	37.1
33	China	51.4	78	Tonga	45.9	Mongolia	123	41.6	Mozambique	168	36.8
34	Uruguay	51.3	79	Turkey	45.8	Eswatini	124	41.5	Haiti	169	36.7
35	Poland	51.2	80	Kazakhstan	45.8	Burkina Faso	125	41.5	Pakistan	170	36.7
36	Hungary	50.8	81	Nepal	45.5	Jamaica	126	41.5	Chad	171	36.6
37	Canada	50.6	82	Suriname	45.3	Equatorial	127	41.4	Sudan	172	36.3
38	Chile	50.4	83	Cote d'Ivoire	45.2	Tunisia	128	41.4	Yemen	173	36.2
39	Peru	50.3	84	Uzbekistan	45.2	Papua New	129	41.2	Burundi	174	36.0
40	Albania	49.9	85	Dominica	45.2	St. Kitts and	130	41.1	Lebanon	175	35.7
41	Serbia	49.7	86	Maldives	45.1	Egypt	131	41.0	Syria	176	35.4
42	Greece	49.6	87	El Salvador	45.1	Jordan	132	41.0	Libya	177	35.4
43	Mauritius	49.6	88	Thailand	45.0	Malawi	133	40.9	South Sudan	178	35.0
44	Bulgaria	49.6	89	Mexico	44.9	Angola	134	40.9	Eritrea	179	34.5
45	Paraguay	49.5	90	Cameroon	44.9	India	135	40.9	Somalia	180	32.7

Natural Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Laos	1	69.2	Solomon Islands	46	52.8	Indonesia	91	44.1	Benin	136	37.5
Colombia	2	69.2	Gabon	47	52.6	Oman	92	43.9	Egypt	137	37.4
Paraguay	3	68.1	Lithuania	48	52.6	Niger	93	43.9	Algeria	138	37.1
Bolivia	4	67.9	Costa Rica	49	52.6	Sudan	94	43.2	South Korea	139	37.0
Venezuela	5	67.1	Malaysia	50	52.5	Honduras	95	43.1	Saudi Arabia	140	36.9
Iceland	6	65.2	Bulgaria	51	51.9	Mali	96	42.9	Belgium	141	36.9
Brazil	7	64.1	Tanzania	52	51.8	Mexico	97	42.9	Senegal	142	36.3
Norway	8	62.5	Cote d'Ivoire	53	51.8	Chad	98	42.7	Togo	143	36.2
Suriname	9	62.4	Ghana	54	51.7	Tajikistan	99	42.4	Zimbabwe	144	36.1
Peru	10	62.4	Luxembourg	55	51.5	Kazakhstan	100	41.8	Nepal	145	35.8
Croatia	11	61.4	Ireland	56	51.4	Iran	101	41.5	Micronesia	146	35.6
Uruguay	12	60.6	Central African Republic	57	51.0	Tonga	102	41.4	Eritrea	147	34.8
Bhutan	13	60.6	Slovakia	58	51.0	Netherlands	103	41.4	Azerbaijan	148	34.6
New Zealand	14	60.2	Brunei	59	50.7	Armenia	104	41.0	Israel	149	34.5
Sweden	15	60.2	Madagascar	60	50.6	Turkey	105	41.0	Bahamas	150	34.2
Papua New	16	60.1	Australia	61	50.6	Sri Lanka	106	41.0	St. Kitts and	151	34.2
Finland	17	59.8	Montenegro	62	50.0	Libya	107	40.9	India	152	34.0
Belarus	18	59.6	Sierra Leone	63	49.6	Vanuatu	108	40.9	Gambia	153	34.0
Belize	19	59.5	Portugal	64	49.5	Morocco	109	40.7	Philippines	154	33.9
Equatorial	20	59.3	Austria	65	49.1	Malawi	110	40.7	Jordan	155	33.7
Albania	21	59.0	Spain	66	49.0	Czech Republic	111	40.7	Uzbekistan	156	33.6
Angola	22	58.8	Mozambique	67	48.9	Japan	112	40.6	Kiribati	157	33.3
Democratic Republic of Congo	23	58.5	Zambia	68	48.8	Ethiopia	113	40.4	Mauritania	158	33.3
Chile	24	58.3	South Africa	69	48.6	Vietnam	114	40.4	United Arab	159	33.3
Serbia	25	58.2	North	70	48.4	Lesotho	115	40.3	Syria	160	33.0
Burma	26	58.1	Liechtenstein	71	48.1	Thailand	116	40.0	Turkmenistan	161	33.0
Russia	27	58.1	Slovenia	72	48.1	Botswana	117	39.7	Qatar	162	32.9
Argentina	28	58.0	Estonia	73	48.1	Eswatini	118	39.7	Rwanda	163	32.9
Ecuador	29	57.9	Namibia	74	47.4	Moldova	119	39.7	Grenada	164	32.4
Latvia	30	57.6	Kyrgistan	75	47.1	Sao Tome and	120	39.5	Kuwait	165	32.2
Canada	31	57.4	Guinea	76	46.2	Timor-Leste	121	39.5	Maldives	166	31.5
Bosnia and Herzegovina	32	57.3	Poland	77	46.2	South Sudan	122	39.5	Yemen	167	31.2
Guyana	33	57.2	Germany	78	46.2	Nigeria	123	39.4	Burkina Faso	168	31.1
Republic of Congo	34	57.0	Ukraine	79	45.8	Mongolia	124	39.2	Djibouti	169	30.5
Cameroon	35	56.7	Guinea-Bissau	80	45.7	El Salvador	125	39.1	Haiti	170	30.0
Panama	36	56.2	Mauritius	81	45.6	Jamaica	126	38.8	Comoros	171	29.5
Georgia	37	55.8	Hungary	82	45.5	Cyprus	127	38.8	Singapore	172	29.1
Switzerland	38	55.4	Nicaragua	83	45.1	Trinidad and	128	38.6	Burundi	173	28.9
USA	39	54.9	Malta	84	45.1	United Kingdom	129	38.6	Seychelles	174	28.6
Romania	40	54.7	Dominica	85	45.0	Uganda	130	38.5	Tunisia	175	28.6
France	41	54.2	Dominican	86	44.7	Afghanistan	131	38.5	Pakistan	176	28.2
Fiji	42	54.0	Greece	87	44.7	Guatemala	132	38.2	Bahrain	177	27.8
Cambodia	43	53.8	Liberia	88	44.4	Bangladesh	133	38.2	Iraq	178	27.4
Samoa	44	53.7	Cuba	89	44.3	China	134	38.0	Lebanon	179	26.4
Denmark	45	53.2	Italy	90	44.2	Kenya	135	37.9	Somalia	180	22.6

Resource Intensity Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Malawi	1	63.8	Comoros	46	53.5	Ecuador	91	47.8	Thailand	136	39.8
Kenya	2	62.3	Mali	47	53.5	Japan	92	47.7	Moldova	137	39.6
El Salvador	3	61.9	Togo	48	53.2	Argentina	93	47.7	Israel	138	39.3
Switzerland	4	61.8	Bangladesh	49	53.0	Liberia	94	47.6	Bhutan	139	39.1
Democratic Republic of Congo	5	61.4	South Sudan	50	52.9	Hungary	95	47.4	Turkey	140	38.7
Yemen	6	61.3	Tanzania	51	52.4	Eswatini	96	47.3	Suriname	141	38.5
Uruguay	7	61.1	Germany	52	52.3	New Zealand	97	47.2	Laos	142	38.4
United Kingdom	8	61.0	Zimbabwe	53	52.1	Philippines	98	47.1	Poland	143	38.2
Ethiopia	9	60.5	Mauritania	54	51.7	Croatia	99	47.0	North	144	38.1
Belize	10	60.1	Sao Tome and Principe	55	51.6	Mauritius	100	46.7	Bulgaria	145	37.8
Rwanda	11	60.1	Gambia	56	51.4	Senegal	101	46.5	Kyrgistan	146	37.0
Kiribati	12	59.6	Italy	57	51.4	Dominican	102	46.4	St. Kitts and	147	36.9
Solomon Islands	13	59.4	Equatorial Guinea	58	51.3	India	103	46.0	Cyprus	148	36.7
Costa Rica	14	59.0	Timor-Leste	59	51.2	Republic of	104	46.0	Tajikistan	149	36.2
Burundi	15	58.7	Maldives	60	51.1	Jamaica	105	45.8	China	150	36.1
Ghana	16	58.5	Dominica	61	50.9	Lesotho	106	45.7	Tunisia	151	36.0
Angola	17	58.5	Nicaragua	62	50.9	Bolivia	107	45.6	Bahamas	152	35.0
Sweden	18	58.0	Colombia	63	50.9	Jordan	108	45.1	South Korea	153	34.1
Ireland	19	57.7	Sri Lanka	64	50.8	Chile	109	45.0	Singapore	154	33.8
France	20	57.3	Brazil	65	50.7	Slovakia	110	44.9	Uzbekistan	155	33.7
Somalia	21	57.2	Namibia	66	50.7	Ukraine	111	44.9	South Africa	156	33.2
Central African Republic	22	56.9	Finland	67	50.6	USA	112	44.8	Azerbaijan	157	33.0
Guinea-Bissau	23	56.7	Austria	68	50.3	Armenia	113	44.7	Lebanon	158	32.9
Denmark	24	56.4	Haiti	69	50.3	Greece	114	44.7	Georgia	159	32.9
Uganda	25	56.2	Gabon	70	50.1	Burma	115	44.6	Malaysia	160	32.0
Cote d'Ivoire	26	55.9	Netherlands	71	50.1	Estonia	116	43.8	Belarus	161	31.4
Djibouti	27	55.4	Peru	72	49.9	Australia	117	43.3	Serbia	162	31.3
Madagascar	28	55.1	Luxembourg	73	49.8	West Bank and	118	43.2	Iraq	163	30.9
Panama	29	55.0	Spain	74	49.8	Mexico	119	43.0	Seychelles	164	30.2
Vanuatu	30	54.9	Fiji	75	49.7	Iceland	120	43.0	Turkmenistan	165	29.8
Chad	31	54.7	Lithuania	76	49.7	Guyana	121	42.9	Algeria	166	29.7
Niger	32	54.7	Honduras	77	49.3	Sudan	122	42.9	Brunei	167	29.6
Papua New Guinea	33	54.6	Cuba	78	49.2	Zambia	123	42.9	Bosnia and	168	28.8
Sierra Leone	34	54.5	Albania	79	49.0	Benin	124	42.4	Vietnam	169	28.3
Burkina Faso	35	54.4	Norway	80	48.9	Pakistan	125	42.0	Kazakhstan	170	27.9
Guinea	36	54.2	Morocco	81	48.8	Cambodia	126	41.7	Russia	171	27.6
Samoa	37	54.2	Nigeria	82	48.8	Czech Republic	127	41.7	United Arab	172	27.2
Cameroon	38	54.1	Paraguay	83	48.7	Slovenia	128	41.7	Trinidad and	173	26.5
Eritrea	39	54.1	Portugal	84	48.6	Syria	129	41.5	Libya	174	26.2
Romania	40	54.0	Venezuela	85	48.1	Botswana	130	41.4	Saudi Arabia	175	25.9
Liechtenstein	41	53.9	Belgium	86	48.0	Mozambique	131	41.3	Bahrain	176	25.8
Tonga	42	53.9	Malta	87	48.0	Indonesia	132	41.2	Mongolia	177	25.7
Afghanistan	43	53.7	Latvia	88	47.9	Montenegro	133	40.7	Kuwait	178	24.8
Guatemala	44	53.6	Grenada	89	47.9	Canada	134	40.2	Qatar	179	24.6
Micronesia	45	53.5	Nepal	90	47.9	Egypt	135	40.0	Iran	180	23.4

Social Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
Iceland	1	64.1	United Kingdom	46	51.2	Turkey	91	43.2	Mozambique	136	37.4
Norway	2	63.5	Moldova	47	50.9	Jordan	92	43.1	West Bank and	137	37.4
Sweden	3	62.4	Greece	48	50.7	Bahrain	93	42.7	Kiribati	138	37.3
Finland	4	62.3	Uzbekistan	49	50.5	Trinidad and	94	42.6	Belize	139	37.2
Belgium	5	61.2	Kazakhstan	50	50.3	USA	95	42.5	Uganda	140	37.2
Austria	6	60.7	North	51	50.1	Libya	96	42.3	Nigeria	141	36.7
Slovenia	7	60.5	Saudi Arabia	52	50.0	Paraguay	97	42.2	Samoa	142	36.7
Estonia	8	60.4	Brunei	53	49.7	Nicaragua	98	42.2	Bahamas	143	36.5
Denmark	9	60.4	Costa Rica	54	49.7	Algeria	99	42.1	Vanuatu	144	36.4
Luxembourg	10	59.8	Montenegro	55	49.1	Solomon Islands	100	41.9	Botswana	145	36.3
Maldives	11	59.8	Bulgaria	56	49.0	Grenada	101	41.9	Venezuela	146	36.2
Switzerland	12	59.8	Sri Lanka	57	49.0	Bangladesh	102	41.8	Namibia	147	36.2
South Korea	13	59.6	Mongolia	58	48.9	Philippines	103	41.8	Tanzania	148	36.1
Portugal	14	59.4	Bhutan	59	48.8	Suriname	104	41.5	Togo	149	35.7
Japan	15	58.2	Seychelles	60	48.8	Jamaica	105	41.0	Mauritania	150	35.6
Singapore	16	58.2	Malaysia	61	48.8	Iran	106	40.9	South Sudan	151	35.3
Netherlands	17	57.9	Oman	62	48.4	Malawi	107	40.8	Chad	152	35.0
Czech Republic	18	56.7	Ecuador	63	48.4	Cuba	108	40.8	Cote d'Ivoire	153	34.9
Germany	19	56.1	Albania	64	48.2	St. Kitts and	109	40.8	Burundi	154	34.6
New Zealand	20	56.0	Tajikistan	65	47.7	Ethiopia	110	40.7	Zambia	155	34.5
Slovakia	21	56.0	Georgia	66	47.6	Dominican	111	40.5	Syria	156	34.3
Spain	22	56.0	Israel	67	47.6	Mali	112	40.5	Morocco	157	34.0
United Arab	23	55.8	Chile	68	47.5	Mexico	113	40.4	Honduras	158	33.9
Ireland	24	55.8	Mauritius	69	47.3	Sierra Leone	114	39.9	Angola	159	33.9
Liechtenstein	25	55.4	Nepal	70	46.7	Ghana	115	39.8	Haiti	160	33.8
France	26	55.4	Peru	71	46.2	Cameroon	116	39.6	Guinea-Bissau	161	33.7
Cyprus	27	55.4	Lebanon	72	46.2	Burma	117	39.4	Comoros	162	33.6
Italy	28	54.6	Argentina	73	46.1	Turkmenistan	118	39.2	Zimbabwe	163	33.5
Croatia	29	54.5	Indonesia	74	46.1	Cambodia	119	39.0	Micronesia	164	33.4
Timor-Leste	30	54.1	Azerbaijan	75	45.9	Laos	120	38.9	Djibouti	165	33.2
Australia	31	54.1	Hungary	76	45.8	Guyana	121	38.8	Eswatini	166	33.2
China	32	53.8	Thailand	77	45.6	Dominica	122	38.8	Republic of	167	33.0
Poland	33	53.7	Vietnam	78	44.9	India	123	38.6	Lesotho	168	32.7
Bosnia and Herzegovina	34	53.5	El Salvador	79	44.8	Gabon	124	38.6	Eritrea	169	32.7
Malta	35	53.5	Uruguay	80	44.6	Rwanda	125	38.6	Guatemala	170	32.7
Romania	36	53.5	Burkina Faso	81	44.4	Equatorial Guinea	126	38.3	Democratic	171	32.6
Serbia	37	53.4	Tonga	82	44.3	Papua New	127	38.2	Benin	172	32.5
Lithuania	38	53.4	Panama	83	44.0	Brazil	128	37.8	Sudan	173	32.2
Armenia	39	53.4	Niger	84	44.0	Kenya	129	37.8	Somalia	174	32.1
Belarus	40	53.1	Ukraine	85	43.9	Guinea	130	37.8	Madagascar	175	32.1
Qatar	41	52.3	Tunisia	86	43.8	Colombia	131	37.8	Afghanistan	176	31.2
Kuwait	42	52.0	Russia	87	43.7	Pakistan	132	37.7	South Africa	177	31.1
Canada	43	51.7	Bolivia	88	43.7	Fiji	133	37.7	Egypt	178	30.8
Latvia	44	51.4	Senegal	89	43.5	Gambia	134	37.7	Yemen	179	30.4
Kyrgistan	45	51.2	Sao Tome and	90	43.4	Liberia	135	37.5	Iraq	180	29.7

Intellectual Capital Competitiveness Scores

Country	Rank	Score	Country	Rank	Score	Country	Rank	Score	Country	Rank	Score
South Korea	1	77.8	Kazakhstan	46	47.5	Fiji	91	39.3	Benin	136	30.4
China	2	71.1	Bulgaria	47	47.4	Bahrain	92	39.3	Ghana	137	30.0
Singapore	3	69.3	Turkey	48	47.3	Tajikistan	93	39.1	Togo	138	30.0
Sweden	4	67.9	New Zealand	49	46.9	Suriname	94	39.0	Afghanistan	139	29.9
Denmark	5	66.8	Chile	50	46.7	Samoa	95	38.8	Comoros	140	29.7
United Kingdom	6	66.6	Oman	51	46.2	Nepal	96	38.7	Bahamas	141	29.2
Japan	7	65.3	Luxembourg	52	46.0	Lesotho	97	38.7	Burkina Faso	142	28.6
USA	8	65.0	Spain	53	45.3	Romania	98	38.7	Yemen	143	28.4
Norway	9	64.4	Costa Rica	54	45.3	Moldova	99	38.3	Djibouti	144	28.3
Finland	10	64.3	Eswatini	55	45.2	Guyana	100	38.2	Gabon	145	28.1
Germany	11	63.2	Serbia	56	45.2	Maldives	101	37.8	Cote d'Ivoire	146	27.6
Switzerland	12	62.7	Mexico	57	44.8	Mongolia	102	37.6	Haiti	147	27.3
Iceland	13	62.5	Vietnam	58	44.6	Armenia	103	37.4	Pakistan	148	27.0
Israel	14	62.3	Georgia	59	44.3	Micronesia	104	37.3	Cambodia	149	26.8
Netherlands	15	60.3	Uzbekistan	60	44.3	India	105	37.3	Laos	150	26.7
Russia	16	59.7	Australia	61	44.1	Qatar	106	37.3	Guinea	151	26.5
France	17	58.7	Saudi Arabia	62	44.0	Argentina	107	37.1	Mauritania	152	26.3
Austria	18	58.7	Seychelles	63	43.9	Kenya	108	37.1	Iraq	153	26.1
Belgium	19	58.5	United Arab Emirates	64	43.8	Cuba	109	36.4	Sudan	154	26.0
Liechtenstein	20	58.1	South Africa	65	43.3	Jamaica	110	36.3	Rwanda	155	25.7
Slovenia	21	57.5	Turkmenistan	66	43.3	Bosnia and Herzegovina	111	36.2	Equatorial Guinea	156	25.6
Hungary	22	56.3	Kyrgistan	67	43.3	Sao Tome and Principe	112	35.9	El Salvador	157	25.4
Czech Republic	23	55.7	Bolivia	68	42.9	Kuwait	113	35.9	Guatemala	158	24.7
Canada	24	55.6	Botswana	69	42.9	Solomon Islands	114	35.8	Ethiopia	159	23.5
Portugal	25	55.5	North Macedonia	70	42.8	Uruguay	115	35.7	Liberia	160	22.8
Poland	26	55.5	Dominica	71	42.7	Colombia	116	35.2	Nigeria	161	22.7
Estonia	27	54.9	Indonesia	72	42.1	Vanuatu	117	35.1	Zambia	162	22.2
Brazil	28	53.1	Montenegro	73	41.9	Trinidad and Tobago	118	34.8	Bangladesh	163	21.5
Slovakia	29	52.8	Bhutan	74	41.6	Dominican Republic	119	34.7	Malawi	164	21.4
Iran	30	52.5	Azerbaijan	75	41.2	St. Kitts and Nevis	120	34.7	Gambia	165	20.4
Malaysia	31	52.1	Belarus	76	41.2	Panama	121	33.6	Tanzania	166	20.3
Ireland	32	51.2	Albania	77	40.6	Paraguay	122	33.4	Somalia	167	19.9
Thailand	33	50.6	Grenada	78	40.5	Sierra Leone	123	32.7	Burundi	168	19.7
Italy	34	50.5	Ecuador	79	40.5	Philippines	124	32.5	Mozambique	169	19.4
Greece	35	50.3	Algeria	80	40.3	Nicaragua	125	32.4	Niger	170	19.2
Lithuania	36	50.0	Belize	81	40.1	Lebanon	126	32.3	Guinea-Bissau	171	18.6
Venezuela	37	49.9	Peru	82	40.1	Zimbabwe	127	32.2	Madagascar	172	17.8
Mauritius	38	49.4	Timor-Leste	83	40.0	Senegal	128	32.2	Angola	173	17.7
Ukraine	39	49.2	West Bank and Gaza	84	40.0	Jordan	129	31.5	Papua New Guinea	174	17.2
Croatia	40	49.1	Tonga	85	39.9	Libya	130	31.5	Chad	175	17.0
Cyprus	41	48.8	Sri Lanka	86	39.8	Cameroon	131	31.0	Mali	176	16.9
Tunisia	42	48.8	Morocco	87	39.8	Syria	132	31.0	Democratic Republic of Congo	177	16.6
Malta	43	48.5	Kiribati	88	39.7	Burma	133	30.8	Eritrea	178	16.2
Latvia	44	48.1	Egypt	89	39.6	Republic of Congo	134	30.6	South Sudan	179	15.8
Brunei	45	48.0	Namibia	90	39.5	Honduras	135	30.4	Central African Republic	180	14.6

Governance Efficiency Competitiveness Scores

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

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The Global Sustainable Competitiveness Index

10th edition

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