The

Global Sustainable Competitiveness Index

2024

13th edition

About this Report

The Sustainable Competitiveness Report, ***13th edition***

December, 2024

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

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About SolAbility

SolAbility is an independent sustainability think-tank with a history in sustainable management implementation for large international corporations. Our ESG strategy development, ESG management tools, and ESG communication have made 3 global sustainability leaders according to the Dow Jones Sustainability Index, the highest accolade in corporate sustainability.

SolAbility is the proud publisher of the Global Sustainable Competitiveness Index.

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The 13th edition of the Global Sustainable Competitiveness Index

Global Sustainable Competitiveness Index 2024

Same concept, new methodology.
Not based on, but using AI.

While we have been proud of the beautiful complexity of our nearly full-automated excel-structure to calculate the GSCI, modern statistical tools allow for an incomparable larger flexibility and calculation options. The GSCI is now based on the most sophisticated statistical calculation tools available, including deep-learning AI tools to extract, clean, and analyse data, which allows for superior correlation and trend analysis to further refine the GSCI construction. However, the development and oversight over these tools as well as control of the outcome remains human.

Given the change of computation, we have undertaken a major review of the methodology itself, and refined score extraction, trend analysis, weighting calculations, and aggregation of the final scores. In addition, we have expanded the coverage in terms of reach, the GSCI is now based on 216 indicators.

The changes in methodology means that year-on-year comparison to past published GSCI Indexes is not overly reliable. However, for academic purposes we have time series based on the new methodology – and therefor comparable over time – available. Get in touch.

The Global Sustainable Competitiveness Report 2024 provides a comprehensive overview of the current State of the World – global, regional, and national - on the six sustainable competitiveness pillars: Natural Capital, Resource Intensity-Efficiency, Intellectual Capital, Economic Sustainability, Social Capital and Governance Performance.

National performance – development, growth - needs to be measured in a comprehensive and integrating way beyond the still prevailing focus on economic parameters. The Global Sustainable Competitiveness Index measures national development and success beyond pure financial outcomes and GDP.

Sweden, the best scoring country in the Global Sustainable Competitiveness Index 2024, scores 62.6 out of a possible 100. The global average is 46. What is not sustainable is not competitive. The World is somewhat off being sustainable, but that is hardly any news.

We thank all pour readers for the continued interest over the years.

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1 Global Sustainable Competitiveness Index 2024

1.1 Sustainable Competitiveness

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

The Global Sustainable Competitiveness Index (GSCI) is measuring country performance, trends, and growth potential based on 216 quantitative indicators:

- grouped into the pillars of national development: natural capital, resource efficiency, social capital, intellectual & innovation capital, economic sustainability, and governance performance;
- based on purely quantitative ("measurable" KPIs;
- taking into account 216 indicators derived from renown global data sources (World Bank, various UN agencies, IMF);
- evaluating latest available data points and trends over time to better reflect future potential

Why Sustainable Competitiveness?

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

- The GDP is a measurement based on purely macro-economic numbers.
- GDP does not take into account the "intangibles" that make and contribute to the final economic outcome – quality and availability of education and health system, infrastructure, the social fabric, and the environment
- Similarly, sovereign bond ratings and other country ratings – which determine the interest rate on the international financial markets – are based on macro-economic indicators, fiscal status, and - often subjective - political risk definition
- Neither GDP nor credit ratings GDP therefore truly reflect performance, status, risks and opportunities associated with a country
- There is a lack of comprehensive, integrated SWOT analysis for countries on a global level

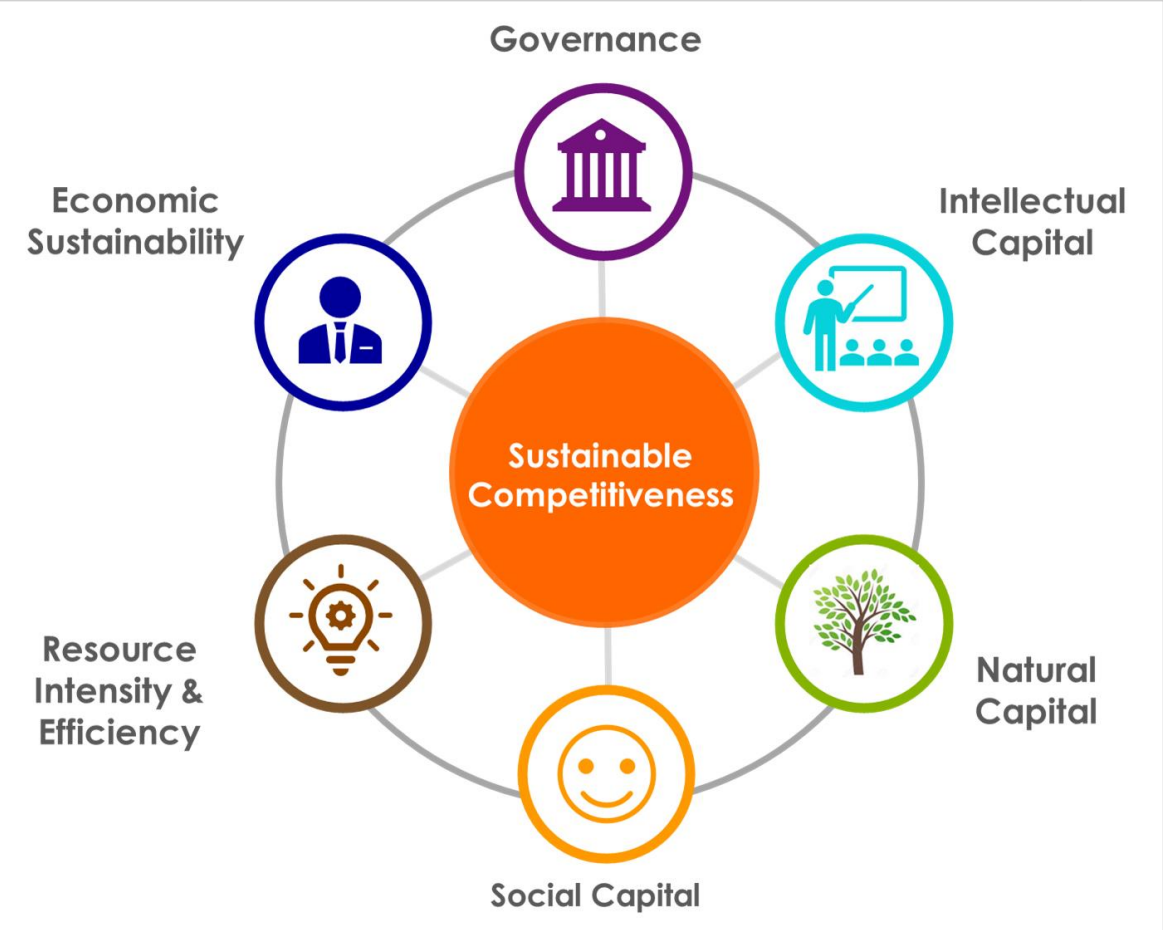
The integration of all relevant dimensions of competitiveness leads to a broader and more accurate reflection of nation-economies.

We believe the Global Sustainable Competitiveness Index is the currently most comprehensive and accurate measurement of the competitiveness of nation-states and their future potential – as a general measurement, for creditors seeking to evaluate country-specific risks, and other relevant private and public parties to evaluate both risk and opportunities in specific sectors.

The Sustainable Competitiveness Model

The development – both in its conventional definition and in terms of "sustainable" development – of a country is based on equal development in all areas that make a country:

The six pillars of Sustainable Competitiveness on which the GSCI is based:

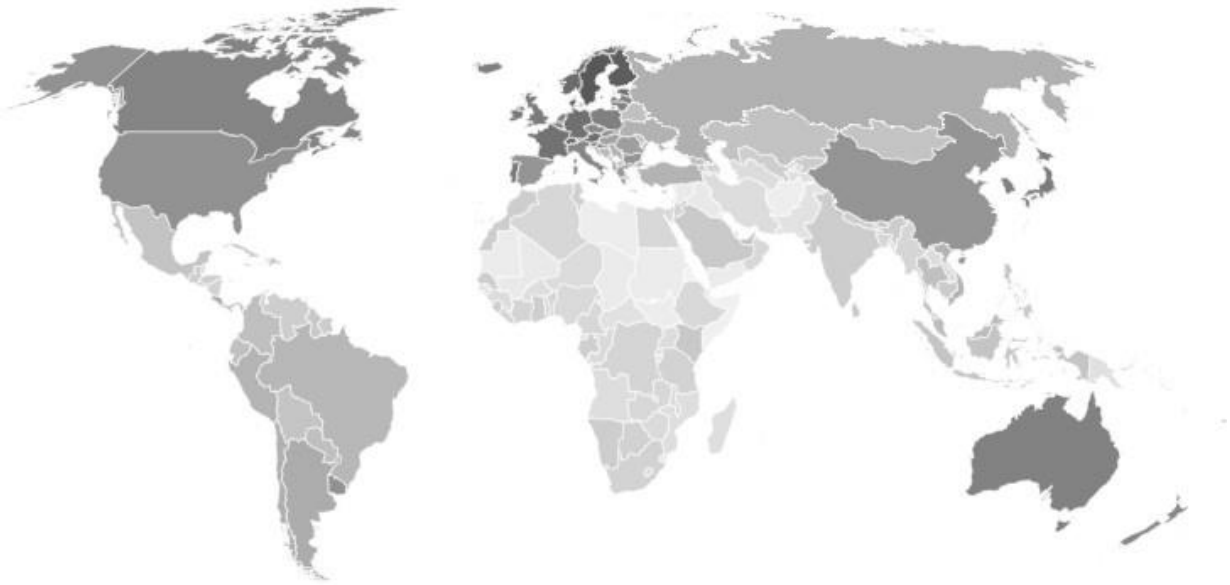


- **Natural Capital**: the given natural environment, including the availability of resources, and the level of the depletion of those resources.
- **Resource Efficiency**: the efficiency of using available resources as a measurement of operational competitiveness in a resource-constraint World.
- **Social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

1.2 Highlights from the GSCI 2024

- The GSCI is now based on a new calculation methodology incorporating 216 quantitative indicators that uses (but is not based upon) AI tools to clean data, and analyse trends and correlations
- Scandinavia continues to make its mark on the Sustainable Competitiveness Index: of the top 5 spots, 4 are Scandinavian. Sweden keeps topping the Index, followed by Finland and Denmark;
- Northern European countries dominate the top 20 rankings;
- Only two countries in the Top 20 are not European: Japan on 10, and South on 16;
- China is ranked 28, exceling in Intellectual Capital but lags in Natural Capital and Resource Efficiency, albeit with encouraging signs of efficiency improvements;
- The USA is ranked 35, performing comparatively poor in resource efficiency and social capital, reflecting a decline that could potentially undermine the global status of the US in the future;
- Germany ranks 9, France 8, and the UK 14;
- Brazil ranks 52, India 90, and Nigeria – Africa's most populous nation – 145;
- Some of the least developed nations have a considerable higher GSCI ranking than their GDP would suggest (e.g. Vietnam, Colombia, Peu, Nepal, Bhutan, Bolivia, …)
- Asian nations (South Korea, Japan, Singapore, and China) lead the Intellectual Capital Index – the basis of innovation.
- The Social Capital Index ranking is headed by Northern European (Scandinavian) countries, the result of economic growth combined with a commonly accepted social consensus
- Countries savaged by violent conflicts (Sudan, Yemen, Eritrea, Libya, Somalia, Afghanistan) are at the bottom of the GSCI

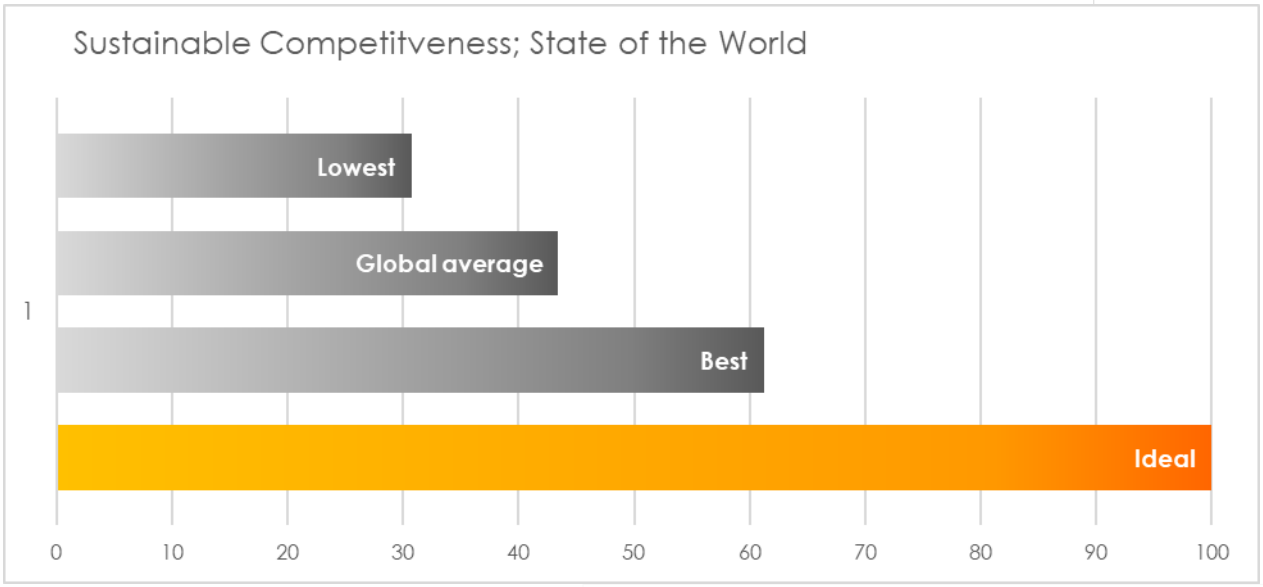
The Sustainable Competitiveness World Map 2024



1.3 Key take-aways: State of the World 2024

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

- The Global average Sustainable Competitiveness score in 2024 is 43.9 – out of a possible maximum of 100.
- The global gap to a perfect sustainable competitive World is 56.1. We are far from an inclusive and circular society that lives in equilibrium with the natural environment.
- In the Natural Capital dimension, nearly 55% of all indicators are pointing the wrong way globally. We have to expect further decline of the natural environment in the future.
- Improvements in resource efficiency can be observed. However, the pace of small positive changes is insufficient to avoid climate disaster. The necessary technology is available, but there is a distinctive lack of political vision to direct the markets towards more sustainable competitiveness.
- The corporate world is driven by competition and cost-benefit considerations – and is currently ahead of politics
- The large gap between low and high performers in Intellectual Capital dimension raises the question: is education the key to development, or the result of development?
- Trend analysis shows small but positive developments in Social and intellectual Capital, where slow but steady development could be expected under the right circumstances
- Tribalism, distracting cultural wars, struggles for perceived personal power, and armed conflict are complicating (if not preventing) the implementation of simple, efficient, profitable and readily available solutions.
- There is immense untapped potential. Policies geared to maximise efficiency improvements could lead to significant positive developments throughout all dimensions

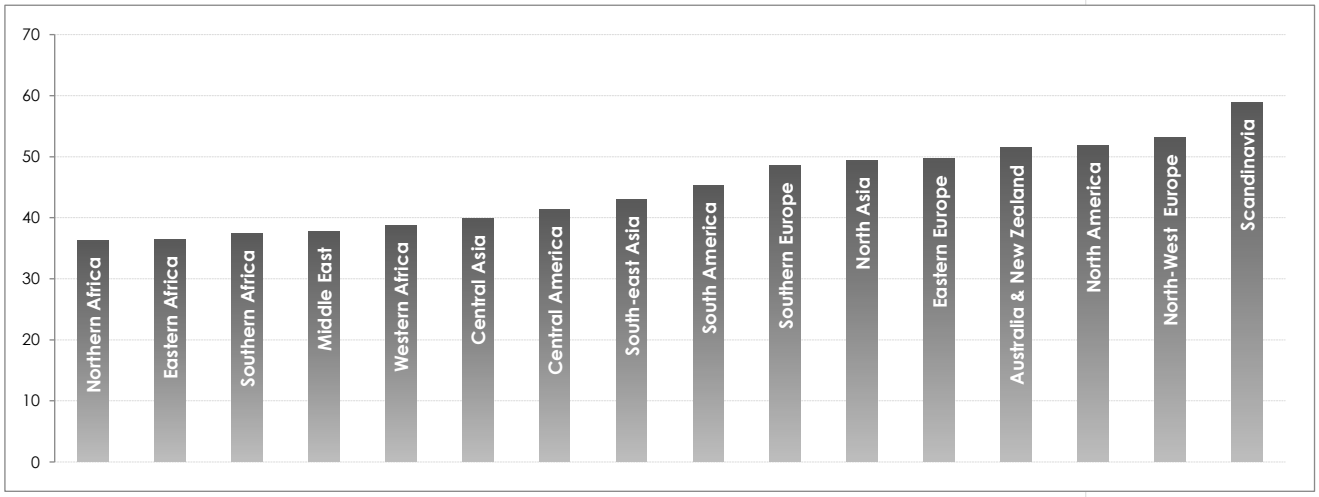


Global average, lowest and highest country score. GSCI 2024

Regional breakdown

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

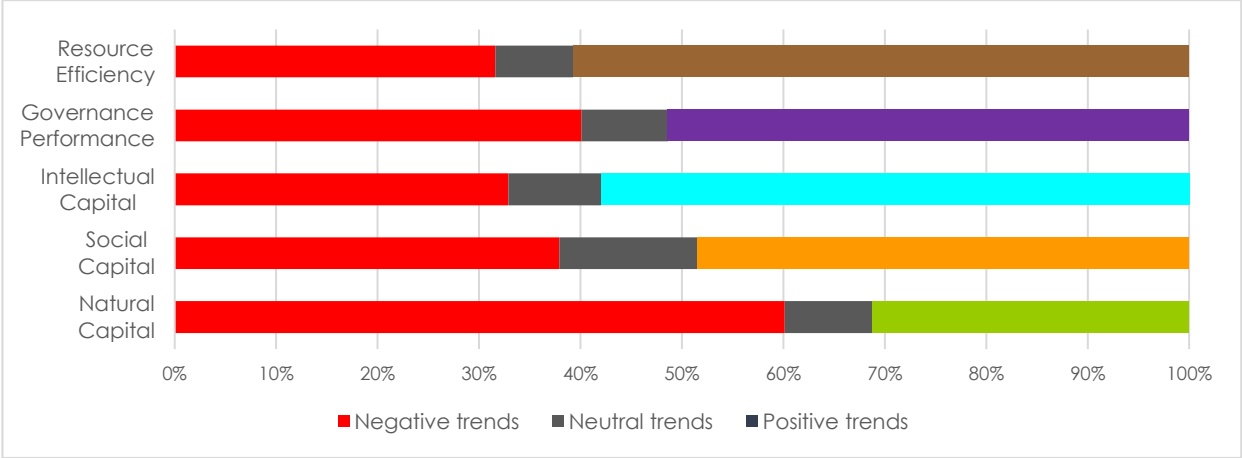
- Scandinavia scores highest in sustainable competitiveness, before Western Europe, North America, and North-East Asia
- Africa and the Middle East are lowest in sustainable competitiveness score
- North-East Asia score is significantly affected by North Korea's low score. Without NK, East Asia scores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



Sustainable Competitiveness score by region. GSCI 2024

Trend Analysis: Natural Capital Declining

- Intellectual Capital has a high percentage of positive drivers (58%), mostly driven by Asian Nations. Positive development can therefore be expected in the future. However, these developments take time to translate into sustainable growth.
- Social Capital and Governance trends are small but positive
- More than 60% of Natural Capital trends are negative. Unfortunately, we have to expect further decline of the natural environment in the future.



Percentage of positive/negative developing indicators. GSCI 2024

1.4 Natural Capital

The Natural Capital reflects "the given" natural environment of a country, and the state of its health/decline of that Natural Capital. Key take-aways from the 2024 Natural Capital Index include:

- The Natural Capital Index 2024 is topped by Bhutana, followed by Bosnia, Brazil, and Laos
- South America nations, with their large biodiversity pool, score high in Natural Capital
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water are all ranked in the top 30s,
- African countries in the tropical belt are ranked fairly high – including the two Congo, Gabon, and Cameroon
- The two most populated countries, India (107) and China (141) are both affected by a combination of arid climate, high population density and high natural depletion levels, raising concerns over those countries' ability to self-sustain their large populations in the long term.
- Several countries with a high population in the less developed World (for example Pakistan, Egypt, Iran) are performing low in Natural Capital, raising concerns about the future ability to sustain the population in the face of rapidly increasing climate disruption

Country	Ran	Sco
Bhutan	1	59.86
Bosnia and Herzegovina	2	59.63
Brazil	3	58.31
Lao	4	58.14
Peru	5	57.37
Viet Nam	59	47.35
United States of America	72	45.71
Nigeria	91	43.05
Indonesia	93	42.83
France	94	42.75
Japan	101	41.67
India	107	40.99
United Kingdom	126	39.20
Philippines	131	38.51
Germany	137	37.83
Korea	139	37.61
Pakistan	151	35.19
South Africa	156	34.37
Egypt	180	29.26

1.5 Resource Intensity/Efficiency

The Resource Index measures both Intensity (normally measured per capita) and efficiency (measured against economic output. The Index is therefore a mixture of higher and lesser developed countries:

- The Intensity Index (per capita resource consumption) is topped by less developed countries.
- The Resource Efficiency Index (resource use per economic output) is led by advanced economies transitioning to service sectors.
- The UK ranks first in the combined Resource Efficiency/Intensity Index, followed by Malawi, Sweden, Denmark, and Kenya.
- African nations like Congo, Uganda, and Benin rank in the top 20.
- Germany is 36th, the US 93rd, and Japan 109th.
- China (108th) is hindered by heavy industries and construction but shows efficiency improvements despite rising intensity.

Country	Ran	Sco
United Kingdom	1	59.65
Malawi	2	58.86
Sweden	3	57.51
Denmark	4	56.93
Kenya	5	56.85
France	20	54.47
Germany	36	51.71
Brazil	48	50.52
Nigeria	52	50.36
Philippines	90	47.17
United States of America	93	46.70
India	97	46.22
Japan	109	44.95
South Africa	112	44.55
Viet Nam	116	43.98
Egypt	121	43.48
Korea	148	39.19
Indonesia	151	39.00
Pakistan	159	37.93

1.6 Social Capital

Social Capital is the extend of social cohesion, measured through health, equality and security indicators.

- The Social Capital Index is topped by Japan, followed by the Netherlands, France, Iceland and Norway
- The top 30 of the Social Capital sub-index is dominated by Western European countries and the Baltics – except for Japan (1) and South Korea (17), and the United Arab Emirates (25)
- The USA, due to comparable high crime rates, low availability of health services, and rising inequality, is ranked 118
- China is ranked 43, India 89, Nigeria 109, and Brazil 179
- The highest ranked South American countries are Uruguay (68), followed by Argentina (71), Peru (86); the highest-ranking African nations are Senegal (56), Madagascar (76), and Kenya (78)
- Due to a combination of low availability of health care services and child mortality, limited freedom of expression, and unstable human rights situation may African countries are at the bottom of this ranking

Country	Ran	Sco
Japan	1	64.99
Netherlands	2	62.31
France	3	62.19
Iceland	4	61.04
Norway	5	60.94
Korea	17	56.73
Germany	24	53.89
United Kingdom	35	50.56
Viet Nam	45	49.37
Indonesia	62	46.32
Philippines	63	45.76
India	89	41.60
Nigeria	109	39.07
United States of America	118	37.89
Egypt	159	33.90
Pakistan	165	33.20
Brazil	179	30.69
South Africa	186	29.13

1.7 Intellectual Capital

The Intellectual Capital Index measures educational system, educational outcomes, as well as innovation indicators through quantitative measurements. Key insights from the 2024 Capital Index include:

- North-Eastern Asian nations (South. Korea, China, Japan, Singapore) dominate the intellectual capital sub-index of the GSCI, reflecting the continuing shift of technology advancements
- The Innovation ranking continues to be topped by South Korea – by a considerable margin.
- China is ranked second, underlying the countries continued advance into technology (and indicating the value of state-led investments in education)
- Germany is ranked 4, The UK 6 and the US 8,
- Scandinavian Nations are all within the top twenty, as is Israel
- Brazil is ranked 49, India 62 and Nigeria 169.
- Morocco (57), Tunesia (68), and South Africa (76) are the highest ranked nation on the African continent
- Most of Africa is unfortunately still underperforming in the global intellectual capital comparison, raising fear of prolonged entrapment in poverty

Country	Ran	Sco
Korea	1	77.86
China	2	75.00
Germany	3	73.69
Switzerland	4	72.16
Japan	5	72.05
United Kingdom	6	71.89
United States of America	8	70.14
France	13	66.75
Viet Nam	34	54.45
Brazil	49	48.34
India	62	44.59
South Africa	76	41.64
Indonesia	78	41.40
Philippines	89	40.13
Egypt	100	37.63
Pakistan	146	26.32
Nigeria	169	20.98

1.8 Economic Capital

- The Economic Capital ranking is topped by economically advanced nations in Europe, and Asia, However, Israel on rank 12 and Costa Ric (16) also make into the top 20
- The index is topped by Slovenia, followed by Austria, The Check Republic, Iceland and Finland
- China is ranked 4, while the US 24, reflecting the ongoing shift of economic power
- Germany is ranked 10, the UK 26, and France 29
- Brazil is ranked 101, Nigeria 87, and India 161
- Economies in Central and Eastern Europe score all in the upper quarter

Country	Ran	Sco
Austria	1	60.22
Ireland	2	58.92
Poland	3	58.54
China	4	57.13
Slovenia	5	56.59
Germany	10	55.53
Korea	14	53.71
United States of America	24	51.97
United Kingdom	26	51.34
Viet Nam	27	51.33
Japan	28	51.32
France	29	51.28
Philippines	40	49.56
Egypt	77	43.74
Indonesia	79	43.62
Nigeria	87	42.80
Brazil	100	41.42
Pakistan	144	38.02
South Africa	160	35.70
India	161	35.69

1.9 Governance Index

The Governance index measures the performance of a country's regulatory framework and infrastructure environment to facilitate sustainable competitiveness. It is based on 38 quantitative indicators – i.e. not measuring the quality of the system, but the outcomes of the system. Insights from the 2024 Governance Index include:

- The Governance Index is dominated by countries from Western Europe. Only New Zealand (9), Korea (13). Australia (15), Japan (17) and Urugay (29) are non-European countries in the top 30.
- The Economic Capital ranking is topped by Sweden, followed by Denmark, Finland, and Estonia
- China is ranked 61, the US 62
- Germany is ranked 6, France 12, the UK 26
- Brazil is ranked 70, India 118, and Nigeria 19
- The map shows a significant north-South gap: all African countries score comparable low (except for South Africa)

Country	Ran	Sco
Sweden	1	71.91
Denmark	2	71.46
Finland	3	70.56
Estonia	4	69.22
Luxembourg	5	68.79
Germany	6	68.62
France	12	66.49
Korea	13	66.43
Japan	17	65.14
United Kingdom	26	61.02
United States of America	62	53.44
Viet Nam	71	52.06
Brazil	73	51.53
Indonesia	75	50.87
South Africa	93	48.67
Philippines	107	46.35
India	118	45.41
Egypt	152	38.37
Pakistan	161	35.53
Nigeria	169	33.63

1.10 GSCI Sovereign Bond Ratings vs Credit Ratings

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 2024:

Country	Current Credit Rating Average Moody's, S&P, Fitch	GSCI ESG Rating	ESG vs. Current Rating
Ireland	AA-	AA-	0
Japan	A+	AA-	1
Kuwait	A+	CCC+	-12
Luxembourg	AAA	AA-	-3
Malaysia	A-	BBB-	-3
Maldives	B-	BBB-	7
Mongolia	B	BBB-	5
Saudi Arabia	A	B+	-8
Slovenia	A	AA	4
Spain	A-	A	1
Suriname	CCC-	BB-	6
United Kingdom	AA-	AA-	0

Country	Current Credit Rating Average Moody's, S&P, Fitch	GSCI ESG Rating	ESG vs. Current Rating
Australia	AAA	A+	-4
Brazil	BB	BBB	4
Canada	AAA	A+	-4
China	A+	A	-1
Denmark	AAA	AA+	-1
France	AA	AA-	-1
Germany	AAA	AA-	-3
Ghana	CC	BB-	7
India	BBB-	B+	-4
Indonesia	BBB	BB+	-2
Italy	BBB	A+	4
Tanzania	B	BB-	2
USA	AAA	A	-5

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.

For more information on ESG country ratings, please refer to the detailed Report available on the SolAbility website.

1.11 Sustainable Competitiveness Ranking 2024

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

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	61.22	48	Chile	47.70	96	Venezuela	41.85	144	Congo	38.36
2	Finland	59.87	49	Serbia	47.29	97	Kosovo	41.83	145	Nigeria	38.32
3	Denmark	59.10	50	Peru	47.02	98	Namibia	41.80	146	Marshall Islands	38.25
4	Switzerland	58.68	51	Turkey	46.84	99	Brunei Darussalam	41.78	147	Micronesia	38.23
5	Norway	58.06	52	Brazil	46.80	100	Ghana	41.75	148	Cabo Verde	38.16
6	Austria	57.96	53	Russian Federation	46.69	101	Belize	41.58	149	Algeria	38.05
7	France	57.32	54	Malaysia	46.64	102	Cuba	41.44	150	Bahamas	38.01
8	Estonia	57.14	55	Bosnia and Herzegovi	46.46	103	Saudi Arabia	41.25	151	Guinea	38.00
9	Germany	56.88	56	Bhutan	45.88	104	Morocco	41.23	152	Oman	37.94
10	Japan	56.69	57	Moldova	45.82	105	Kyrgyzstan	41.20	153	Lao	37.94
11	Ireland	56.15	58	Saint Vincent and the	45.69	106	Senegal	41.12	154	Gambia	37.90
12	Luxembourg	56.01	59	Georgia	45.53	107	Guatemala	41.10	155	Zimbabwe	37.86
13	Portugal	55.98	60	Colombia	45.53	108	Solomon Islands	41.08	156	Egypt	37.73
14	United Kingdom	55.61	61	Thailand	45.45	109	Kiribati	40.99	157	Madagascar	37.59
15	Slovenia	55.32	62	Belarus	45.18	110	Honduras	40.99	158	Uganda	37.46
16	Korea	55.25	63	Andorra	45.11	111	Tuvalu	40.75	159	Lesotho	37.46
17	Poland	55.07	64	Ecuador	45.02	112	Saint Kitts and Nevis	40.73	160	Djibouti	37.28
18	Iceland	54.89	65	Paraguay	44.82	113	Tonga	40.61	161	Niger	37.27
19	Netherlands	54.88	66	Panama	44.70	114	Tunisia	40.61	162	Burkina Faso	36.94
20	Belgium	54.68	67	Philippines	44.58	115	Congo DR	40.56	163	Angola	36.83
21	Italy	54.13	68	Montenegro	44.49	116	Bangladesh	40.55	164	Mozambique	36.70
22	Latvia	54.07	69	Kazakhstan	44.43	117	Jamaica	40.48	165	Equatorial Guinea	36.70
23	Canada	54.04	70	United Arab Emirates	44.09	118	Gabon	40.43	166	Turkmenistan	36.66
24	Lithuania	54.02	71	Fiji	44.03	119	Uzbekistan	40.29	167	Bahrain	36.52
25	Australia	53.86	72	Indonesia	44.01	120	Botswana	40.21	168	Iran	36.23
26	Czechia	53.36	73	Barbados	44.00	121	Benin	40.02	169	Central African Repub	36.04
27	New Zealand	53.36	74	Timor-Leste	43.91	122	Rwanda	39.98	170	Guinea-Bissau	35.96
28	China	52.85	75	Armenia	43.77	123	Tanzania	39.96	171	Papua New Guinea	35.86
29	Slovakia	52.40	76	Bolivia	43.76	124	Palau	39.91	172	Kuwait	35.80
30	Croatia	52.18	77	Cambodia	43.74	125	Myanmar	39.90	173	Comoros	35.80
31	Spain	51.88	78	North Macedonia	43.50	126	Samoa	39.90	174	Tajikistan	35.76
32	Uruguay	51.84	79	Vanuatu	43.40	127	Grenada	39.88	175	Burundi	35.49
33	Bulgaria	51.73	80	Mongolia	43.31	128	Nicaragua	39.82	176	Haiti	35.02
34	Greece	51.46	81	El Salvador	43.30	129	Trinidad and Tobago	39.75	177	Pakistan	34.37
35	United States of Amer	50.98	82	Mexico	43.17	130	Dominica	39.70	178	Lebanon	34.20
36	Liechtenstein	50.53	83	Nepal	43.13	131	Côte d'Ivoire	39.49	179	Eswatini	34.08
37	Singapore	50.36	84	Kenya	43.07	132	Jordan	39.46	180	Mali	33.25
38	Viet Nam	49.76	85	Maldives	43.05	133	Togo	39.37	181	Chad	33.14
39	Hungary	49.60	86	Seychelles	42.92	134	Liberia	39.36	182	Yemen	32.48
40	Costa Rica	49.58	87	Sri Lanka	42.72	135	Zambia	39.29	183	Syrian Arab Republic	32.30
41	Romania	49.48	88	Guyana	42.48	136	Cameroon	39.13	184	Iraq	31.97
42	Israel	49.45	89	Sierra Leone	42.42	137	Ethiopia	39.12	185	Sudan	31.92
43	Albania	49.18	90	India	42.42	138	Qatar	39.08	186	Mauritania	31.89
44	Cyprus	48.78	91	Antigua and Barbuda	42.32	139	South Africa	39.01	187	Afghanistan	31.69
45	Malta	48.09	92	Mauritius	42.30	140	Saint Lucia	38.92	188	South Sudan	31.58
46	Argentina	47.99	93	Sao Tome and Princip	42.13	141	Palestine, State of	38.67	189	Libya	31.11
47	Ukraine	47.73	94	Suriname	42.02	142	Azerbaijan	38.58	190	Eritrea	30.76
48	Chile	47.70	95	Dominican Republic	42.00	143	Malawi	38.51	191	Somalia	30.75

Focus 2024

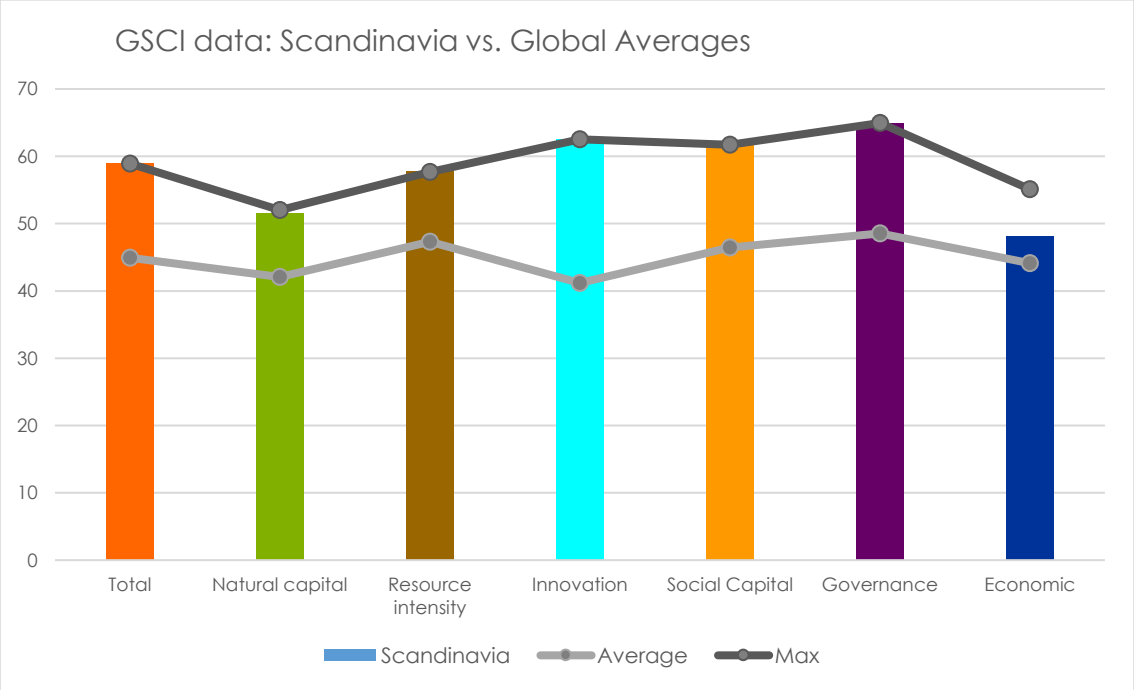
Why always Scandinavia?

Gulf Countries: ready for the energy transition?

2 Spotlight

2.1 Why always Scandinavia?

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



Scandinavian averages vs, other World regions across all GSCI scores, 2024

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

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

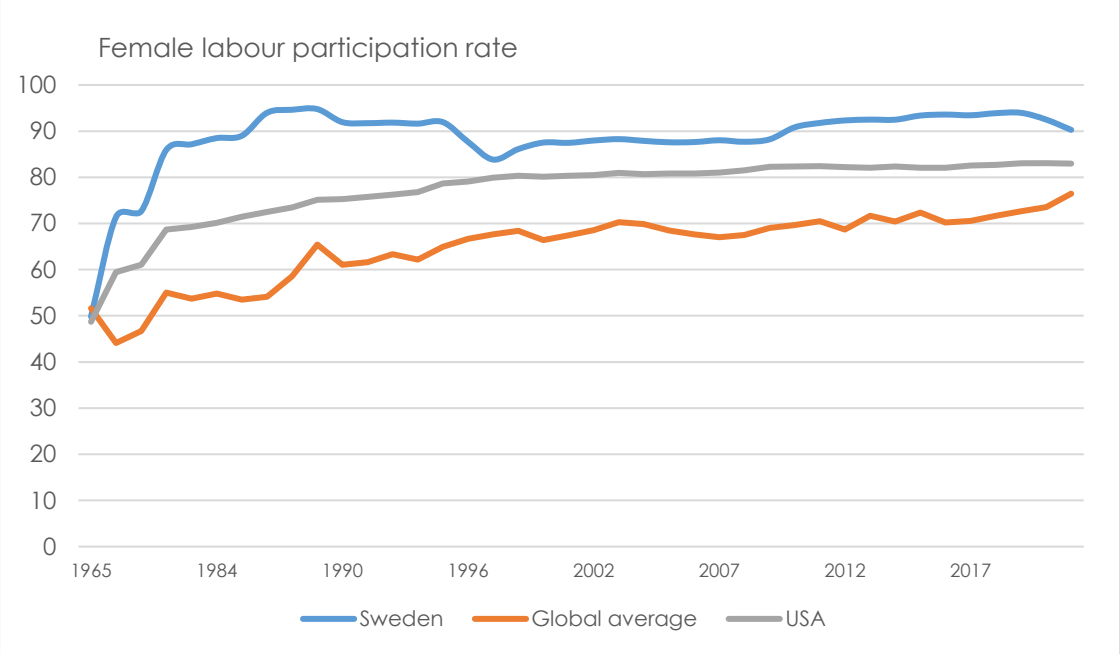
Everything else is somewhat more difficult to explain.

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

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

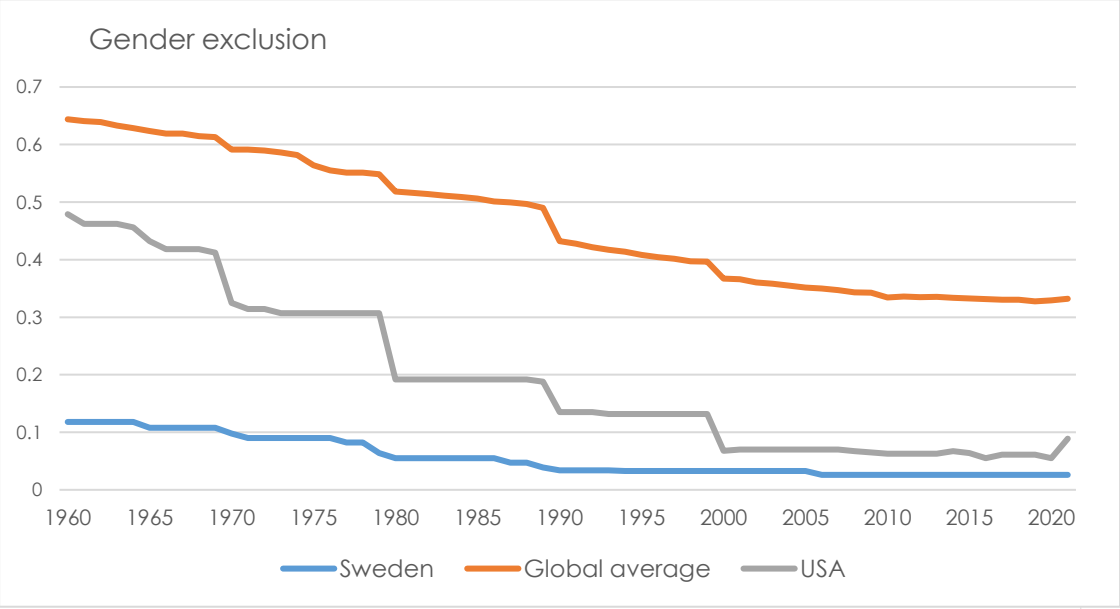
Gender integration

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



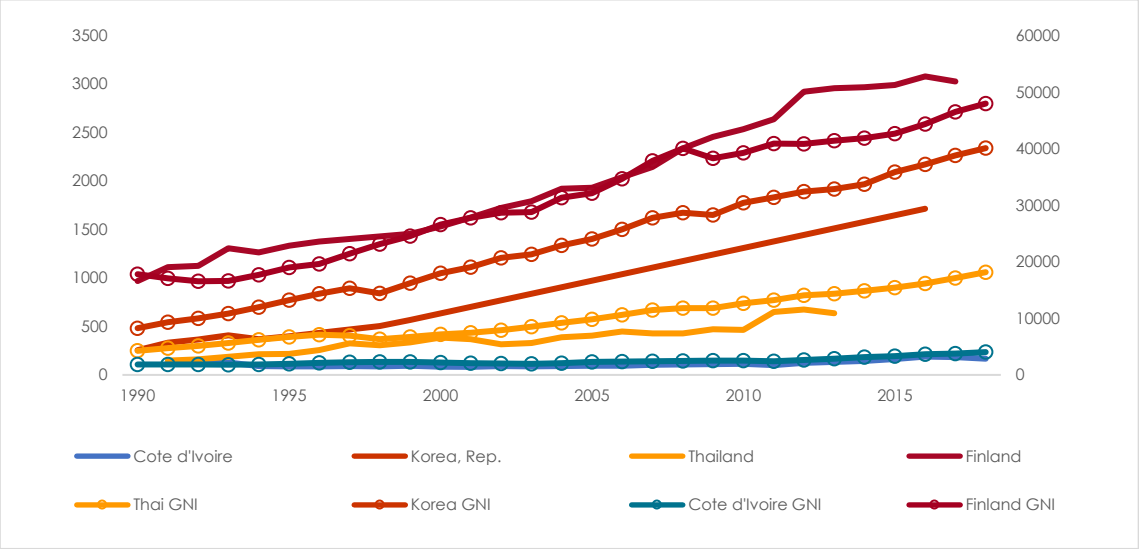
Female labour participation rate, Sweden vs USA vs global average, 1968-2020, Data courtesy of ILO/World Bank 2022

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



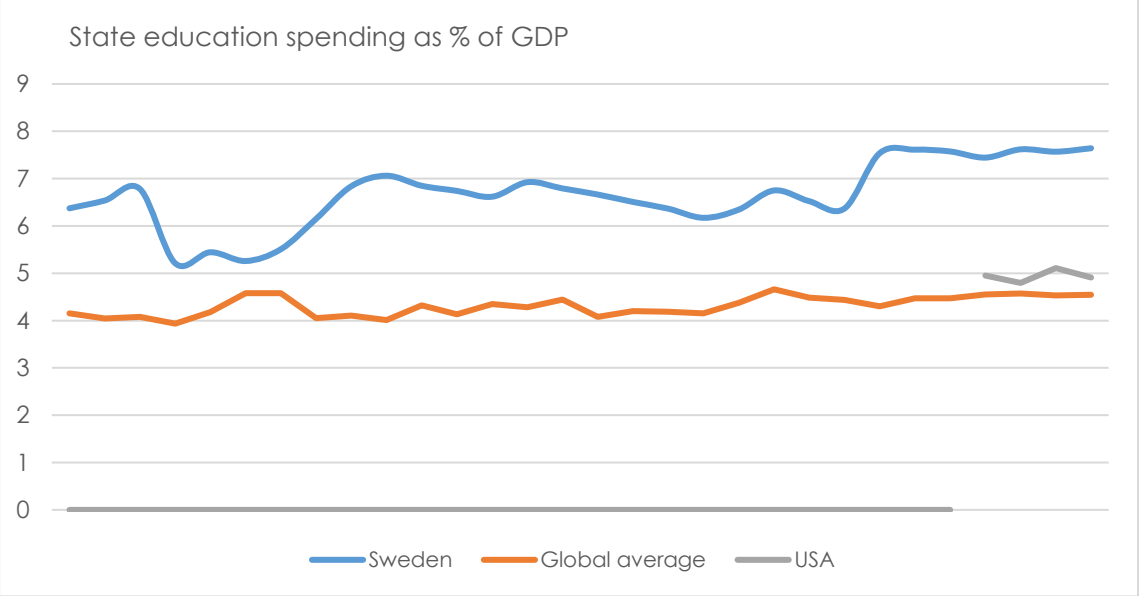
Female exclusion index, 1960-2021, Sweden vs USA vs global average. Data courtesy of V-Dem Project

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



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

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

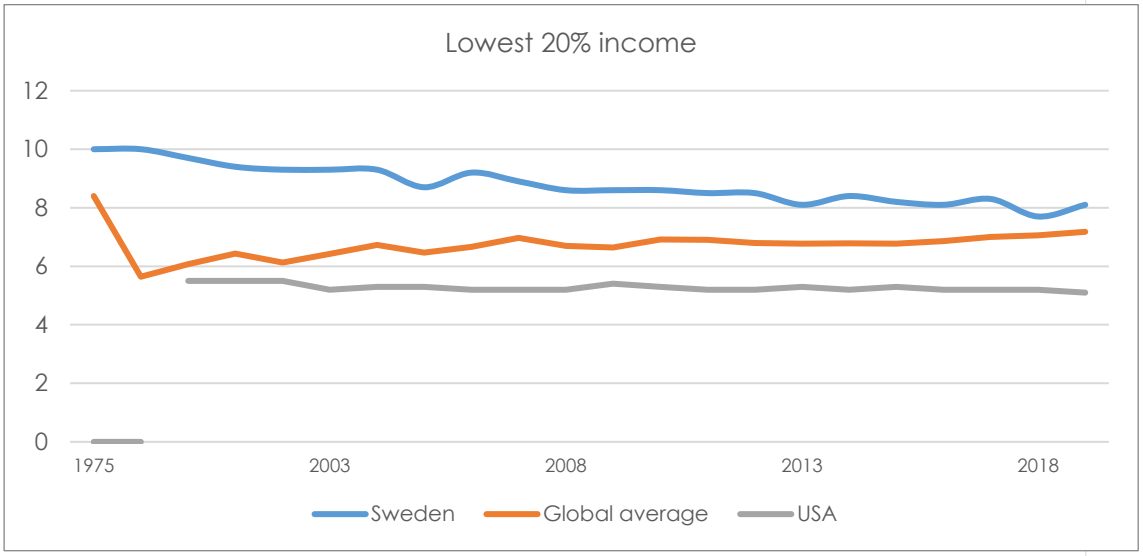


Government education spending, Sweden, USA, global average, 1980-2020. Data: World Bank

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

Income disparity

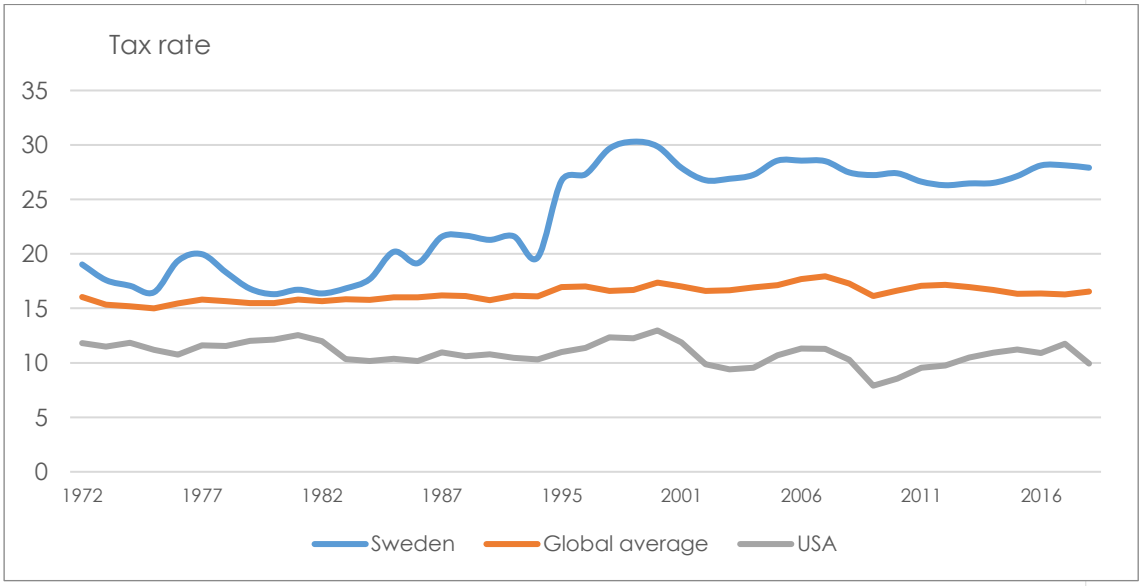
While the connection between GSCI, GDP and income disparity is complex – is one of them a precursor to the other? – the observation is clear: in comparison to the global average and most developed economies, income disparity in Scandinavian countries is significantly smaller.



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

Or is it the tax rate, in the end?

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



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

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

2.2 The Gulf countries: ready for the energy transition?

In China, demand for fossils is expected to peak in 2024; the International Energy Agency projects global demand to peak in 2025.

For countries that generated income from fossils that means decreasing and eventually disappearing income. The higher the fossil income proportion, the higher the exposure to decline in standard of life. The question is the timing of "eventually disappearing", and when the oil income decline is starting to seriously impact government revenues.

The global economy has seen significant dynamics of renewable technology markets, picking up pace in the replacement of fossils including (but not limited to) the road transport sector. With renewables becoming even more cheaper, deployment will only intensify. With declining demand, oil prices and profits decline. And that is before accounting for any potential future market policies in response to climate change.

- In a business-as-usual world, oil revenues will start to decline drastically by 2030 at the latest. More likely after 2027.
- Oil revenues and profits will be marginal after 2035 compared to today
- Oil producing countries: how to replace the oil income?

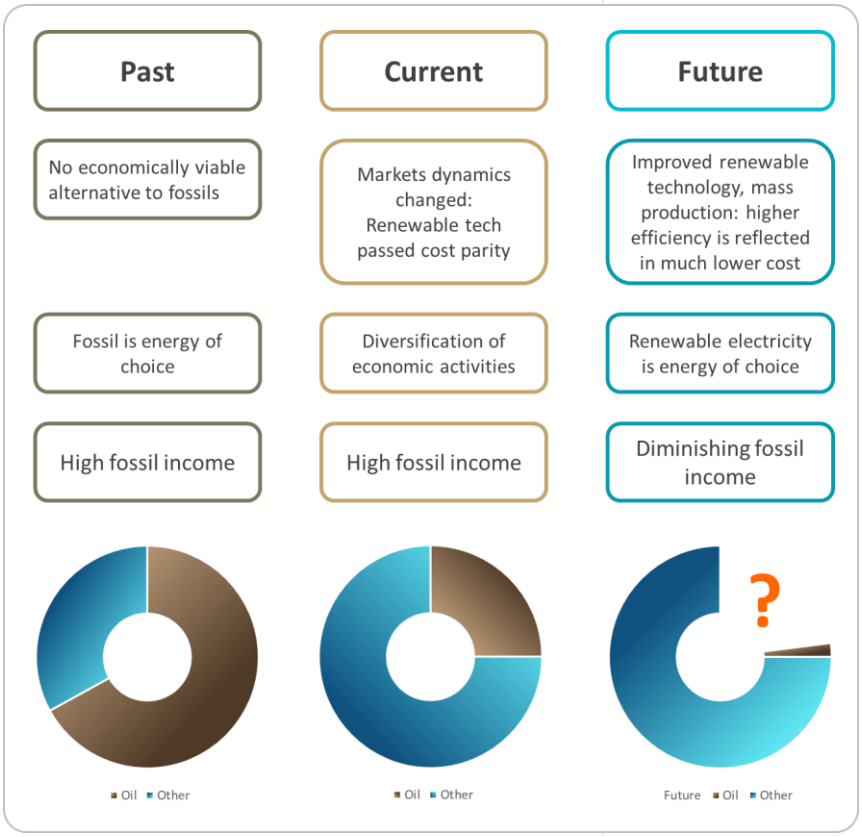
The countries in the gulf country co-operation – Bahrain, Kuwait, Oman, Qatae, Saudi Arabia and the United Arab Emirates (UAE) - generate between 15-40% of their GDP from the sales of fossils. Are they prepared to replace the oil income?

Oil Income in Gulf countries, past & future

Gulf countries, some a bi more than others – have invested oil income in other economic areas and have successfully developed their economies

Development of renewable technology, the markets and climate change suggest that oil income will be reduced and then marginalised in the near future.

If Gulf countries intend to maintain their current high standard of life, they urgently need to develop serious alternatives to completely replace fossil income. The sooner the better for themselves.



2.2.1 Background: renewables vs fossil consumption cost

Renewable technology is now cheaper throughout the board

Physics is simple, defined by the laws of nature. Converting fossil energy to heat and then to power (e.g. in the form of moving a car) has a physical maximal efficiency grad of around 35%. A higher efficiency grade is physically not possible according the thermodynamic laws. Electricity to power (movement) has an efficiency grad of 100%. Three times more than burning fossils.

Electricity-powered systems are 3 times as efficient, and now also drastically cheaper than equivalent fossil-burning systems, across all energy areas:

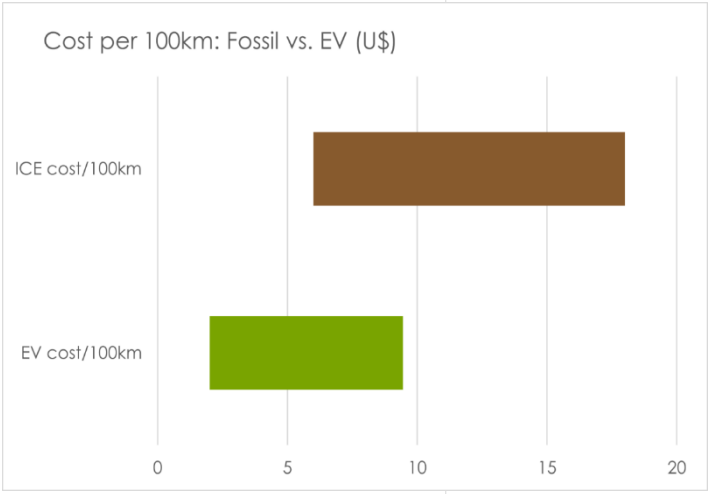
- transport,
- appliances
- residential heating & cooling.

Electric car vs gasoline car travel cost

The efficiency of an internal combustion engine is limited by the laws of thermo-physics, and can reach a maximum of 35%, In ICE cars, between 20-25% of the energy contained in the gasoline is turned into moving energy.

Electric motors directly convert energy to movement, and can reach up to 100% efficiency.

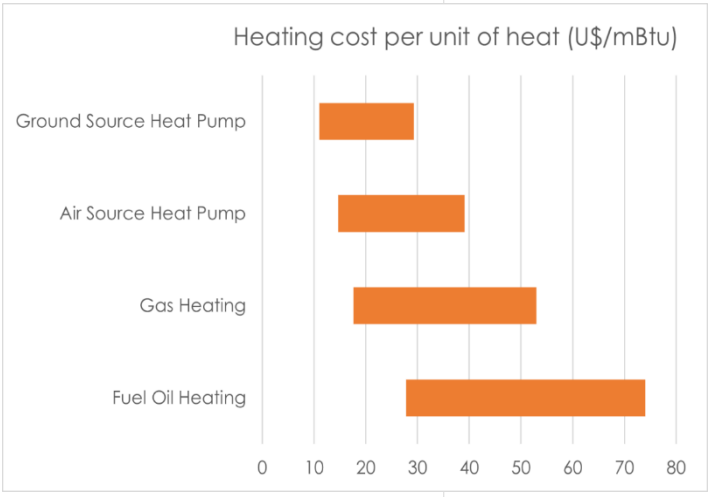
Data source: RMI, Bloomberg



Heat pumps vs oil-fired heating

The operating cost of a heating devices depends on a set of variables – electricity generation cost, taxes and/or tax breaks on fossil energy, and VAT.

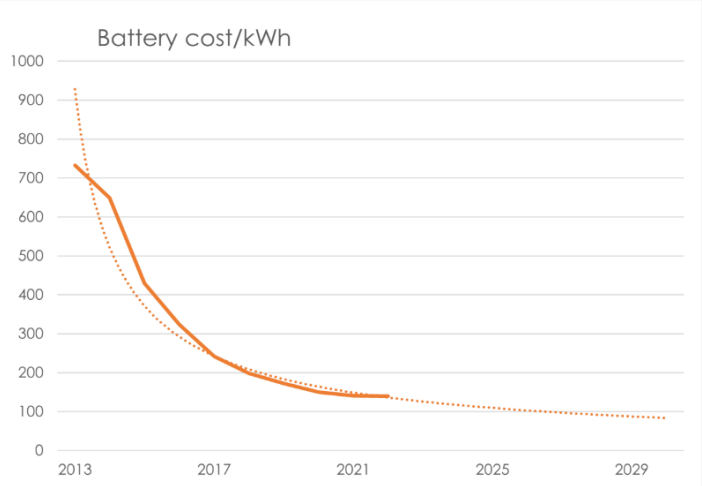
In the worst case, heat pump operating costs are comparable to fossil-fired heating systems. Under normal circumstances, heat pump's operating costs are significantly lower due to the higher factor between energy input and energy output.



Background: renewables vs fossil consumption cost (continued)

Battery costs

Battery cost have been reduced 4-fold since 2010, Given the global investment push into battery technology, costs are expected to decline further significantly. Making renewable electricity and electric road transport even more competitive.



Commercial aviation is the only area where fossils still enjoy a monopoly. Renewable technology is now a lot cheaper than fossil technology, not just by some percentage points, but by factors of 2 and 3 – and forecasted to further half costs within the next 5 to 10 years. The replacement of fossils is therefore happening either way. Economically correct speaking, fossils are toast.

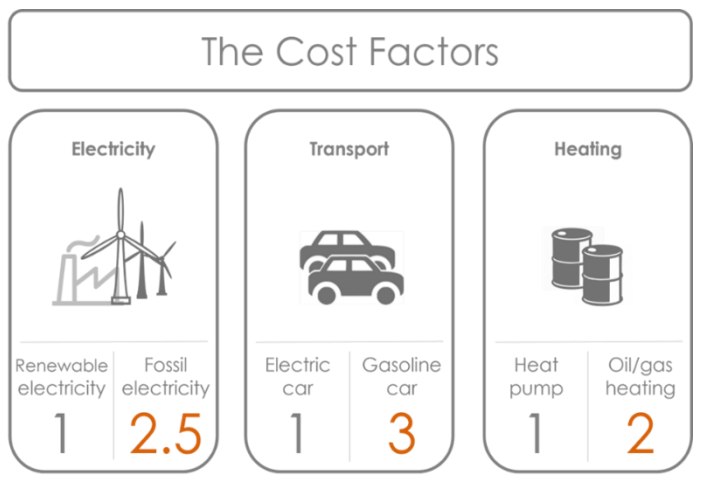
It is not a question if fossils will be replaced. Only when.

How fast the deployment of renewables and the replacement of fossils will happen is a political question. Climate change suggest that should happen a lot faster than it currently is. Climate policies could further accelerate the deployment of renewables and replacement of fossils.

Renewables are now a lot cheaper

New renewable technology – generation, heating, and transport - is now cheaper than fossil equivalents: by a factor of 2 or more. Investments driven by market dynamics are set to further improve technology and reduce costs in the near future – by around 50% in the next 5 to 10 years, putting a factor of 4 or more between renewable electricity and fossil. The economic argument is set.

Capital that seeks a return on investment is going to renewables. Fossils are no longer competitive.



Rise of renewable, decline of fossil

Gulf countries have successfully diversified their economies in logistics, finance, tourism, and hospitality amongst others, thereby reducing their dependency on fossil income. All countries have development visions that would further reduce dependency in the future.

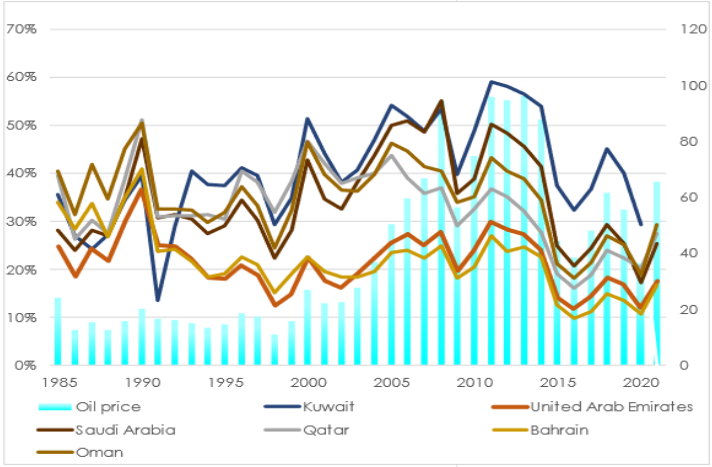
However, the currently formulated visions paths seem insufficient in the face of the expected rapid loss of fossil demand and income by 2035. At the same time, Gulf countries have built the foundation and resources to change the challenges to an opportunity.

15-40% of GDP is oil

Depending on the year (and the global market price of oil), the share of oil income on the GDP ranges from 15 to 40%

- For the UEA and Bahrain, the fossil share of GDP has been 15-20% for the last 10 years
- For Saudi Arabia, Qatar and Oman, 20-30%
- For Kuwait, 40%

These figures are even more extreme if we look at the share of fossil exports: between 50% (UEA) and 90% (Kuwait) of exports are generated from fossils. Making matters more complicated, most



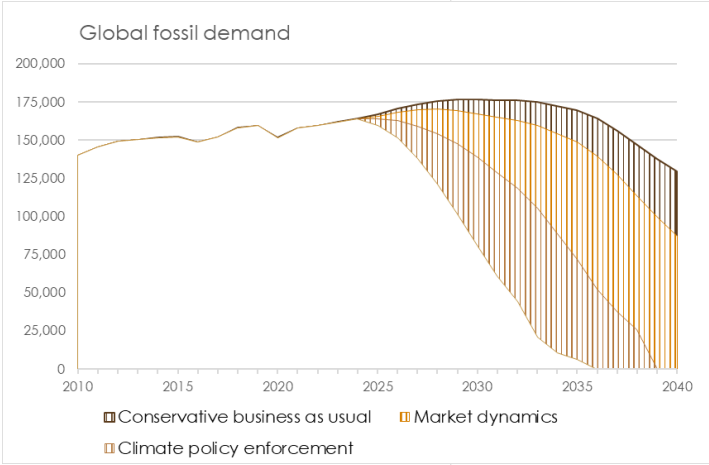
Data source: IEA, BP, World Bank

Oil demand decline: 40+% by 2035

Demand for oil is to peak in 2025 according to the IEA. With increasing speed of replacement of gasoline cars and fossil heating systems, demand will decrease further thereafter.

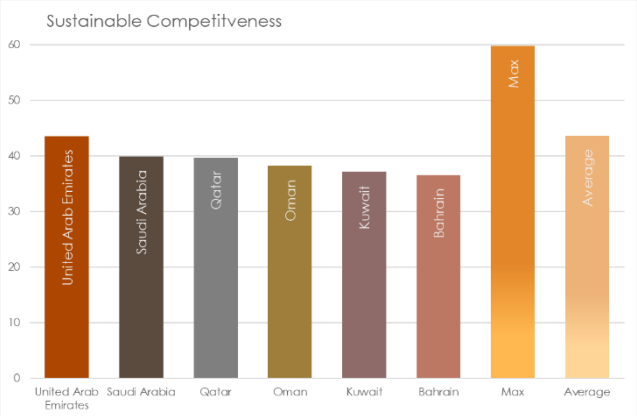
The pace of demand decline is driven by market dynamics, and accelerated by potential climate policies to reduce fossils - supply and demand are also affecting prices and margins.

Even under the most conservative scenario, Gulf countries need to replace between 10 and 20% of the current fossil income with different sources by 2040. More realistically, this number will be much higher and happening much earlier.

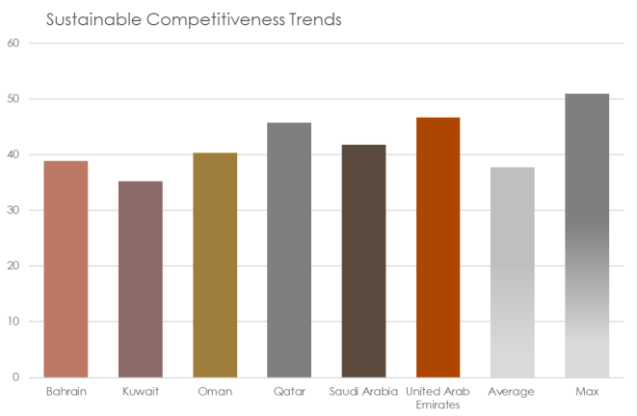


Data source: IEA, BP. Projections: IEA, SolAbility

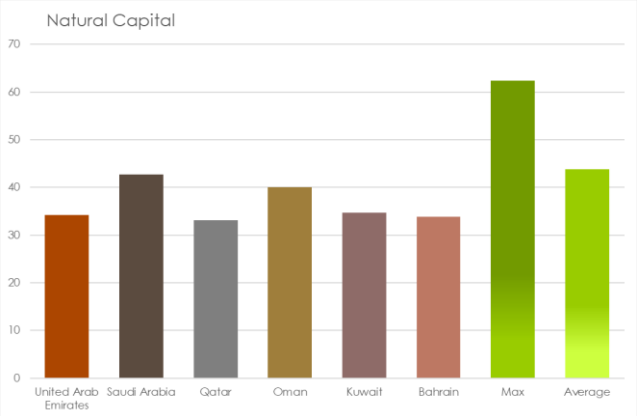
2.2.2 Gulf country's sustainable competitiveness



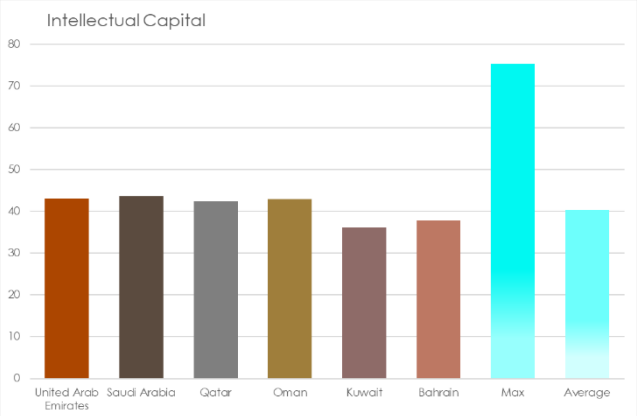
Sustainable Competitiveness
All GCC countries score below the global average. The UAE is ranked 84, Saudia Arabia 128, Qatar 132, Oman 148, Kuwait 161, and Bahrain 168



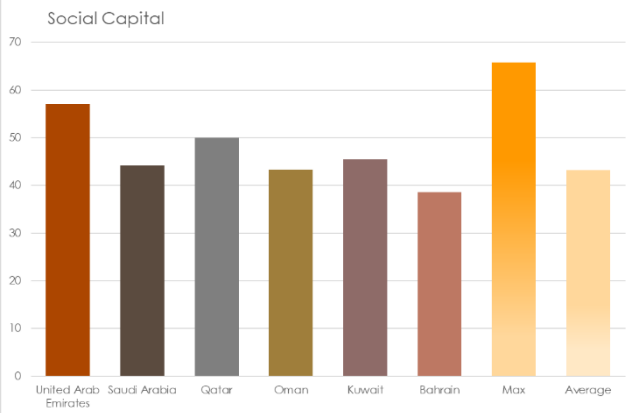
Trends
The picture is distinctively more positive when looking at developments: the UAE and Qatar are amongst the fasted improving nations globally



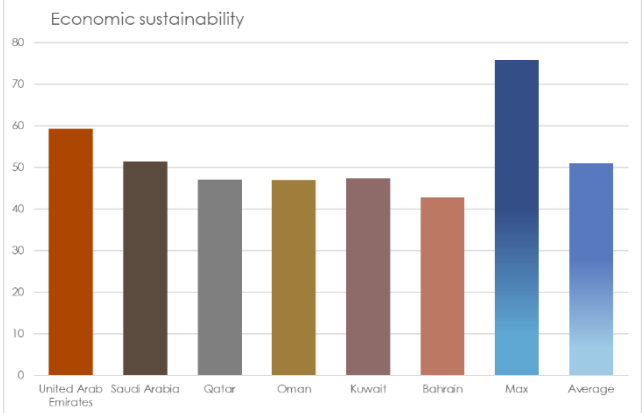
Natural Capital
Given the climatic characteristics of the region, it is not surprising that the GCC countries perform below the global average



Intellectual Capital
GCC countries are scoring slightly above the global average, but significantly below leading nations. However, trends suggest that improvements can be expected.



Social Capital
GCC score in line with global averages. The UAE however is amongst the global leading countries in social capital



Economic Capital

2.2.3 Gulf Co-operation Countries: Challenges & Opportunities

If the golf countries intend to maintain their current high standards of income and standard of life,

they need to make contingency plans to replace 80% of their fossil income by 2030, and more thereafter.

The challenges

- GCC countries need to replace a significant proportion (20-30%) of the national GDP within the next 5 -15 years
- As a consequence, nearly 100% of government revenues must be replaced – either by taxing people and businesses, or generating income through state-business. Either way, the coming changes represent a challenging shift, for governments and population alike
- While future development plans incorporate reducing reliance on fossil income, these plans remain vague – and are insufficiently timed in light of the pace of current developments
- Delaying the details and fine-planning of an alternative vision far beyond plans for 3 or more years most likely will result in significant loss of GDP and government revenues
- National oil/gas companies and their suppliers need to re-define their business model - or risk becoming marginalised
- GCC countries need a sustainable competitiveness vision & implementation strategy

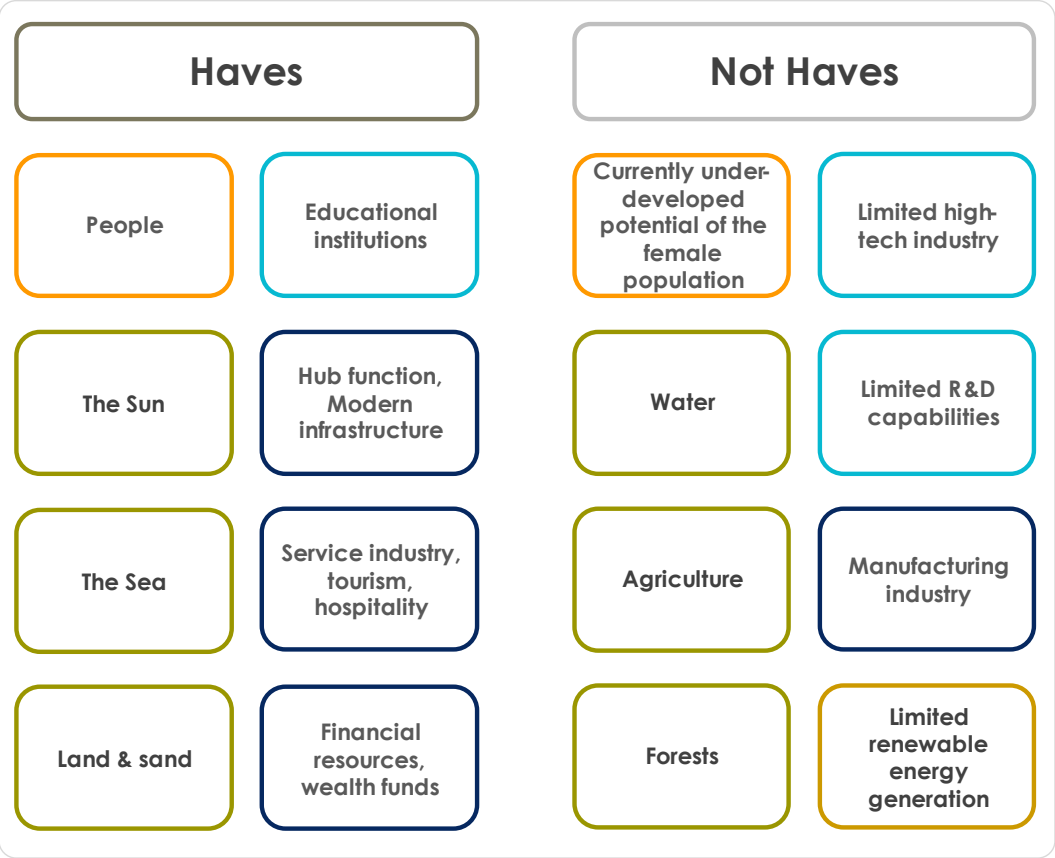
The opportunities

- Social Capital: GCC countries have invested significantly in Social Capital => a key element and basis of sustainable & competitive development in an innovation-driven global economy
- The path so far: the UAE has successfully diversified its economy over the past 30 years, proving that the reliance on fossil income can be overcome. Other countries in the GCC have also started diversification efforts, but are not yet that far.
- The location, part one: GCC is geographically and through investments a hub between Asia, Europe and Africa – potential that can further be exploited
- The location, part two: past investments in infrastructure and amenities have made the GCC a magnet for expats with high educational level. There is large pool of young & educated expats: intellectual capital and bright minds to facilitate the necessary transition – and more can be attracted
- Business opportunities: when technologies become redundant, new technologies emerge. Every technological transition (challenge) carries new opportunities in the new technology fields
- Capital reserves: GCC countries have accumulated large capital reserves and national funds. Financing the further sustainable competitiveness transition

Haves and not haves

The basis to develop alternatives, is a strength-weakness analysis: identifying – areas which the Gulf region countries already have developed, and areas that are (as of now) less competitive:

Gulf countries' current strengths and weaknesses



In an ideal case, the current "haves" can be used an combined to develop or improve the current "not-haves" to counter the threats (diminishing fossil income)-

Given the current specifics of Gulf countries, the following areas could potentially develop into key future revenue streams:

- Water
- New agriculture technologies
- Greening deserts
- Solar energy, solar fuels, solar plastics
- Tourism
- Culture
- Specific IT areas related to the key areas
- Global service providers

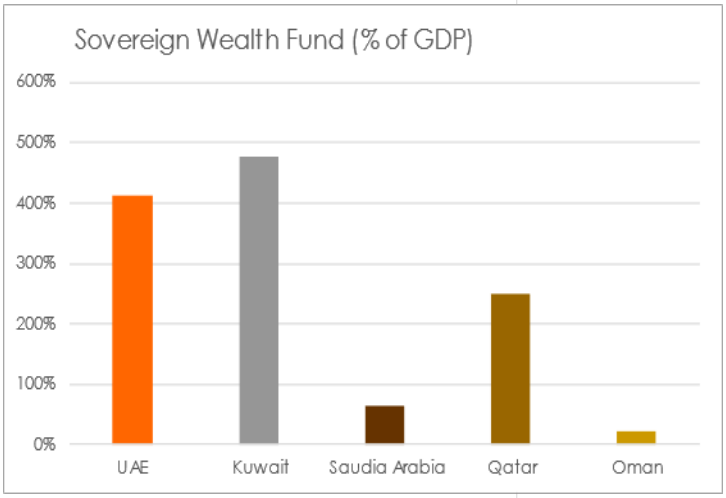
Capital Resources

Thanks to continuous demand for oil, Gulf countries have enjoyed a continuous flow of income over the last decades, nearly amounting to what economists call a "free lunch". Some of that income has been diverted for future use in sovereign wealth funds. Gulf countries therefore have considerable financial resource at their disposal to finance the required transition.

Gulf Countries' Sovereign Wealth Funds

Kuwait & UAE in good position

Kuwait's and the UAE's wealth fund exceed 400% of the respective countries annual GDP, putting these two countries in a particular strong position to finance a meaningful transition. Qatar's wealth fund is also more than 200% of its GDP, while Saudi Arabia's savings are around 60% of GDP.



Based on financial resources, Kuwait, the UAE and Qatar appear to be in the strongest position to finance effective transition, while Saudi Arabia – the World's largest exporter of fossils, and the region's largest country by population and economy – seems in a less advantageous position to finance a comprehensive and speedy transition.

Collaboration to identify key development areas

In collaboration of government agencies, universities and the private sector, Gulf countries should identify priority business and technology areas aligned with the respective country characteristics.

In a next step, cost-benefit analysis on a range of potential projects and development areas identified need to be conducted to facilitate informed resource allocation.

Resources and investments need to be allocated wisely in areas that promise the highest return on investment in terms of sustainable competitiveness.

The problem is: this needs to happen fast.

Potential alternatives include (but are not limited to):

Water tech

Water scacity is a key issue in the Golf region and beyond, and is likely to become a more pressing issue in many parts of the world. Future technologies related to water efficiency include

- Desalination
- Smart irrigation
- Smart distribution
- Water recycling & efficiency

New agriculture tech

GCC countries rely on imports to cover the needs of their population – arid hot regions are not particular fertile. In addition, climate change is making traditional agriculture significantly more volatile

- Vertical indoor agriculture and aquacultures
- Low-tech sustainablr agriculture
- Cultured meat
- Synthetic diary product alternatives:

Solar energy, fuels & plastic

For some specific usages and applications, fossils remain difficult to subsidise – in particular commercial aviation, and in the petro-chemicals, plastics and fertilizer industries. Non-fossil alternatives are emerging, however. Given the GCC's expertise with fossils, it seems manifest to capitalise on possible replacements in these areas to guarantee new income streams

- Synthetic solar fuels
- Synthetic solar plastics
- Solar electricity

R & D investment – fostering new enterprises

Developing a knowledge-based economy through investments in technology, innovation, and R & D can yield significant returns. High-quality universities and research facilities also attract students and seasoned researchers alike. Strong co-operation of government agencies, universities and the private sector can facilitate the development of start-ups, new technologies industries and income streams.

Global Service Providers

The Gulf countries have invested heavily in modern infrastructure, and are home to some of the World's most modern cities. Combined with the geographical location between Europe, Asia, and Africa should enable GCC's to attract globally active service providers – e.g. in the financial, insurance, or IT service development industries, creating jobs and income

Tourism, Hospitality, and Culture

The Gulf region has tremendous potential for tourism due to its rich culture, investments in the cultural sector, its historical sites, and beautiful landscapes. By developing this sector further, Gulf countries could attract more tourists and generate revenue through hospitality, entertainment, and related services.

For a more detailed analysis, please refer to the detailed Report, How to replace 30% Oil Income? Available on the SolAbility website.

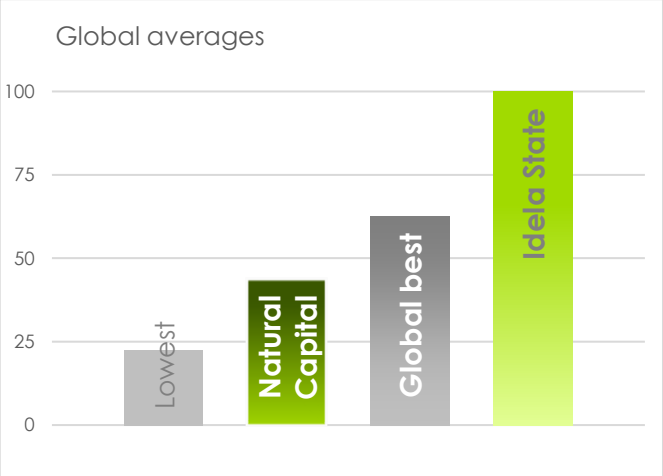
Natural Capital Index

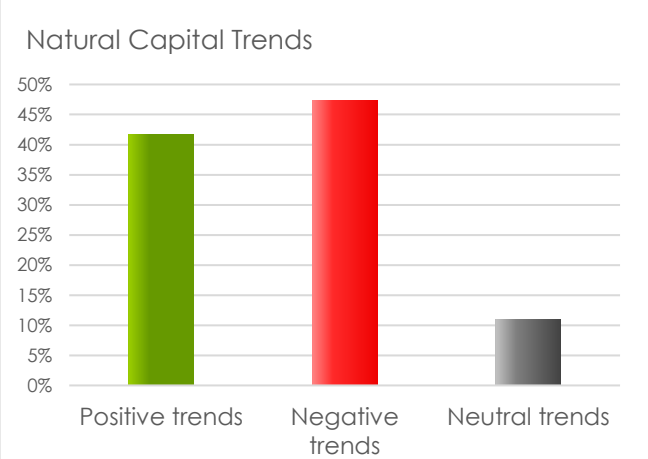
3 Natural Capital Index

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 2024 – 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 2024 is topped by Bhutana, followed by Bosnia, Brazil, and Laos
- South America nations, with their large biodiversity pool, score high in Natural Capital
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water are all ranked in the top 30s,
- African countries in the tropical belt are ranked fairly high – including the two Congo, Gabon, and Cameroon
- The two most populated countries, India (107) and China (141) are both affected by a combination of arid climate, high population density and high natural depletion levels, raising concerns over those countries' ability to self-sustain their large populations in the long term.
- Several countries with a high population in the less developed World (for example Pakistan, Egypt, Iran) are performing low in Natural Capital, raising concerns about the future ability to sustain the population in the face of rapidly increasing climate disruption

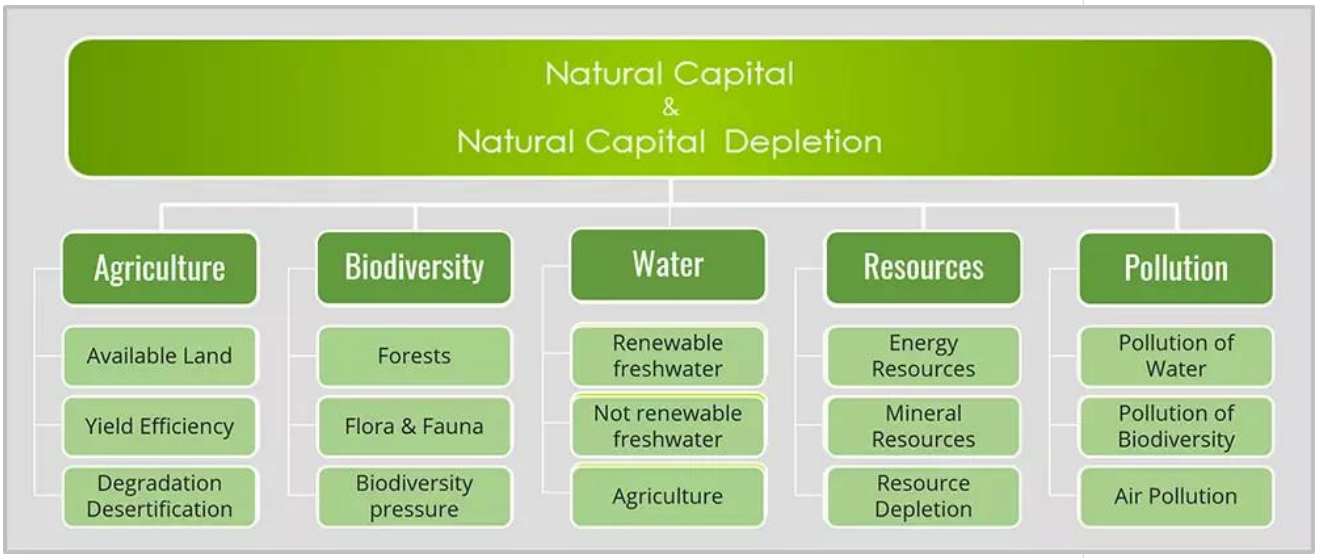
Natural Capital Index World Map

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

Natural Capital Components

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

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



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

Natural capital indicators

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

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

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

Natural Capital Index 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Bhutan	59.86	48	New Zealand	48.88	96	Turkey	42.29	144	Kenya	36.26
2	Bosnia and Herzegovi	59.63	49	Lithuania	48.85	97	Vanuatu	42.06	145	Singapore	36.15
3	Brazil	58.31	50	Georgia	48.77	98	Zimbabwe	41.76	146	Saint Lucia	36.00
4	Lao	58.14	51	Angola	48.70	99	Kyrgyzstan	41.76	147	Rwanda	35.79
5	Peru	57.37	52	Ecuador	48.52	100	Dominica	41.74	148	Grenada	35.63
6	Uruguay	57.02	53	Chile	47.96	101	Japan	41.67	149	Belgium	35.60
7	Cambodia	56.78	54	Samoa	47.95	102	Uganda	41.56	150	Liechtenstein	35.38
8	Canada	56.64	55	Portugal	47.73	103	Marshall Islands	41.40	151	Pakistan	35.19
9	Albania	56.57	56	Argentina	47.64	104	Senegal	41.35	152	Saudi Arabia	35.07
10	Sweden	56.42	57	Togo	47.43	105	Niger	41.05	153	Bahamas	34.94
11	Finland	56.26	58	Timor-Leste	47.40	106	Guinea-Bissau	40.99	154	Eritrea	34.87
12	Congo DR	55.48	59	Viet Nam	47.35	107	India	40.99	155	Libya	34.49
13	Guyana	55.15	60	Brunei Darussalam	47.29	108	Comoros	40.86	156	South Africa	34.37
14	Fiji	55.14	61	Slovenia	47.20	109	Hungary	40.76	157	Uzbekistan	34.10
15	Venezuela	54.93	62	Costa Rica	47.19	110	Sudan	40.69	158	Andorra	34.09
16	Latvia	54.73	63	Nepal	47.15	111	Mali	40.62	159	Armenia	34.03
17	Cameroon	54.27	64	Côte d'Ivoire	47.03	112	Italy	40.61	160	Eswatini	34.03
18	Paraguay	53.99	65	Austria	46.99	113	Botswana	40.51	161	Trinidad and Tobago	33.87
19	Central African Repub	53.84	66	Saint Vincent and the	46.90	114	Sri Lanka	40.39	162	Antigua and Barbuda	33.58
20	Bolivia	53.37	67	Palau	46.85	115	Saint Kitts and Nevis	40.38	163	Gambia	33.53
21	Norway	53.19	68	Denmark	46.42	116	Benin	40.34	164	Cyprus	33.48
22	Colombia	53.01	69	Liberia	46.14	117	Seychelles	40.01	165	Algeria	33.27
23	Myanmar	52.69	70	Tanzania	45.80	118	Luxembourg	39.83	166	Haiti	33.27
24	Russian Federation	51.75	71	Solomon Islands	45.78	119	Kosovo	39.77	167	Netherlands	33.26
25	Suriname	51.74	72	United States of Ameri	45.71	120	Tuvalu	39.71	168	Barbados	33.22
26	Sierra Leone	51.70	73	Zambia	45.62	121	Mexico	39.64	169	Djibouti	32.58
27	Ghana	51.66	74	Guatemala	45.24	122	Ethiopia	39.60	170	Syrian Arab Republic	32.34
28	Guinea	51.37	75	Sao Tome and Princip	45.19	123	Malawi	39.60	171	Turkmenistan	32.16
29	Belize	51.30	76	Australia	44.86	124	Madagascar	39.44	172	Yemen	32.15
30	Congo	51.04	77	Malaysia	44.81	125	Mongolia	39.24	173	Morocco	31.73
31	Equatorial Guinea	51.03	78	Belarus	44.78	126	United Kingdom	39.20	174	Oman	30.89
32	Iceland	50.80	79	El Salvador	44.75	127	Azerbaijan	39.19	175	Lebanon	30.10
33	Panama	50.78	80	Honduras	44.51	128	Spain	39.06	176	Malta	30.05
34	Tonga	50.72	81	Montenegro	44.44	129	Bangladesh	38.66	177	Maldives	29.73
35	Estonia	50.63	82	Namibia	44.27	130	Burkina Faso	38.55	178	Iran	29.61
36	Gabon	50.56	83	Switzerland	44.03	131	Philippines	38.51	179	Mauritania	29.49
37	Poland	50.55	84	South Sudan	44.01	132	Burundi	38.37	180	Egypt	29.26
38	Ukraine	50.47	85	Thailand	43.86	133	Moldova	38.29	181	Tunisia	28.92
39	Romania	50.14	86	Czechia	43.79	134	Afghanistan	38.19	182	Bahrain	28.46
40	Nicaragua	49.73	87	Greece	43.71	135	Dominican Republic	38.17	183	Iraq	28.15
41	Papua New Guinea	49.51	88	Chad	43.53	136	Kiribati	37.84	184	Cabo Verde	27.89
42	Serbia	49.47	89	Cuba	43.36	137	Germany	37.83	185	Israel	27.62
43	Mozambique	49.31	90	Lesotho	43.34	138	Mauritius	37.68	186	Somalia	27.41
44	Croatia	49.24	91	Nigeria	43.05	139	Korea	37.61	187	United Arab Emirates	27.37
45	Bulgaria	49.01	92	North Macedonia	42.93	140	Jamaica	36.87	188	Jordan	26.26
46	Micronesia	48.99	93	Indonesia	42.83	141	China	36.84	189	Kuwait	25.49
47	Slovakia	48.98	94	France	42.75	142	Kazakhstan	36.78	190	Qatar	25.46
48	New Zealand	48.88	95	Ireland	42.55	143	Tajikistan	36.34	191	Palestine, State of	22.77

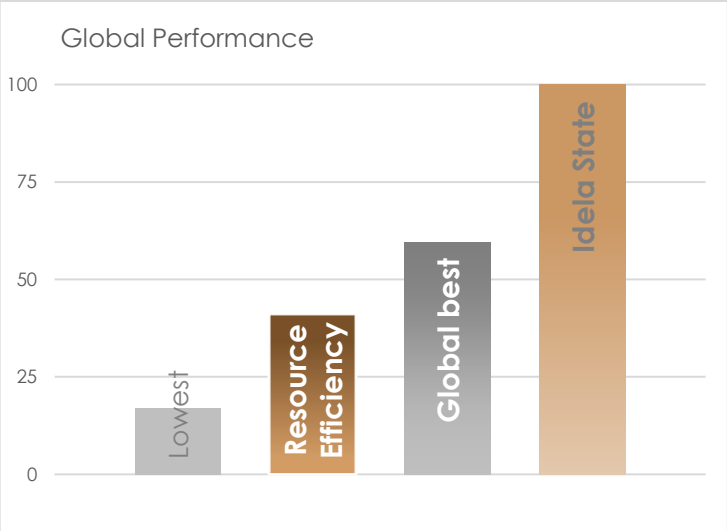
Resource Efficiency & Intensity Index

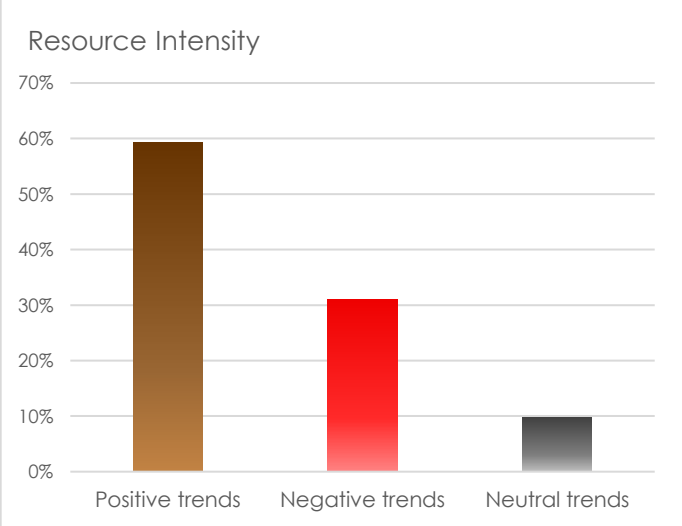
4 Resource Efficiency Index

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

The Resource Efficiency & Intensity Index measured both efficiency and intensity of a country's economy. Resource efficiency measures the economic efficiency represented by the amount of resources consumed per unit of value and wealth produced. The intensity measures the footprint of a country – per capita.

Key elements of competitiveness drivers in the Resource Efficiency Index

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

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

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

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

Resource Intensity/Efficiency Index – Key Take-Aways

The Resource Intensity & Efficiency Index is based on both per-capita measurement (intensity) and measurement against economic output, e.g. water usage per unit of GDP (economic efficiency; resource usage per unit of value generated). The countries with low resource consumption – per capita and per GNI – generally achieve a higher score in terms of intensity, while industrial economies with modern efficient production processes general achieve a higher score in terms of efficiency. As a result, the Resource Intensity /Efficiency sees both developed and lesser developed nation on the top:

- When considering the Intensity Index (per capita resource consumption), less developed countries tend to perform the best.
- In contrast, the Resource Efficiency Index (resource consumption per unit of economic value generated) is dominated by highly developed economies transitioning towards service-based economic structures.
- The combined Resource Efficiency/Intensity Index is led by the United Kingdom, followed by Malawi, Sweden, Denmark, and Kenya.
- Several African countries, including the Democratic Republic of the Congo, Uganda, and Benin, also rank among the top 20, highlighting their efficiency in resource use.
- Among major economies, Germany is ranked 36th, the United States 93rd, and Japan 109th.
- China ranks 108th, primarily due to its reliance on heavy industries and extensive construction activities, coupled with relatively low resource efficiency. However, while resource intensity in China is increasing, there are indications of improvements in overall efficiency.

The main implications of a high or low score in resource efficiency/intensity is related to stability and sustained economic growth. The global prices for raw materials and energy are subject to high volatility due to geo-political risks and hedging due to expected demand/supply imbalances. 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 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	United Kingdom	59.65	48	Brazil	50.52	96	Senegal	46.35	144	South Sudan	39.54
2	Malawi	58.86	49	Côte d'Ivoire	50.47	97	India	46.22	145	Cabo Verde	39.53
3	Sweden	57.51	50	Nicaragua	50.46	98	Hungary	46.18	146	Samoa	39.36
4	Denmark	56.93	51	Jordan	50.43	99	Malta	46.03	147	Guyana	39.31
5	Kenya	56.85	52	Nigeria	50.36	100	Colombia	45.84	148	Korea	39.19
6	Ethiopia	56.76	53	Gabon	50.36	101	Guinea-Bissau	45.80	149	Saint Lucia	39.17
7	Costa Rica	56.54	54	Sri Lanka	49.93	102	Czechia	45.67	150	Armenia	39.17
8	Djibouti	56.53	55	Namibia	49.77	103	Ecuador	45.66	151	Indonesia	39.00
9	Congo DR	55.85	56	Fiji	49.75	104	Slovenia	45.65	152	Bahamas	38.95
10	Australia	55.72	57	Poland	49.74	105	Peru	45.64	153	Sudan	38.55
11	Switzerland	55.66	58	Solomon Islands	49.66	106	Congo	45.43	154	Kyrgyzstan	38.54
12	Yemen	55.63	59	Paraguay	49.62	107	Kiribati	45.20	155	Russian Federation	38.42
13	Uganda	55.47	60	Italy	49.60	108	China	45.04	156	Kazakhstan	38.42
14	Luxembourg	55.42	61	Belgium	49.51	109	Japan	44.95	157	Bosnia and Herzegovi	38.36
15	Haiti	55.20	62	Liberia	49.48	110	Liechtenstein	44.63	158	Montenegro	38.28
16	Venezuela	55.12	63	Argentina	49.43	111	Mozambique	44.56	159	Pakistan	37.93
17	Honduras	54.87	64	Ghana	49.37	112	South Africa	44.55	160	Singapore	37.88
18	Finland	54.69	65	Cuba	49.15	113	Myanmar	44.48	161	Tonga	37.86
19	Ireland	54.49	66	Romania	49.10	114	Comoros	44.30	162	Tuvalu	37.83
20	France	54.47	67	Latvia	48.94	115	Cambodia	44.06	163	Seychelles	37.80
21	El Salvador	54.33	68	Bulgaria	48.87	116	Viet Nam	43.98	164	North Macedonia	37.53
22	Portugal	54.18	69	Uruguay	48.83	117	Maldives	43.92	165	Mongolia	37.47
23	Benin	53.93	70	Vanuatu	48.62	118	Lesotho	43.88	166	Suriname	36.97
24	Ukraine	53.80	71	Zambia	48.62	119	Syrian Arab Republic	43.84	167	Belarus	36.67
25	Norway	53.74	72	Cyprus	48.60	120	Albania	43.64	168	Iceland	36.46
26	Panama	53.71	73	Sao Tome and Princip	48.52	121	Egypt	43.48	169	Mauritius	36.32
27	Canada	53.66	74	Chile	48.46	122	Grenada	43.37	170	Georgia	36.27
28	Rwanda	53.58	75	Central African Repub	48.44	123	Dominica	43.25	171	Qatar	36.16
29	Greece	53.26	76	Niger	48.34	124	Chad	43.04	172	Turkmenistan	35.42
30	Guatemala	53.22	77	Jamaica	48.24	125	Turkey	42.70	173	Saudi Arabia	35.42
31	Sierra Leone	53.03	78	Bolivia	48.21	126	Barbados	42.54	174	Serbia	35.09
32	Papua New Guinea	52.08	79	Burundi	48.15	127	Botswana	42.54	175	United Arab Emirates	34.99
33	Cameroon	52.07	80	Equatorial Guinea	48.11	128	Trinidad and Tobago	42.53	176	Kuwait	34.67
34	Lithuania	51.77	81	Morocco	47.94	129	Bhutan	42.31	177	Saint Kitts and Nevis	34.66
35	Austria	51.74	82	Gambia	47.42	130	Tunisia	42.19	178	Lebanon	33.09
36	Germany	51.71	83	Dominican Republic	47.36	131	Belize	42.01	179	Azerbaijan	33.06
37	Madagascar	51.70	84	Guinea	47.27	132	Mauritania	41.92	180	Iraq	32.86
38	Burkina Faso	51.55	85	Timor-Leste	47.26	133	Malaysia	41.82	181	Micronesia	32.75
39	Somalia	51.53	86	Afghanistan	47.25	134	Moldova	41.63	182	Bahrain	32.66
40	Angola	51.50	87	New Zealand	47.25	135	Andorra	41.63	183	Uzbekistan	32.14
41	Spain	51.42	88	Saint Vincent and the	47.17	136	Eswatini	41.61	184	Oman	31.70
42	Estonia	51.38	89	Slovakia	47.17	137	Mali	41.55	185	Algeria	31.41
43	Netherlands	51.22	90	Philippines	47.17	138	Mexico	41.42	186	Iran	30.89
44	Zimbabwe	51.19	91	Croatia	46.93	139	Thailand	40.96	187	Lao	30.45
45	Bangladesh	50.85	92	Togo	46.93	140	Antigua and Barbuda	40.50	188	Marshall Islands	29.89
46	Tanzania	50.68	93	United States of Amer	46.70	141	Tajikistan	40.49	189	Palau	29.86
47	Palestine, State of	50.59	94	Israel	46.56	142	Brunei Darussalam	40.37	190	Kosovo	29.71
48	Brazil	50.52	95	Nepal	46.45	143	Eritrea	40.05	191	Libya	25.58

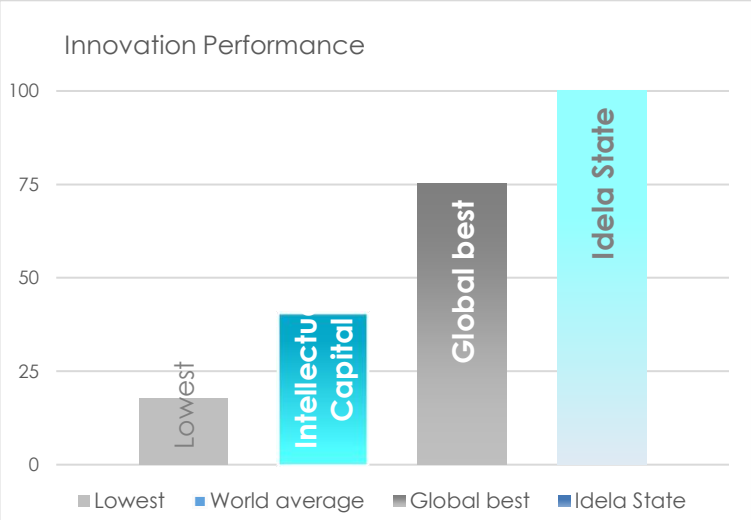
Intellectual Capital Index

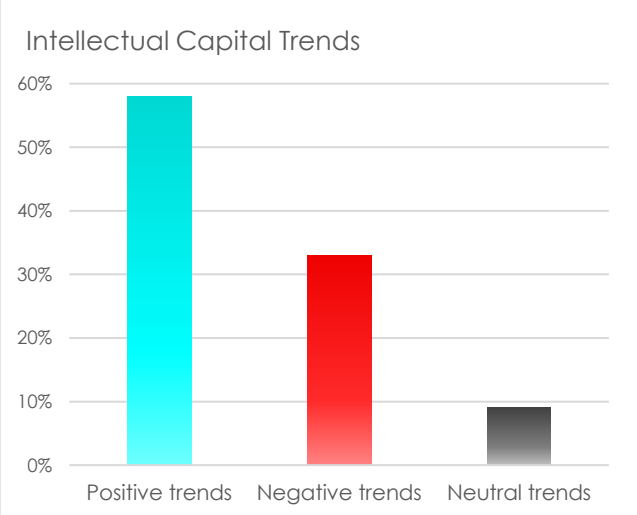
5 Intellectual Capital & Innovation Index

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

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

State of the World – Intellectual & Innovation Capital



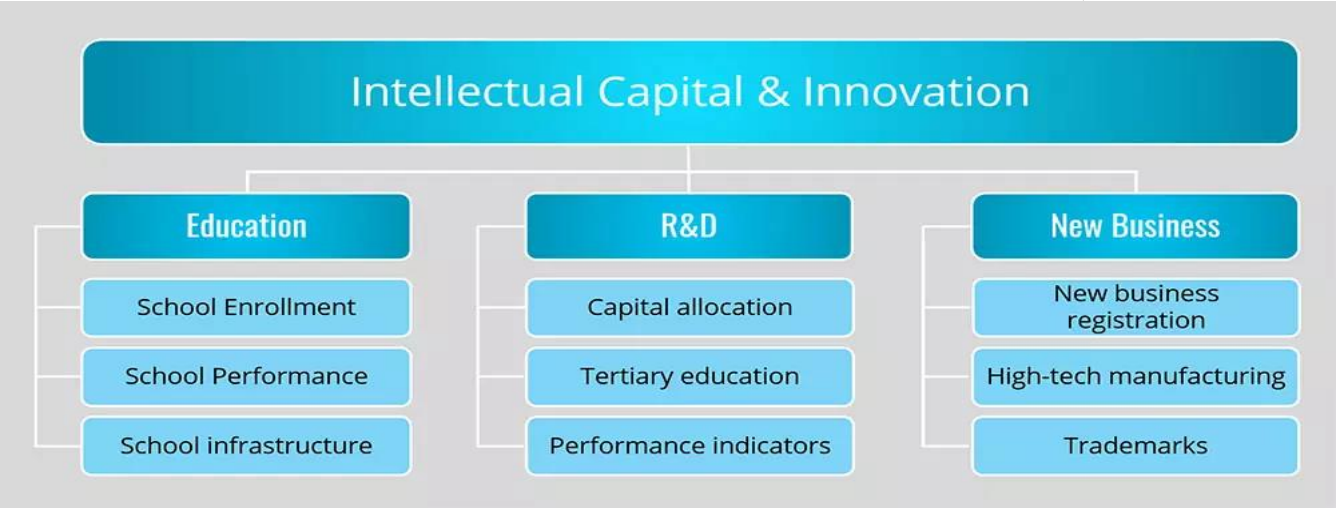


The global average in the Intellectual Capital Index is 40 – the gap to a perfect World 60. The Difference between low-performing countries (lowest: 15) and the highest score (78) is striking, and reflects – even stronger than a GNI comparison – the North-South reflect. A high score in the Intellectual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

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

Measuring Innovation

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.



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

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 2024

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 (South. Korea, China, Japan, Singapore) dominate the intellectual capital sub-index of the GSCI, reflecting the continuing shift of technology advancements
- The Innovation ranking continues to be topped by South Korea – by a considerable margin.
- China is ranked second, underlying the countries continued advance into technology (and indicating the value of state-led investments in education)
- Germany is ranked 4, The UK 6 and the US 8,
- Scandinavian Nations are all within the top twenty, as is Israel
- Brazil is ranked 49, India 62 and Nigeria 169.
- Morocco (57), Tunesia (68), and South Africa (76) are the highest ranked nation on the African continent
- Most of Africa is unfortunately still underperforming in the global intellectual capital comparison, raising fear of prolonged entrapment in poverty

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

Intellectual Capital Index 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Korea	77.86	48	Tuvalu	48.69	96	Fiji	38.68	144	Trinidad and Tobago	27.00
2	China	75.00	49	Brazil	48.34	97	Saint Lucia	38.21	145	Senegal	26.33
3	Germany	73.69	50	Barbados	47.90	98	Saint Kitts and Nevis	38.03	146	Pakistan	26.32
4	Switzerland	72.16	51	Saudi Arabia	47.86	99	Vanuatu	37.69	147	Bangladesh	26.28
5	Japan	72.05	52	Thailand	47.73	100	Egypt	37.63	148	Gambia	26.00
6	United Kingdom	71.89	53	Chile	47.63	101	Paraguay	36.95	149	Nicaragua	25.90
7	Sweden	71.53	54	Andorra	46.88	102	Tonga	36.59	150	Togo	25.68
8	United States of Amer	70.14	55	Palestine, State of	45.99	103	Maldives	36.45	151	Zimbabwe	25.62
9	Singapore	69.68	56	Peru	45.45	104	Guyana	36.10	152	Syrian Arab Republic	25.53
10	Finland	67.53	57	Morocco	45.44	105	Turkmenistan	36.03	153	Liberia	25.51
11	Denmark	67.44	58	Serbia	45.39	106	Kyrgyzstan	35.98	154	Zambia	24.74
12	Netherlands	67.00	59	Saint Vincent and the	45.23	107	Bolivia	35.96	155	Mozambique	24.59
13	France	66.75	60	Antigua and Barbuda	44.91	108	Samoa	35.87	156	Yemen	23.81
14	Israel	66.68	61	Mexico	44.89	109	Micronesia	35.50	157	Congo	23.28
15	Liechtenstein	66.52	62	India	44.59	110	Namibia	35.11	158	Burkina Faso	23.24
16	Belgium	66.38	63	Colombia	44.55	111	Venezuela	34.96	159	Iraq	22.91
17	Austria	66.23	64	Georgia	44.44	112	Jamaica	34.91	160	Comoros	22.67
18	Luxembourg	64.49	65	Palau	44.42	113	Jordan	34.10	161	Sudan	22.51
19	Iceland	64.46	66	Moldova	44.15	114	Lebanon	33.96	162	Lao	22.49
20	Estonia	62.94	67	Qatar	44.03	115	Kuwait	33.84	163	Djibouti	22.36
21	Italy	62.40	68	Tunisia	43.96	116	Bahrain	33.66	164	Gabon	22.24
22	Norway	62.12	69	Belarus	43.81	117	Belize	33.47	165	Cameroon	22.14
23	Turkey	61.97	70	Costa Rica	43.70	118	Dominican Republic	32.57	166	Congo DR	21.59
24	Slovenia	61.77	71	Kazakhstan	43.49	119	Botswana	32.11	167	Burundi	21.50
25	Poland	60.57	72	Kiribati	43.24	120	Sri Lanka	32.00	168	Lesotho	21.15
26	Portugal	60.45	73	Argentina	42.97	121	Solomon Islands	31.59	169	Nigeria	20.98
27	Czechia	60.25	74	Mauritius	42.31	122	Panama	31.29	170	Malawi	20.74
28	Australia	59.93	75	Albania	42.11	123	Tajikistan	31.01	171	Equatorial Guinea	20.62
29	Canada	59.26	76	South Africa	41.64	124	Nepal	30.90	172	Afghanistan	20.22
30	Ireland	58.83	77	Marshall Islands	41.63	125	Timor-Leste	30.76	173	Haiti	19.61
31	Malta	58.24	78	Indonesia	41.40	126	Suriname	30.74	174	Côte d'Ivoire	19.56
32	New Zealand	58.00	79	Romania	41.37	127	Bahamas	30.38	175	Tanzania	19.27
33	Cyprus	55.07	80	Ukraine	41.36	128	Dominica	30.30	176	Benin	18.89
34	Viet Nam	54.45	81	Uzbekistan	41.31	129	Sao Tome and Princip	30.16	177	Mali	18.50
35	Croatia	54.35	82	North Macedonia	41.09	130	Grenada	30.07	178	Niger	18.43
36	Russian Federation	54.31	83	Armenia	40.95	131	Honduras	29.58	179	Guinea	18.08
37	Lithuania	54.22	84	Mongolia	40.95	132	Sierra Leone	29.51	180	Ethiopia	17.57
38	Greece	53.90	85	Oman	40.92	133	Bhutan	29.35	181	Guinea-Bissau	16.97
39	Spain	53.88	86	Brunei Darussalam	40.72	134	Kenya	29.20	182	Madagascar	16.88
40	Slovakia	52.87	87	Algeria	40.54	135	Myanmar	29.11	183	Angola	16.02
41	Hungary	52.61	88	Kosovo	40.16	136	Guatemala	28.73	184	Uganda	14.99
42	Latvia	51.80	89	Philippines	40.13	137	Cabo Verde	28.30	185	Central African Repub	14.89
43	Bulgaria	50.65	90	Montenegro	40.10	138	Ghana	28.18	186	Chad	14.77
44	United Arab Emirates	50.07	91	Ecuador	40.01	139	El Salvador	28.07	187	Papua New Guinea	14.48
45	Uruguay	49.52	92	Seychelles	39.82	140	Cambodia	27.84	188	Mauritania	14.13
46	Iran	49.28	93	Cuba	39.80	141	Eswatini	27.81	189	Eritrea	13.21
47	Malaysia	48.89	94	Azerbaijan	39.01	142	Libya	27.56	190	South Sudan	12.91
48	Tuvalu	48.69	95	Bosnia and Herzegovi	38.88	143	Rwanda	27.01	191	Somalia	10.74

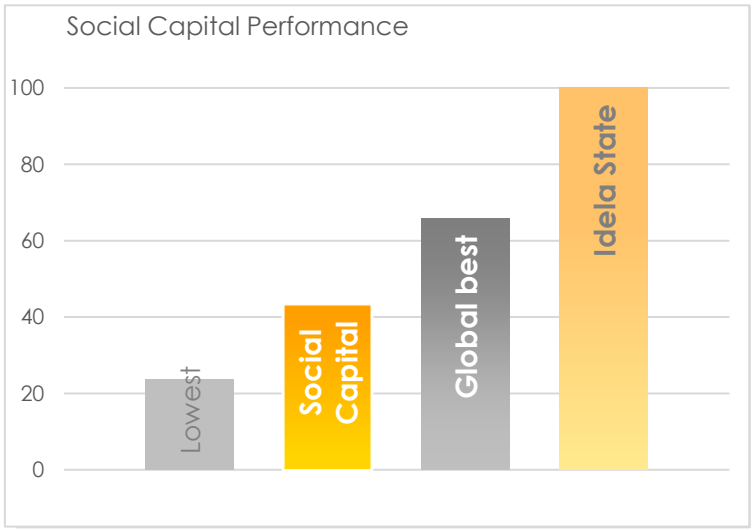
Social Capital Index

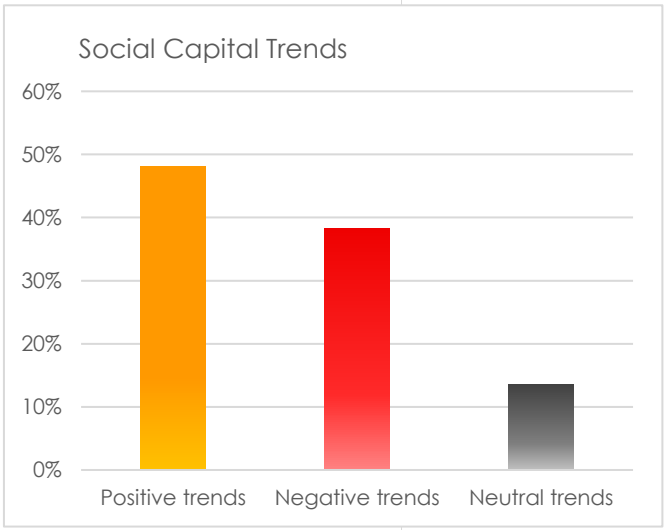
6 Social Capital Index

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

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

State of the World – Social Capital



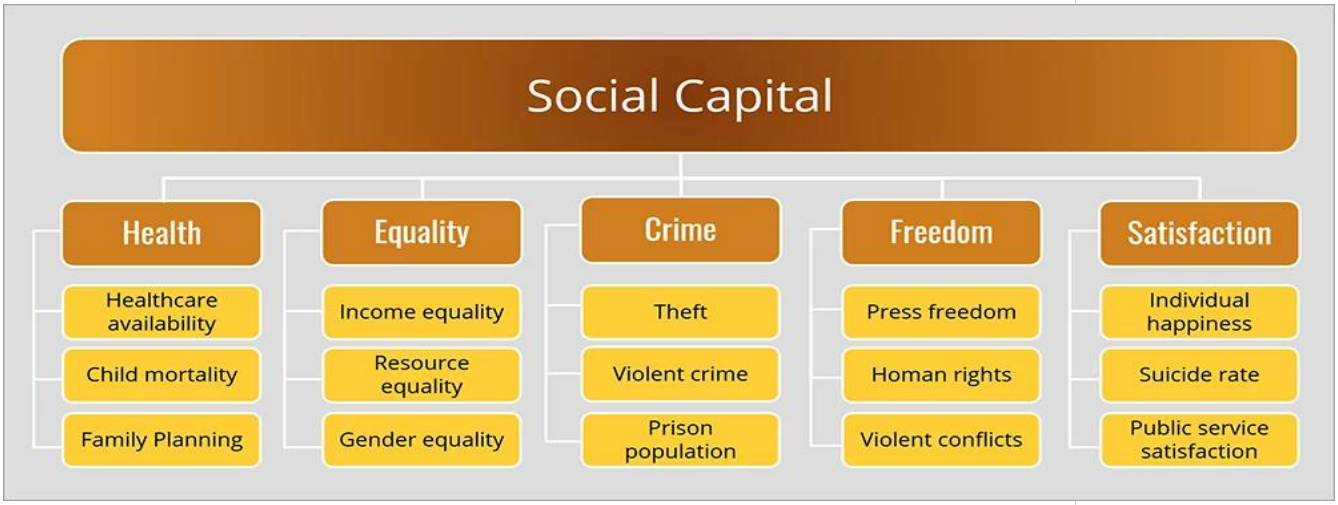


The global average Social Capital Score is 44; the global best 64 – a gap of 56 to a perfect state. Not surprisingly, the nations in the North (particularly Scandinavia) are significantly ahead of countries in the South (particular Africa and Central Asia).

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

Measuring Social Capital

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, and prevents natural resources from being over-exploited.



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

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

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

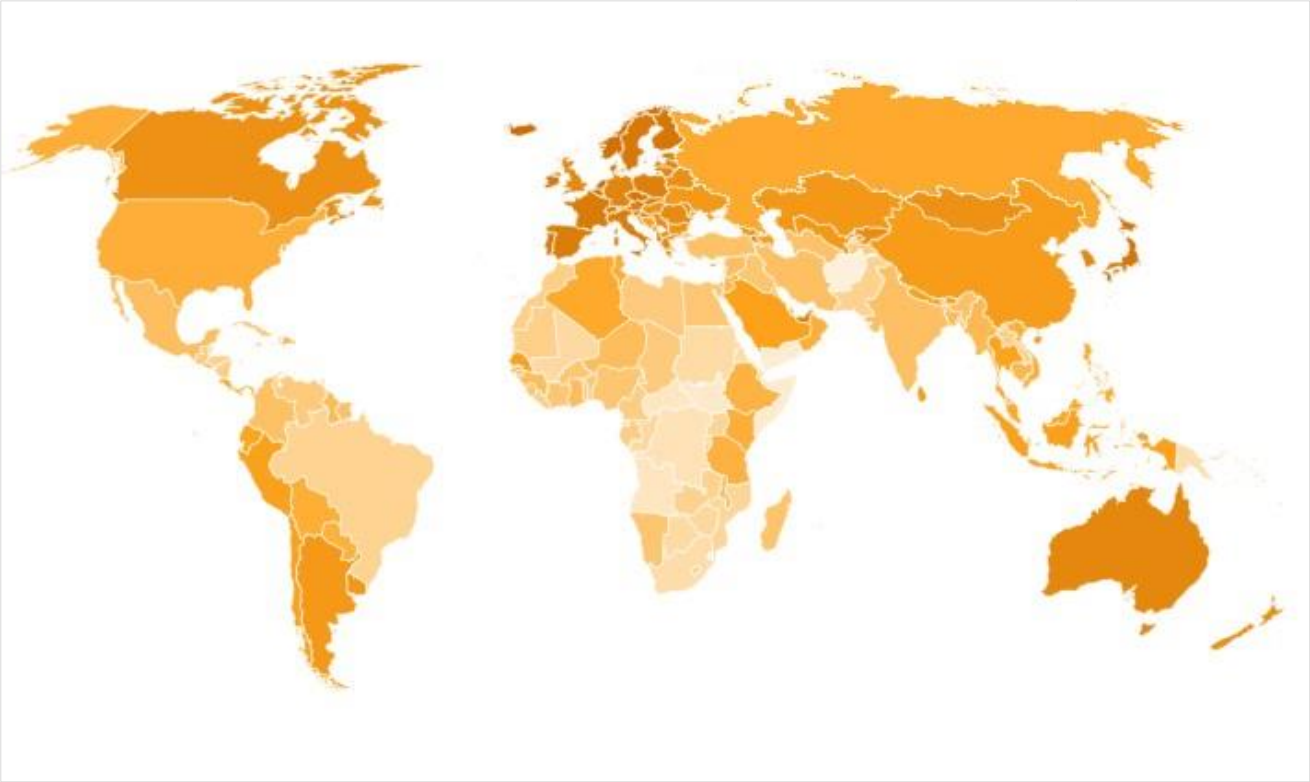
The indicators used to calculate the Social Capital score of countries is composed of health and health care factors (availability and affordability), the quantitative equality within societies (income, assets, and gender equality), freedom indicators (political freedom, freedom from fear, individual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

Social Capital Index World Map

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

Key observations include

- The Social Capital Index is topped by Japan, followed by the Netherlands, France, Iceland and Norway. The remaining Scandinavian nations are also in the top 10.
- The top 30 of the Social Capital sub-index is dominated by Western European countries and the Baltics – except for Japan (1) and South Korea (17), and the United Arab Emirates (25)
- The USA, due to comparable high crime rates, low availability of health services, and rising inequality, is ranked 118
- China is ranked 43, India 89, Nigeria 109, and Brazil 179
- The highest ranked South American countries are Uruguay (68), followed by Argentina (71), Peru (86); the highest-ranking African nations are Senegal (56), Madagascar (76), and Kenya (78)
- 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

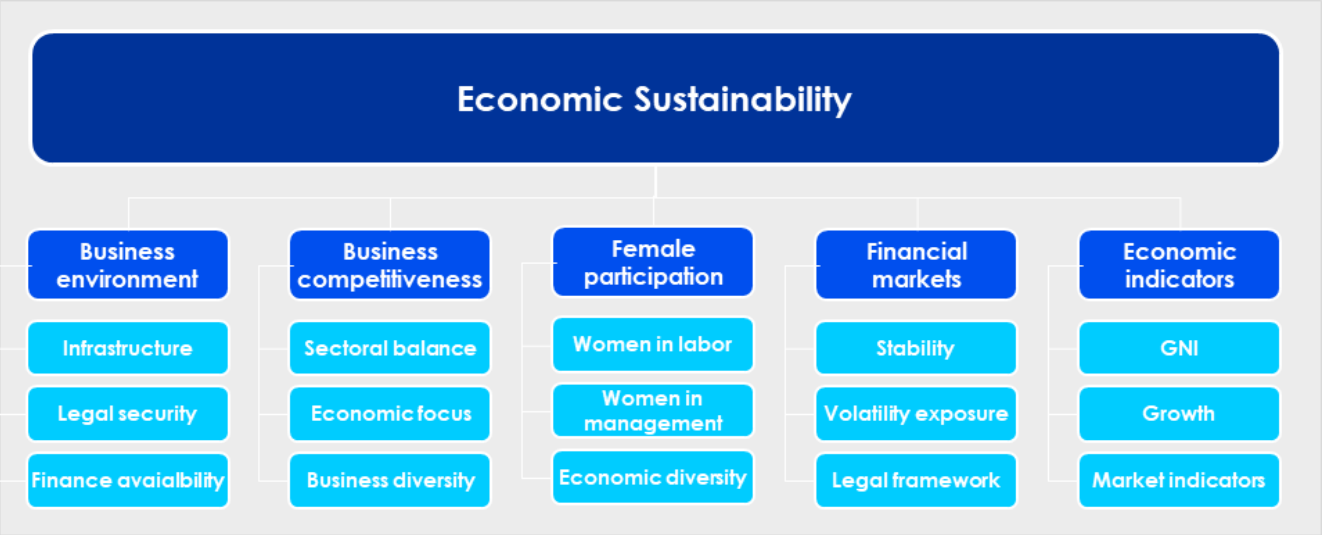
Social Capital Index 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Japan	64.99	48	Sri Lanka	49.03	96	Ecuador	41.01	144	Comoros	35.73
2	Netherlands	62.31	49	North Macedonia	49.02	97	Burkina Faso	40.95	145	Panama	35.69
3	France	62.19	50	Canada	48.79	98	El Salvador	40.94	146	Turkey	35.47
4	Iceland	61.04	51	Kosovo	48.50	99	Ghana	40.85	147	Cuba	35.44
5	Norway	60.94	52	Liechtenstein	48.42	100	Guinea-Bissau	40.83	148	Mexico	35.39
6	Slovenia	60.91	53	Ethiopia	48.28	101	Sierra Leone	40.80	149	Venezuela	35.18
7	Denmark	59.62	54	Kazakhstan	48.11	102	Russian Federation	40.65	150	Zimbabwe	35.17
8	Belgium	59.30	55	Mongolia	48.05	103	Gambia	40.54	151	Congo DR	35.07
9	Sweden	59.29	56	Senegal	47.87	104	Burundi	40.42	152	Haiti	35.03
10	Switzerland	58.57	57	New Zealand	47.70	105	Tunisia	40.18	153	Mali	34.92
11	Spain	58.50	58	Bulgaria	47.60	106	Chad	39.69	154	Suriname	34.67
12	Timor-Leste	58.40	59	Singapore	47.26	107	Tonga	39.61	155	Saint Vincent and the	34.43
13	Italy	58.29	60	Ukraine	46.51	108	Oman	39.36	156	Iraq	34.39
14	Finland	57.95	61	Hungary	46.37	109	Nigeria	39.07	157	Tajikistan	34.31
15	Portugal	56.82	62	Indonesia	46.32	110	Bolivia	38.93	158	Kiribati	34.06
16	Ireland	56.79	63	Philippines	45.76	111	Djibouti	38.89	159	Egypt	33.90
17	Korea	56.73	64	Uzbekistan	45.18	112	Benin	38.84	160	Libya	33.77
18	Czechia	56.19	65	Cambodia	45.09	113	Jordan	38.68	161	Gabon	33.70
19	Cyprus	55.98	66	Bangladesh	44.91	114	Côte d'Ivoire	38.55	162	Morocco	33.61
20	Estonia	55.94	67	Andorra	44.83	115	Paraguay	38.15	163	Mauritania	33.25
21	Austria	55.88	68	Uruguay	44.66	116	Vanuatu	38.11	164	Lesotho	33.25
22	Luxembourg	55.22	69	Thailand	44.65	117	Barbados	37.94	165	Pakistan	33.20
23	Slovakia	54.74	70	Georgia	44.33	118	United States of Ameri	37.89	166	Guatemala	32.93
24	Germany	53.89	71	Argentina	44.30	119	Dominican Republic	37.88	167	Samoa	32.83
25	United Arab Emirates	53.60	72	Qatar	43.95	120	Brunei Darussalam	37.87	168	Botswana	32.58
26	Poland	53.01	73	Kuwait	43.85	121	Bahrain	37.63	169	Central African Repub	32.42
27	Moldova	52.52	74	Azerbaijan	43.79	122	Togo	37.50	170	Sudan	32.10
28	Albania	52.39	75	Bosnia and Herzegovi	43.76	123	Eritrea	37.45	171	Saint Kitts and Nevis	32.03
29	Montenegro	51.44	76	Madagascar	43.72	124	Congo	37.27	172	Angola	31.84
30	Latvia	51.38	77	Niger	43.47	125	Namibia	37.24	173	Equatorial Guinea	31.71
31	Armenia	51.20	78	Kenya	43.35	126	Zambia	37.22	174	Nicaragua	31.69
32	Lithuania	51.08	79	Tanzania	43.34	127	Syrian Arab Republic	37.15	175	South Sudan	31.57
33	Australia	50.78	80	Sao Tome and Princip	43.20	128	Lebanon	36.93	176	Marshall Islands	31.32
34	Croatia	50.71	81	Myanmar	42.72	129	Lao	36.88	177	Honduras	31.20
35	United Kingdom	50.56	82	Trinidad and Tobago	42.36	130	Guyana	36.70	178	Tuvalu	30.98
36	Belarus	50.28	83	Seychelles	42.33	131	Mozambique	36.69	179	Brazil	30.69
37	Israel	50.18	84	Malawi	42.24	132	Iran	36.55	180	Belize	30.30
38	Kyrgyzstan	50.17	85	Saudi Arabia	42.05	133	Antigua and Barbuda	36.52	181	Papua New Guinea	30.22
39	Maldives	50.15	86	Peru	42.00	134	Palestine, State of	36.49	182	Yemen	30.03
40	Greece	49.67	87	Mauritius	41.93	135	Liberia	36.43	183	Dominica	29.47
41	Romania	49.44	88	Guinea	41.85	136	Uganda	36.40	184	Micronesia	29.41
42	Serbia	49.42	89	India	41.60	137	Fiji	36.40	185	Saint Lucia	29.19
43	China	49.41	90	Algeria	41.52	138	Solomon Islands	36.30	186	South Africa	29.13
44	Bhutan	49.38	91	Cabo Verde	41.39	139	Turkmenistan	36.22	187	Somalia	28.96
45	Viet Nam	49.37	92	Malaysia	41.33	140	Cameroon	36.14	188	Palau	28.76
46	Malta	49.28	93	Rwanda	41.30	141	Grenada	35.99	189	Bahamas	28.63
47	Nepal	49.16	94	Costa Rica	41.11	142	Jamaica	35.94	190	Afghanistan	27.20
48	Sri Lanka	49.03	95	Chile	41.08	143	Colombia	35.88	191	Eswatini	24.19

Economic Capital Index

7 Economic Sustainability Index

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

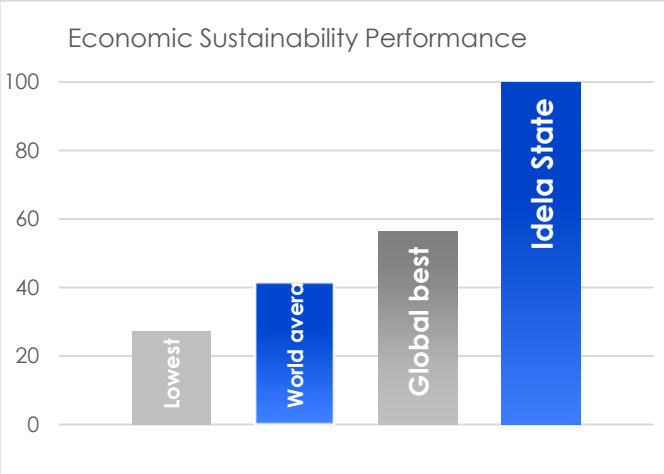


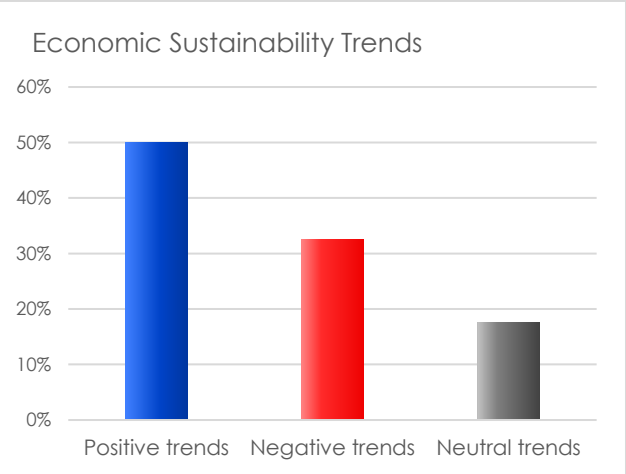
Measuring Economic Sustainability

Economic sustainable competitiveness is determined by a set of external and internal factors, including the regulatory environment, government efficiency, level of education as a basis for innovation, sectoral balance, inclusiveness, and equal opportunities. The Economic Capital Index does not make qualitative evaluate of systems. The Economic Capital Index is based on measuring quantitative outcomes of the systems.

Economic Sustainability

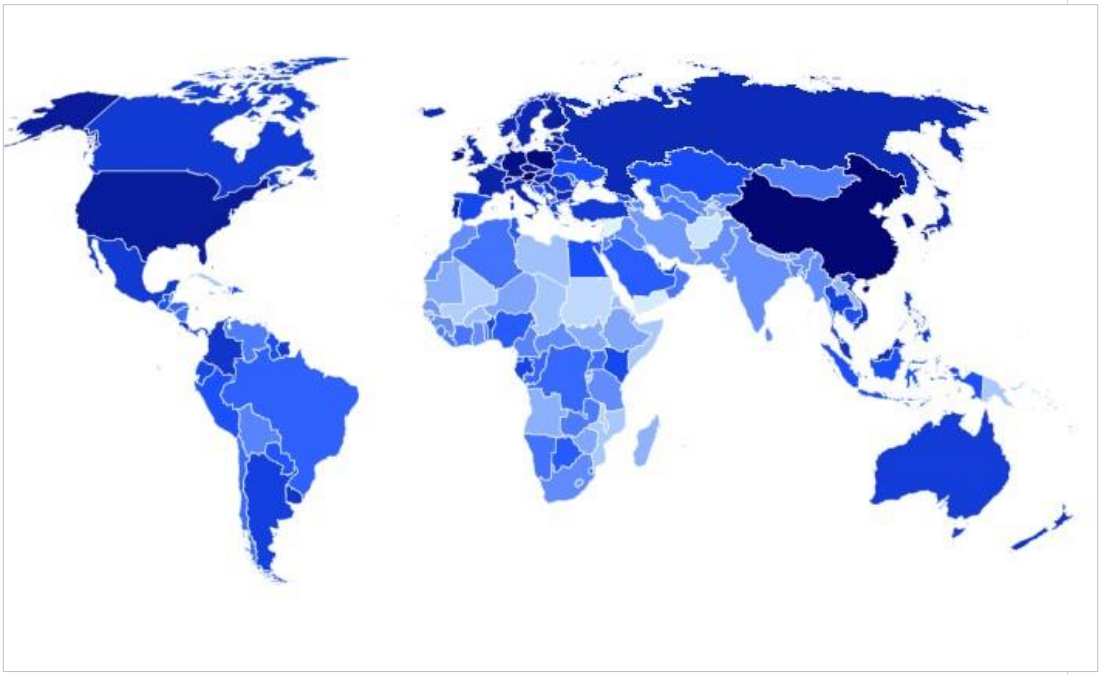
Economic Sustainability reflects the ability to generate wealth through sustainable and inclusive economic development. The global average level of economic sustainability in 2024 is 41, the highest achieved score is 62. 50% of all trends are positive, while 37% are pointing the wrong direction.





Key take-aways of Economic Sustainability Index 2024:

- The Economic Capital ranking is topped by economically advanced nations in Europe, and Asia, However, Israel on rank 12 and Costa Ric (16) also make into the top 20
- The index is topped by Slovenia, followed by Austria, The Check Republic, Iceland and Finland
- China is ranked 4, while the US 24, reflecting the ongoing shift of economic power
- Germany is ranked 10, the UK 26, and France 29
- Brazil is ranked 101, Nigeria 87, and India 161
- Economies in Central and Eastern Europe score all in the upper quarter



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

Economic Sustainability Scores 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Austria	60.22	48	Netherlands	47.41	96	Uganda	41.70	144	Pakistan	38.02
2	Ireland	58.92	49	El Salvador	47.37	97	Tuvalu	41.70	145	Uzbekistan	38.00
3	Poland	58.54	50	Thailand	47.24	98	Equatorial Guinea	41.70	146	Morocco	37.93
4	China	57.13	51	Liechtenstein	47.22	99	Vanuatu	41.69	147	Haiti	37.65
5	Slovenia	56.59	52	Greece	47.22	100	Brazil	41.42	148	Fiji	37.61
6	Czechia	56.49	53	Albania	47.16	101	Eswatini	41.39	149	Ghana	37.60
7	Singapore	56.23	54	Andorra	47.00	102	Cabo Verde	41.32	150	Azerbaijan	37.56
8	Latvia	55.83	55	Kenya	46.52	103	Sao Tome and Princip	41.24	151	Marshall Islands	37.53
9	Switzerland	55.63	56	Dominican Republic	46.51	104	Congo	41.04	152	Lebanon	37.42
10	Germany	55.53	57	Canada	46.48	105	Saint Lucia	41.01	153	Myanmar	37.42
11	Hungary	55.28	58	Bahrain	46.22	106	Chile	40.99	154	Solomon Islands	36.95
12	Israel	54.11	59	Panama	46.22	107	Namibia	40.93	155	Jamaica	36.64
13	Lithuania	54.07	60	Turkey	46.18	108	Palau	40.88	156	Senegal	36.63
14	Korea	53.71	61	Gabon	46.18	109	Sierra Leone	40.77	157	Ethiopia	35.99
15	Portugal	53.03	62	Australia	46.16	110	Dominica	40.58	158	Bhutan	35.95
16	Costa Rica	52.98	63	Cambodia	45.89	111	Grenada	40.49	159	Iraq	35.85
17	Slovakia	52.96	64	Spain	45.54	112	North Macedonia	40.31	160	South Africa	35.70
18	Estonia	52.73	65	Ecuador	45.40	113	Saudi Arabia	40.29	161	India	35.69
19	Denmark	52.73	66	Saint Vincent and the	45.40	114	Côte d'Ivoire	40.17	162	Mauritania	35.46
20	Luxembourg	52.30	67	Guatemala	45.22	115	Bangladesh	40.16	163	Zimbabwe	35.42
21	Finland	52.24	68	Ukraine	45.20	116	Togo	40.04	164	Niger	35.09
22	Serbia	52.19	69	Georgia	45.08	117	Turkmenistan	39.93	165	Madagascar	35.07
23	Iceland	52.04	70	Saint Kitts and Nevis	44.86	118	Zambia	39.85	166	Tonga	35.05
24	United States of Ameri	51.97	71	Malta	44.82	119	Seychelles	39.81	167	Micronesia	34.92
25	Bulgaria	51.86	72	Belize	44.63	120	Jordan	39.66	168	Nepal	34.43
26	United Kingdom	51.34	73	Bosnia and Herzegovi	44.29	121	Comoros	39.58	169	South Sudan	34.20
27	Viet Nam	51.33	74	Paraguay	44.27	122	Trinidad and Tobago	39.56	170	Tajikistan	33.95
28	Japan	51.32	75	Antigua and Barbuda	44.00	123	Central African Repub	39.50	171	Burkina Faso	33.93
29	France	51.28	76	Kazakhstan	43.87	124	Rwanda	39.43	172	Iran	33.72
30	Italy	51.16	77	Egypt	43.74	125	Djibouti	39.41	173	Timor-Leste	33.66
31	Croatia	50.92	78	United Arab Emirates	43.72	126	Liberia	39.38	174	Angola	33.62
32	Russian Federation	50.68	79	Indonesia	43.62	127	Algeria	39.28	175	Eritrea	33.30
33	Sweden	50.65	80	Botswana	43.61	128	Kiribati	39.18	176	Lao	33.22
34	Belgium	50.48	81	Maldives	43.60	129	Guinea-Bissau	39.14	177	Samoa	32.95
35	Malaysia	50.47	82	Peru	43.53	130	Venezuela	39.10	178	Somalia	32.95
36	New Zealand	50.45	83	Cyprus	43.37	131	Cameroon	39.01	179	Kuwait	32.84
37	Uruguay	50.30	84	Honduras	43.24	132	Oman	38.91	180	Chad	32.62
38	Norway	49.96	85	Guyana	43.04	133	Sri Lanka	38.67	181	Burundi	32.52
39	Romania	49.68	86	Tunisia	42.97	134	Bolivia	38.62	182	Cuba	32.11
40	Philippines	49.56	87	Nigeria	42.80	135	Guinea	38.52	183	Mali	31.97
41	Belarus	49.37	88	Bahamas	42.69	136	Montenegro	38.50	184	Malawi	31.95
42	Colombia	49.06	89	Moldova	42.26	137	Kyrgyzstan	38.49	185	Libya	31.63
43	Mexico	49.00	90	Congo DR	42.23	138	Qatar	38.44	186	Papua New Guinea	31.29
44	Suriname	48.96	91	Kosovo	42.09	139	Lesotho	38.40	187	Mozambique	30.28
45	Barbados	48.37	92	Armenia	42.06	140	Gambia	38.40	188	Afghanistan	28.90
46	Argentina	47.78	93	Nicaragua	41.99	141	Tanzania	38.27	189	Sudan	28.84
47	Benin	47.63	94	Mauritius	41.80	142	Mongolia	38.27	190	Yemen	28.17
48	Netherlands	47.41	95	Palestine, State of	41.78	143	Brunei Darussalam	38.15	191	Syrian Arab Republic	25.48

Global Governance Index

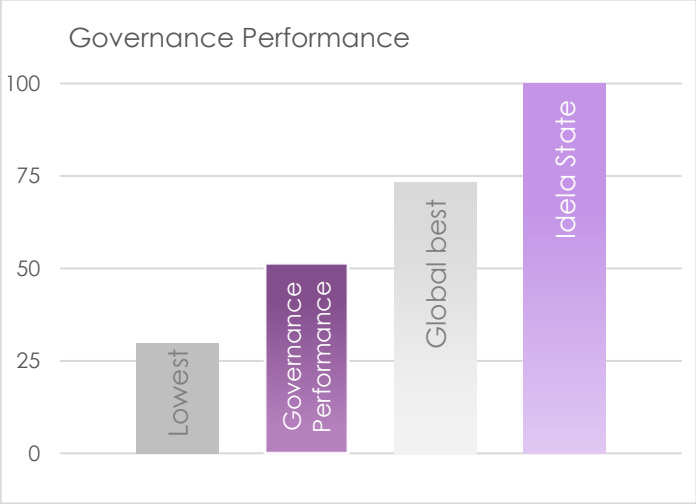
8 Governance Performance Index

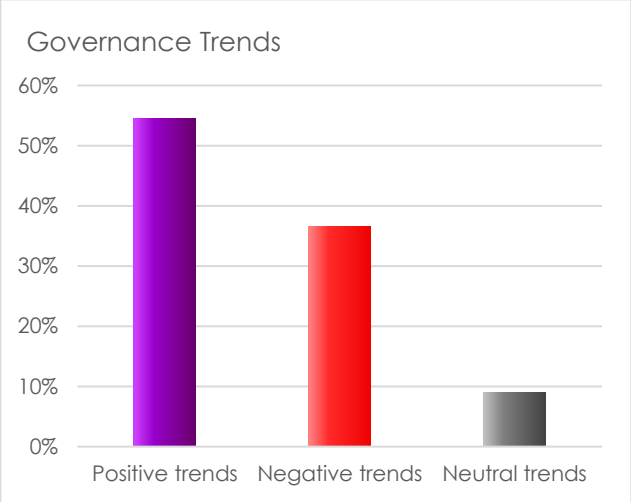
Governance defines the environment the society – individual and businesses – operate in.

The Governance Index of the Global Sustainable Competitiveness Index is based on quantitative data series. It is therefore *not* based on qualitative evaluation of government systems and policies, but based on the outcomes of those systems. 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 Performance Index measures the performance of a country's regulatory framework and infrastructure environment to facilitate sustainable competitiveness within the society, the environment and the economy. 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





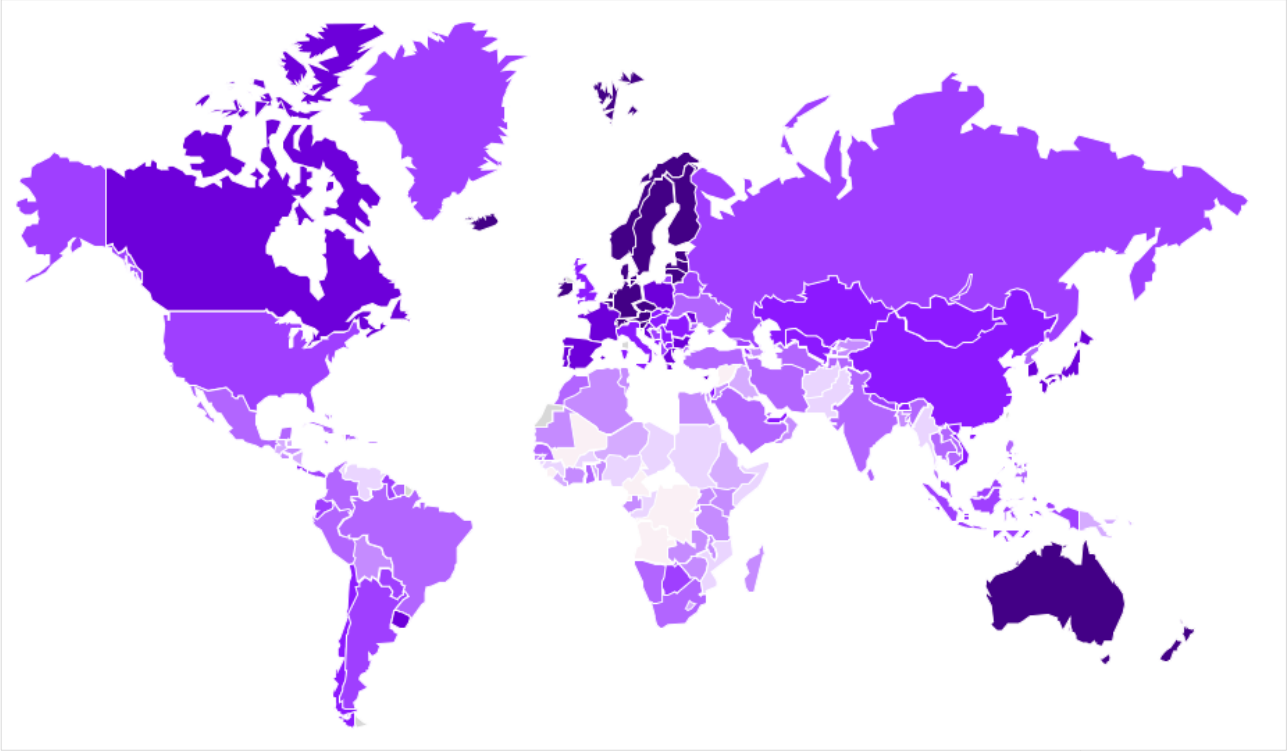
The Global average in Governance Performance is 45 – the second highest of all six dimensions considered in the Global Sustainable Competitiveness Index. However, discrepancies are rather large from 25 (lowest) to 71 (highest).

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

Key insights from the Governance Performance Index 2024:

- The Governance Index is dominated by countries from Western Europe. Only New Zealand (9), Korea (13). Australia (15), Japan (17) and Urugay (29) are non-European countries in the top 30.
- The Economic Capital ranking is topped by Sweden, followed by Denmark, Finland, and Estonia
- China is ranked 61, the US 62
- Germany is ranked 6, France 12, the UK 26
- Brazil is ranked 70, India 118, and Nigeria 19
- The map shows a significant north-South gap: all African countries score comparable low (except for South Africa)

The Governance World Map

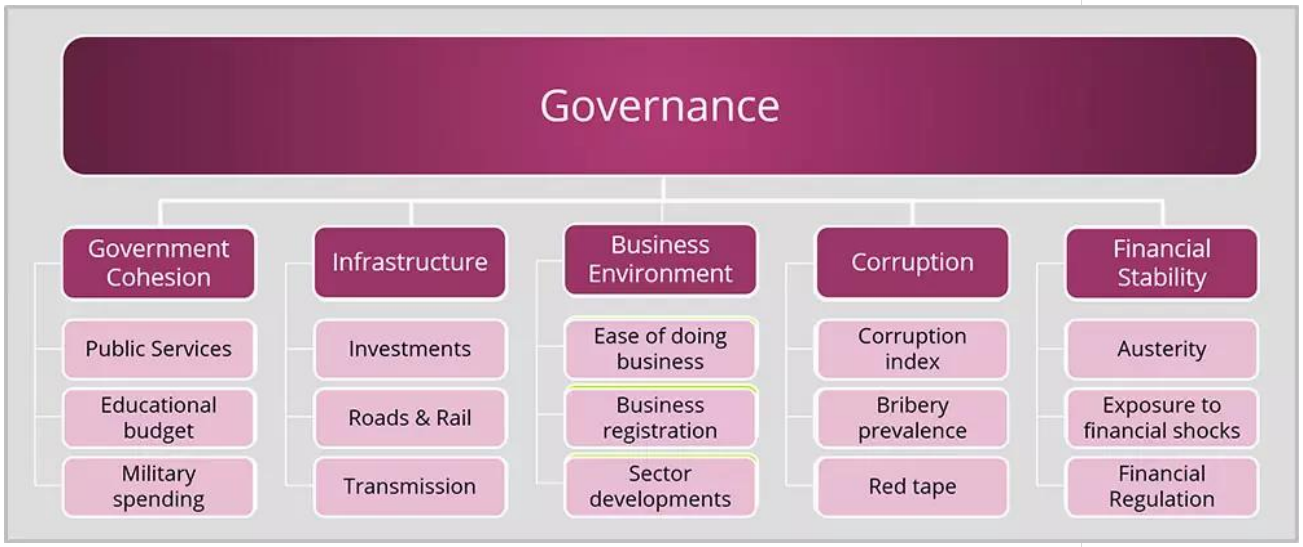


The Governance World Map. Dark areas indicate high, light areas low levels of Governance quality

Governance = National Development: Shaping Social and Economic Capital

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

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



Key elements of competitiveness drivers in the Governance Sub-Index

Measuring Governance

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

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

Governance Performance Index 2024

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	71.91	48	Armenia	55.22	96	Peru	48.15	144	Angola	39.31
2	Denmark	71.46	49	Saint Vincent and the	55.03	97	Micronesia	47.82	145	Liberia	39.23
3	Finland	70.56	50	Singapore	54.96	98	Belize	47.78	146	Nicaragua	39.12
4	Estonia	69.22	51	United Arab Emirates	54.80	99	Marshall Islands	47.74	147	Azerbaijan	38.91
5	Luxembourg	68.79	52	Maldives	54.47	100	Jordan	47.64	148	Madagascar	38.72
6	Germany	68.62	53	Antigua and Barbuda	54.42	101	Bolivia	47.48	149	Sierra Leone	38.70
7	Norway	68.42	54	Saint Kitts and Nevis	54.40	102	Saudi Arabia	46.81	150	Togo	38.66
8	Netherlands	68.06	55	Georgia	54.31	103	Fiji	46.63	151	Tajikistan	38.44
9	New Zealand	67.86	56	Montenegro	54.18	104	Lao	46.45	152	Egypt	38.37
10	Belgium	66.81	57	Barbados	54.03	105	Qatar	46.43	153	Zimbabwe	37.99
11	Austria	66.68	58	Bosnia and Herzegovi	53.84	106	Kiribati	46.40	154	Malawi	37.68
12	France	66.49	59	Mauritius	53.77	107	Philippines	46.35	155	Iraq	37.66
13	Korea	66.43	60	Grenada	53.73	108	Sri Lanka	46.32	156	Papua New Guinea	37.60
14	Switzerland	66.03	61	China	53.68	109	Brunei Darussalam	46.26	157	Iran	37.36
15	Australia	65.70	62	United States of Ameri	53.44	110	Kenya	46.21	158	Niger	37.27
16	Ireland	65.33	63	Albania	53.20	111	Solomon Islands	46.17	159	Mauritania	37.06
17	Japan	65.14	64	Trinidad and Tobago	53.17	112	Belarus	46.17	160	Ethiopia	36.54
18	Iceland	64.55	65	Dominica	52.86	113	Timor-Leste	45.99	161	Pakistan	35.53
19	Lithuania	64.15	66	Malaysia	52.51	114	Paraguay	45.96	162	Eswatini	35.45
20	Portugal	63.69	67	Bahamas	52.49	115	Oman	45.85	163	Mozambique	34.79
21	Spain	62.91	68	Turkey	52.42	116	Tuvalu	45.60	164	Uganda	34.63
22	Italy	62.72	69	Vanuatu	52.26	117	Tunisia	45.42	165	Palestine, State of	34.39
23	Bulgaria	62.42	70	Serbia	52.20	118	India	45.41	166	Djibouti	33.91
24	Latvia	61.75	71	Viet Nam	52.06	119	Colombia	44.85	167	Lebanon	33.72
25	Liechtenstein	61.02	72	Israel	51.54	120	Lesotho	44.72	168	Libya	33.65
26	United Kingdom	61.02	73	Brazil	51.53	121	Guyana	44.56	169	Nigeria	33.63
27	Greece	60.98	74	Uzbekistan	51.04	122	Sao Tome and Princip	44.49	170	Burkina Faso	33.45
28	Croatia	60.96	75	Indonesia	50.87	123	El Salvador	44.34	171	Congo DR	33.14
29	Uruguay	60.73	76	Morocco	50.76	124	Russian Federation	44.31	172	Myanmar	32.95
30	Malta	60.14	77	Kosovo	50.75	125	Kuwait	44.09	173	Somalia	32.89
31	Chile	60.06	78	Nepal	50.67	126	Tonga	43.86	174	Congo	32.10
32	Slovenia	59.78	79	Cabo Verde	50.55	127	Namibia	43.46	175	Guinea-Bissau	32.02
33	Canada	59.38	80	Panama	50.51	128	Ghana	42.85	176	Burundi	31.97
34	Bhutan	58.42	81	Samoa	50.41	129	Cambodia	42.77	177	Mali	31.96
35	Poland	57.99	82	Jamaica	50.28	130	Rwanda	42.74	178	Venezuela	31.84
36	Seychelles	57.77	83	North Macedonia	50.13	131	Honduras	42.52	179	Comoros	31.64
37	Czechia	57.75	84	Botswana	49.96	132	Bangladesh	42.43	180	Cameroon	31.17
38	Slovakia	57.70	85	Saint Lucia	49.94	133	Tanzania	42.42	181	Guinea	30.91
39	Romania	57.14	86	Ecuador	49.51	134	Algeria	42.26	182	Syrian Arab Republic	29.45
40	Hungary	56.42	87	Dominican Republic	49.51	135	Kyrgyzstan	42.26	183	Haiti	29.34
41	Andorra	56.21	88	Ukraine	49.05	136	Gambia	41.52	184	Sudan	28.80
42	Cyprus	56.17	89	Suriname	49.03	137	Guatemala	41.28	185	Afghanistan	28.39
43	Moldova	56.08	90	Cuba	48.80	138	Côte d'Ivoire	41.19	186	South Sudan	27.23
44	Costa Rica	55.94	91	Mexico	48.68	139	Bahrain	40.49	187	Central African Repub	27.14
45	Kazakhstan	55.93	92	Palau	48.68	140	Benin	40.47	188	Equatorial Guinea	27.05
46	Mongolia	55.86	93	South Africa	48.67	141	Turkmenistan	40.23	189	Eritrea	25.66
47	Argentina	55.79	94	Thailand	48.26	142	Zambia	39.67	190	Chad	25.20
48	Armenia	55.22	95	Senegal	48.19	143	Gabon	39.54	191	Yemen	25.11

Sustainable Competitiveness

9 Sustainable, Competitive

9.1 GSCI vs GDP: measuring green growth

What is not sustainable is not competitive. What is not competitive is not sustainable.

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.**

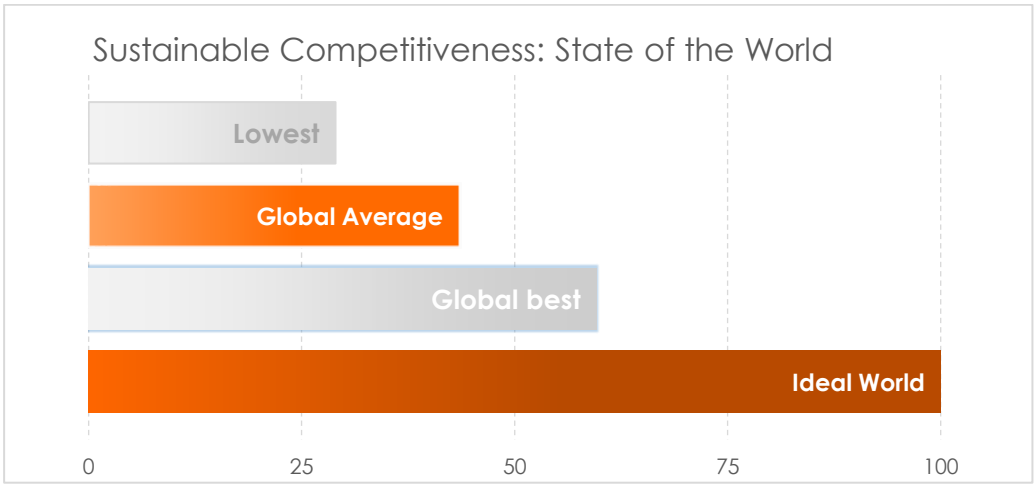
The Global Sustainable Competitiveness Index: Measuring Green Growth since 2012

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 (therefore minimising subjectivity), collected by renown international agencies. 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.

9.2 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 2024 is 43.1; the highest score, achieved by Sweden, is 61.2.



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

However – politics currently seems to be stuck in tribalism, in many parts of the world, as well as on the international stage. Tribalism blocks the implementation of efficient solutions that would be readily available. Tribalism and power-grabbing is stifling the huge potential of new technologies, markets, and positive, inclusive development across all pillars of sustainable competitiveness. Countries that fall into the tribalism trap are circling within, fighting cultural wars instead of developing sustainable competitive policies, and therefore are likely to lose ground relative to politically les tribal or autocratic economies.

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

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

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

9.3 Education & Sustainable Competitiveness

The chicken or the egg?

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

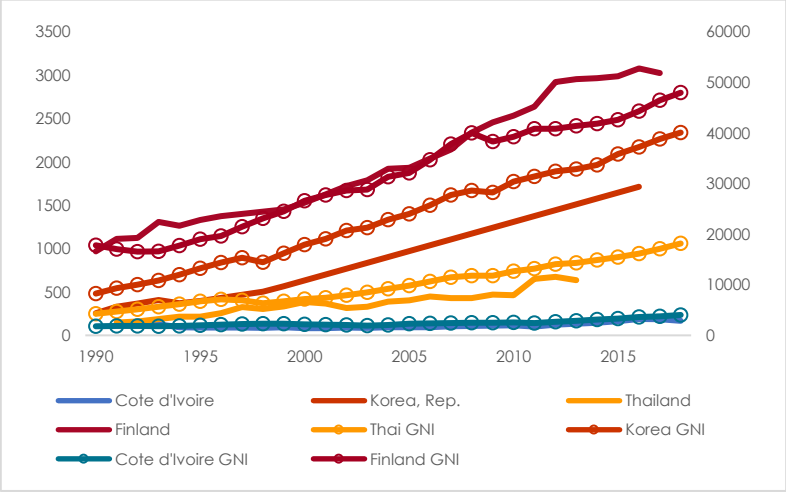
GDP/capita and sustainable competitiveness

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

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

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

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



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

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

In other words:

Sustainability is the chicken *AND* the egg.

9.4 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 corelation 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 leads to l**ow-cost, high-benefit solutions** (**LCHB**s)

9.5 System 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

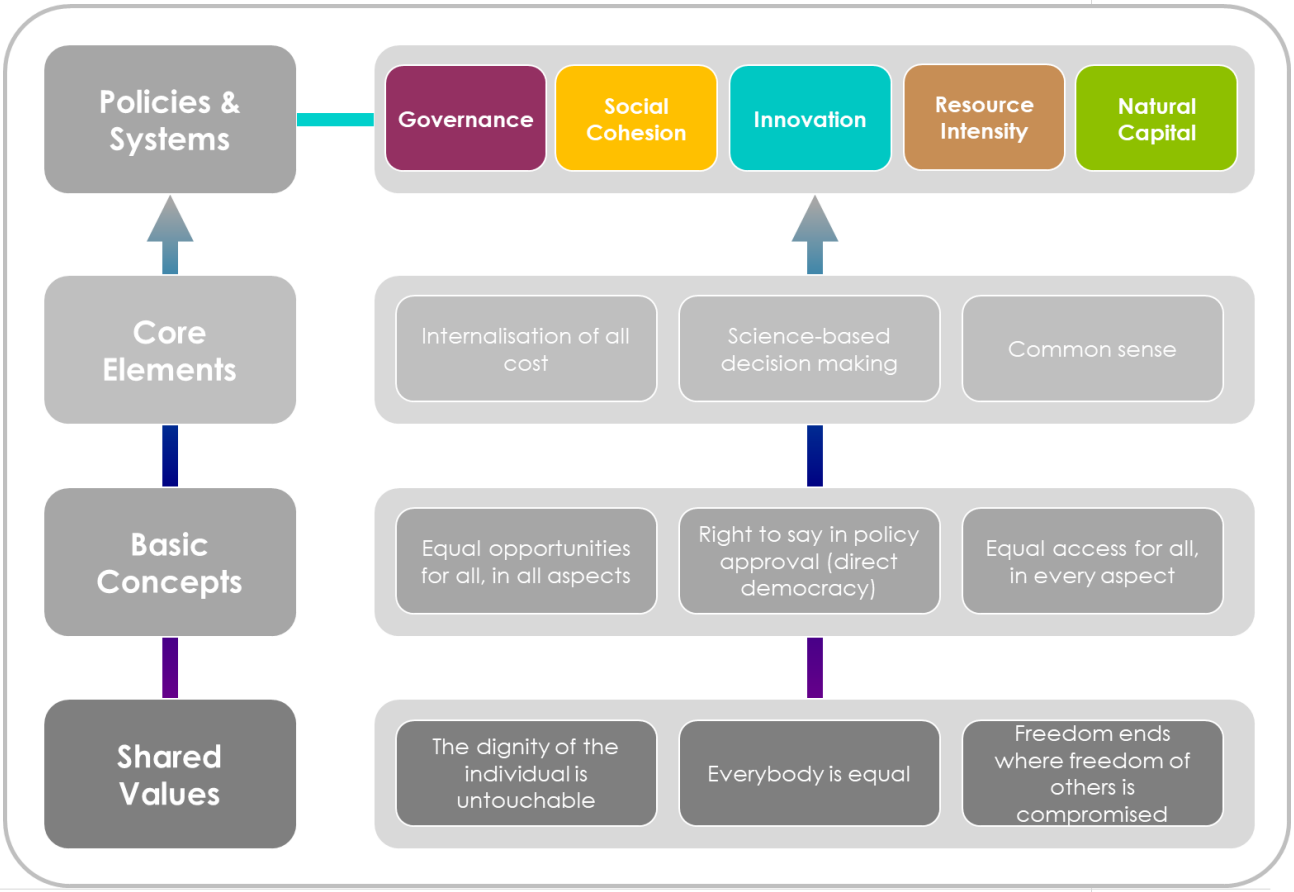
9.6 Basic Commons

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.



9.7 Outlining Sustainable Governance

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

- **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 led 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.

9.8 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.

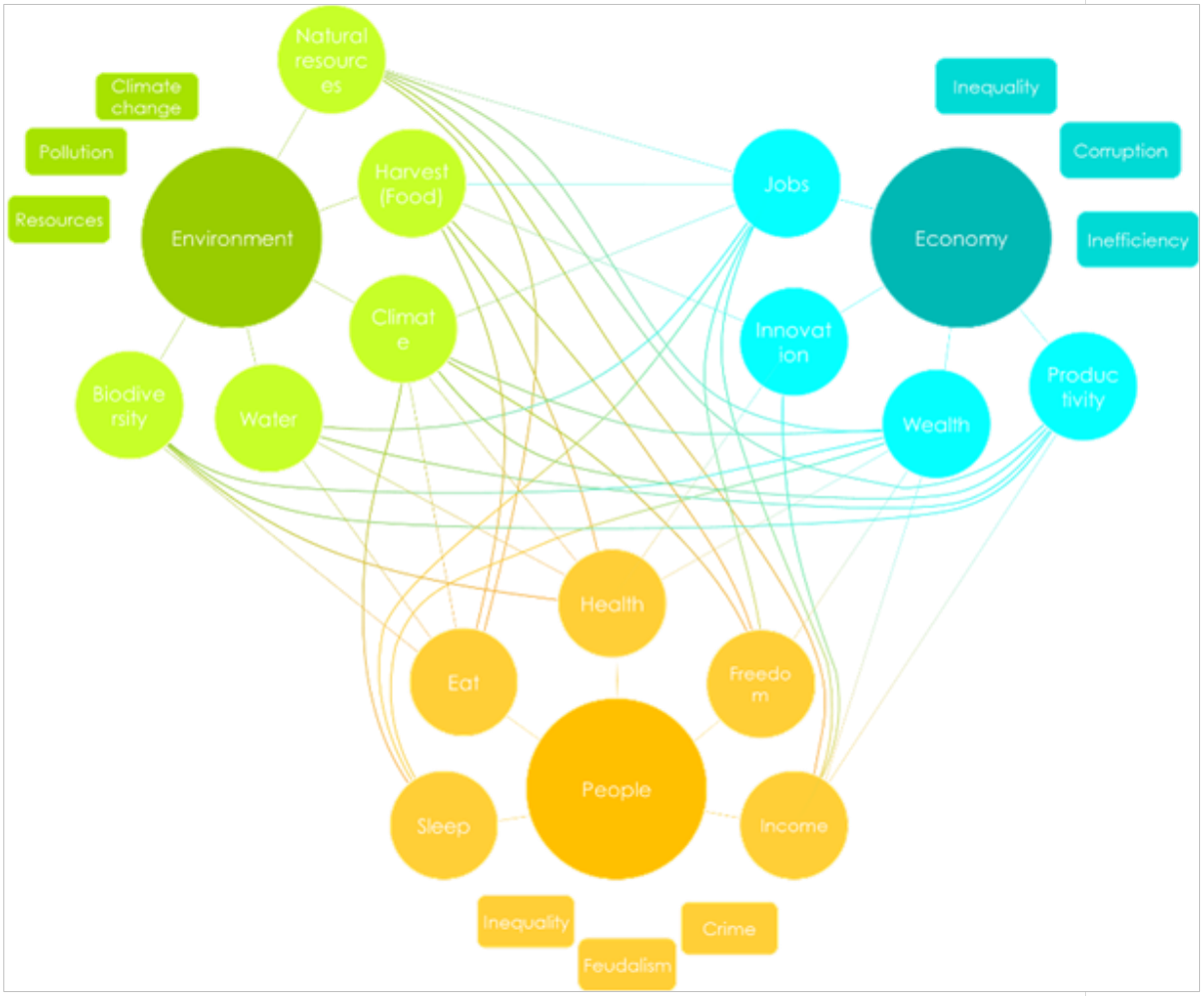
12. **Total equality.** It is a shame that this has to be mentioned in the 21st century – but we need total equality. Between genders, races, regions, wealth.

GSCI Methodology

10 Model & Index Methodology

10.1 The Sustainable Competitiveness Model

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



The ESG model

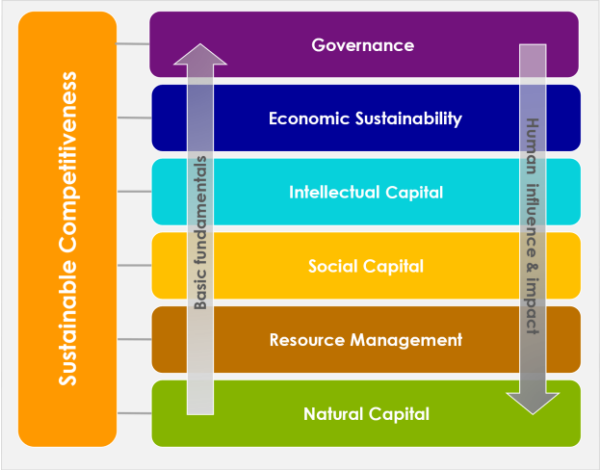
However, corporations are entities that operate in very different boundaries and with different goals than states and nation-economies. The elements of the model therefore have to be adapted to the characteristics of nations and their fundament of sustained prosperity.

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

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

The Sustainable Competitiveness Pyramid

Sustainable competitiveness - they ability to generate and sustain inclusive wealth and dignifying standard of life for all citizens in a globalised world of competing economies, consists of 6 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), economic capital and governance (the framework given, normally by government policies & investments, in which a national economies operate).

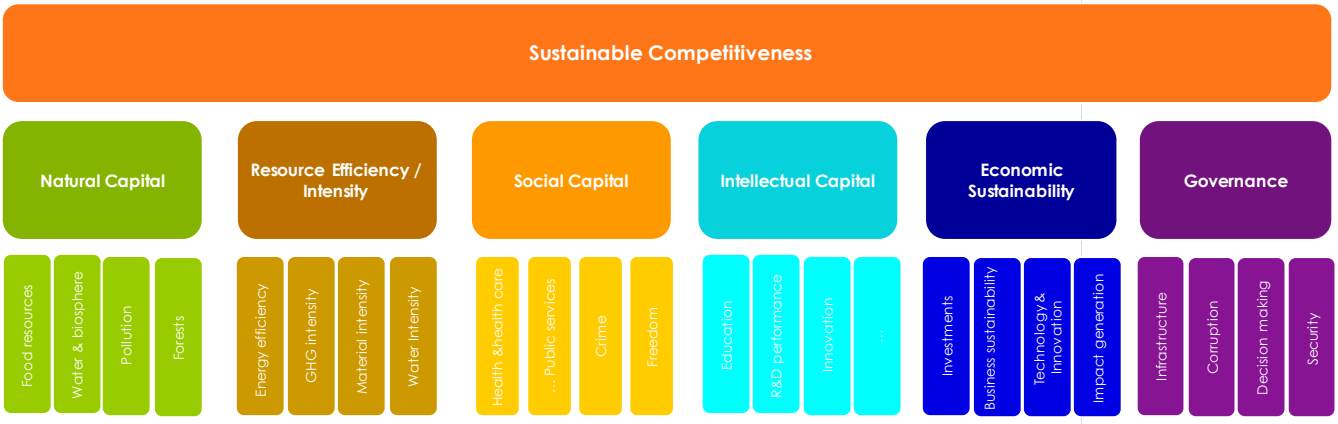


The Sustainable Competitiveness Pyramid

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 continuous development of 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 system constraints, changes in methodology, past year-on-year comparison of rankings have had 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 to the methodology include changes to the model of competitiveness on which the calculation is based, and further adaptation to availability of congruent data series. However, beginning in 2024, we are able th backdate GSCI performance with methodology currently in use for better reflection of sustainable competitiveness over time.

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

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

10.2 Competitiveness Elements

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

Natural Capital

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

Resource Intensity

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

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

Social Capital

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

Indictors used cover health performance indicators, birth statistics, income differences, equal opportunities (gender, economic), freedom of press, human rights considerations, the level of crime against both possession and humans, and perceived levels of well-being and happiness.

Intellectual Capital

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

Economic Sustainability

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

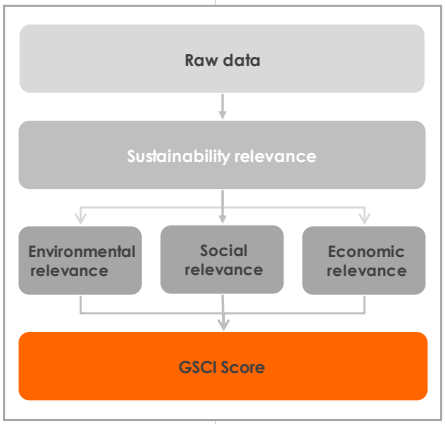
Governance Index

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

10.3 Index calculation

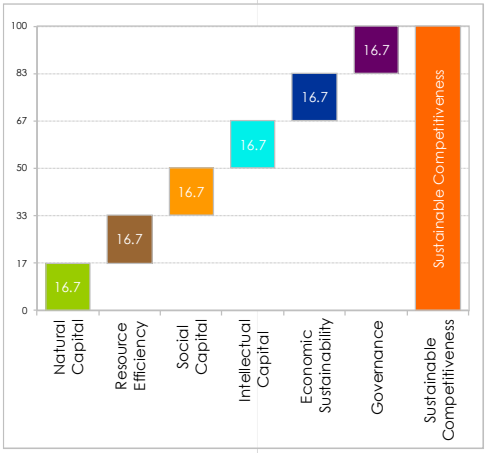
The raw data consist of numerical values. While values can be ranked against each other, they cannot be compared or added to other values. It is therefore necessary to extract a scalable and comparable score from the raw data as a first step.

When comparing raw data of variables of different countries, an "absolute best" cannot be defined in most cases. Scores therefore often cannot be calculated against a real or calculated best score. For the purpose of this index, the raw data is analysed in absolute and relative terms. Depending on the indicator, the score can be calculated based on a mixture of absolute values, relative values, average deviation or exponential/logarithmic analysis. The scoring method is weighted for each indicator individually, depending on the availability, quality and nature of the raw data.



Calculating scores from raw data

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



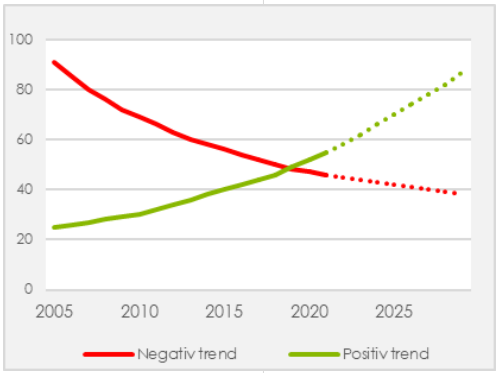
Each level of the Sustainable Competitiveness Pyramid is equally important and therefore equally weighted

Data in perspective

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

Trend analysis: Integrating recent developments

Current data limits the perspective to a momentary picture in time. However, the momentary status is not sufficient to gain a true picture of the sustainable competitiveness, which is, by definition, forward-looking. Of equal importance are therefore the trend developments. Analysing trends and developments allow for understanding of where a country is coming from – and, more importantly - indicates the direction of future developments. Increasing agricultural efficiency, for example, indicates a country's capability to feed an increasing population in the future, or the opposite if the trends are decreasing. Trends are calculated for 5-, 10-, 15- and 20-years periods as well as against a moving average. Since 2024, we are also using deep-learning AI tools to better understand trends and their implications to evaluate current performance as well as the future outlook and sustainability potential of a country based on past 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 is derived from the World Bank's indicator database, followed by data sets and indicators provided by various UN and other global agencies.

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, IMF) 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 2024 is based on the latest available data. For most data series, the latest data available dates 2023. Where 2023 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, using deep-learning AI tools.

10.4 Data Tables – Global Sustainable Competitiveness Index

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	61.22	48	Chile	47.70	96	Venezuela	41.85	144	Congo	38.36
2	Finland	59.87	49	Serbia	47.29	97	Kosovo	41.83	145	Nigeria	38.32
3	Denmark	59.10	50	Peru	47.02	98	Namibia	41.80	146	Marshall Islands	38.25
4	Switzerland	58.68	51	Turkey	46.84	99	Brunei Darussalam	41.78	147	Micronesia	38.23
5	Norway	58.06	52	Brazil	46.80	100	Ghana	41.75	148	Cabo Verde	38.16
6	Austria	57.96	53	Russian Federation	46.69	101	Belize	41.58	149	Algeria	38.05
7	France	57.32	54	Malaysia	46.64	102	Cuba	41.44	150	Bahamas	38.01
8	Estonia	57.14	55	Bosnia and Herzegovi	46.46	103	Saudi Arabia	41.25	151	Guinea	38.00
9	Germany	56.88	56	Bhutan	45.88	104	Morocco	41.23	152	Oman	37.94
10	Japan	56.69	57	Moldova	45.82	105	Kyrgyzstan	41.20	153	Lao	37.94
11	Ireland	56.15	58	Saint Vincent and the	45.69	106	Senegal	41.12	154	Gambia	37.90
12	Luxembourg	56.01	59	Georgia	45.53	107	Guatemala	41.10	155	Zimbabwe	37.86
13	Portugal	55.98	60	Colombia	45.53	108	Solomon Islands	41.08	156	Egypt	37.73
14	United Kingdom	55.61	61	Thailand	45.45	109	Kiribati	40.99	157	Madagascar	37.59
15	Slovenia	55.32	62	Belarus	45.18	110	Honduras	40.99	158	Uganda	37.46
16	Korea	55.25	63	Andorra	45.11	111	Tuvalu	40.75	159	Lesotho	37.46
17	Poland	55.07	64	Ecuador	45.02	112	Saint Kitts and Nevis	40.73	160	Djibouti	37.28
18	Iceland	54.89	65	Paraguay	44.82	113	Tonga	40.61	161	Niger	37.27
19	Netherlands	54.88	66	Panama	44.70	114	Tunisia	40.61	162	Burkina Faso	36.94
20	Belgium	54.68	67	Philippines	44.58	115	Congo DR	40.56	163	Angola	36.83
21	Italy	54.13	68	Montenegro	44.49	116	Bangladesh	40.55	164	Mozambique	36.70
22	Latvia	54.07	69	Kazakhstan	44.43	117	Jamaica	40.48	165	Equatorial Guinea	36.70
23	Canada	54.04	70	United Arab Emirates	44.09	118	Gabon	40.43	166	Turkmenistan	36.66
24	Lithuania	54.02	71	Fiji	44.03	119	Uzbekistan	40.29	167	Bahrain	36.52
25	Australia	53.86	72	Indonesia	44.01	120	Botswana	40.21	168	Iran	36.23
26	Czechia	53.36	73	Barbados	44.00	121	Benin	40.02	169	Central African Repub	36.04
27	New Zealand	53.36	74	Timor-Leste	43.91	122	Rwanda	39.98	170	Guinea-Bissau	35.96
28	China	52.85	75	Armenia	43.77	123	Tanzania	39.96	171	Papua New Guinea	35.86
29	Slovakia	52.40	76	Bolivia	43.76	124	Palau	39.91	172	Kuwait	35.80
30	Croatia	52.18	77	Cambodia	43.74	125	Myanmar	39.90	173	Comoros	35.80
31	Spain	51.88	78	North Macedonia	43.50	126	Samoa	39.90	174	Tajikistan	35.76
32	Uruguay	51.84	79	Vanuatu	43.40	127	Grenada	39.88	175	Burundi	35.49
33	Bulgaria	51.73	80	Mongolia	43.31	128	Nicaragua	39.82	176	Haiti	35.02
34	Greece	51.46	81	El Salvador	43.30	129	Trinidad and Tobago	39.75	177	Pakistan	34.37
35	United States of Ameri	50.98	82	Mexico	43.17	130	Dominica	39.70	178	Lebanon	34.20
36	Liechtenstein	50.53	83	Nepal	43.13	131	Côte d'Ivoire	39.49	179	Eswatini	34.08
37	Singapore	50.36	84	Kenya	43.07	132	Jordan	39.46	180	Mali	33.25
38	Viet Nam	49.76	85	Maldives	43.05	133	Togo	39.37	181	Chad	33.14
39	Hungary	49.60	86	Seychelles	42.92	134	Liberia	39.36	182	Yemen	32.48
40	Costa Rica	49.58	87	Sri Lanka	42.72	135	Zambia	39.29	183	Syrian Arab Republic	32.30
41	Romania	49.48	88	Guyana	42.48	136	Cameroon	39.13	184	Iraq	31.97
42	Israel	49.45	89	Sierra Leone	42.42	137	Ethiopia	39.12	185	Sudan	31.92
43	Albania	49.18	90	India	42.42	138	Qatar	39.08	186	Mauritania	31.89
44	Cyprus	48.78	91	Antigua and Barbuda	42.32	139	South Africa	39.01	187	Afghanistan	31.69
45	Malta	48.09	92	Mauritius	42.30	140	Saint Lucia	38.92	188	South Sudan	31.58
46	Argentina	47.99	93	Sao Tome and Princip	42.13	141	Palestine, State of	38.67	189	Libya	31.11
47	Ukraine	47.73	94	Suriname	42.02	142	Azerbaijan	38.58	190	Eritrea	30.76
48	Chile	47.70	95	Dominican Republic	42.00	143	Malawi	38.51	191	Somalia	30.75

Natural Capital Competitiveness Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Bhutan	59.86	48	New Zealand	48.88	96	Turkey	42.29	144	Kenya	36.26
2	Bosnia and Herzegovi	59.63	49	Lithuania	48.85	97	Vanuatu	42.06	145	Singapore	36.15
3	Brazil	58.31	50	Georgia	48.77	98	Zimbabwe	41.76	146	Saint Lucia	36.00
4	Lao	58.14	51	Angola	48.70	99	Kyrgyzstan	41.76	147	Rwanda	35.79
5	Peru	57.37	52	Ecuador	48.52	100	Dominica	41.74	148	Grenada	35.63
6	Uruguay	57.02	53	Chile	47.96	101	Japan	41.67	149	Belgium	35.60
7	Cambodia	56.78	54	Samoa	47.95	102	Uganda	41.56	150	Liechtenstein	35.38
8	Canada	56.64	55	Portugal	47.73	103	Marshall Islands	41.40	151	Pakistan	35.19
9	Albania	56.57	56	Argentina	47.64	104	Senegal	41.35	152	Saudi Arabia	35.07
10	Sweden	56.42	57	Togo	47.43	105	Niger	41.05	153	Bahamas	34.94
11	Finland	56.26	58	Timor-Leste	47.40	106	Guinea-Bissau	40.99	154	Eritrea	34.87
12	Congo DR	55.48	59	Viet Nam	47.35	107	India	40.99	155	Libya	34.49
13	Guyana	55.15	60	Brunei Darussalam	47.29	108	Comoros	40.86	156	South Africa	34.37
14	Fiji	55.14	61	Slovenia	47.20	109	Hungary	40.76	157	Uzbekistan	34.10
15	Venezuela	54.93	62	Costa Rica	47.19	110	Sudan	40.69	158	Andorra	34.09
16	Latvia	54.73	63	Nepal	47.15	111	Mali	40.62	159	Armenia	34.03
17	Cameroon	54.27	64	Côte d'Ivoire	47.03	112	Italy	40.61	160	Eswatini	34.03
18	Paraguay	53.99	65	Austria	46.99	113	Botswana	40.51	161	Trinidad and Tobago	33.87
19	Central African Repub	53.84	66	Saint Vincent and the	46.90	114	Sri Lanka	40.39	162	Antigua and Barbuda	33.58
20	Bolivia	53.37	67	Palau	46.85	115	Saint Kitts and Nevis	40.38	163	Gambia	33.53
21	Norway	53.19	68	Denmark	46.42	116	Benin	40.34	164	Cyprus	33.48
22	Colombia	53.01	69	Liberia	46.14	117	Seychelles	40.01	165	Algeria	33.27
23	Myanmar	52.69	70	Tanzania	45.80	118	Luxembourg	39.83	166	Haiti	33.27
24	Russian Federation	51.75	71	Solomon Islands	45.78	119	Kosovo	39.77	167	Netherlands	33.26
25	Suriname	51.74	72	United States of Ameri	45.71	120	Tuvalu	39.71	168	Barbados	33.22
26	Sierra Leone	51.70	73	Zambia	45.62	121	Mexico	39.64	169	Djibouti	32.58
27	Ghana	51.66	74	Guatemala	45.24	122	Ethiopia	39.60	170	Syrian Arab Republic	32.34
28	Guinea	51.37	75	Sao Tome and Princip	45.19	123	Malawi	39.60	171	Turkmenistan	32.16
29	Belize	51.30	76	Australia	44.86	124	Madagascar	39.44	172	Yemen	32.15
30	Congo	51.04	77	Malaysia	44.81	125	Mongolia	39.24	173	Morocco	31.73
31	Equatorial Guinea	51.03	78	Belarus	44.78	126	United Kingdom	39.20	174	Oman	30.89
32	Iceland	50.80	79	El Salvador	44.75	127	Azerbaijan	39.19	175	Lebanon	30.10
33	Panama	50.78	80	Honduras	44.51	128	Spain	39.06	176	Malta	30.05
34	Tonga	50.72	81	Montenegro	44.44	129	Bangladesh	38.66	177	Maldives	29.73
35	Estonia	50.63	82	Namibia	44.27	130	Burkina Faso	38.55	178	Iran	29.61
36	Gabon	50.56	83	Switzerland	44.03	131	Philippines	38.51	179	Mauritania	29.49
37	Poland	50.55	84	South Sudan	44.01	132	Burundi	38.37	180	Egypt	29.26
38	Ukraine	50.47	85	Thailand	43.86	133	Moldova	38.29	181	Tunisia	28.92
39	Romania	50.14	86	Czechia	43.79	134	Afghanistan	38.19	182	Bahrain	28.46
40	Nicaragua	49.73	87	Greece	43.71	135	Dominican Republic	38.17	183	Iraq	28.15
41	Papua New Guinea	49.51	88	Chad	43.53	136	Kiribati	37.84	184	Cabo Verde	27.89
42	Serbia	49.47	89	Cuba	43.36	137	Germany	37.83	185	Israel	27.62
43	Mozambique	49.31	90	Lesotho	43.34	138	Mauritius	37.68	186	Somalia	27.41
44	Croatia	49.24	91	Nigeria	43.05	139	Korea	37.61	187	United Arab Emirates	27.37
45	Bulgaria	49.01	92	North Macedonia	42.93	140	Jamaica	36.87	188	Jordan	26.26
46	Micronesia	48.99	93	Indonesia	42.83	141	China	36.84	189	Kuwait	25.49
47	Slovakia	48.98	94	France	42.75	142	Kazakhstan	36.78	190	Qatar	25.46
48	New Zealand	48.88	95	Ireland	42.55	143	Tajikistan	36.34	191	Palestine, State of	22.77

Resource Intensity Competitiveness Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	United Kingdom	59.65	48	Brazil	50.52	96	Senegal	46.35	144	South Sudan	39.54
2	Malawi	58.86	49	Côte d'Ivoire	50.47	97	India	46.22	145	Cabo Verde	39.53
3	Sweden	57.51	50	Nicaragua	50.46	98	Hungary	46.18	146	Samoa	39.36
4	Denmark	56.93	51	Jordan	50.43	99	Malta	46.03	147	Guyana	39.31
5	Kenya	56.85	52	Nigeria	50.36	100	Colombia	45.84	148	Korea	39.19
6	Ethiopia	56.76	53	Gabon	50.36	101	Guinea-Bissau	45.80	149	Saint Lucia	39.17
7	Costa Rica	56.54	54	Sri Lanka	49.93	102	Czechia	45.67	150	Armenia	39.17
8	Djibouti	56.53	55	Namibia	49.77	103	Ecuador	45.66	151	Indonesia	39.00
9	Congo DR	55.85	56	Fiji	49.75	104	Slovenia	45.65	152	Bahamas	38.95
10	Australia	55.72	57	Poland	49.74	105	Peru	45.64	153	Sudan	38.55
11	Switzerland	55.66	58	Solomon Islands	49.66	106	Congo	45.43	154	Kyrgyzstan	38.54
12	Yemen	55.63	59	Paraguay	49.62	107	Kiribati	45.20	155	Russian Federation	38.42
13	Uganda	55.47	60	Italy	49.60	108	China	45.04	156	Kazakhstan	38.42
14	Luxembourg	55.42	61	Belgium	49.51	109	Japan	44.95	157	Bosnia and Herzegovi	38.36
15	Haiti	55.20	62	Liberia	49.48	110	Liechtenstein	44.63	158	Montenegro	38.28
16	Venezuela	55.12	63	Argentina	49.43	111	Mozambique	44.56	159	Pakistan	37.93
17	Honduras	54.87	64	Ghana	49.37	112	South Africa	44.55	160	Singapore	37.88
18	Finland	54.69	65	Cuba	49.15	113	Myanmar	44.48	161	Tonga	37.86
19	Ireland	54.49	66	Romania	49.10	114	Comoros	44.30	162	Tuvalu	37.83
20	France	54.47	67	Latvia	48.94	115	Cambodia	44.06	163	Seychelles	37.80
21	El Salvador	54.33	68	Bulgaria	48.87	116	Viet Nam	43.98	164	North Macedonia	37.53
22	Portugal	54.18	69	Uruguay	48.83	117	Maldives	43.92	165	Mongolia	37.47
23	Benin	53.93	70	Vanuatu	48.62	118	Lesotho	43.88	166	Suriname	36.97
24	Ukraine	53.80	71	Zambia	48.62	119	Syrian Arab Republic	43.84	167	Belarus	36.67
25	Norway	53.74	72	Cyprus	48.60	120	Albania	43.64	168	Iceland	36.46
26	Panama	53.71	73	Sao Tome and Princip	48.52	121	Egypt	43.48	169	Mauritius	36.32
27	Canada	53.66	74	Chile	48.46	122	Grenada	43.37	170	Georgia	36.27
28	Rwanda	53.58	75	Central African Repub	48.44	123	Dominica	43.25	171	Qatar	36.16
29	Greece	53.26	76	Niger	48.34	124	Chad	43.04	172	Turkmenistan	35.42
30	Guatemala	53.22	77	Jamaica	48.24	125	Turkey	42.70	173	Saudi Arabia	35.42
31	Sierra Leone	53.03	78	Bolivia	48.21	126	Barbados	42.54	174	Serbia	35.09
32	Papua New Guinea	52.08	79	Burundi	48.15	127	Botswana	42.54	175	United Arab Emirates	34.99
33	Cameroon	52.07	80	Equatorial Guinea	48.11	128	Trinidad and Tobago	42.53	176	Kuwait	34.67
34	Lithuania	51.77	81	Morocco	47.94	129	Bhutan	42.31	177	Saint Kitts and Nevis	34.66
35	Austria	51.74	82	Gambia	47.42	130	Tunisia	42.19	178	Lebanon	33.09
36	Germany	51.71	83	Dominican Republic	47.36	131	Belize	42.01	179	Azerbaijan	33.06
37	Madagascar	51.70	84	Guinea	47.27	132	Mauritania	41.92	180	Iraq	32.86
38	Burkina Faso	51.55	85	Timor-Leste	47.26	133	Malaysia	41.82	181	Micronesia	32.75
39	Somalia	51.53	86	Afghanistan	47.25	134	Moldova	41.63	182	Bahrain	32.66
40	Angola	51.50	87	New Zealand	47.25	135	Andorra	41.63	183	Uzbekistan	32.14
41	Spain	51.42	88	Saint Vincent and the	47.17	136	Eswatini	41.61	184	Oman	31.70
42	Estonia	51.38	89	Slovakia	47.17	137	Mali	41.55	185	Algeria	31.41
43	Netherlands	51.22	90	Philippines	47.17	138	Mexico	41.42	186	Iran	30.89
44	Zimbabwe	51.19	91	Croatia	46.93	139	Thailand	40.96	187	Lao	30.45
45	Bangladesh	50.85	92	Togo	46.93	140	Antigua and Barbuda	40.50	188	Marshall Islands	29.89
46	Tanzania	50.68	93	United States of Amer	46.70	141	Tajikistan	40.49	189	Palau	29.86
47	Palestine, State of	50.59	94	Israel	46.56	142	Brunei Darussalam	40.37	190	Kosovo	29.71
48	Brazil	50.52	95	Nepal	46.45	143	Eritrea	40.05	191	Libya	25.58

Social Capital Competitiveness Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Japan	64.99	48	Sri Lanka	49.03	96	Ecuador	41.01	144	Comoros	35.73
2	Netherlands	62.31	49	North Macedonia	49.02	97	Burkina Faso	40.95	145	Panama	35.69
3	France	62.19	50	Canada	48.79	98	El Salvador	40.94	146	Turkey	35.47
4	Iceland	61.04	51	Kosovo	48.50	99	Ghana	40.85	147	Cuba	35.44
5	Norway	60.94	52	Liechtenstein	48.42	100	Guinea-Bissau	40.83	148	Mexico	35.39
6	Slovenia	60.91	53	Ethiopia	48.28	101	Sierra Leone	40.80	149	Venezuela	35.18
7	Denmark	59.62	54	Kazakhstan	48.11	102	Russian Federation	40.65	150	Zimbabwe	35.17
8	Belgium	59.30	55	Mongolia	48.05	103	Gambia	40.54	151	Congo DR	35.07
9	Sweden	59.29	56	Senegal	47.87	104	Burundi	40.42	152	Haiti	35.03
10	Switzerland	58.57	57	New Zealand	47.70	105	Tunisia	40.18	153	Mali	34.92
11	Spain	58.50	58	Bulgaria	47.60	106	Chad	39.69	154	Suriname	34.67
12	Timor-Leste	58.40	59	Singapore	47.26	107	Tonga	39.61	155	Saint Vincent and the	34.43
13	Italy	58.29	60	Ukraine	46.51	108	Oman	39.36	156	Iraq	34.39
14	Finland	57.95	61	Hungary	46.37	109	Nigeria	39.07	157	Tajikistan	34.31
15	Portugal	56.82	62	Indonesia	46.32	110	Bolivia	38.93	158	Kiribati	34.06
16	Ireland	56.79	63	Philippines	45.76	111	Djibouti	38.89	159	Egypt	33.90
17	Korea	56.73	64	Uzbekistan	45.18	112	Benin	38.84	160	Libya	33.77
18	Czechia	56.19	65	Cambodia	45.09	113	Jordan	38.68	161	Gabon	33.70
19	Cyprus	55.98	66	Bangladesh	44.91	114	Côte d'Ivoire	38.55	162	Morocco	33.61
20	Estonia	55.94	67	Andorra	44.83	115	Paraguay	38.15	163	Mauritania	33.25
21	Austria	55.88	68	Uruguay	44.66	116	Vanuatu	38.11	164	Lesotho	33.25
22	Luxembourg	55.22	69	Thailand	44.65	117	Barbados	37.94	165	Pakistan	33.20
23	Slovakia	54.74	70	Georgia	44.33	118	United States of Ameri	37.89	166	Guatemala	32.93
24	Germany	53.89	71	Argentina	44.30	119	Dominican Republic	37.88	167	Samoa	32.83
25	United Arab Emirates	53.60	72	Qatar	43.95	120	Brunei Darussalam	37.87	168	Botswana	32.58
26	Poland	53.01	73	Kuwait	43.85	121	Bahrain	37.63	169	Central African Repub	32.42
27	Moldova	52.52	74	Azerbaijan	43.79	122	Togo	37.50	170	Sudan	32.10
28	Albania	52.39	75	Bosnia and Herzegovi	43.76	123	Eritrea	37.45	171	Saint Kitts and Nevis	32.03
29	Montenegro	51.44	76	Madagascar	43.72	124	Congo	37.27	172	Angola	31.84
30	Latvia	51.38	77	Niger	43.47	125	Namibia	37.24	173	Equatorial Guinea	31.71
31	Armenia	51.20	78	Kenya	43.35	126	Zambia	37.22	174	Nicaragua	31.69
32	Lithuania	51.08	79	Tanzania	43.34	127	Syrian Arab Republic	37.15	175	South Sudan	31.57
33	Australia	50.78	80	Sao Tome and Princip	43.20	128	Lebanon	36.93	176	Marshall Islands	31.32
34	Croatia	50.71	81	Myanmar	42.72	129	Lao	36.88	177	Honduras	31.20
35	United Kingdom	50.56	82	Trinidad and Tobago	42.36	130	Guyana	36.70	178	Tuvalu	30.98
36	Belarus	50.28	83	Seychelles	42.33	131	Mozambique	36.69	179	Brazil	30.69
37	Israel	50.18	84	Malawi	42.24	132	Iran	36.55	180	Belize	30.30
38	Kyrgyzstan	50.17	85	Saudi Arabia	42.05	133	Antigua and Barbudo	36.52	181	Papua New Guinea	30.22
39	Maldives	50.15	86	Peru	42.00	134	Palestine, State of	36.49	182	Yemen	30.03
40	Greece	49.67	87	Mauritius	41.93	135	Liberia	36.43	183	Dominica	29.47
41	Romania	49.44	88	Guinea	41.85	136	Uganda	36.40	184	Micronesia	29.41
42	Serbia	49.42	89	India	41.60	137	Fiji	36.40	185	Saint Lucia	29.19
43	China	49.41	90	Algeria	41.52	138	Solomon Islands	36.30	186	South Africa	29.13
44	Bhutan	49.38	91	Cabo Verde	41.39	139	Turkmenistan	36.22	187	Somalia	28.96
45	Viet Nam	49.37	92	Malaysia	41.33	140	Cameroon	36.14	188	Palau	28.76
46	Malta	49.28	93	Rwanda	41.30	141	Grenada	35.99	189	Bahamas	28.63
47	Nepal	49.16	94	Costa Rica	41.11	142	Jamaica	35.94	190	Afghanistan	27.20
48	Sri Lanka	49.03	95	Chile	41.08	143	Colombia	35.88	191	Eswatini	24.19

Intellectual Capital Competitiveness Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Korea	77.86	48	Tuvalu	48.69	96	Fiji	38.68	144	Trinidad and Tobago	27.00
2	China	75.00	49	Brazil	48.34	97	Saint Lucia	38.21	145	Senegal	26.33
3	Germany	73.69	50	Barbados	47.90	98	Saint Kitts and Nevis	38.03	146	Pakistan	26.32
4	Switzerland	72.16	51	Saudi Arabia	47.86	99	Vanuatu	37.69	147	Bangladesh	26.28
5	Japan	72.05	52	Thailand	47.73	100	Egypt	37.63	148	Gambia	26.00
6	United Kingdom	71.89	53	Chile	47.63	101	Paraguay	36.95	149	Nicaragua	25.90
7	Sweden	71.53	54	Andorra	46.88	102	Tonga	36.59	150	Togo	25.68
8	United States of Ameri	70.14	55	Palestine, State of	45.99	103	Maldives	36.45	151	Zimbabwe	25.62
9	Singapore	69.68	56	Peru	45.45	104	Guyana	36.10	152	Syrian Arab Republic	25.53
10	Finland	67.53	57	Morocco	45.44	105	Turkmenistan	36.03	153	Liberia	25.51
11	Denmark	67.44	58	Serbia	45.39	106	Kyrgyzstan	35.98	154	Zambia	24.74
12	Netherlands	67.00	59	Saint Vincent and the	45.23	107	Bolivia	35.96	155	Mozambique	24.59
13	France	66.75	60	Antigua and Barbuda	44.91	108	Samoa	35.87	156	Yemen	23.81
14	Israel	66.68	61	Mexico	44.89	109	Micronesia	35.50	157	Congo	23.28
15	Liechtenstein	66.52	62	India	44.59	110	Namibia	35.11	158	Burkina Faso	23.24
16	Belgium	66.38	63	Colombia	44.55	111	Venezuela	34.96	159	Iraq	22.91
17	Austria	66.23	64	Georgia	44.44	112	Jamaica	34.91	160	Comoros	22.67
18	Luxembourg	64.49	65	Palau	44.42	113	Jordan	34.10	161	Sudan	22.51
19	Iceland	64.46	66	Moldova	44.15	114	Lebanon	33.96	162	Lao	22.49
20	Estonia	62.94	67	Qatar	44.03	115	Kuwait	33.84	163	Djibouti	22.36
21	Italy	62.40	68	Tunisia	43.96	116	Bahrain	33.66	164	Gabon	22.24
22	Norway	62.12	69	Belarus	43.81	117	Belize	33.47	165	Cameroon	22.14
23	Turkey	61.97	70	Costa Rica	43.70	118	Dominican Republic	32.57	166	Congo DR	21.59
24	Slovenia	61.77	71	Kazakhstan	43.49	119	Botswana	32.11	167	Burundi	21.50
25	Poland	60.57	72	Kiribati	43.24	120	Sri Lanka	32.00	168	Lesotho	21.15
26	Portugal	60.45	73	Argentina	42.97	121	Solomon Islands	31.59	169	Nigeria	20.98
27	Czechia	60.25	74	Mauritius	42.31	122	Panama	31.29	170	Malawi	20.74
28	Australia	59.93	75	Albania	42.11	123	Tajikistan	31.01	171	Equatorial Guinea	20.62
29	Canada	59.26	76	South Africa	41.64	124	Nepal	30.90	172	Afghanistan	20.22
30	Ireland	58.83	77	Marshall Islands	41.63	125	Timor-Leste	30.76	173	Haiti	19.61
31	Malta	58.24	78	Indonesia	41.40	126	Suriname	30.74	174	Côte d'Ivoire	19.56
32	New Zealand	58.00	79	Romania	41.37	127	Bahamas	30.38	175	Tanzania	19.27
33	Cyprus	55.07	80	Ukraine	41.36	128	Dominica	30.30	176	Benin	18.89
34	Viet Nam	54.45	81	Uzbekistan	41.31	129	Sao Tome and Princip	30.16	177	Mali	18.50
35	Croatia	54.35	82	North Macedonia	41.09	130	Grenada	30.07	178	Niger	18.43
36	Russian Federation	54.31	83	Armenia	40.95	131	Honduras	29.58	179	Guinea	18.08
37	Lithuania	54.22	84	Mongolia	40.95	132	Sierra Leone	29.51	180	Ethiopia	17.57
38	Greece	53.90	85	Oman	40.92	133	Bhutan	29.35	181	Guinea-Bissau	16.97
39	Spain	53.88	86	Brunei Darussalam	40.72	134	Kenya	29.20	182	Madagascar	16.88
40	Slovakia	52.87	87	Algeria	40.54	135	Myanmar	29.11	183	Angola	16.02
41	Hungary	52.61	88	Kosovo	40.16	136	Guatemala	28.73	184	Uganda	14.99
42	Latvia	51.80	89	Philippines	40.13	137	Cabo Verde	28.30	185	Central African Repub	14.89
43	Bulgaria	50.65	90	Montenegro	40.10	138	Ghana	28.18	186	Chad	14.77
44	United Arab Emirates	50.07	91	Ecuador	40.01	139	El Salvador	28.07	187	Papua New Guinea	14.48
45	Uruguay	49.52	92	Seychelles	39.82	140	Cambodia	27.84	188	Mauritania	14.13
46	Iran	49.28	93	Cuba	39.80	141	Eswatini	27.81	189	Eritrea	13.21
47	Malaysia	48.89	94	Azerbaijan	39.01	142	Libya	27.56	190	South Sudan	12.91
48	Tuvalu	48.69	95	Bosnia and Herzegovi	38.88	143	Rwanda	27.01	191	Somalia	10.74

Economic Sustainabilty Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Austria	60.22	48	Netherlands	47.41	96	Uganda	41.70	144	Pakistan	38.02
2	Ireland	58.92	49	El Salvador	47.37	97	Tuvalu	41.70	145	Uzbekistan	38.00
3	Poland	58.54	50	Thailand	47.24	98	Equatorial Guinea	41.70	146	Morocco	37.93
4	China	57.13	51	Liechtenstein	47.22	99	Vanuatu	41.69	147	Haiti	37.65
5	Slovenia	56.59	52	Greece	47.22	100	Brazil	41.42	148	Fiji	37.61
6	Czechia	56.49	53	Albania	47.16	101	Eswatini	41.39	149	Ghana	37.60
7	Singapore	56.23	54	Andorra	47.00	102	Cabo Verde	41.32	150	Azerbaijan	37.56
8	Latvia	55.83	55	Kenya	46.52	103	Sao Tome and Princip	41.24	151	Marshall Islands	37.53
9	Switzerland	55.63	56	Dominican Republic	46.51	104	Congo	41.04	152	Lebanon	37.42
10	Germany	55.53	57	Canada	46.48	105	Saint Lucia	41.01	153	Myanmar	37.42
11	Hungary	55.28	58	Bahrain	46.22	106	Chile	40.99	154	Solomon Islands	36.95
12	Israel	54.11	59	Panama	46.22	107	Namibia	40.93	155	Jamaica	36.64
13	Lithuania	54.07	60	Turkey	46.18	108	Palau	40.88	156	Senegal	36.63
14	Korea	53.71	61	Gabon	46.18	109	Sierra Leone	40.77	157	Ethiopia	35.99
15	Portugal	53.03	62	Australia	46.16	110	Dominica	40.58	158	Bhutan	35.95
16	Costa Rica	52.98	63	Cambodia	45.89	111	Grenada	40.49	159	Iraq	35.85
17	Slovakia	52.96	64	Spain	45.54	112	North Macedonia	40.31	160	South Africa	35.70
18	Estonia	52.73	65	Ecuador	45.40	113	Saudi Arabia	40.29	161	India	35.69
19	Denmark	52.73	66	Saint Vincent and the	45.40	114	Côte d'Ivoire	40.17	162	Mauritania	35.46
20	Luxembourg	52.30	67	Guatemala	45.22	115	Bangladesh	40.16	163	Zimbabwe	35.42
21	Finland	52.24	68	Ukraine	45.20	116	Togo	40.04	164	Niger	35.09
22	Serbia	52.19	69	Georgia	45.08	117	Turkmenistan	39.93	165	Madagascar	35.07
23	Iceland	52.04	70	Saint Kitts and Nevis	44.86	118	Zambia	39.85	166	Tonga	35.05
24	United States of Ameri	51.97	71	Malta	44.82	119	Seychelles	39.81	167	Micronesia	34.92
25	Bulgaria	51.86	72	Belize	44.63	120	Jordan	39.66	168	Nepal	34.43
26	United Kingdom	51.34	73	Bosnia and Herzegovi	44.29	121	Comoros	39.58	169	South Sudan	34.20
27	Viet Nam	51.33	74	Paraguay	44.27	122	Trinidad and Tobago	39.56	170	Tajikistan	33.95
28	Japan	51.32	75	Antigua and Barbuda	44.00	123	Central African Repub	39.50	171	Burkina Faso	33.93
29	France	51.28	76	Kazakhstan	43.87	124	Rwanda	39.43	172	Iran	33.72
30	Italy	51.16	77	Egypt	43.74	125	Djibouti	39.41	173	Timor-Leste	33.66
31	Croatia	50.92	78	United Arab Emirates	43.72	126	Liberia	39.38	174	Angola	33.62
32	Russian Federation	50.68	79	Indonesia	43.62	127	Algeria	39.28	175	Eritrea	33.30
33	Sweden	50.65	80	Botswana	43.61	128	Kiribati	39.18	176	Lao	33.22
34	Belgium	50.48	81	Maldives	43.60	129	Guinea-Bissau	39.14	177	Samoa	32.95
35	Malaysia	50.47	82	Peru	43.53	130	Venezuela	39.10	178	Somalia	32.95
36	New Zealand	50.45	83	Cyprus	43.37	131	Cameroon	39.01	179	Kuwait	32.84
37	Uruguay	50.30	84	Honduras	43.24	132	Oman	38.91	180	Chad	32.62
38	Norway	49.96	85	Guyana	43.04	133	Sri Lanka	38.67	181	Burundi	32.52
39	Romania	49.68	86	Tunisia	42.97	134	Bolivia	38.62	182	Cuba	32.11
40	Philippines	49.56	87	Nigeria	42.80	135	Guinea	38.52	183	Mali	31.97
41	Belarus	49.37	88	Bahamas	42.69	136	Montenegro	38.50	184	Malawi	31.95
42	Colombia	49.06	89	Moldova	42.26	137	Kyrgyzstan	38.49	185	Libya	31.63
43	Mexico	49.00	90	Congo DR	42.23	138	Qatar	38.44	186	Papua New Guinea	31.29
44	Suriname	48.96	91	Kosovo	42.09	139	Lesotho	38.40	187	Mozambique	30.28
45	Barbados	48.37	92	Armenia	42.06	140	Gambia	38.40	188	Afghanistan	28.90
46	Argentina	47.78	93	Nicaragua	41.99	141	Tanzania	38.27	189	Sudan	28.84
47	Benin	47.63	94	Mauritius	41.80	142	Mongolia	38.27	190	Yemen	28.17
48	Netherlands	47.41	95	Palestine, State of	41.78	143	Brunei Darussalam	38.15	191	Syrian Arab Republic	25.48

Governance Efficiency Competitiveness Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	71.91	48	Armenia	55.22	96	Peru	48.15	144	Angola	39.31
2	Denmark	71.46	49	Saint Vincent and the	55.03	97	Micronesia	47.82	145	Liberia	39.23
3	Finland	70.56	50	Singapore	54.96	98	Belize	47.78	146	Nicaragua	39.12
4	Estonia	69.22	51	United Arab Emirates	54.80	99	Marshall Islands	47.74	147	Azerbaijan	38.91
5	Luxembourg	68.79	52	Maldives	54.47	100	Jordan	47.64	148	Madagascar	38.72
6	Germany	68.62	53	Antigua and Barbudc	54.42	101	Bolivia	47.48	149	Sierra Leone	38.70
7	Norway	68.42	54	Saint Kitts and Nevis	54.40	102	Saudi Arabia	46.81	150	Togo	38.66
8	Netherlands	68.06	55	Georgia	54.31	103	Fiji	46.63	151	Tajikistan	38.44
9	New Zealand	67.86	56	Montenegro	54.18	104	Lao	46.45	152	Egypt	38.37
10	Belgium	66.81	57	Barbados	54.03	105	Qatar	46.43	153	Zimbabwe	37.99
11	Austria	66.68	58	Bosnia and Herzegovi	53.84	106	Kiribati	46.40	154	Malawi	37.68
12	France	66.49	59	Mauritius	53.77	107	Philippines	46.35	155	Iraq	37.66
13	Korea	66.43	60	Grenada	53.73	108	Sri Lanka	46.32	156	Papua New Guinea	37.60
14	Switzerland	66.03	61	China	53.68	109	Brunei Darussalam	46.26	157	Iran	37.36
15	Australia	65.70	62	United States of Ameri	53.44	110	Kenya	46.21	158	Niger	37.27
16	Ireland	65.33	63	Albania	53.20	111	Solomon Islands	46.17	159	Mauritania	37.06
17	Japan	65.14	64	Trinidad and Tobago	53.17	112	Belarus	46.17	160	Ethiopia	36.54
18	Iceland	64.55	65	Dominica	52.86	113	Timor-Leste	45.99	161	Pakistan	35.53
19	Lithuania	64.15	66	Malaysia	52.51	114	Paraguay	45.96	162	Eswatini	35.45
20	Portugal	63.69	67	Bahamas	52.49	115	Oman	45.85	163	Mozambique	34.79
21	Spain	62.91	68	Turkey	52.42	116	Tuvalu	45.60	164	Uganda	34.63
22	Italy	62.72	69	Vanuatu	52.26	117	Tunisia	45.42	165	Palestine, State of	34.39
23	Bulgaria	62.42	70	Serbia	52.20	118	India	45.41	166	Djibouti	33.91
24	Latvia	61.75	71	Viet Nam	52.06	119	Colombia	44.85	167	Lebanon	33.72
25	Liechtenstein	61.02	72	Israel	51.54	120	Lesotho	44.72	168	Libya	33.65
26	United Kingdom	61.02	73	Brazil	51.53	121	Guyana	44.56	169	Nigeria	33.63
27	Greece	60.98	74	Uzbekistan	51.04	122	Sao Tome and Princip	44.49	170	Burkina Faso	33.45
28	Croatia	60.96	75	Indonesia	50.87	123	El Salvador	44.34	171	Congo DR	33.14
29	Uruguay	60.73	76	Morocco	50.76	124	Russian Federation	44.31	172	Myanmar	32.95
30	Malta	60.14	77	Kosovo	50.75	125	Kuwait	44.09	173	Somalia	32.89
31	Chile	60.06	78	Nepal	50.67	126	Tonga	43.86	174	Congo	32.10
32	Slovenia	59.78	79	Cabo Verde	50.55	127	Namibia	43.46	175	Guinea-Bissau	32.02
33	Canada	59.38	80	Panama	50.51	128	Ghana	42.85	176	Burundi	31.97
34	Bhutan	58.42	81	Samoa	50.41	129	Cambodia	42.77	177	Mali	31.96
35	Poland	57.99	82	Jamaica	50.28	130	Rwanda	42.74	178	Venezuela	31.84
36	Seychelles	57.77	83	North Macedonia	50.13	131	Honduras	42.52	179	Comoros	31.64
37	Czechia	57.75	84	Botswana	49.96	132	Bangladesh	42.43	180	Cameroon	31.17
38	Slovakia	57.70	85	Saint Lucia	49.94	133	Tanzania	42.42	181	Guinea	30.91
39	Romania	57.14	86	Ecuador	49.51	134	Algeria	42.26	182	Syrian Arab Republic	29.45
40	Hungary	56.42	87	Dominican Republic	49.51	135	Kyrgyzstan	42.26	183	Haiti	29.34
41	Andorra	56.21	88	Ukraine	49.05	136	Gambia	41.52	184	Sudan	28.80
42	Cyprus	56.17	89	Suriname	49.03	137	Guatemala	41.28	185	Afghanistan	28.39
43	Moldova	56.08	90	Cuba	48.80	138	Côte d'Ivoire	41.19	186	South Sudan	27.23
44	Costa Rica	55.94	91	Mexico	48.68	139	Bahrain	40.49	187	Central African Repub	27.14
45	Kazakhstan	55.93	92	Palau	48.68	140	Benin	40.47	188	Equatorial Guinea	27.05
46	Mongolia	55.86	93	South Africa	48.67	141	Turkmenistan	40.23	189	Eritrea	25.66
47	Argentina	55.79	94	Thailand	48.26	142	Zambia	39.67	190	Chad	25.20
48	Armenia	55.22	95	Senegal	48.19	143	Gabon	39.54	191	Yemen	25.11

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The

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State of the World 2024

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