The

Global Sustainable Competitiveness Index

2025

14th edition

About this Report

The Sustainable Competitiveness Report, ***14th edition***

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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 support in strategy development, ESG management tools, and ESG communication have made 3 global sustainability leaders in 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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1 The Global Sustainable Competitiveness Index 2025

1.1 What is Sustainable Competitiveness?

Sustainable competitiveness represents a fundamental re-conceptualisation of national strength. Sustainable competitiveness is the capacity of a nation to generate and sustain inclusive wealth while simultaneously preserving—and ideally enhancing—the natural, social, intellectual, and institutional foundations that enable wealth creation.

Traditional competitiveness measures tend to focus narrowly on economic output. Sustainable competitiveness recognizes that a nation's prosperity depends on the dynamic interplay between its economic performance, environmental health, social cohesion, governance quality, resource management, and innovation capacity.

Sustainable competitiveness addresses a critical question: Can a country maintain or improve its current prosperity without undermining the very systems—ecological, social, and institutional—that make that prosperity possible? The GSCI measures not just present performance, but the resilience and adaptive capacity necessary for long-term success in an increasingly complex and interconnected world.

The Global Sustainable Competitiveness Index (GSCI) measures country performance, trends, and growth potential based on more than 250 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 – i.e. *measurable* - KPIs
- Taking into account 250+ indicators derived from renowned 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 Matters

The challenges facing nations today are fundamentally interconnected and long-term in nature. Climate disruption, resource constraints, demographic shifts, technological transformation, and social cohesion cannot be addressed through economic growth alone—they require integrated strategies that balance multiple objectives simultaneously.

Traditional metrics – in particular GDP - fail to capture what determines success and future trajectory:

The Gross Domestic Product (GDP) remains the most commonly used parameter to express size and power (total GDP) or wealth (GDP per capita) of a nation. However, GDP is fundamentally inadequate for understanding national resilience, adaptability, and long-term viability:

- GDP is a measurement based purely on macro-economic flows over a specific period
- GDP does not account for the "intangibles" that drive outcomes - quality and accessibility of education and healthcare, infrastructure robustness, social trust and cohesion, environmental health, innovation ecosystems, and institutional integrity
- GDP treats natural resource depletion as income rather than capital loss, making resource extraction appear economically positive even when it undermines future capacity
- GDP ignores distributional concerns—a nation can show strong GDP growth while experiencing rising inequality, social fragmentation, or environmental degradation that threatens long-term stability
- Similarly, sovereign bond ratings and other country ratings - which determine interest rates on international financial markets - rely primarily on macro-economic indicators, fiscal status, and often subjective political risk definitions
- Neither GDP nor credit ratings truly reflect the multidimensional performance, inherent strengths, systemic risks, and future opportunities associated with a country
- There is a lack of comprehensive, integrated SWOT analysis for countries on a global level that considers how various national strengths and vulnerabilities interact

Implications extend far beyond academic measurement:

- **For policymakers**, sustainable competitiveness provides a framework for understanding trade-offs and synergies across policy domains—revealing how environmental degradation undermines economic potential, how social fragmentation limits human capital development, or how governance failures constrain innovation
- **For investors and creditors**, the GSCI offers a more accurate assessment of country-specific risks and opportunities, particularly long-term structural risks that traditional ratings miss
- **For businesses**, sustainable competitiveness identifies nations with genuine future potential versus those experiencing unsustainable growth that will eventually revert
- **For citizens**, it provides transparency about whether their nation is building lasting prosperity or mortgaging the future for present consumption

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 currently the most comprehensive and accurate measurement of the competitiveness of nation-states and their future potential**—serving as a general measurement tool, a risk evaluation framework for creditors, and a strategic assessment resource for private and public parties evaluating both risks and opportunities in specific sectors and countries.

The Sustainable Competitiveness Model

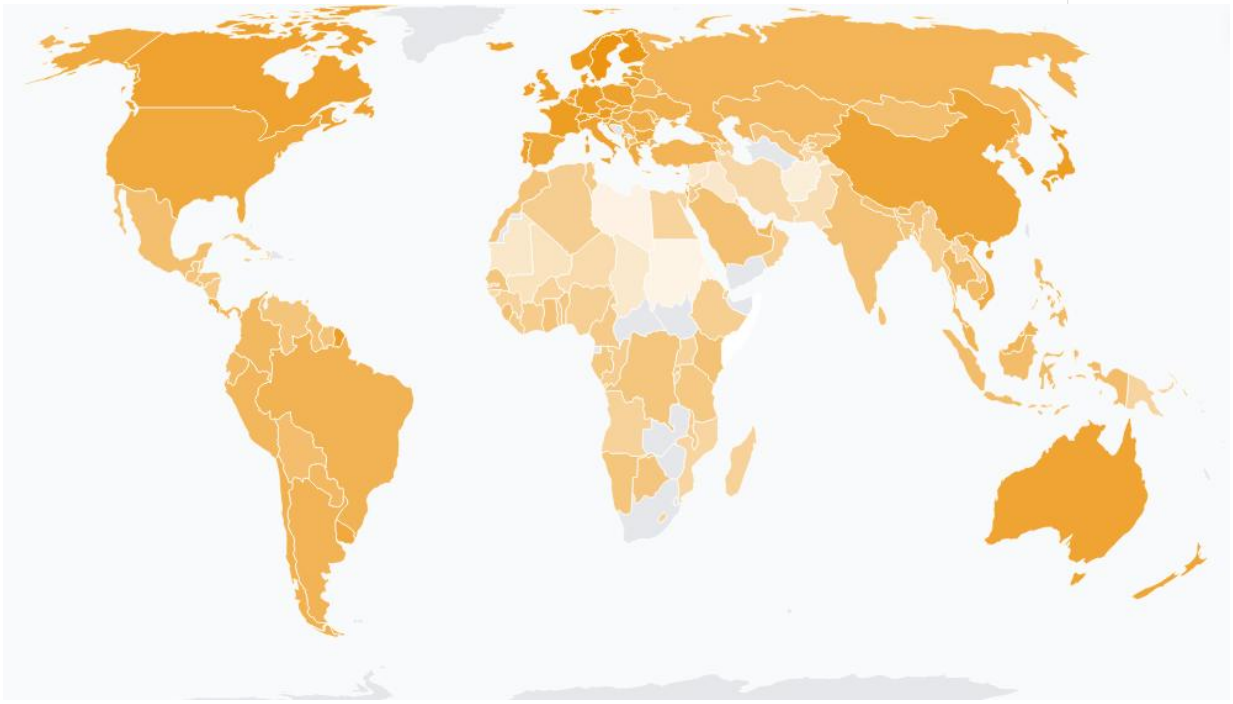
The development – both in its conventional definition and in terms of "sustainable" development – of a country is based on equal development in all areas that make a country:

- **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 Country-Highlights from the GSCI 2025

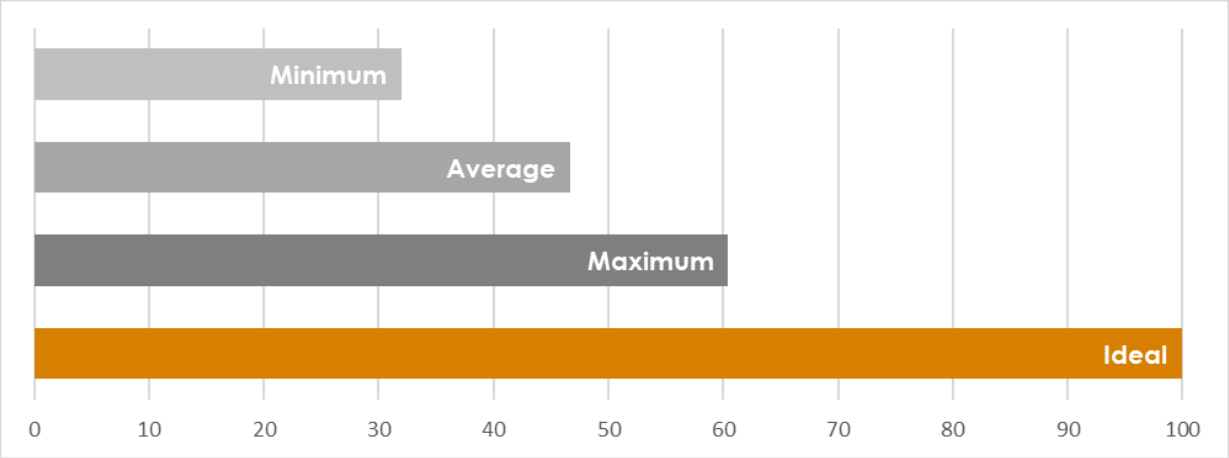
- Nordic dominance continues: Finland takes the top position, followed closely by Sweden, Denmark and Estonia Switzerland rounds out the top 5 (59.15).
- Limited non-European presence: Only Japan (#19) makes the Top-20; South Korea follows on #23
- China (ranked 34th) tops the Intellectual Capital index but faces challenges in Natural Capital and Resource Intensity (but showing signs of improvement in efficiency metrics).
- The USA ranks 42nd, with comparatively weak performance in Resource Intensity and Social Capital dimensions. A significant number of important metrics show downward trajectories, reflecting systemic challenges that could impact long-term global competitiveness.
- Major European economies: Germany ranks 14th, the UK 17th, and France 24th
- BRICS nations show diverse performance: Brazil ranks 56, India 98, and South Africa 138, while Nigeria – Africa's most populous nation – ranks 163.
- Several developing nations significantly outperform their GDP rankings, including Vietnam, Colombia, Peru, Nepal, Bhutan, and Bolivia, demonstrating that sustainable competitiveness extends beyond pure economic size.
- Asia is the new innovation leader: China, South Korea, Japan, Singapore, dominate the Intellectual Capital rankings
- Nordic countries lead Social Capital: Northern European nations (Denmark, Luxembourg, Finland, Germany, Ireland) top the Social Capital Index rankings, reflecting inclusive economic growth combined with strong social consensus and institutions.
- Countries experiencing or recovering from violent conflicts – Yemen (192), Somalia (191), Eritrea (190), South Sudan (189), and Sudan (188) – occupy the lowest GSCI positions, highlighting how instability undermines all aspects of sustainable development.

The Sustainable Competitiveness World Map



1.3 Key take-aways: State of the World 2025

The Global Competitiveness Index reveals that the World remains far from a sustainable state:



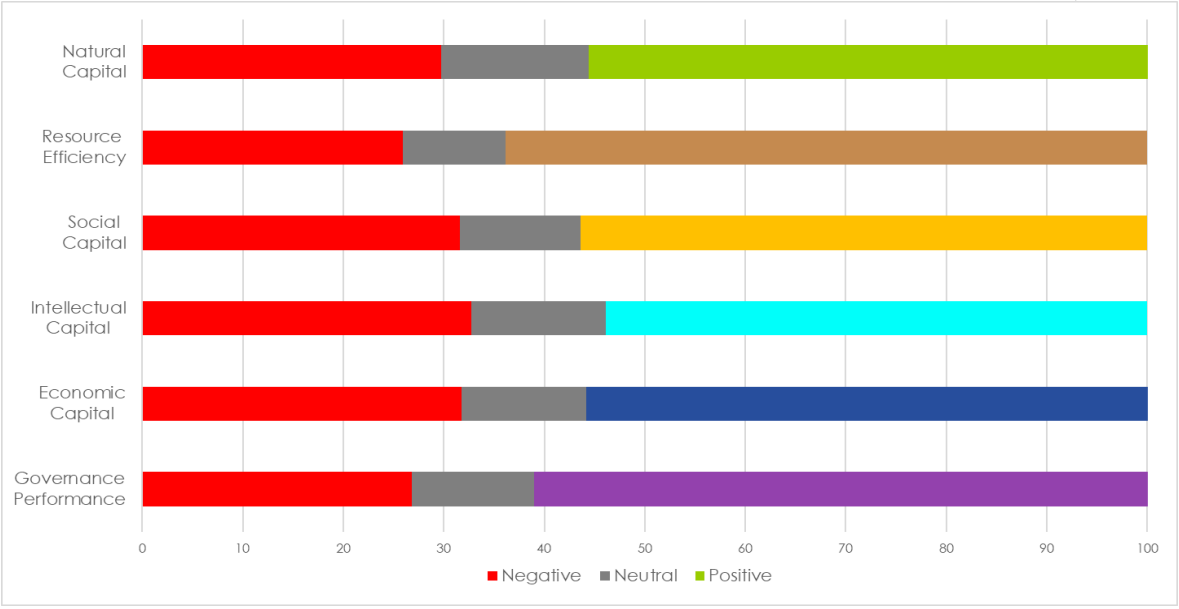
- The global average Sustainable Competitiveness score in 2025 is 46.8 – out of a possible maximum of 100
- **The global gap to a sustainable world** is 53.2 points. We remain distant from achieving an inclusive, circular society living in equilibrium with the natural environment.
- **In the Natural Capital dimension**, degradation continues: Despite some localized improvements, over half of all natural capital indicators globally show negative trends. The trajectory points toward further environmental decline without decisive intervention.
- **Resource efficiency improvements** are occurring, but at an insufficient pace to avert climate disaster. While necessary technologies exist and are increasingly cost-competitive, there remains a critical lack of political will to systematically redirect markets toward sustainable competitiveness. The gap between technological potential and policy implementation continues to widen.
- The corporate sector is increasingly outpacing political leadership: Market-driven competition and cost-benefit optimization are driving efficiency gains faster than regulatory frameworks can evolve, creating both opportunities and governance gaps.
- **The Intellectual Capital** divide remains stark: Top performers (South Korea, Japan, Singapore) score above 70, while bottom performers struggle below 35. This 35+ point gap raises a fundamental question: Is education the foundation for development, or the consequence of it? The data suggests a reinforcing cycle where both are true.
- Modest but positive trends in Social and Intellectual Capital: Analysis shows slow but steady improvements in education systems, healthcare access, and social cohesion in countries with stable governance. Under favourable conditions, these dimensions demonstrate the most consistent upward trajectories.
- **The Governance dimension** shows the highest variance and volatility: Countries affected by tribalism, polarizing cultural conflicts, power struggles, and armed conflict (Yemen, Somalia, Syria, Afghanistan) rank 40-50 points below stable democracies. Political instability is the single greatest

impediment to implementing proven, cost-effective, and readily available sustainability solutions.

- **Immense untapped potential** exists across all dimensions: Countries that have implemented coherent efficiency-focused policies demonstrate that coordinated action across education, Natural Capital preservation, Resource Intensity reduction, and Social Capital investment can yield measurable improvements within 5-10-year timeframes. The gap between leaders (Finland: 60.4) and the global average (46.8) represents actionable opportunity, not insurmountable challenge.
- **The ESG rating distribution** reveals systemic patterns: 84% of countries score below AA-, indicating that even relatively well-performing nations face significant sustainability deficits. Only 9 countries achieve AA- or above, all from Northern Europe, suggesting that comprehensive sustainable competitiveness requires integrated policy frameworks rather than siloed interventions.

Global Trends

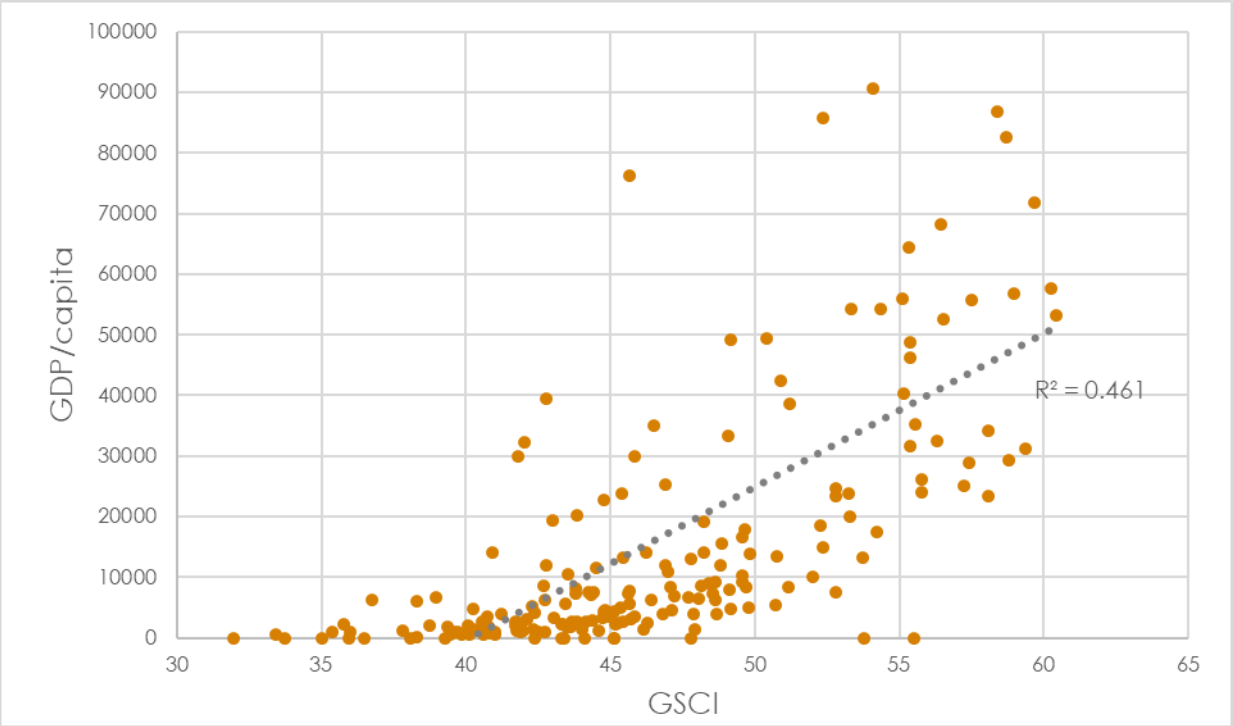
- Resource intensity is declining, and resource efficiency is increasing: more than 60% of all indicators in the resource usage dimension globally are positive. However, these changes are slow, and insufficient in face of global resource consumption challenges.
- Intellectual Capital shows a high percentage of positive trends, mostly driven by Asian Nations. At the same time, we see decline or stagnation in other parts of the World
- A high number 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

GDP vs GSCI

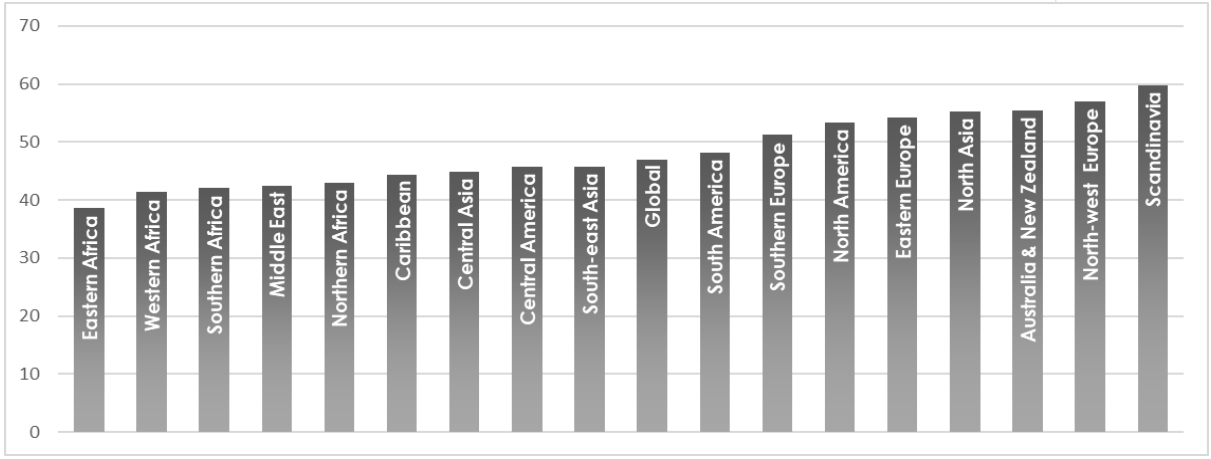
Plotting the GSCI vs GDP shows a certain but yet limited correlation between GDP and sustainable competitiveness, suggesting that the GSCI is able to catch performance not visible in purely financial numbers.



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



1.4 2025 GSCI Rankings – All Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Finland	60.42	49	Ukraine	50.7	97	Maldives	45.44	145	Papua New Guinea	42.13
2	Sweden	60.26	50	United Arab Emirates	50.39	98	India	45.43	146	Kuwait	42.03
3	Denmark	59.69	51	Argentina	49.81	99	Antigua and Barbuda	45.41	147	Tanzania	41.99
4	Estonia	59.38	52	Indonesia	49.76	100	Samoa	45.34	148	Togo	41.91
5	Switzerland	59.15	53	Peru	49.68	101	Ghana	45.24	149	Congo, Rep.	41.86
6	Austria	58.97	54	Seychelles	49.67	102	Kenya	45.15	150	Bahrain	41.8
7	Lithuania	58.8	55	Georgia	49.58	103	Palau	45.13	151	Uganda	41.75
8	Iceland	58.69	56	Brazil	49.57	104	Cuba	45.12	152	West Bank and Gaza	41.72
9	Norway	58.38	57	Chile	49.56	105	Tunisia	45.12	153	Lao PDR	41.69
10	Latvia	58.08	58	Vietnam	49.17	106	Honduras	44.92	154	Eswatini	41.23
11	Slovenia	58.07	59	Andorra	49.16	107	Jordan	44.82	155	Malawi	41.01
12	Luxembourg	57.8	60	Colombia	49.1	108	St. Kitts and Nevis	44.78	156	Burkina Faso	40.99
13	Ireland	57.65	61	Brunei Darussalam	49.08	109	Namibia	44.75	157	St. Lucia	40.91
14	Germany	57.51	62	Turkiye	48.83	110	Sao Tome and Princi	44.72	158	Liberia	40.85
15	Portugal	57.4	63	Malaysia	48.81	111	Zambia	44.59	159	Lesotho	40.82
16	Poland	57.23	64	Bolivia	48.68	112	St. Vincent and the G	44.49	160	Guinea	40.76
17	United Kingdom	56.53	65	North Macedonia	48.64	113	Suriname	44.4	161	Djibouti	40.72
18	Netherlands	56.43	66	Fiji	48.62	114	Nicaragua	44.39	162	Congo, Dem. Rep.	40.6
19	Japan	56.31	67	Thailand	48.54	115	Jamaica	44.32	163	Nigeria	40.6
20	Croatia	55.77	68	Bosnia and Herzegov	48.42	116	Marshall Islands	44.22	164	Zimbabwe	40.58
21	Slovak Republic	55.76	69	Kazakhstan	48.24	117	Cote d'Ivoire	44.13	165	Pakistan	40.45
22	Spain	55.55	70	Panama	48.22	118	Tonga	44.1	166	Iran, Islamic Rep.	40.26
23	Korea, Rep.	55.52	71	Armenia	48.13	119	Benin	44.01	167	Myanmar	40.25
24	France	55.37	72	Paraguay	48.06	120	Oman	43.84	168	Mozambique	40.1
25	New Zealand	55.36	73	Timor-Leste	47.9	121	Bangladesh	43.82	169	Angola	40.06
26	Czech Republic	55.35	74	Philippines	47.89	122	Gabon	43.81	170	Madagascar	39.85
27	Australia	55.32	75	Bhutan	47.8	123	Kosovo	43.79	171	Gambia, The	39.72
28	Italy	55.15	76	Montenegro	47.77	124	Cambodia	43.68	172	Guinea-Bissau	39.6
29	Belgium	55.1	77	Mongolia	47.68	125	Senegal	43.62	173	Niger	39.48
30	Canada	54.37	78	Ecuador	47.2	126	Dominica	43.54	174	Central African Repu	39.45
31	Bulgaria	54.23	79	Sri Lanka	47.14	127	Cameroon	43.49	175	Comoros	39.36
32	Singapore	54.09	80	Belize	47.08	128	Algeria	43.44	176	Lebanon	39.27
33	Liechtenstein	53.78	81	Dominican Republic	46.99	129	Tuvalu	43.41	177	Equatorial Guinea	38.96
34	China	53.73	82	Barbados	46.9	130	Kiribati	43.37	178	Mauritania	38.72
35	Israel	53.32	83	Mauritius	46.88	131	Solomon Islands	43.31	179	Iraq	38.31
36	Romania	53.3	84	Morocco	46.82	132	Venezuela, RB	43.31	180	Burundi	38.31
37	Uruguay	53.24	85	Saudi Arabia	46.52	133	Egypt, Arab Rep.	43.03	181	Ethiopia	38.07
38	Greece	52.81	86	Guatemala	46.39	134	Trinidad and Tobago	43	182	Mali	37.82
39	Moldova	52.79	87	Kyrgyz Republic	46.3	135	Bahamas, The	42.79	183	Libya	36.76
40	Hungary	52.78	88	Mexico	46.23	136	Grenada	42.77	184	Afghanistan	36.49
41	Russian Federation	52.37	89	Nepal	46.16	137	Sierra Leone	42.74	185	Chad	35.99
42	United States	52.37	90	Guyana	45.85	138	South Africa	42.71	186	Syrian Arab Republic	35.93
43	Costa Rica	52.28	91	Vanuatu	45.82	139	Turkmenistan	42.68	187	Haiti	35.75
44	Albania	51.99	92	Uzbekistan	45.71	140	Rwanda	42.49	188	Sudan	35.36
45	Cyprus	51.21	93	Qatar	45.66	141	Micronesia, Fed. Sts.	42.39	189	South Sudan	35.01
46	Belarus	51.15	94	El Salvador	45.66	142	Korea, Dem. People's	42.37	190	Eritrea	33.74
47	Malta	50.87	95	Botswana	45.65	143	Tajikistan	42.33	191	Somalia	33.41
48	Serbia	50.74	96	Azerbaijan	45.63	144	Cabo Verde	42.31	192	Yemen, Rep.	31.94

1.5 Natural Capital

The Natural Capital reflects "the given" natural environment of a country, and the state of its health/decline of Natural Capital. Key take-aways from the 2025 Natural Capital Index include:

- The Natural Capital Index 2025 is topped by the Russian Federation, followed by Finland, Lao PDR, and the Central African Republic. Bhutan and Canada complete the top 6.
- South American nations, with their large biodiversity pool, continue to score high in Natural Capital, with Brazil ranked #16 globally.
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water, perform exceptionally well - Finland (#2) and Norway (#13) are both ranked in the top 15.
- African countries in the tropical belt are ranked fairly high – including Central African Republic (#4), Cameroon (#10), Gabon (#13), and both Congo's (Republic of Congo #15, Democratic Republic of Congo #18).
- The two most populated countries, India (#90) and China (#138), 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 (#125), Egypt (#154), Iran (#164)) are performing low in Natural Capital, raising concerns about the future ability to sustain the population in the face of rapidly increasing climate disruption.

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
Russian Federation	1	62.32	Canada	6	59.49	Brazil	16	54.49
Finland	2	61.35	Japan	39	50.65	India	90	45.7
Lao PDR	3	60.33	United States	45	49.81	South Africa	94	45.21
Central African Republic	4	59.78	Spain	55	48.85	Nigeria	134	41.77
Bhutan	5	59.73	Korea, Rep.	67	47.98	China	138	41.14
Canada	6	59.49	United Kingdom	114	43.98	Vietnam	147	40.24

1.6 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 (and the loss of the manufacturing sector due to lack of competitiveness).
- Uganda ranks first in the combined Resource Efficiency/Intensity Index, followed by Angola, Zambia, Cameroon (all with very low per-capita consumption), and the United Kingdom.
- Among major economies, the UK (#5) leads, followed by France (#15) and Germany (#23). Japan ranks 83rd and the US 99th.

- China (#111) is hindered by heavy industries and construction, though it continues to show efficiency improvements despite rising intensity challenges.

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
Uganda	1	65.63	United Kingdom	5	61.9	Nigeria	11	60.01
Angola	2	62.43	France	15	58.64	Brazil	33	56.35
Zambia	3	62.11	Germany	23	57.33	India	74	51.63
Cameroon	4	61.9	Spain	45	55.07	China	111	47.93
United Kingdom	5	61.9	Canada	47	54.79	Vietnam	118	47.22
Switzerland	6	61.75	Japan	83	51.1	South Africa	135	45.29

1.7 Social Capital Index

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

- The Social Capital Index is topped by Timor-Leste, followed by Norway, Slovenia, United Arab Emirates, and Iceland. The Netherlands and Japan complete the top 7.
- The top 30 of the Social Capital sub-index is dominated by Western European countries and the Baltics – with notable exceptions including Timor-Leste (#1), Japan (#7), Mongolia (#10), Seychelles (#20), and the Kyrgyz Republic (#26).
- The United Arab Emirates (#4) leads among Gulf nations.
- The USA, due to comparable high crime rates, low availability of health services, and rising inequality, is ranked 177th – a concerning decline for a major developed economy.
- Among major emerging markets, China is ranked 55th, India 107th, Nigeria 136th, and Brazil 186th, highlighting significant social challenges in these populous nations.
- The highest-ranking African nations are Senegal (#40), Kenya (#79), and Madagascar (#94).
- Due to a combination of low availability of health care services and child mortality, limited freedom of expression, and unstable human rights situations, many African and Latin American countries are at the bottom of this ranking. Eswatini (#192), South Sudan (#191), and Venezuela (#189) rank lowest globally.

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
Timor-Leste	1	59.01	Japan	7	55.9	Vietnam	53	49.58
Norway	2	58.13	Germany	23	53.4	China	55	49.16
Slovenia	3	58.01	Spain	31	52.11	India	107	43.64
United Arab Emirates	4	56.91	Korea, Rep.	33	51.78	Nigeria	136	41.47
Iceland	5	56.06	France	38	51.34	South Africa	173	37.76
Netherlands	6	56.03	United Kingdom	67	47.5	Brazil	186	35.1

1.8 Intellectual Capital

The Intellectual Capital Index measures educational system, educational outcomes, as well as innovation indicators through quantitative measurements. Key insights from the 2025 Capital Index include:

- North-Eastern Asian nations (China, South Korea, Japan, Singapore) dominate the intellectual capital sub-index of the GSCI, reflecting the continuing shift of technology advancements toward the region.
- The Innovation ranking is now topped by China (#1), followed closely by Singapore (#2) and South Korea (#3), underlining China's continued advance into technology and indicating the value of state-led investments in education and R&D.
- Among Western nations, Switzerland ranks 4th, the UK 5th, Germany 11th, and the US 14th, showing strong but increasingly challenged positions in the global innovation landscape.
- Scandinavian nations continue to perform exceptionally well, all within the top 25: Sweden (#7), Denmark (#8), Finland (#12), Iceland (#15), and Norway (#25).
- Israel (#6) maintains its position as a global innovation powerhouse.
- Among emerging markets, Brazil is ranked 58th, India 91st, and Nigeria 182nd, revealing significant gaps in technological capacity and innovation infrastructure.
- Morocco (#62), Tunisia (#95), and South Africa (#127) are the highest ranked nations on the African continent, though even the regional leaders struggle to compete globally in intellectual capital development.
- Most of Africa unfortunately continues to underperform in the global intellectual capital comparison, raising concerns about prolonged entrapment in poverty without significant investments in education, research, and innovation capacity.

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
China	1	68.7	Korea, Rep.	3	68.32	China	1	68.7
Singapore	2	68.57	United Kingdom	5	67.58	Vietnam	42	51.51
Korea, Rep.	3	68.32	Japan	10	66.32	Brazil	58	46.2
Switzerland	4	68.3	Germany	11	65.13	India	91	41.18
United Kingdom	5	67.58	United States	14	63.27	South Africa	127	34.58
Israel	6	67.42	France	17	61.55	Nigeria	182	19.4

1.9 Economic Capital

- The Economic Capital ranking is topped by economically advanced nations in Europe and Asia, with some notable exceptions. Costa Rica (#1) leads globally, followed by Ireland (#2), demonstrating that smaller, well-managed economies can achieve exceptional economic competitiveness.
- China is ranked 27th, while the US sits at 59th, reflecting ongoing shifts in economic power and the challenges facing traditional Western economies with aging infrastructure, rising debt levels, and structural imbalances.
- Germany is ranked 32nd, the UK 28th, and France 78th, indicating varied performance among major European economies.
- Costa Rica's top ranking underscores the importance of sound macroeconomic policies, education investments, and institutional quality over sheer economic size.
- Among emerging markets, Brazil is ranked 102nd, Nigeria 127th, and India 172nd, highlighting persistent challenges in economic governance, that constrain their competitiveness despite high growth potential.
- Economies in Central and Eastern Europe score overwhelmingly in the upper quarter, with countries like Lithuania (#4), Latvia (#8), Estonia (#9), Croatia (#12), Bulgaria (#16), Slovakia (#18), Poland (#20), all ranking in the top 20.

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
Costa Rica	1	64.47	United Kingdom	28	56.59	China	27	56.74
Ireland	2	63.81	Germany	32	55.7	Vietnam	80	51.29
Slovenia	3	63.57	Korea, Rep.	58	53.05	Brazil	102	48.98
Lithuania	4	62.54	United States	59	53.01	Nigeria	127	45.83
Singapore	5	62.44	Spain	63	52.85	India	172	40.31
Austria	6	62.22	France	78	51.43	South Africa	175	40.11

1.10 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 2025 Governance Index include:

- The Governance Capital Index is dominated by countries from Western and Northern Europe. Only Uruguay (#7), New Zealand (#30), Australia (#22), Japan (#33), Korea (#35), and Chile (#32) are non-European countries in the top 35, demonstrating the historical strength of European governance institutions.
- The Governance Capital ranking is topped by Norway (#1), followed by the Netherlands (#2), Denmark (#3), and Luxembourg (#4).
- Estonia (#5) and Lithuania (#6) showcase the remarkable governance achievements of Baltic nations post-transition.
- Uruguay (#7) stands as the highest-ranked nation outside Europe, reflecting decades of democratic stability and strong institutional development in South America.

- Among major economies, Germany is ranked 13th, France 21st, and the UK 39th, while Japan (#33) and South Korea (#35) lead Asian governance performance.
- China is ranked 52nd and the US 38th, indicating governance challenges in both nations – China due to limited political freedoms and transparency, and the US facing declining trust in institutions, polarization, and regulatory inconsistencies.
- Among emerging markets, Brazil is ranked 66th, South Africa 87th, India 112th, and Nigeria 167th, revealing substantial deficits in rule of law, corruption control, government effectiveness, and regulatory quality that constrain their development potential.
- The Economic Sustainability Index shows a significant North-South governance gap: nearly all African countries score comparably low(with South Africa at #87 highest performer),
- Uruguay (#7) and Chile (#32) demonstrating that strong governance is achievable in the developing world with sustained institutional commitment.
-

Top 6	Rank	Score	Major Economies	Rank	Score	Emerging economies	Rank	Score
Norway	1	73.84	Germany	13	69.79	China	52	58.72
Netherlands	2	73.59	Spain	19	67.03	Brazil	66	56.31
Denmark	3	73.53	France	21	66.89	Vietnam	75	55.16
Luxembourg	4	72.01	Japan	33	63.1	South Africa	87	53.28
Estonia	5	70.77	Canada	34	62.84	India	112	50.09
Lithuania	6	70.74	Korea, Rep.	35	62.82	Nigeria	167	35.14

1.11 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 2025:

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

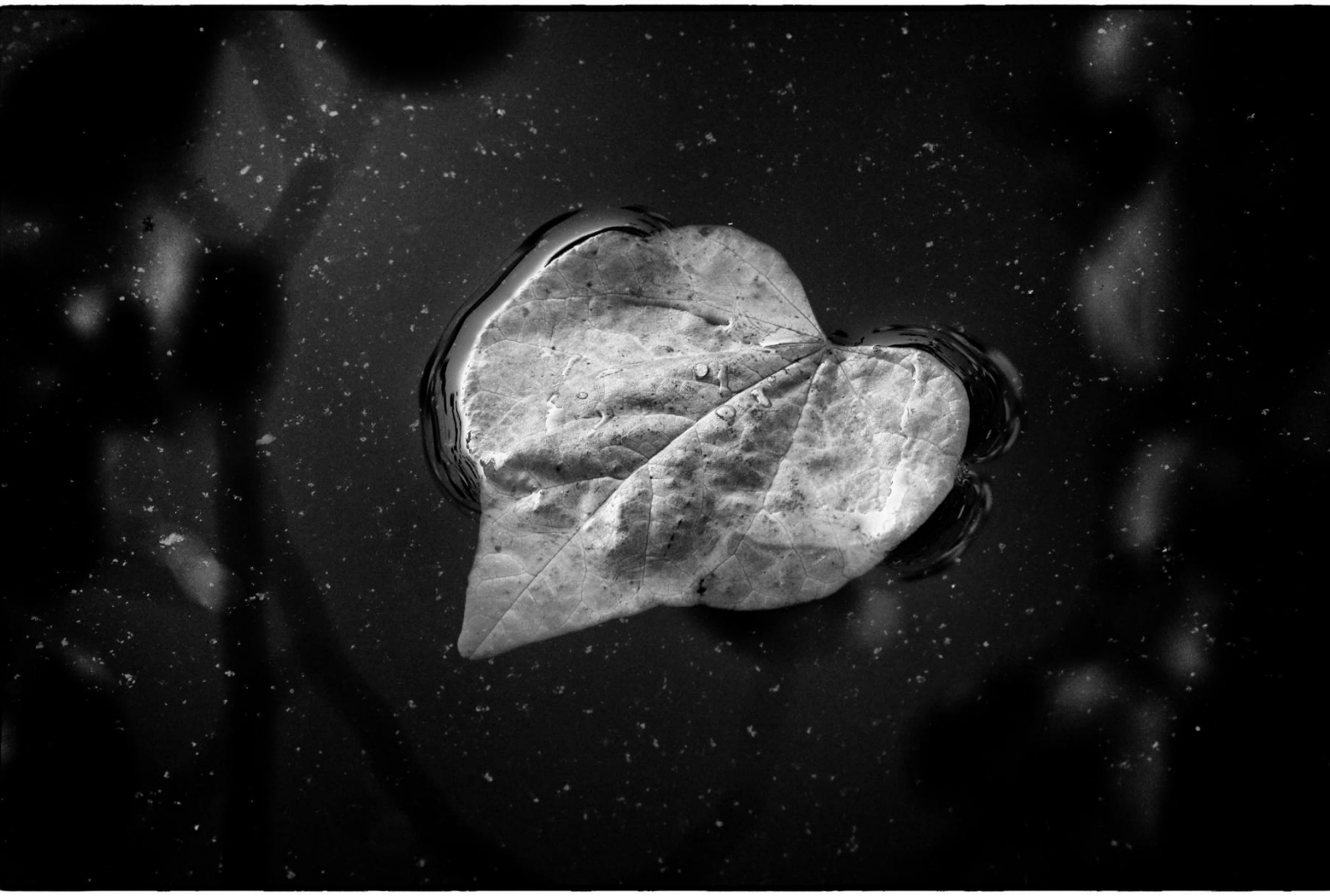
Based on sustainable competitiveness, countries dependent on exploitation of natural resources would receive a significant lower credit rating. On the other hand, some developing nations would receive higher ratings (and therefor lower interest rates) based on their development potential.

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.

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

Natural Capital Index

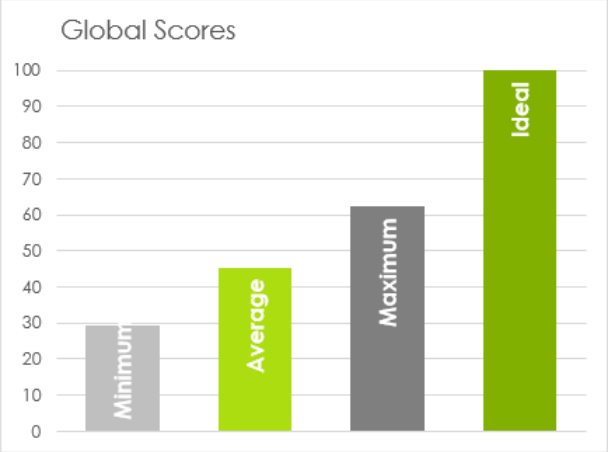


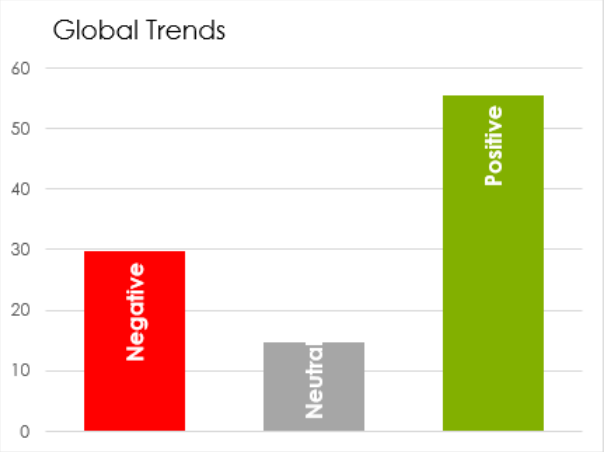
2 Natural Capital Index

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

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

State of the World: Natural Capital





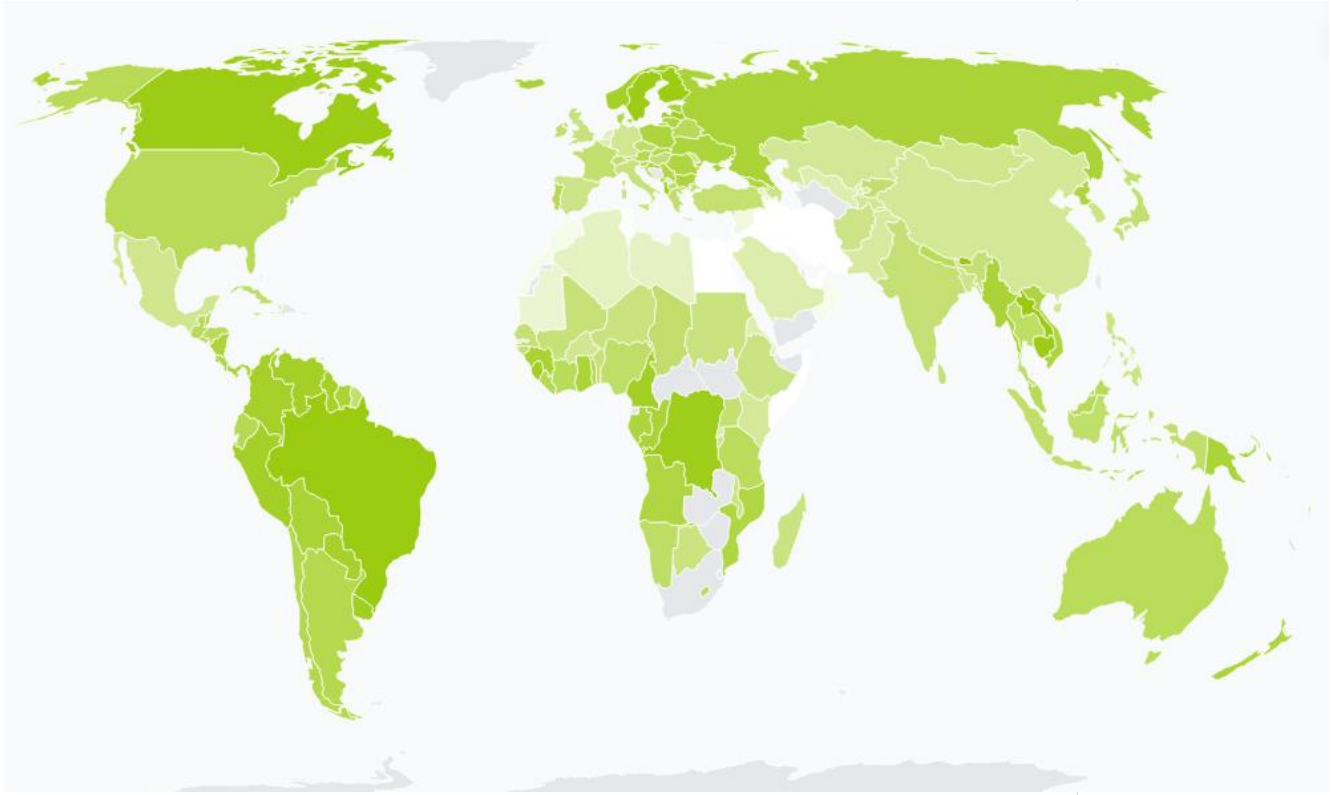
The average global score in Natural Capital is 45.2 – 55 points off the ideal state. Natural Capital is under stress, almost everywhere on the World. The large gap between the lowest (less than 25) and the best performance (72) reflects the unequal distribution of biodiversity across the globe.

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

The Natural Capital Index 2025 – 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 2025 is topped by the Russian Federation, followed by Finland, Lao PDR, and the Central African Republic. Bhutan and Canada complete the top 6.
- South American nations, with their large biodiversity pool, continue to score high in Natural Capital, with Brazil ranked #16 globally.
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water, perform exceptionally well - Finland (#2) and Norway (#13) are both ranked in the top 15.
- African countries in the tropical belt are ranked fairly high – including Central African Republic (#4), Cameroon (#10), Gabon (#13), and both Congo's (Republic of Congo #15, Democratic Republic of Congo #18).
- The two most populated countries, India (#90) and China (#138), 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 (#125), Egypt (#154), Iran (#164)) are performing low in Natural Capital, raising concerns about the future ability to sustain the population in the face of rapidly increasing climate disruption.

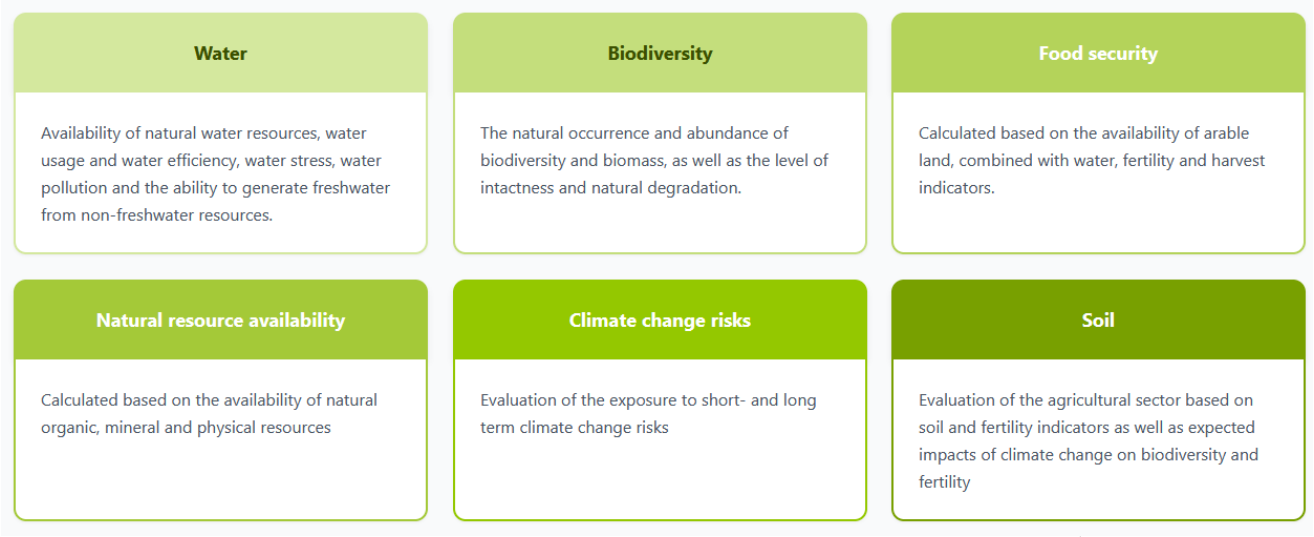


The Natural Capital World Map. Dark areas indicate high, light areas low levels of natural capital

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 points 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.

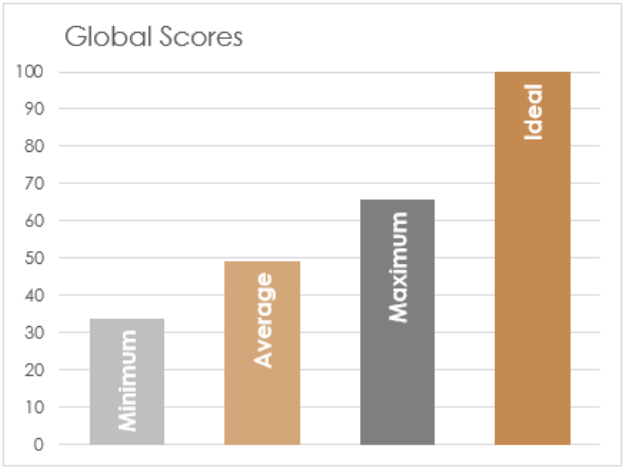
Resource Efficiency & Intensity Index

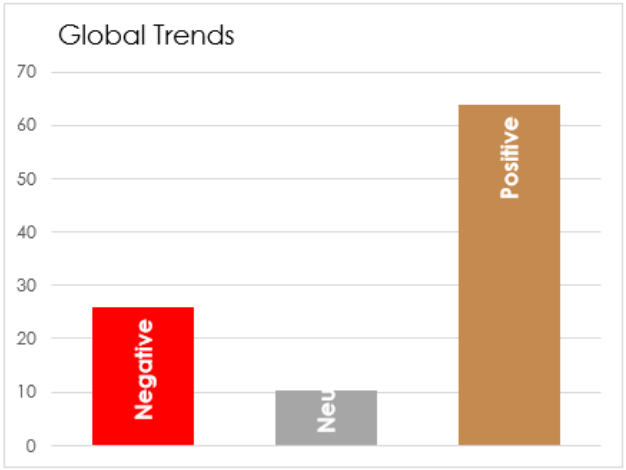
3 Resource Efficiency Index

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

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

State of the World – Resource Efficiency/Intensity



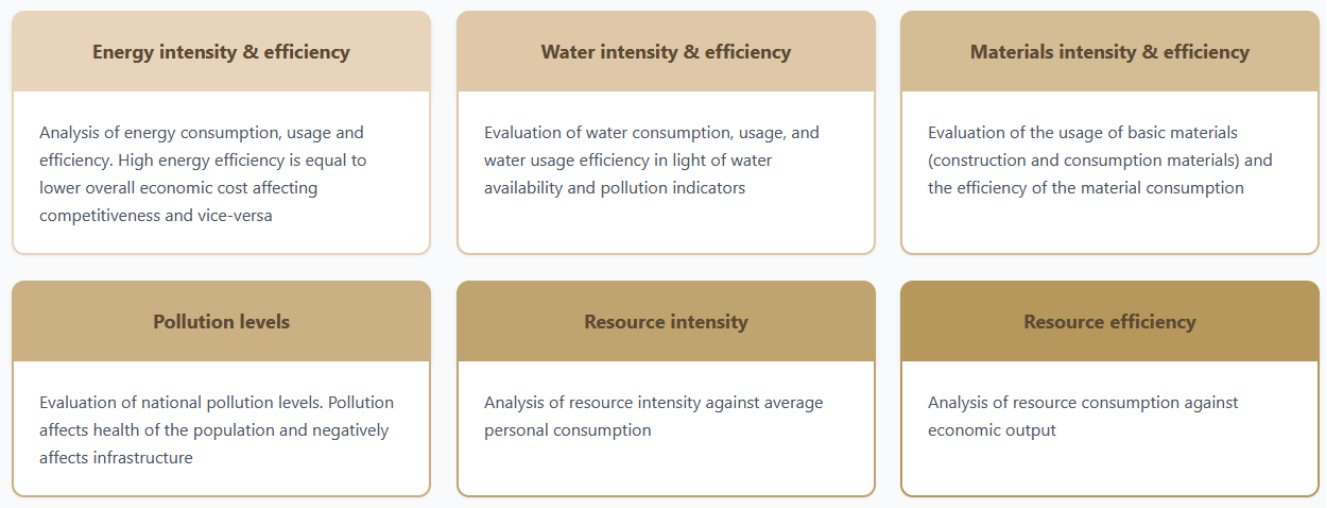


The global average in resource intensity is 46, while the highest achieved is 64. Even the best performing countries are a long way from being sustainable competitive, i.e. achieving net-zero in a circular economy. However, the large represents immense potential – for new business, and cost reduction.

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

Measuring Resource Efficiency

The Resource Efficiency & Intensity Index measured both efficiency and intensity of a country's economy. Resource efficiency measures the economic efficiency represented by the number 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.

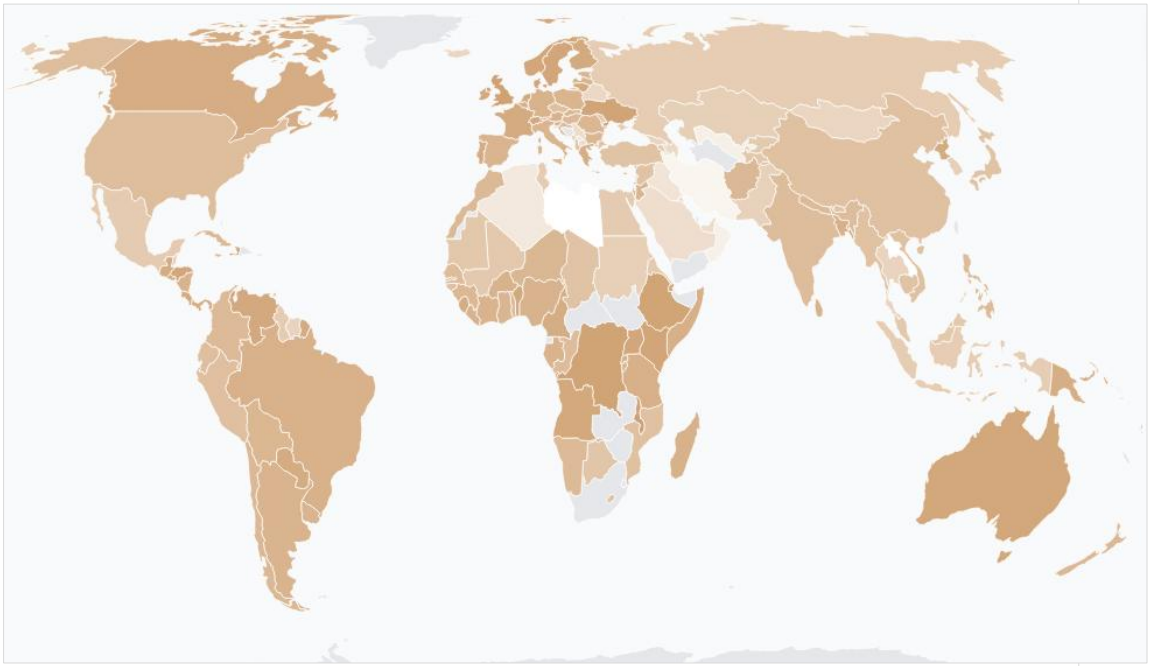
The resource intensity map shows that the resource intensity of less developed countries seems to be – generally speaking - lower than that of higher developed economies. However, indicators are measured both against economic output (GNI/GDP) and against per-capita performance. While the per-capita intensity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

- 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 (and the loss of the manufacturing sector due to lack of competitiveness).
- Uganda ranks first in the combined Resource Efficiency/Intensity Index, followed by Angola, Zambia, Cameroon (all with very low per-capita consumption), and the United Kingdom.
- Among major economies, the UK (#5) leads, followed by France (#15) and Germany (#23). Japan ranks 83rd and the US 99th.
- China (#111) is hindered by heavy industries and construction, though it continues to show efficiency improvements despite rising intensity challenges.

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.

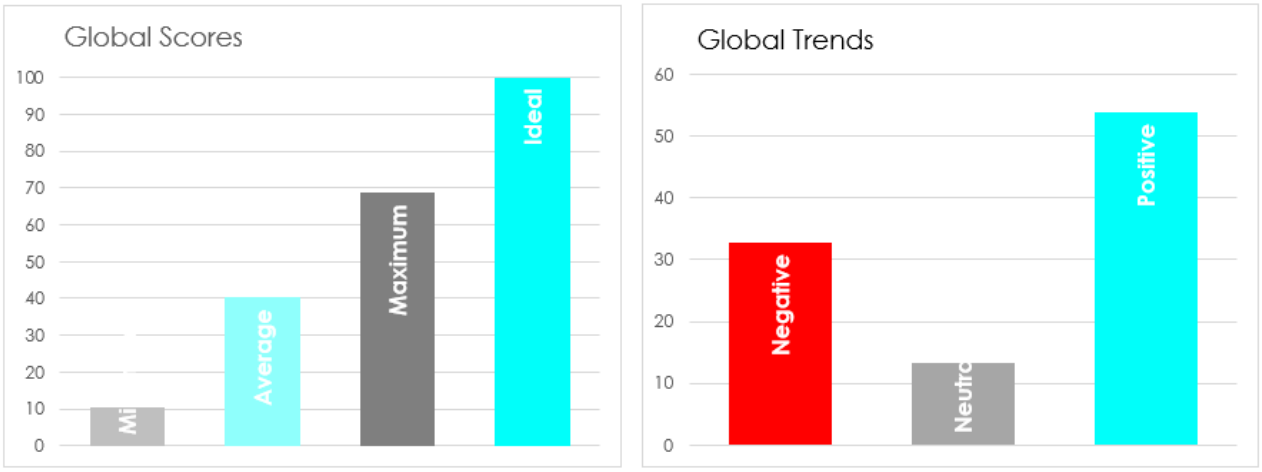
Intellectual Capital Index

4 Intellectual Capital & Innovation Index

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

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

State of the World – Intellectual & Innovation Capital

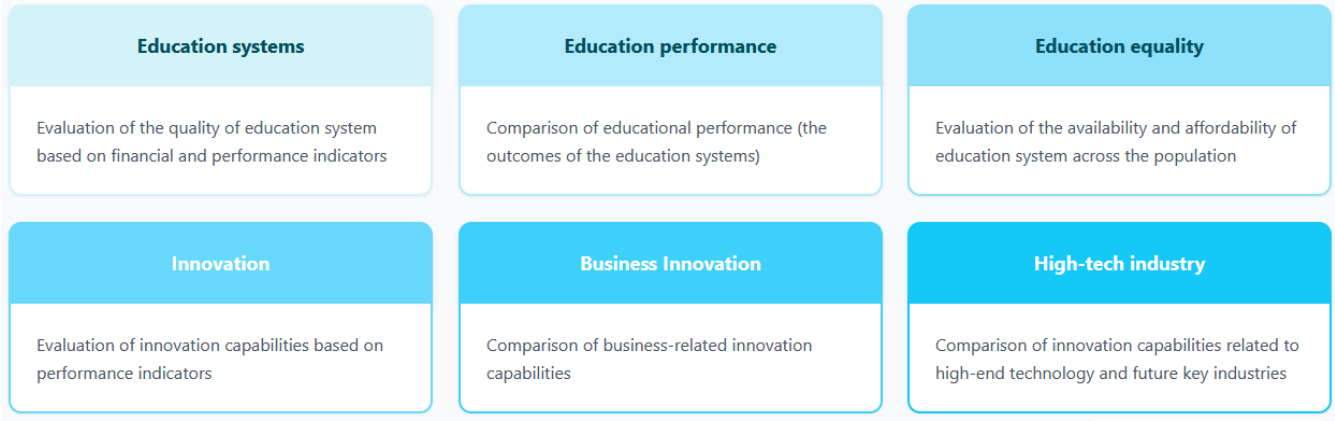


The global average in the Intellectual Capital Index is 40 – the gap to a perfect World 60. The Difference between low-performing countries (lowest: 15) and the highest score (78) is striking, and reflects – even stronger than a GNI comparison – the North-South reflect. A high score in the Intellectual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

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

Measuring Innovation

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.

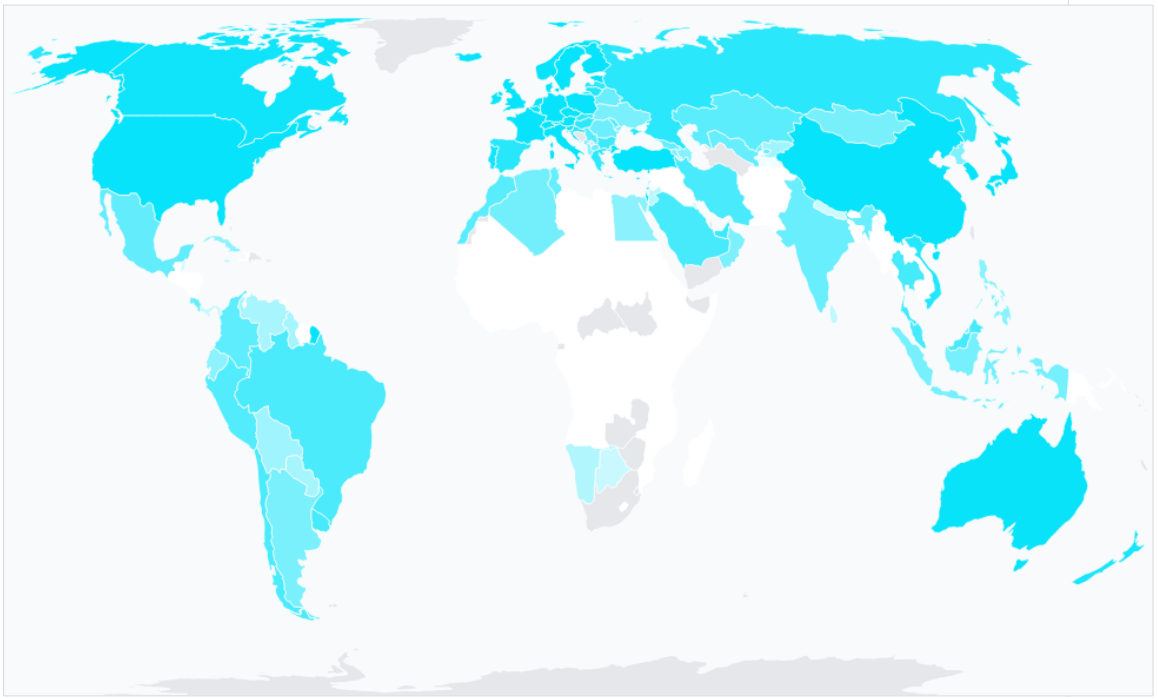
All indicators used to assess the innovation capability and sustainable competitiveness have been scored against size of the population and/or against GNI in order to gain a full picture of the competitiveness, independent of the size of a country. In addition, developments (trend analysis) of performance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

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

The Intellectual Capital Index 2025

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 (China, South Korea, Japan, Singapore) dominate the intellectual capital sub-index of the GSCI, reflecting the continuing shift of technology advancements toward the region.
- The Innovation ranking is now topped by China (#1), followed closely by Singapore (#2) and South Korea (#3), underlining China's continued advance into technology and indicating the value of state-led investments in education and R&D.
- Among Western nations, Switzerland ranks 4th, the UK 5th, Germany 11th, and the US 14th, showing strong but increasingly challenged positions in the global innovation landscape.
- Scandinavian nations continue to perform exceptionally well, all within the top 25: Sweden (#7), Denmark (#8), Finland (#12), Iceland (#15), and Norway (#25).
- Israel (#6) maintains its position as a global innovation powerhouse.
- Among emerging markets, Brazil is ranked 58th, India 91st, and Nigeria 182nd, revealing significant gaps in technological capacity and innovation infrastructure.
- Morocco (#62), Tunisia (#95), and South Africa (#127) are the highest ranked nations on the African continent, though even the regional leaders struggle to compete globally in intellectual capital development.
- Most of Africa unfortunately continues to underperform in the global intellectual capital comparison, raising concerns about prolonged entrapment in poverty without significant investments in education, research, and innovation capacity.



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

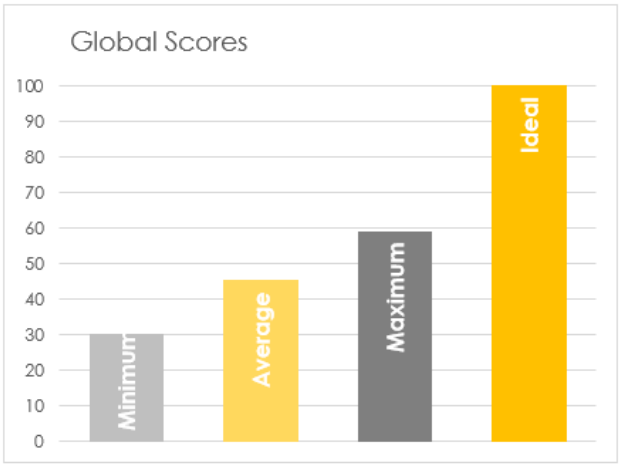
Social Capital Index

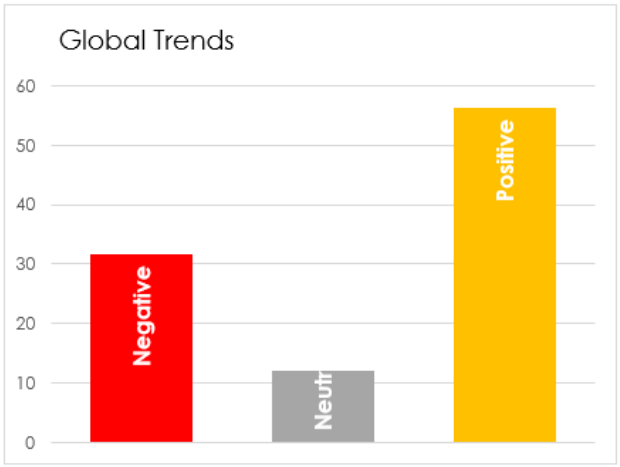
5 Social Capital Index

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

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

State of the World – Social Capital





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

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

Measuring Social Capital

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).

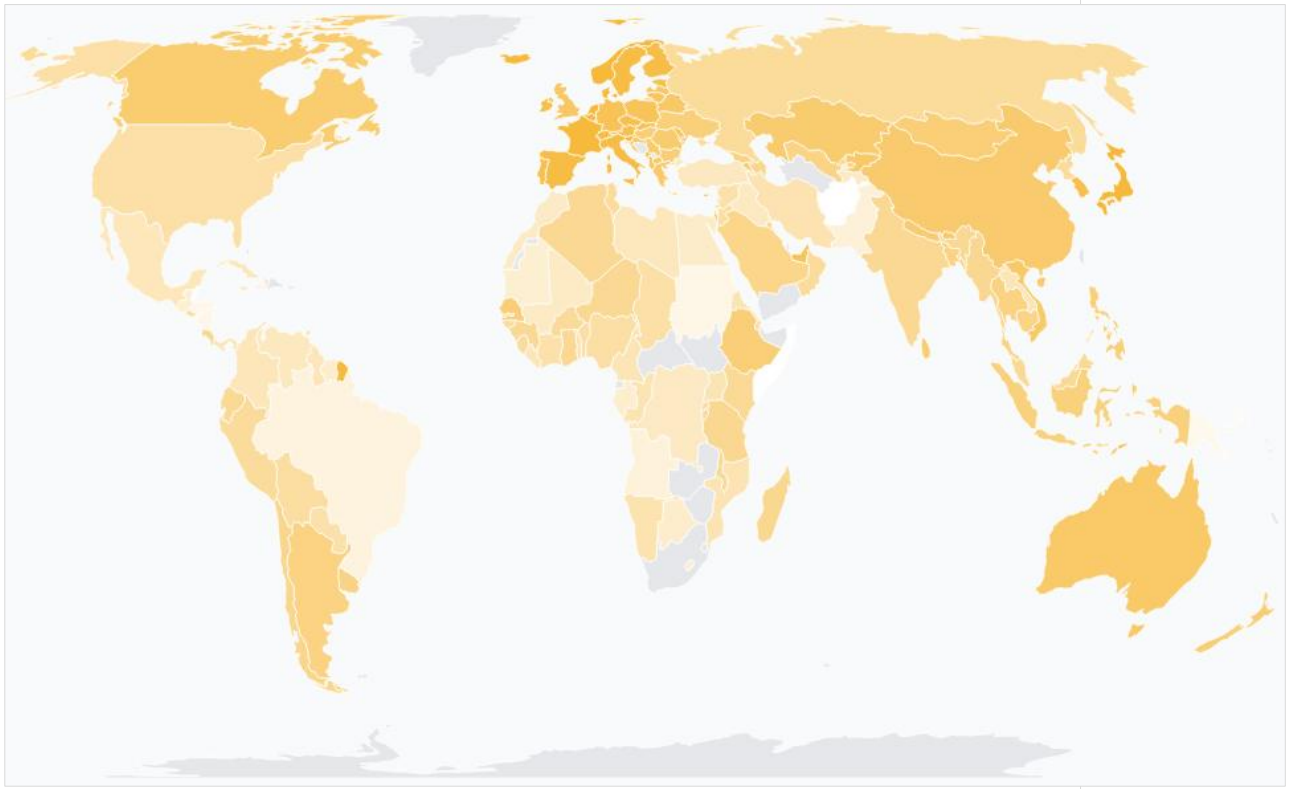
The indicators used to calculate the Social Capital score of countries is composed of health and health care factors (availability and affordability), the quantitative equality within societies (income, assets, and gender equality), freedom indicators (political freedom, freedom from fear, individual 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 2025

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 Timor-Leste, followed by Norway, Slovenia, United Arab Emirates, and Iceland. The Netherlands ranks 6th and Japan 7th, with other top performers including Moldova (8th), Poland (9th), and Mongolia (10th).
- The Nordic presence continues - Norway (#2), Iceland (#5), Finland (#19), Denmark (#22), and Sweden (#28) all rank within the top 30.
- The USA, due to comparably high crime rates, low availability of health services, and rising inequality, is ranked 177th – a concerning position for a major developed economy.
- China is ranked 55th, India 107th, Nigeria 136th, and Brazil 186th, reflecting significant social challenges in these populous emerging economies.
- The highest-ranking African nations are Senegal (#40), Kenya (#79), and Madagascar (#94).
- Most African nations, particularly 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 situations.

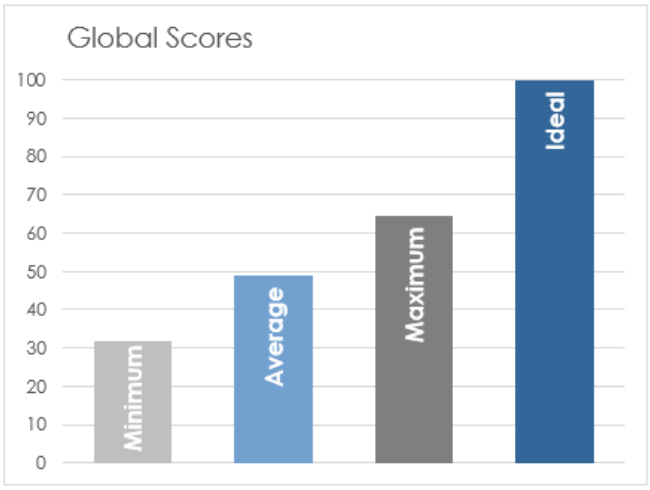


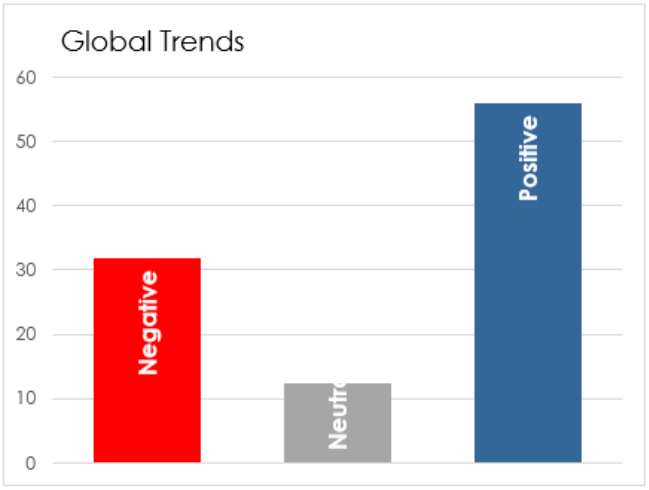
The Social Capital World Map. Dark areas indicate high, light areas low maturity of Social Capital

Economic Capital Index

6 Economic Sustainability Index

"Economy" stems from the Greek terms "oikos" (meaning "house") and "nomos" ("custom" or "law") and means "household management". Economics is the social science that studies the factors which determine the production, distribution and consumption of goods and services. The ultimate goal of 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

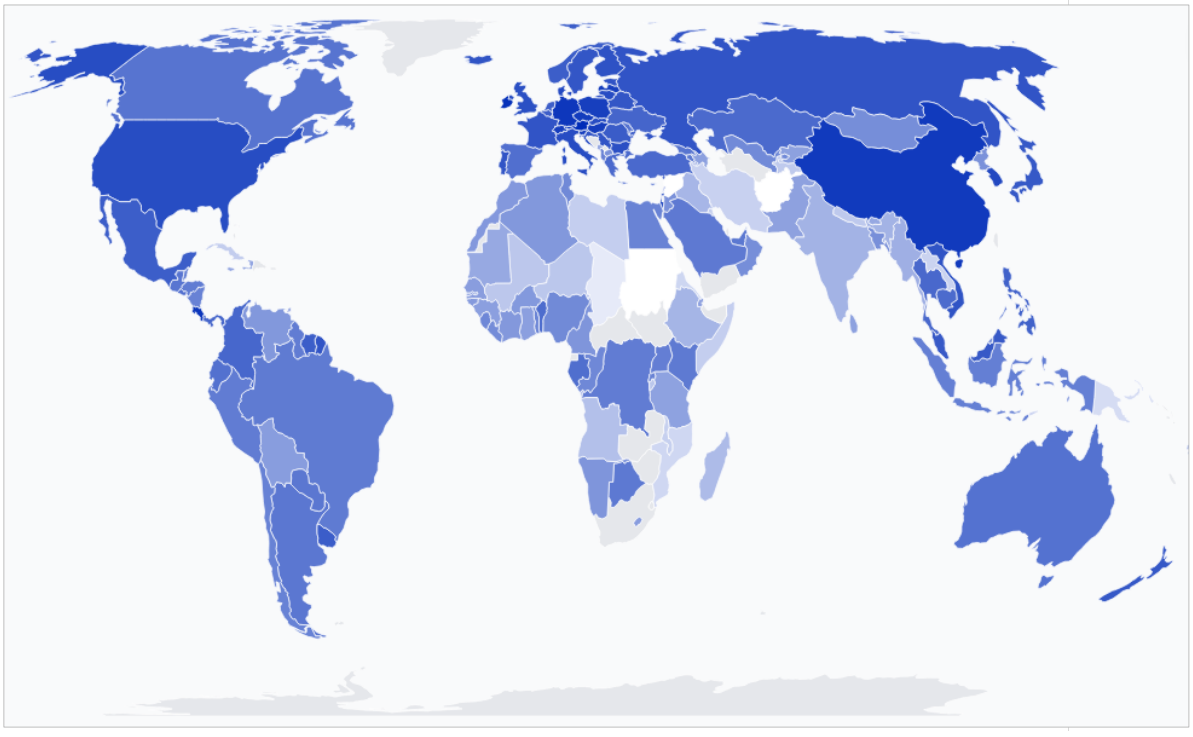
Economic sustainable competitiveness is determined by a set of external and internal factors, including the regulatory environment, government efficiency, level of education as a basis for innovation, sectoral balance, inclusiveness, and equal opportunities. The Economic Capital Index does not make qualitative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

Economic performance sustainability	Sectoral strength and balance	Economic competitiveness
Evaluation of the current status and outlook of the economy in view of hollistic ESG considerations	Analysis of the structural health and balance of the econpomy. High dependency on few sectors and/or industries can nehgatively affect development	Evaluation of the national economic competitiveness under consideration of hollistic ESG aspects beyond generic short-term performance indicators
Innovation Competitveness	**Financial markets sustainability**	**Import-Export balance**
Performnce evaluation of the economy based on innovation capabilities. Sustainable economic development is based on innovation capabilites.	Evaluation of the stability of financial marlkets. High dependency on financial markets can lead to volatility not only in the financial markets, biut in the overall economy as well as social capital value	Evaluation of depoendency on internal and external markets for a balanced development of the economy that allows a country to propser independently of short.term global volatility

Economic Sustainability reflects the ability to generate wealth through sustainable and inclusive economic development. The global average level of economic sustainability in 2025 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 2025:

- The Economic Capital ranking is topped by economically advanced nations in Europe and Asia, with some notable exceptions. Costa Rica (#1) leads globally, followed by Ireland (#2), demonstrating that smaller, well-managed economies can achieve exceptional economic competitiveness.
- China is ranked 27th, while the US sits at 59th, reflecting ongoing shifts in economic power and the challenges facing traditional Western economies with aging infrastructure, rising debt levels, and structural imbalances.
- Germany is ranked 32nd, the UK 28th, and France 78th, indicating varied performance among major European economies.
- Costa Rica's top ranking underscores the importance of sound macroeconomic policies, education investments, and institutional quality over sheer economic size.
- Among emerging markets, Brazil is ranked 102nd, Nigeria 127th, and India 172nd, highlighting persistent challenges in economic governance, that constrain their competitiveness despite high growth potential.
- Economies in Central and Eastern Europe score overwhelmingly in the upper quarter, with countries like Lithuania (#4), Latvia (#8), Estonia (#9), Croatia (#12), Bulgaria (#16), Slovakia (#18), Poland (#20), all ranking in the top 20.



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

Global Governance Index

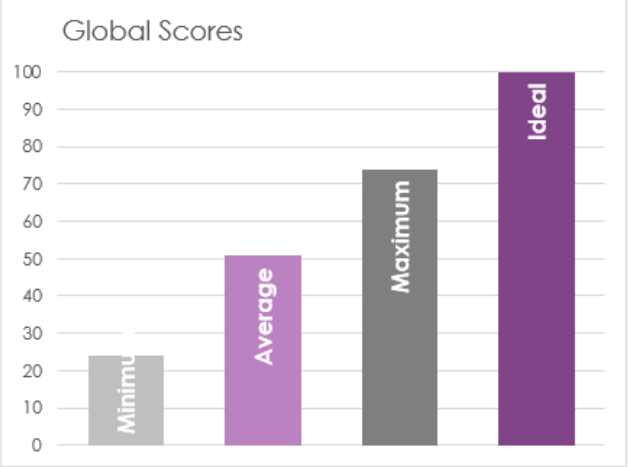
7 The Global Governance Performance Index

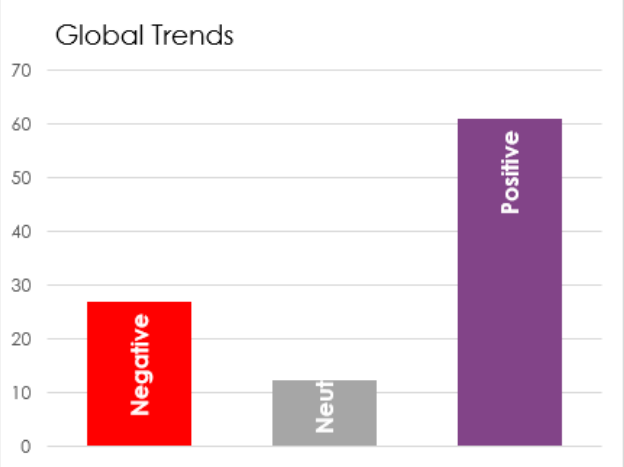
Governance defines the environment the society – individual and businesses – operate in.

The Governance Index of the Global Sustainable Competitiveness Index is based on quantitative data series – and not 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





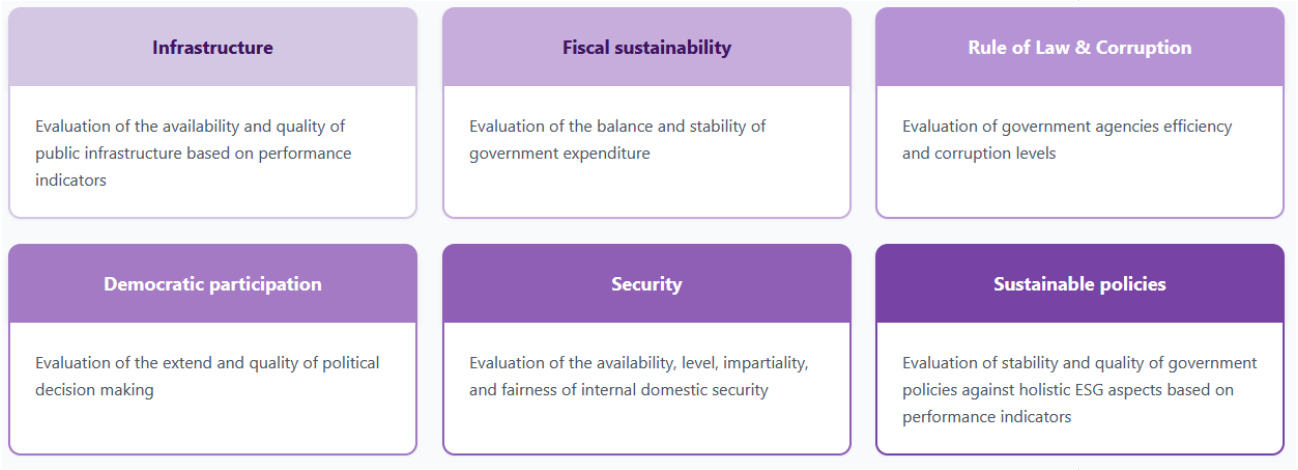
The Global average in Governance Performance is 45 – the second highest of all six dimensions considered in the Global Sustainable Competitiveness Index. However, discrepancies are rather large from 25 (lowest) to 71 (highest).

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

Governance: Shaping Development

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

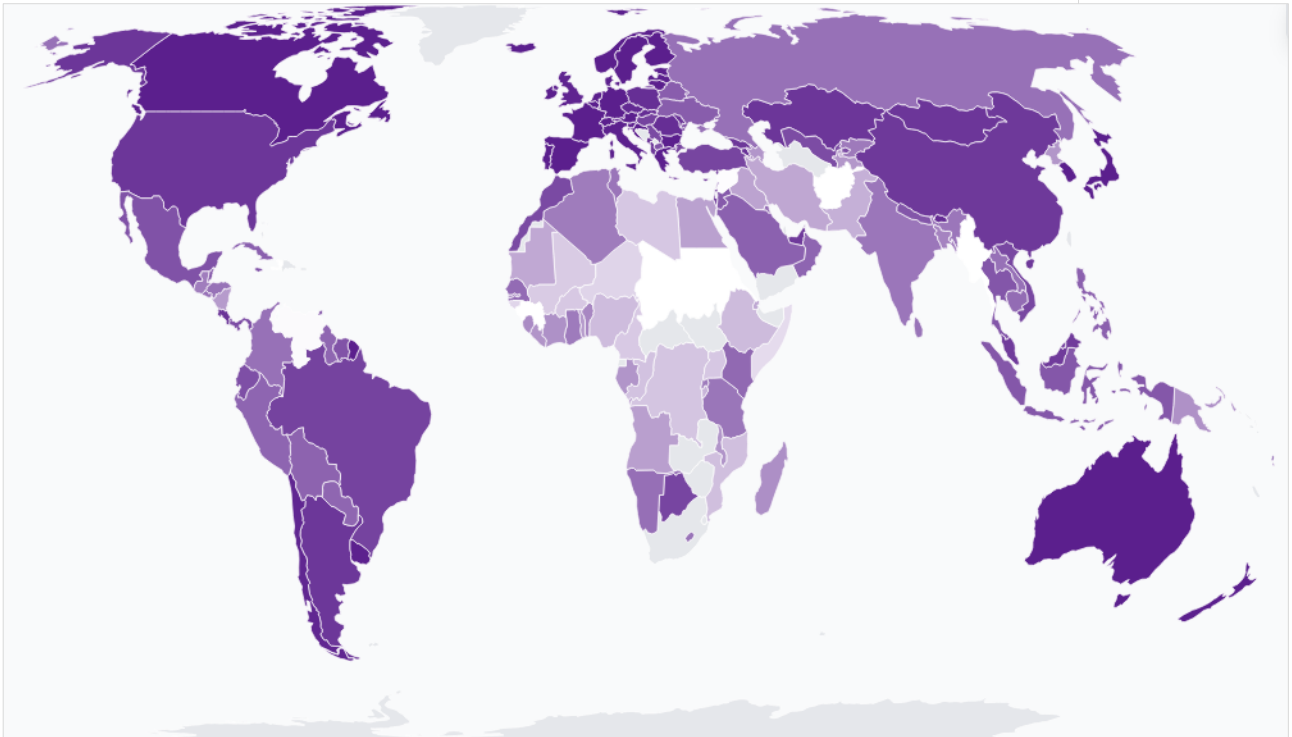
The result of qualitative governance quality & strategy evaluation depends very much on the evaluator. The Sustainable Competitiveness Index therefore relies on purely quantitative data series to exclude all subjectivity in evaluating and calculating the Governance Sub-Index. In addition, some qualitative 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.

Key insights from the Governance Performance Index 2025:

- The Governance Capital Index is dominated by countries from Western and Northern Europe. Only Uruguay (#7), New Zealand (#30), Australia (#22), Japan (#33), Korea (#35), and Chile (#32) are non-European countries in the top 35, demonstrating the historical strength of European governance institutions.
- The Governance Capital ranking is topped by Norway (#1), followed by the Netherlands (#2), Denmark (#3), and Luxembourg (#4).
- Estonia (#5) and Lithuania (#6) showcase the remarkable governance achievements of Baltic nations post-transition.
- Uruguay (#7) stands as the highest-ranked nation outside Europe, reflecting decades of democratic stability and strong institutional development in South America.
- Among major economies, Germany is ranked 13th, France 21st, and the UK 39th, while Japan (#33) and South Korea (#35) lead Asian governance performance.
- China is ranked 52nd and the US 38th, indicating governance challenges in both nations – China due to limited political freedoms and transparency, and the US facing declining trust in institutions, polarization, and regulatory inconsistencies.
- Among emerging markets, Brazil is ranked 66th, South Africa 87th, India 112th, and Nigeria 167th, revealing substantial deficits in rule of law, corruption control, government effectiveness, and regulatory quality that constrain their development potential.
- The Economic Sustainability Index shows a significant North-South governance gap: nearly all African countries score comparably low(with South Africa at #87 highest performer),
- Uruguay (#7) and Chile (#32) demonstrating that strong governance is achievable in the developing world with sustained institutional commitment.

The Governance World Map



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

Sustainable Competitiveness

8 Sustainable, Competitive

8.1 What is Sustainable Competitiveness?

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.

8.2 GSCI vs GDP

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.**

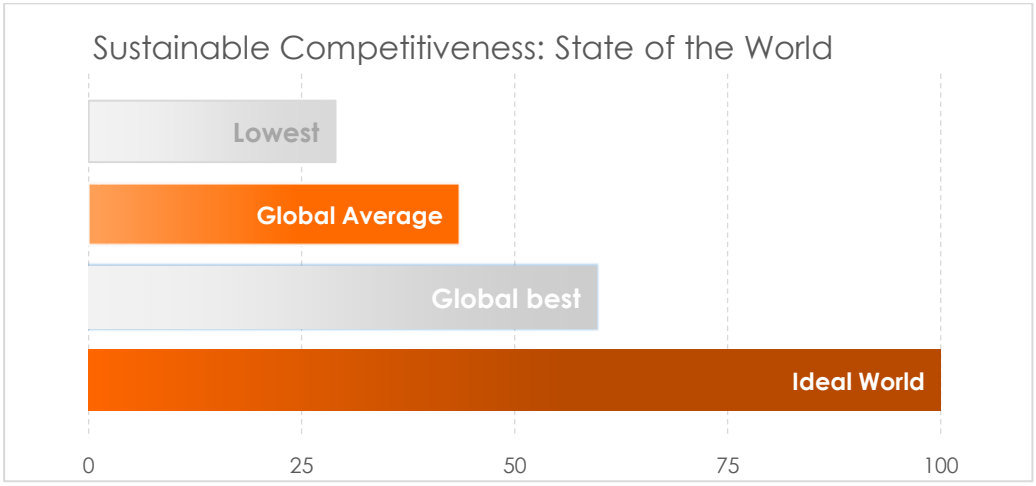
The Global Sustainable Competitiveness Index: Measuring Green Growth since 2012

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.

8.3 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 2025 is 46.1; the highest score, achieved by Finland, is 60.5.



The current global gap to an ideal World is 54 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.

8.4 Education & Sustainable Competitiveness

The chicken or the egg?

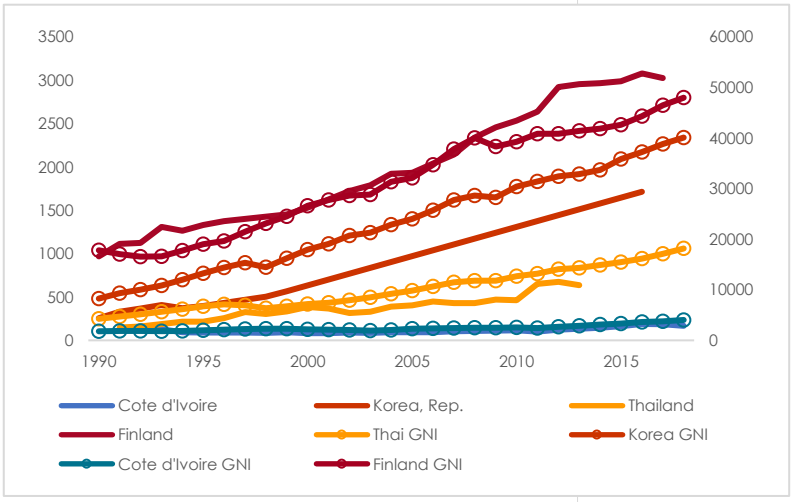
Sustainable competitiveness means that current wealth levels are not in danger of being reduced or diminished through over-exploitation of resources (i.e. natural and human resources), the lack of innovation investments required to compete in the globalised markets (i.e. education), or the discrimination,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

GDP/capita and sustainable competitiveness

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

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

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



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

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

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

In other words:

Sustainability is the chicken *AND* the egg.

8.5 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)

8.6 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

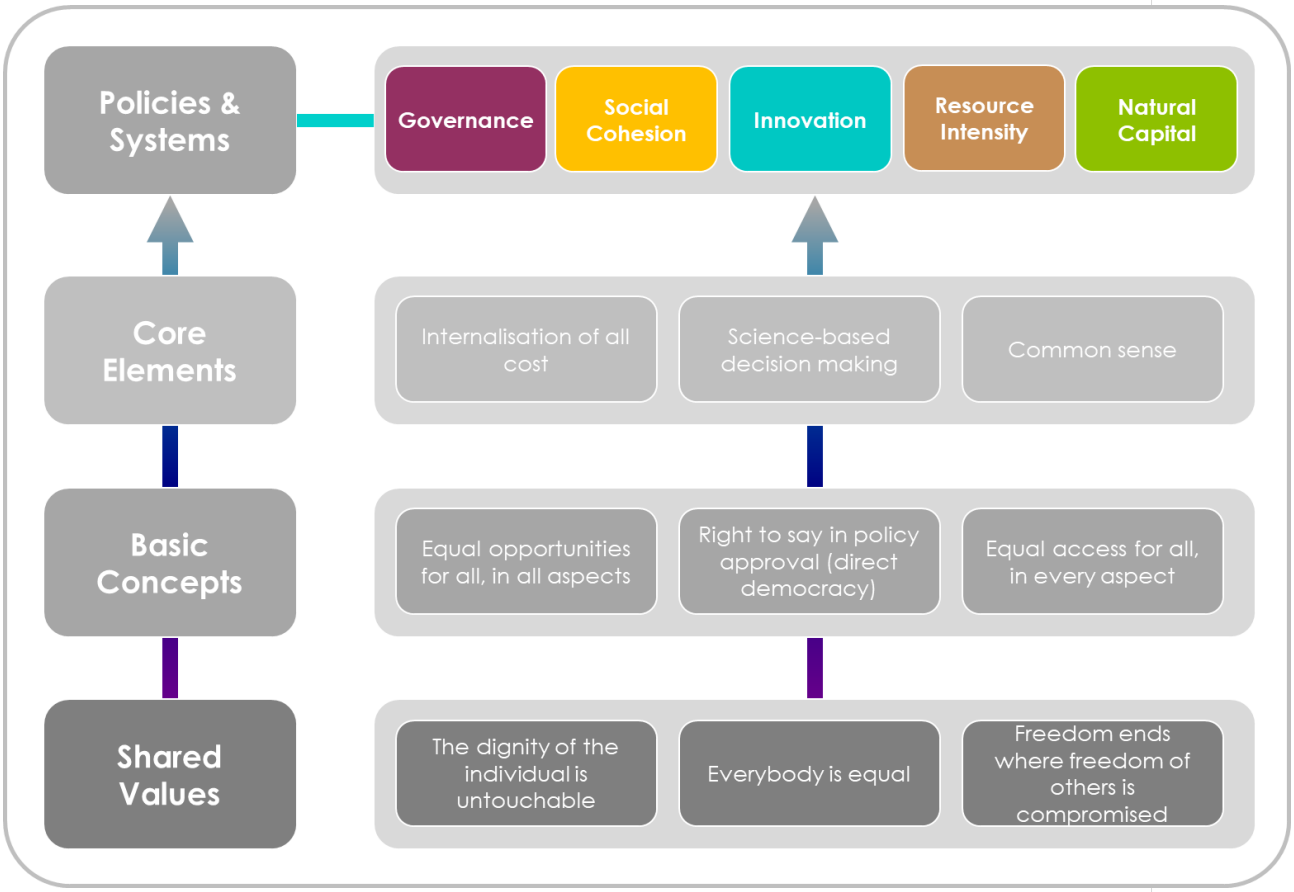
8.7 Basic Commons

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.



8.8 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**
  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.

8.9 12 Key Points to achieve sustainable competitiveness

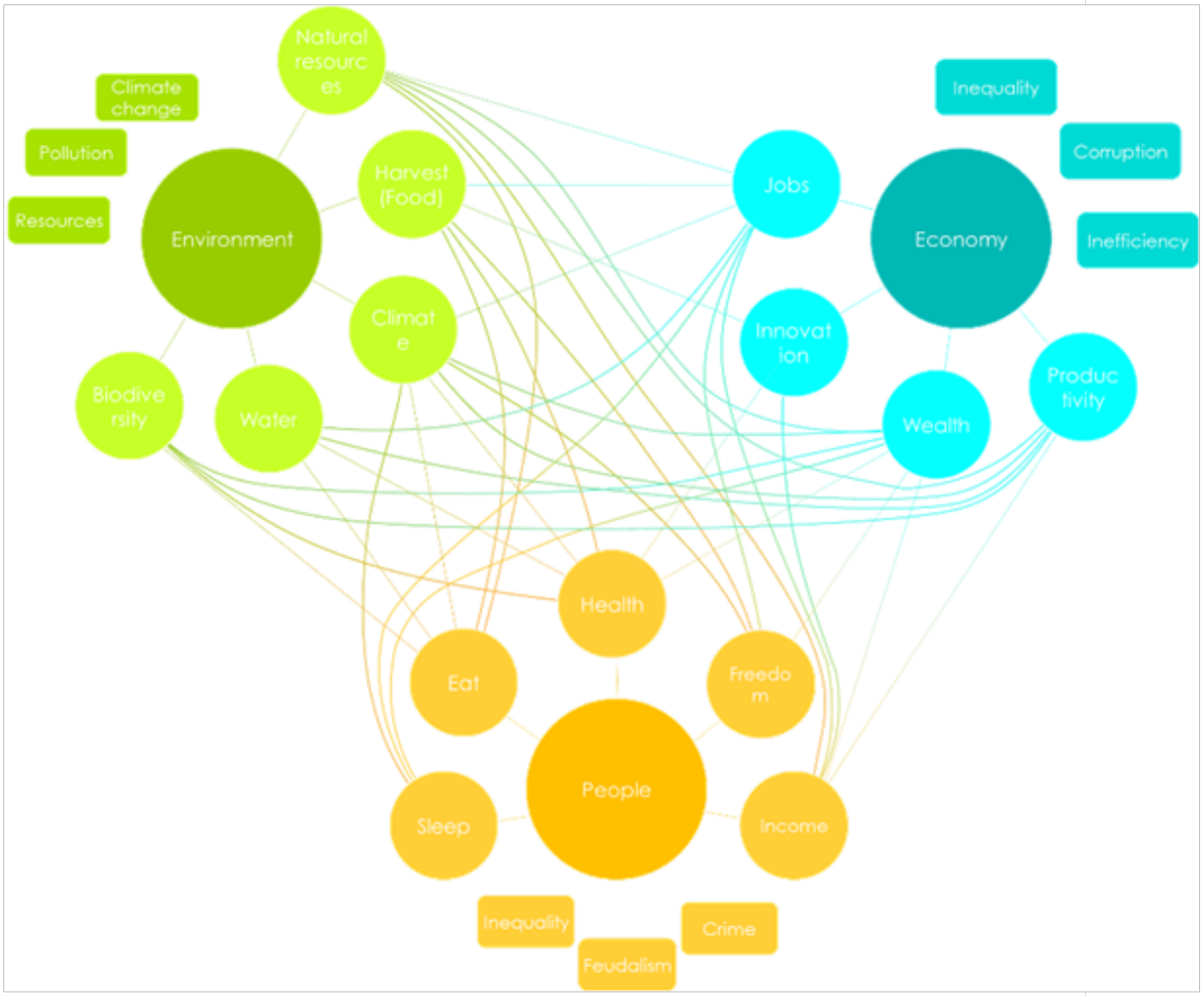
1. **A global climate tax.** Climate change is a gigantic market failure. We need a global climate tax - introduced in phases, paid back to the people in cash and reinvested in a renewable energy infrastructure - to avoid disaster. Now.
2. **More democracy.** In the 21st century, it is not possible that 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

9 Model & Index Methodology

9.1 The Sustainable Competitiveness Model

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



The ESG model

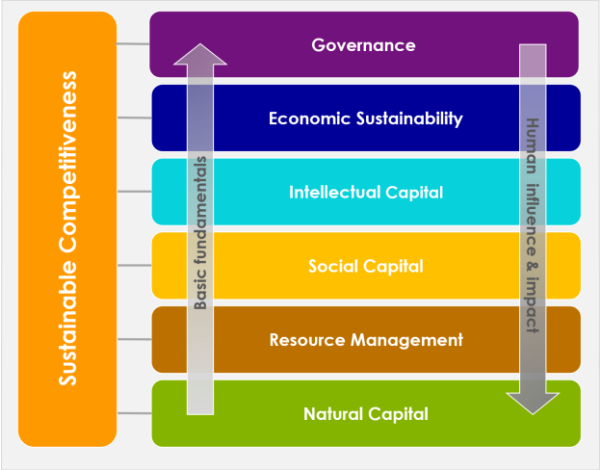
However, corporations are entities that operate in very different boundaries and with different goals than states and nation-economies. The elements of the model therefore have to be adapted to the characteristics of nations and their fundament of sustained prosperity.

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

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

The Sustainable Competitiveness Pyramid

Sustainable competitiveness - they ability to generate and sustain inclusive wealth and dignifying standard of life for all citizens in a globalised world of competing economies, consists of 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).

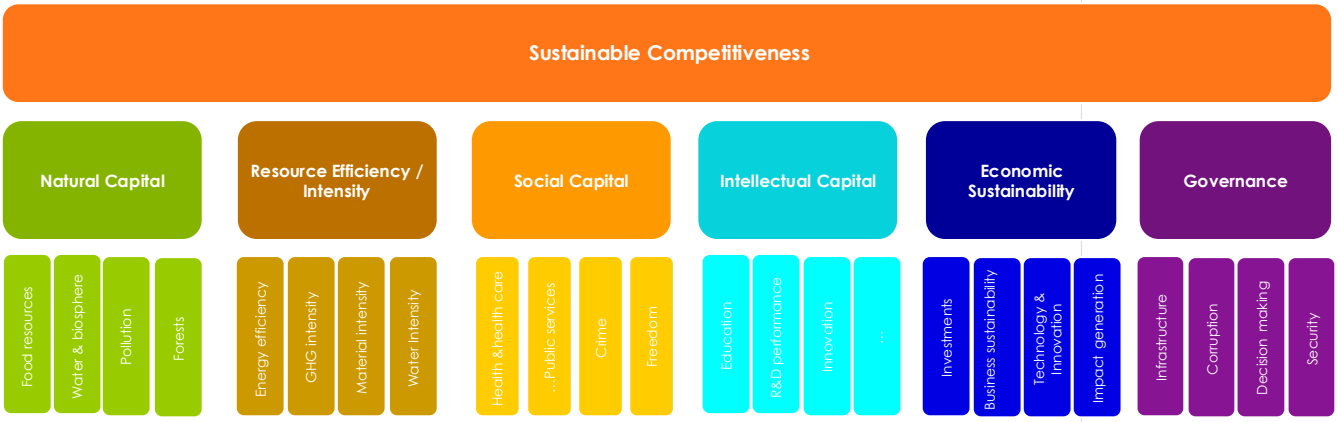


The Sustainable Competitiveness Pyramid

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 the 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.

9.2 Competitiveness Elements

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

Natural Capital

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

Resource Intensity

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

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

Social Capital

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

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

Intellectual Capital

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

Economic Sustainability

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

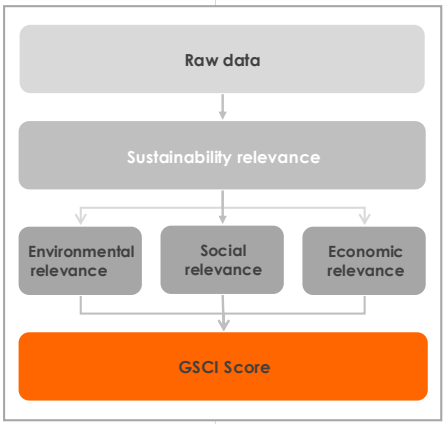
Governance Index

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

9.3 Index calculation

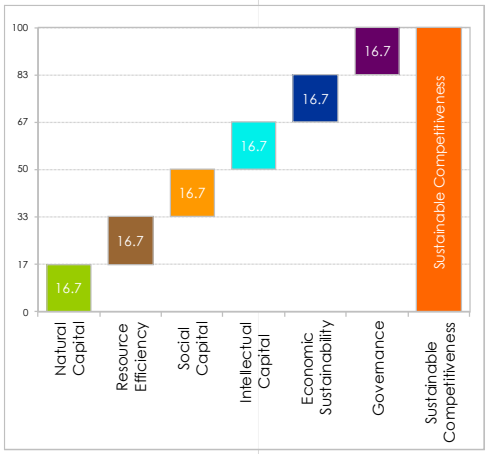
The raw data consist of numerical values. While values can be ranked against each other, they cannot be compared or added to other values. It is therefore necessary to extract a scalable and comparable score from the raw data as a first step.

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%.



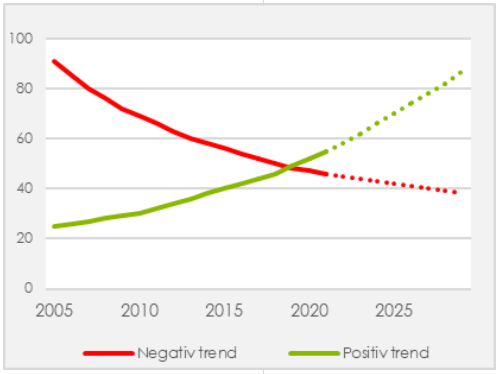
Each level of the Sustainable Competitiveness Pyramid is equally important and therefore equally weighted

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 2025 is based on the latest available data. For most data series, the latest data available dates 2024. Where 2024 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.

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State of the World 2025

The Global Sustainable Competitiveness Index

14th edition

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