

Natural Capital Index

2021



The Natural Capital Index 2021

November 2021

Part of the [Global Sustainable Competitiveness Index](#)

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

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About the Global Sustainable Competitiveness Index (GSCI)

The [GSCI](#) measures the mutual integrative state of development, competitiveness and sustainability, based on 131 quantitative performance data indicators derived from international organisations (World Bank, UN, IMF). It is based on the 5 pillars of sustained competitiveness: [Natural Capital](#), [Resource Intensity/Efficiency](#), [Social Capital](#), [Intellectual Capital](#), and [Governance](#). The GSCI serves as an alternative measurement of national success to the GDP, and as a strength-weakness analysis for decision makers, both internal and external.

It is the currently most comprehensive country performance index available.

About SolAbility

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

SolAbility is the publisher of the Global Sustainable Competitiveness Index and the maker of 3 [DJSI Super-Sector Leaders](#).



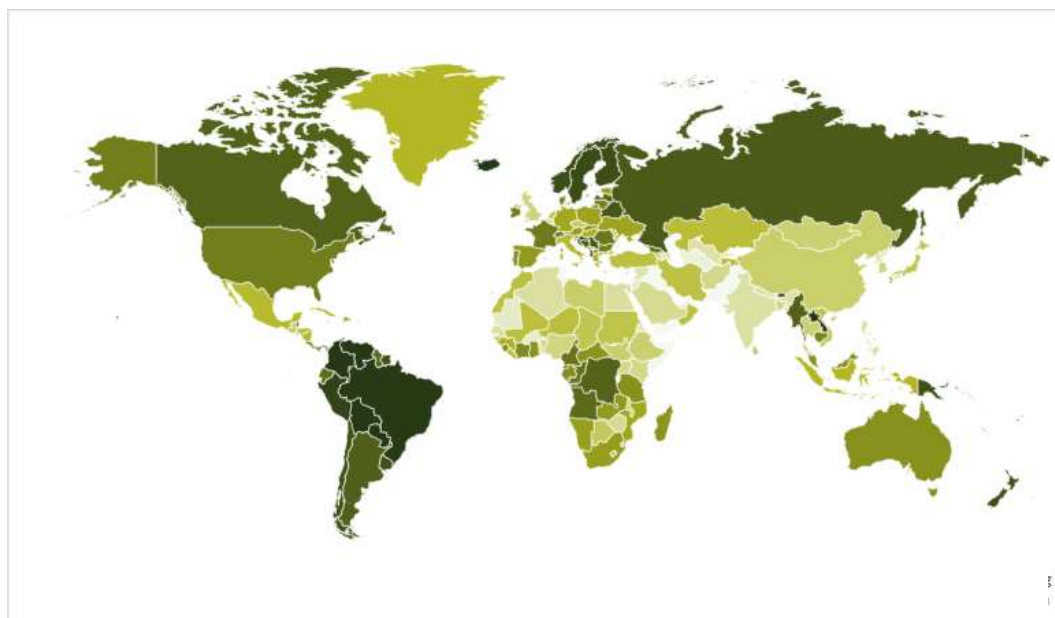
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Laos leads the Natural Capital Index

The Natural Capital Index is a sub-index of the Global Sustainable Competitiveness Index (GSCI), published since 2012.

The Natural Capital Index aims to measure the Natural Capital – one of 5 pillars of a country's (sustainable) competitiveness. The Natural Capital of a country is the given physical environment and its climatic conditions, paired with the availability and intactness of natural resources and sufficient water. The Natural Capital of a country reflects its ability to sustain the livelihoods and health of the population, and the economy - now *AND* into the future. The Natural Capital Index is calculated based on 28 quantitative data indicators derived from reliable international organisations.

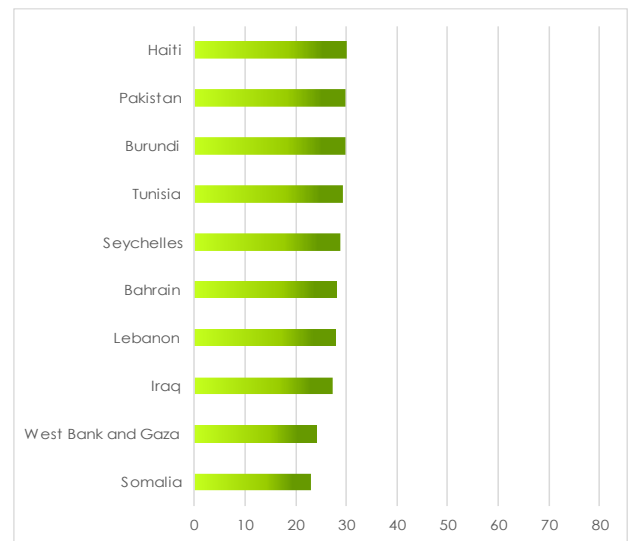
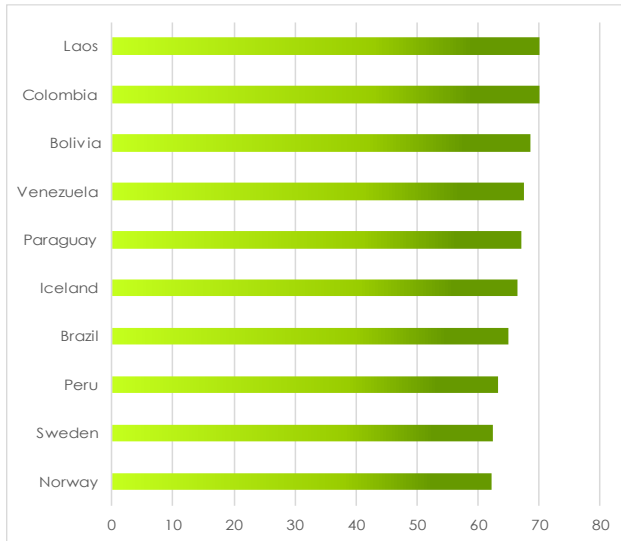
Natural Capital World Map



Key takeaways from the 2021 Natural Capital Index:

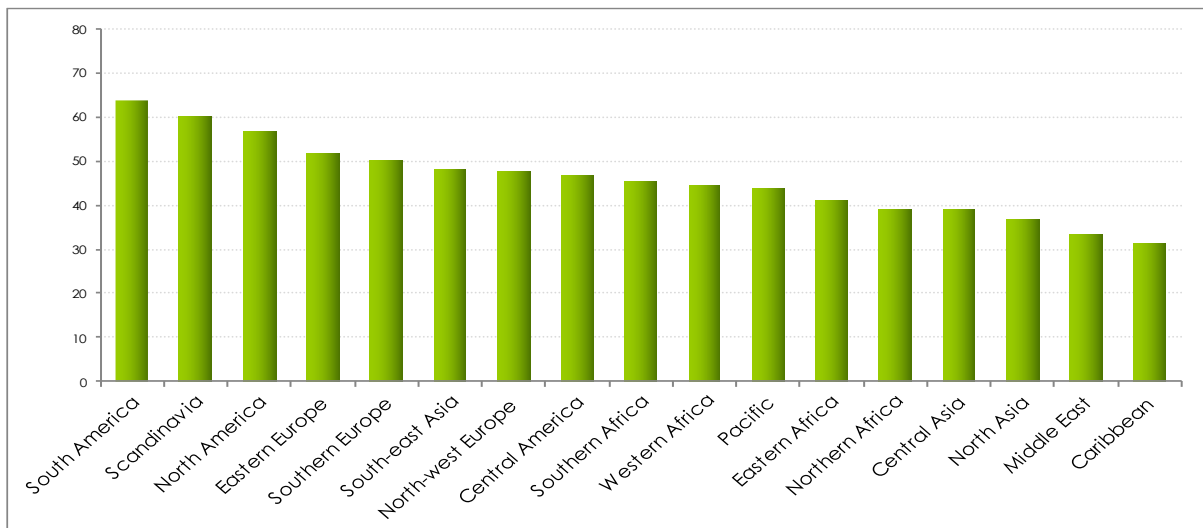
- The Natural Capital Index 2021 is topped by Laos
- Laos is followed by Colombia, Paraguay, and Bolivia.
- South American nations score high in Natural Capital – the combined result of sufficient water availability, humid and tropical climate, and the deposits of other natural resources
- Scandinavian countries, thanks to low population density, high forest coverage and the availability of water are all ranked in the top 20s - as is New Zealand.
- Canada is ranked 31, the US 39
- African countries in the tropical belt are ranked fairly high – including the 2 Congo, Gabon, and Cameroon
- The two most populated countries, China (134) and India (152) are both affected by a combination of arid climate, high population density and depletion levels, raising concerns over those countries' ability to self-sustain their large populations in the long term.

Natural Capital - Top Ten and Lowest Ten Countries



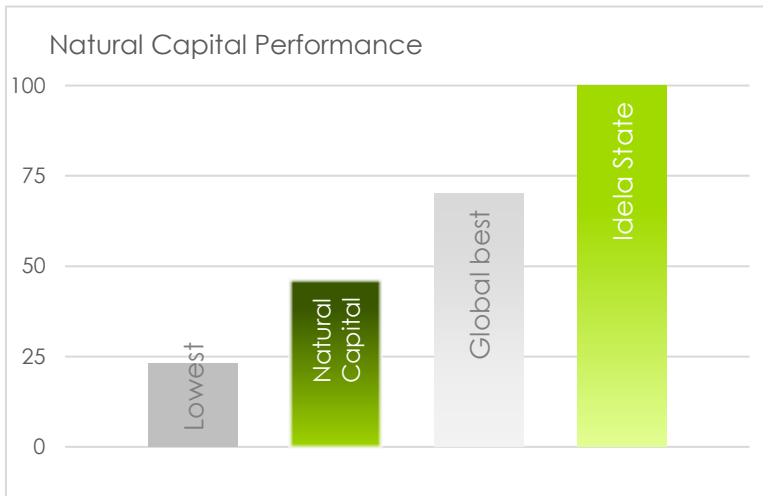
The Natural Capital Index is dominated by countries located in humid and tropical areas, characterised by rich biodiversity and rain forests, but also Scandinavian nations with large forest coverage and abundance of water. Countries in arid areas have a lower natural capital and therefore are in a competitive disadvantage – they rely on imports to guarantee feeding the population and raw materials for the economy.

Regional Spread

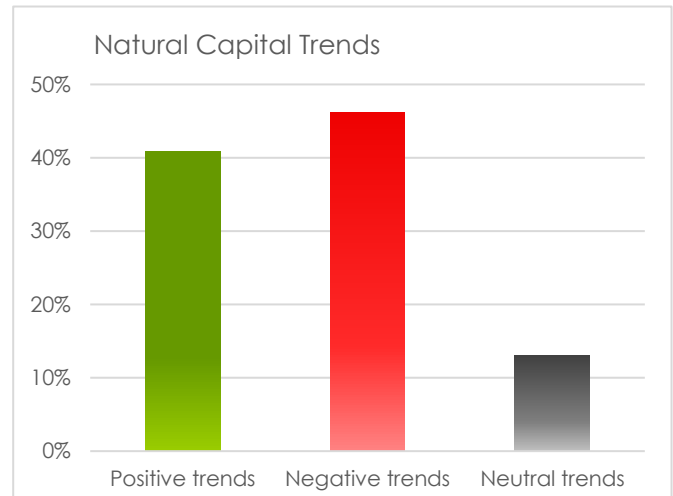


South America as a region has the highest Natural Capital, followed by Scandinavia and North America. Asia Nations and the Middle East are found on the bottom as a region in terms of availability of Natural Capital.

State of the World: Natural Capital



Global average Natural Capital vs the Ideal State



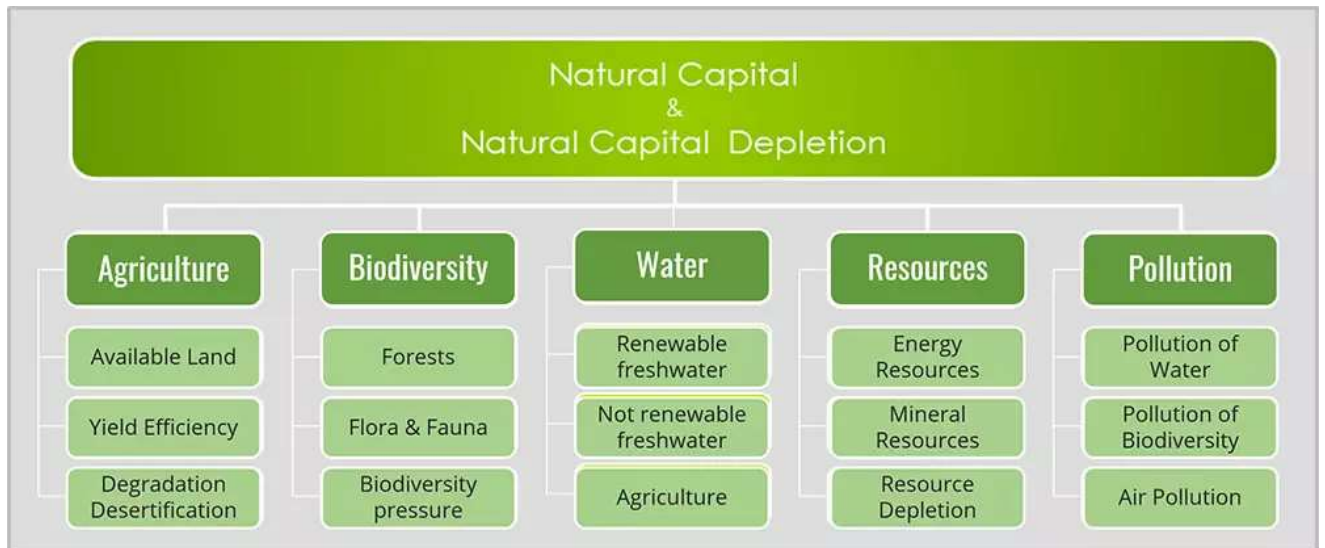
Global Trends: 40% of trends across the Globe are positive, while nearly 50% are pointing the wrong direction

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.

Natural Capital Clusters

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:



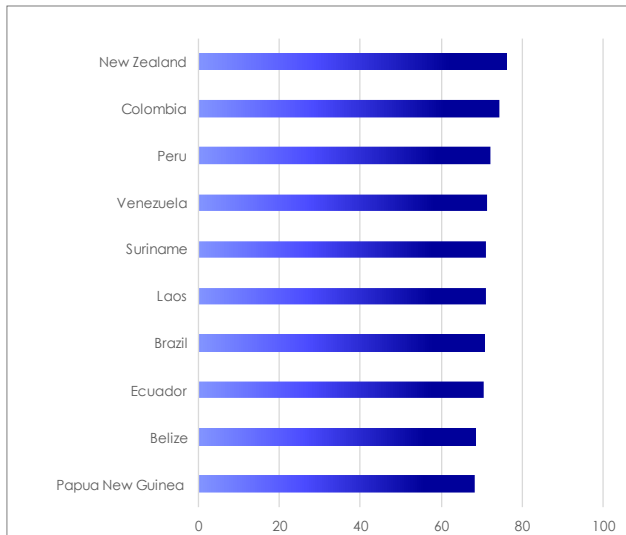
A nation's natural capital is a given value: there are limitations to human ability to improve the availability and quality of the natural capital. Continuing exploitation and extension of human activities, on the other hand diminish the existing Natural Capital. Natural Capital is easily damaged, but difficult to build.

High-ranking countries are characterised by abundant water availability, the source of a rich biodiversity. While some of these countries currently may have a deficit in 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.

Availability of Water Resources

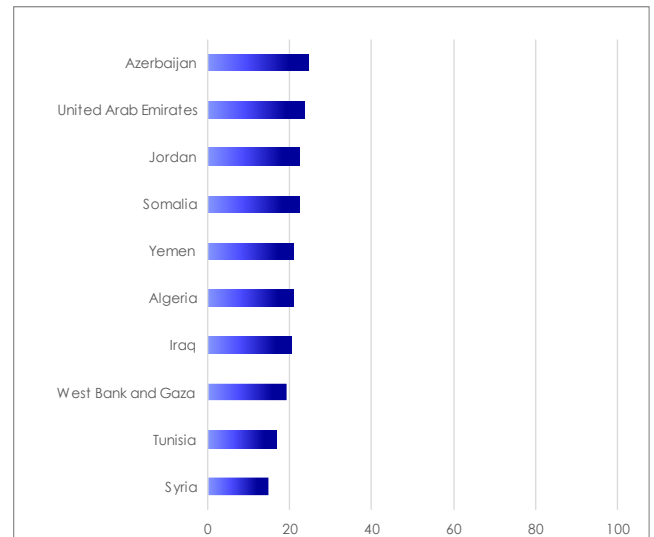
Water is the key to all of life. Without water no organic organism can survive, let alone live. Human beings use it to grow and process food, for sanitation, and in the industry. Sufficient availability of water resources – through consistent rainfall, surface water and natural aquifers – is also the basis for a fertile agricultural yield, and thus the national ability to sustain its population. Water security is a key component of the national natural capital, which is in turn a component of the overall national development ability.

Water availability: Top Ten Countries



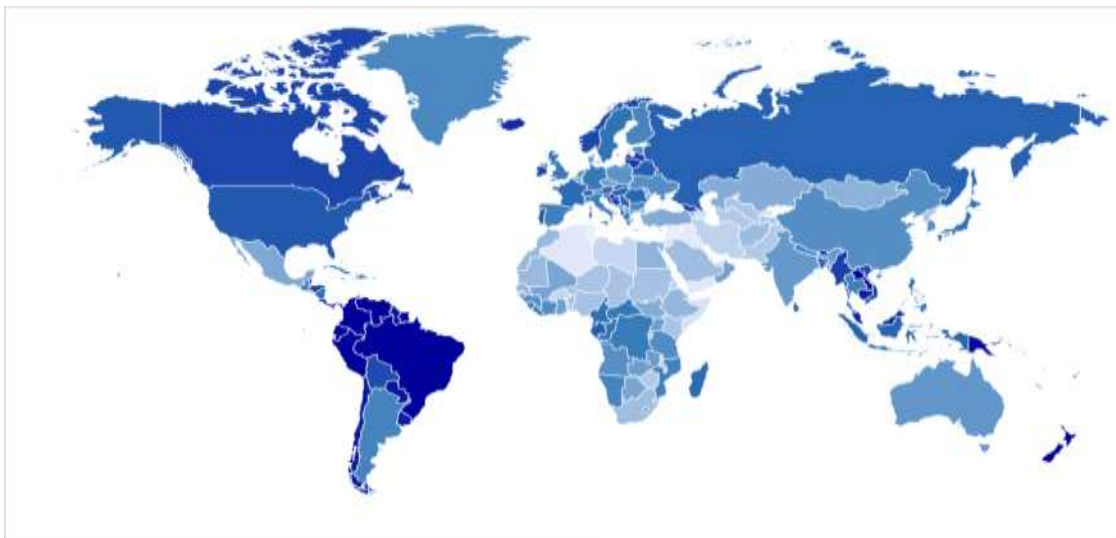
All countries on the top of the list are located in tropical or sub-tropical areas

Lowest Ten Countries



Most countries with insufficient water availability are located in arid areas

Thanks to their geographical location and the associated climatic conditions (humidity, consistent and abundant rain), countries in tropical areas have, in general, higher availability of sufficient water. Countries in arid locations – particularly in the Middle East and Northern Africa – are facing increasing difficulties to meet the water needs of their population, the agriculture, and the economy. China and India – the two most populous countries – have limited internal water resources and ranked 103 and 121, respectively. Both countries will need to better manage their water resources (and potentially access new water sources, such as desalination powered by renewable energy) to guarantee sufficient water availability.

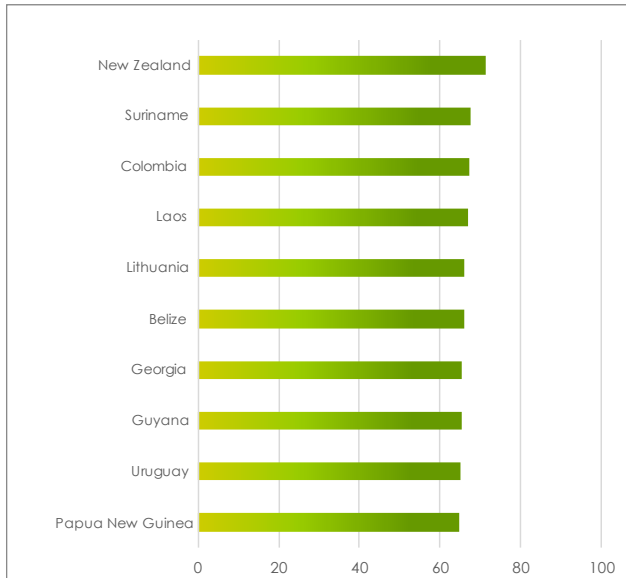


The water availability World Map: dark areas highlight good water availability, light blue indicates insufficient water availability

Biodiversity

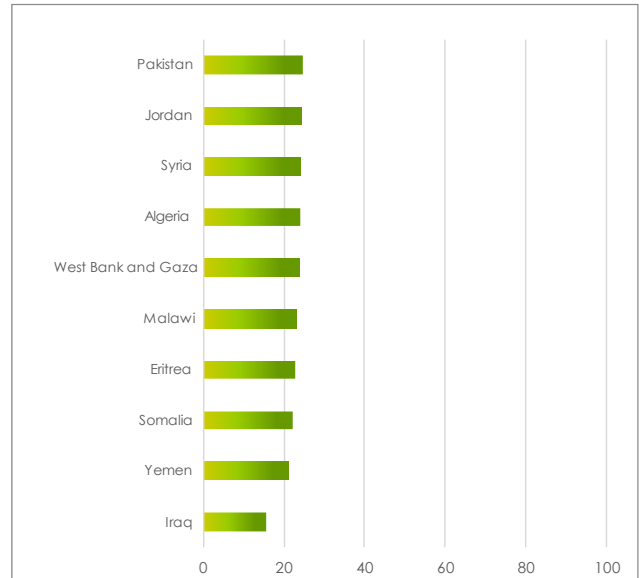
Biodiversity is a contraction of “biological diversity” – it encompasses the variety of life on Earth, in all its forms, from single cells to species to entire eco-systems. The richer and more diverse the diversity and intactness of a country, the greater services it provides. Low bio-diversity and/or degradation can jeopardize the well-being of people and the economy. The sound integrity of Biodiversity is therefore a vital component of sustainable competitiveness

Biodiversity: Top Ten Countries



All countries on the top of the list are located in tropical or sub-tropical areas

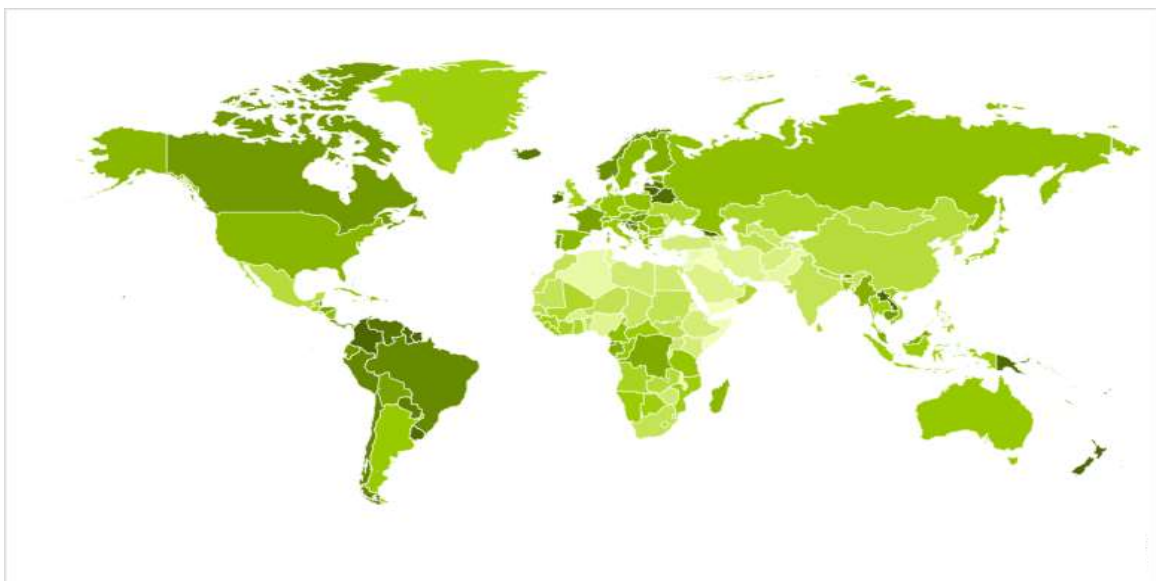
Lowest Ten Countries



Countries at the bottom of the bio-diversity ranking are located in Northern Africa, the Middle East, and Central Asia

Countries with rich biodiversity are mainly located in tropical regions, often combined with rain forests. However, some countries in the northern temperate climatic zones are also rich in overall biodiversity benefits (New Zealand, the Baltic states, Scandinavia).

Bio-Diversity World Map

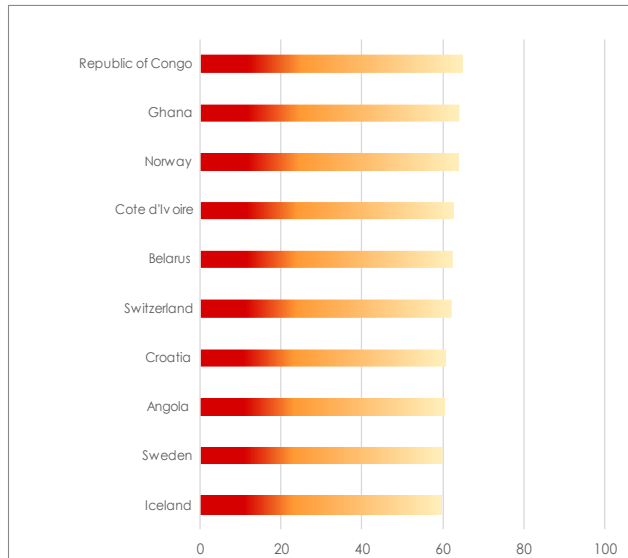


The biodiversity World map: dark areas highlight higher biodiversity; light green indicates lower bio-diversity

Climate Change Risk Exposure

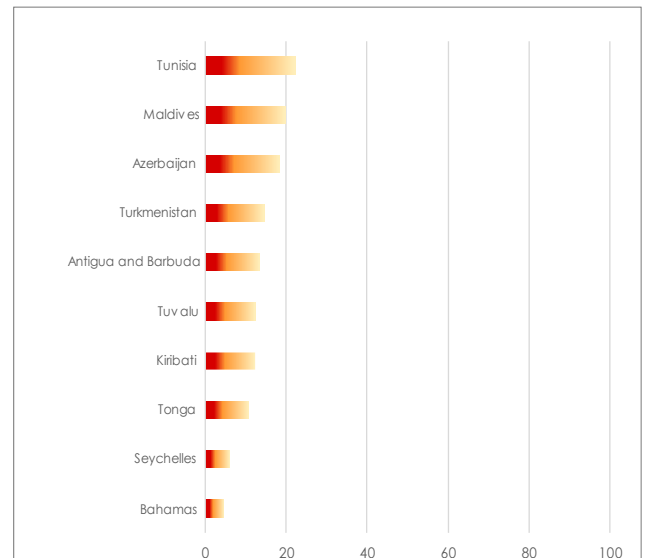
Increasing sea levels due to polar sheet melting, more frequent extreme weather events and associated floods/droughts, drying land resources, decreasing harvests – climate change poses many future risks. The Climate Change Risk Exposure cluster includes all of these events to calculate high or low climate change risk exposure for each country. Climate Change is one of the biggest threats facing our World – and each country.

Climate Change Exposure: Lowest Risks



Higher score = lower risks

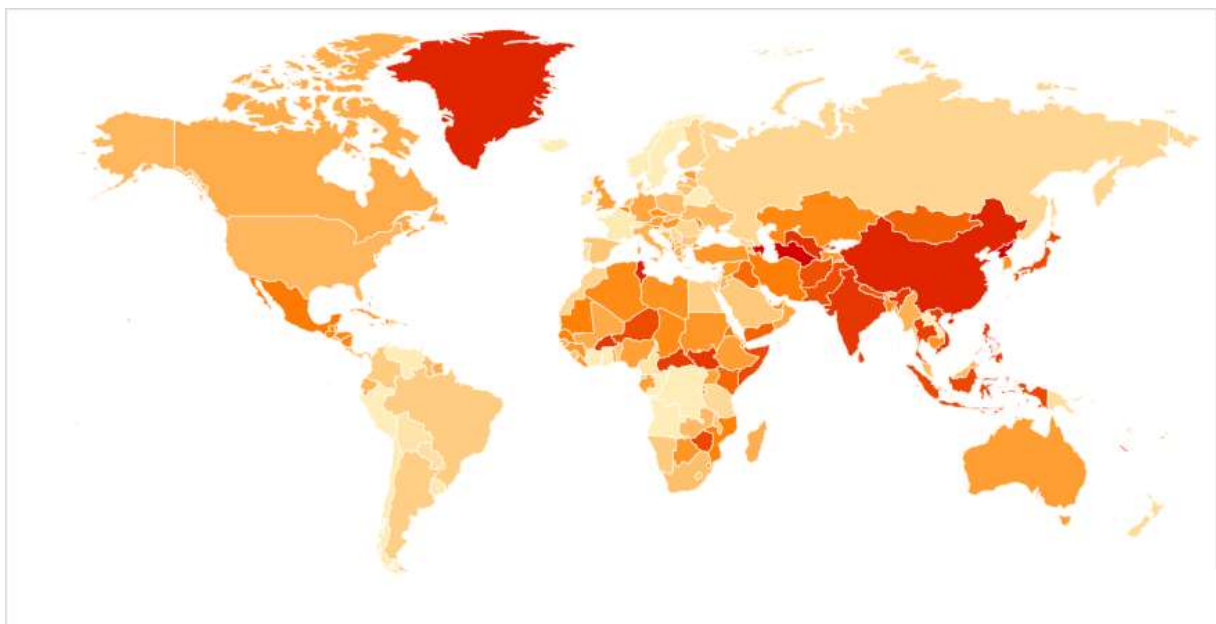
Highest Risk



Low score = high risk. Small Island states with low evaluation are facing the highest climate change risks

Not surprising, small island states with low overall evaluation above sea levels are facing the highest climate change risks across all nations. The two most populous nations – China and India – are also facing significant climate change risks. However – even the best scoring countries at 60 are facing considerable climate change risks

Climate Change Risk Exposure World Map

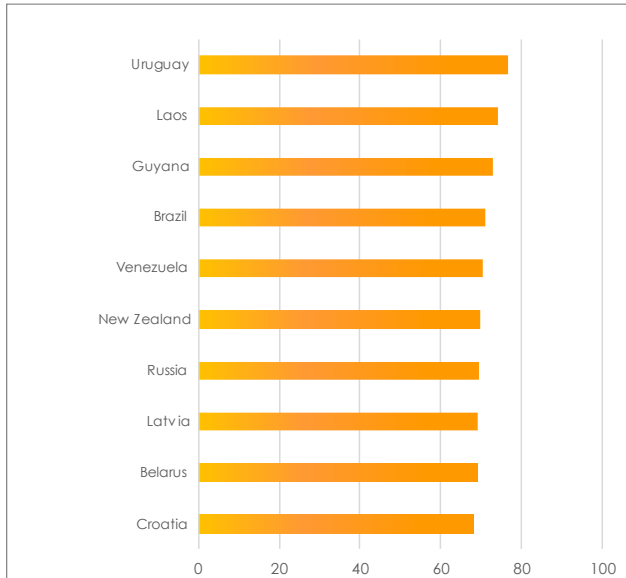


The Climate Change Risk Exposure World map: dark areas indicate high risks exposure, light indicates lower climate change risk exposure

Food Security

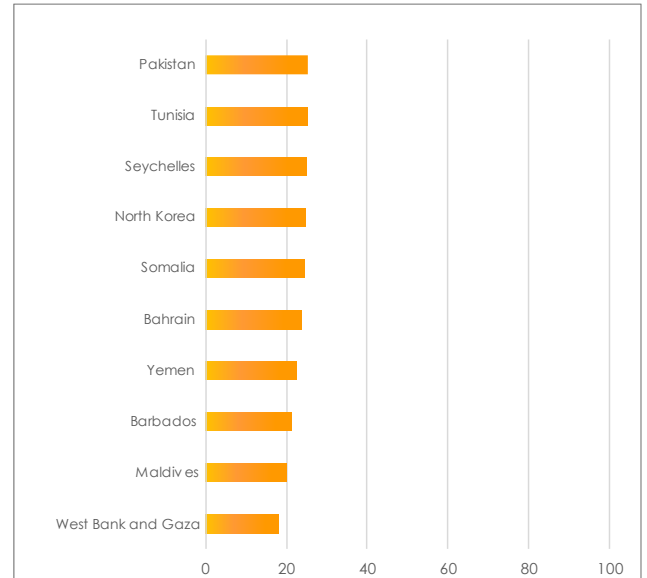
Domestic food supply self-sufficiency is an indicator of a country's ability to sustain its on population at the minimal cost. However, in this globalised World of imports and exports, wealthy nations can compensate for internal supply-deficiencies through imports. The Food Security cluster integrates quantitative data indicators that integrate agricultural performance data, including the availability of arable land, climatic conditions, agricultural fertility, technologies applied, and the state of degradation of the arable land.

Food Security: Top Ten Countries



Countries with large, flat arable land areas combined with favourable climatic conditions top the food security cluster

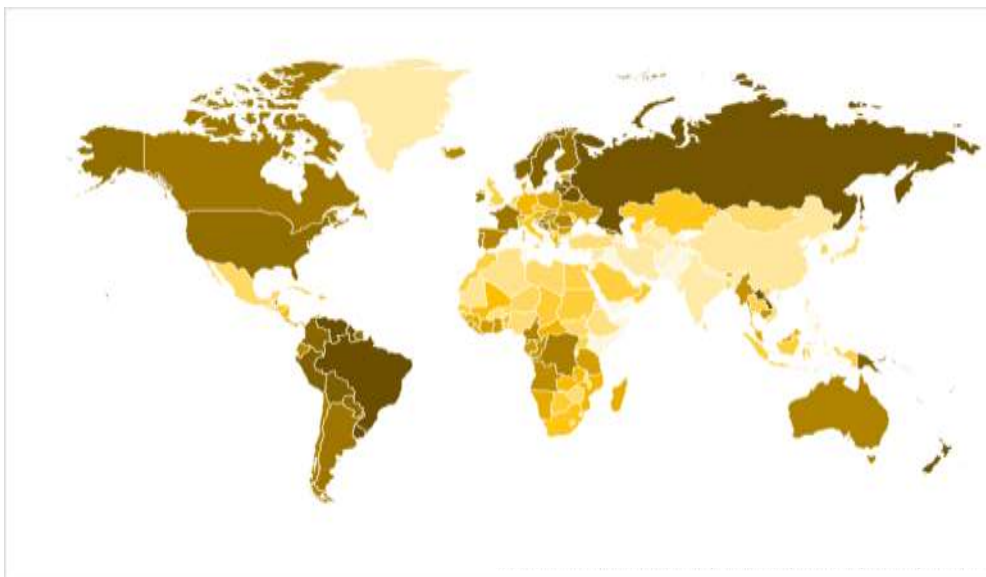
Lowest Ten Countries



Countries located in arid areas are found on the bottom of the food security cluster

Countries in moderate or sub-tropical climate regions, combined with physical characteristics (large plains) are found on the top of the food security cluster. Countries on the bottom are mostly located in arid climatic zones; conflicts also threaten food security.

Food Security World Map

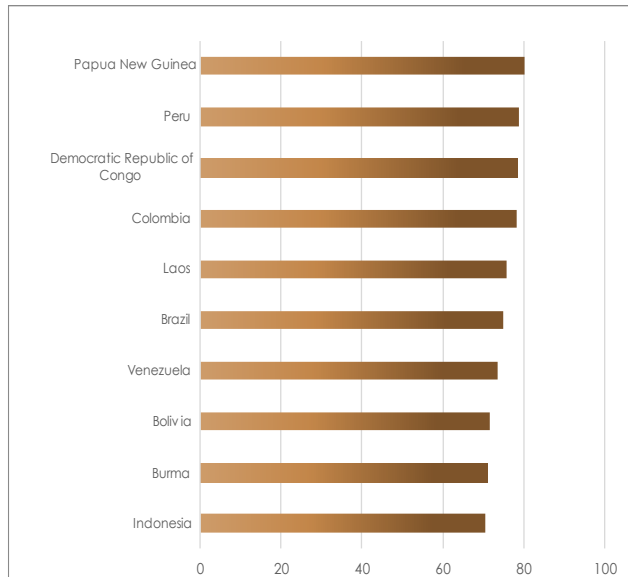


The food security World map: dark areas highlight better food security, light indicates lower food security

Resources

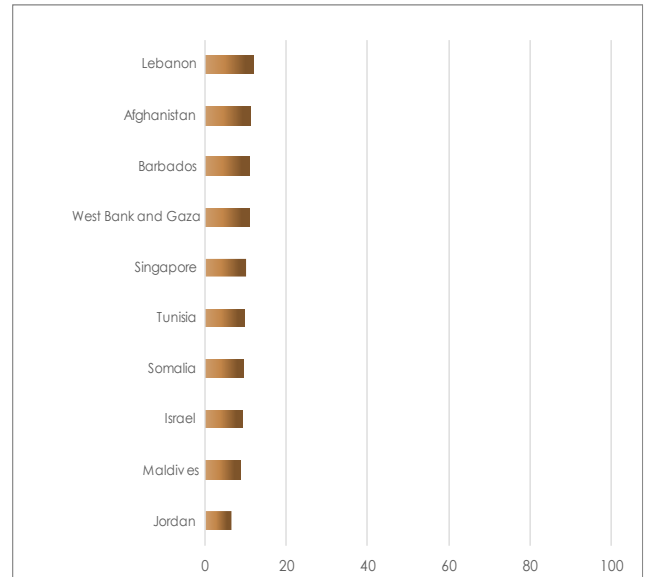
The availability of Natural Resources – minerals, fossil, organic (forests) and water – allow a country to be self-sufficient and makes the country less dependent of the volatility of international commodity markets. Resource availability s therefore an important part of the Natural Capital of a country and an element of national competitiveness.

Resource Availability: Top Ten Countries



Countries with a mixture of organic and mineral/ fossil resources are highest on the resource availability cluster.

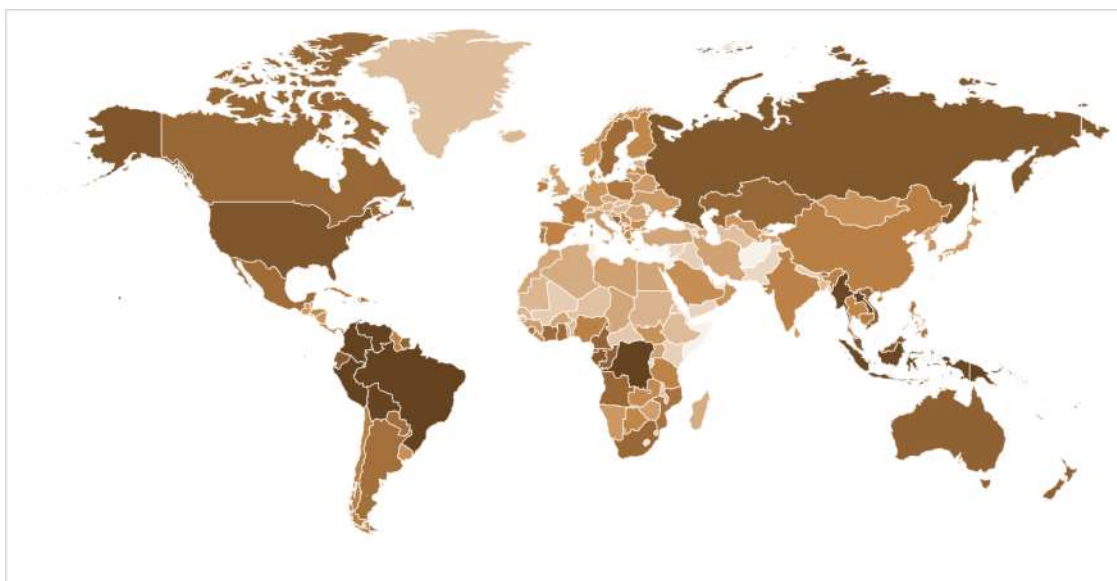
Lowest Ten Countries



Bottom countries in the resource availability cluster.

A mixture of availability or organic resources and mineral/fossil resources is the ideal in terms of resource availability. Countries with a single resource – e.g., the oil-rich countries of the Middle East are not found at the top of this cluster. The bottom countries are characterised by poor resource availability across all resources.

Resource Availability World Map



The resource availability World map: dark areas highlight higher resource availability, light indicates lower resource availability

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