2001 Environmental Sustainability Index

An Initiative of the Global Leaders of Tomorrow Environment Task Force, World Economic Forum

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In collaboration with:

Yale Center for Environmental Law and Policy (YCELP)
Yale University
Center for International Earth Science Information Network (CIESIN)
Columbia University

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January, 2001

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TABLE OF CONTENTS

ANNEXES

This report is available on-line at http://www.ciesin.columbia.edu/indicators/ESI

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The Environmental Sustainability Index (ESI) and this report are the result of collaboration among the World Economic Forum's Global Leaders for Tomorrow (GLT) Environment Task Force, the Yale Center for Environmental Law and Policy (YCELP), and the Columbia University Center for International Earth Science Information Network (CIESIN).

The GLT team was led by Kim Samuel- Johnson. The Environment Task Force members (listed on the inside cover) benefited from the participation of a number of outside experts in environmental sustainability and indicators who attended various ESI workshops or otherwise contributed to the ESI effort over the past two years. These include: Alan AtKisson, Christian P. Avérous, Steve Charnovitz, Peter Cornelius, Frank Dixon, André Dua, Raimundo Florin, Tom Graedel, Kirk Hamilton, Allen Hammond, Peter Hardi, Theodore Heintz, Jochen Jesinghaus, Kai Lee, Maria Leicher, Victor Lichtinger, Bedrich Moldan, William Nordhaus, Theo Panayotou, Tom Parris, Jose Luis Samaniego, Md. Rumi Shammin, Gus Speth, Andreas Sturm, Carla Tabossi, Simon Tay, Phillip Toyne, and Claas van der Linde.

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Executive Summary

The Environmental Sustainability Index (ESI) is a measure of overall progress towards environmental sustainability developed for 122 countries. The three highest ranking countries in the 2001 ESI are Finland, Norway, and Canada. The three lowest are Haiti, Saudi Arabia, and Burundi. Examples of countries scoring in the middle include Ghana and Honduras. A high ESI rank indicates that a country has achieved a higher level of environmental sustainability than most other countries; a low ESI rank signals that a country is facing substantial problems in achieving environmental sustainability along multiple dimensions.

The ESI scores are based upon a set of 22 core "indicators," each of which combines two to six variables for a total of 67 underlying variables. The indicators and variables were chosen through careful review of the environmental literature and available data combined with extensive consultation and analysis.

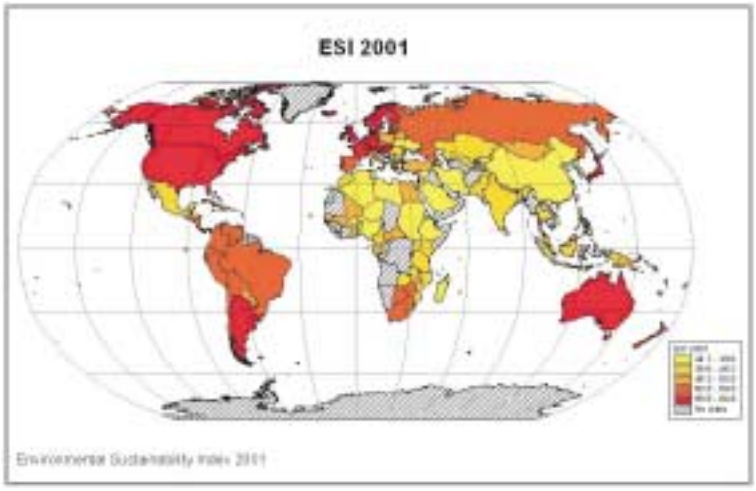
The ESI permits cross-national comparisons of environmental progress in a systematic and quantitative fashion. It represents a first step towards a more analytically driven approach to environmental decision making. The ESI enables:

- identification of issues where national environmental results are above or below expectations;
- policy tracking to identify areas of success or failure;
- benchmarking of environmental performance;
- identification of "best practices"; and
- investigation into interactions between environmental and economic performance.

Although in broad terms high income countries scored higher, among countries of similar levels of per-capita income no strong correlation exists between income and overall environmental sustainability.

The ESI has been developed through a transparent and interactive process, drawing on statistical, environmental, and analytic expertise from around the world. The ESI balances a range of dimensions, including both national and global perspectives, different types of environmental threats, and both environmental and socioeconomic aspects of sustainability. Since different individuals may balance these dimensions differently, this report provides detailed information on the ESI's elements to facilitate understanding of the ESI's assumptions and alternative analyses.

The ESI demonstrates the potential value of improvements in the world's capacity for data-driven environmental analysis and decision making. Investments in data creation and gathering mechanisms, development of better techniques to integrate information from different spatial scales, and creation of information systems that provide for long-term stability and flexible analysis are essential to better environmental management and rapid global progress towards a sustainable environment.



The Need for an Environmental Sustainability Index

Environmental sustainability has been increasingly embraced as an important goal. Especially since the 1992 Earth Summit, many environmental policy objectives have been formulated in terms of sustainability. The proliferation of these objectives has even spawned considerable discussion about how to measure sustainability. Yet actual measurements are exceedingly rare. And nowhere are they more rare than at the international level, where political suspicions and data gaps frequently conspire to derail even the most modest efforts to compare country environmental circumstances and performance.

Of course not just any measure will do. To be useful, an Environmental Sustainability Index must be created in a systematic, transparent, and reproducible manner. It should be faithful to the scientific literature as well as relevant to the major policy debates. It should be applicable to a wide range of situations and conditions. And it should make use of what can actually be measured today while leaving room for movement toward what ought to be measured tomorrow.

Key Results

Before elaborating our analytical approach, methods and analysis, let us summarize our key results and findings:

1. Environmental Sustainability can be measured. The Environmental Sustainability Index advanced in this report uses data on 67 variables rolled into 22 core "indicators" to create comprehensive environmental sustainability scores for 122 countries. While no measure of such a complex phenomenon can be perfect, the Index proved to be surprisingly powerful, useful and robust.

2. The Index creates a series of comparative benchmarks of environmental conditions in different countries and the possibility of shifting environmental decision-making onto a more fact-based and analytically rigorous foundation.

3. Economic conditions affect, but do not determine, environmental conditions. Comparisons of the ESI with measures of economic performance such as the World Economic Forum Current Competitiveness Index and per-capita income suggest that decisions of how vigorously to pursue environmental sustainability and how vigorously to pursue economic growth are in fact two separate choices.

4. Serious gaps in data availability limit the ability to measure environmental sustainability and precluded the analysis of nearly 100 nations. Filling these gaps should be a policy priority at the local, national and international scales.

Our Approach

The first challenge in measuring environmental sustainability is to define the scope in conceptual terms. What are we trying to measure? Unlike many efforts to think about indicators of "sustainable development," we have focused on environmental sustainability, which is a more narrow formulation. This choice was made deliberately, based on a conclusion that one reason efforts to measure sustainability fail is that they seek to fold too many disparate phenomena under the same conceptual umbrella. While we accept the premise that politics, economics, and social values are important factors worthy of being sustained, we do not think that there is a sufficient scientific, empirical or political basis for constructing metrics that combine all of them along with the environment. Moreover, the environment often gets overshadowed in "triple bottom line" analyses and other sweeping sustainability efforts.

Even within the confines of a more narrow focus of environmental sustainability, we are still dealing with a complicated, multi-dimensional concept. At the most basic level, we have concluded that environmental sustainability can be presented as a function of five phenomena: (1) the state of

Table 1. Components of Environmental Sustainability

Component	Logic
Environmental Systems	A country is environmentally sustainable to the extent that its vital environmental systems are maintained at healthy levels, and to the extent to which levels are improving rather than deteriorating.
Reducing Environmental Stresses	A country is environmentally sustainable if the levels of anthropogenic stress are low enough to engender no demonstrable harm to its environmental systems.
Reducing Human Vulnerability	A country is environmentally sustainable to the extent that people and social systems are not vulnerable (in the way of basic needs such as health and nutrition) to environmental disturbances; becoming less vulnerable is a sign that a society is on a track to greater sustainability.
Social and Institutional Capacity	A country is environmentally sustainable to the extent that it has in place institutions and underlying social patterns of skills, attitudes and networks that foster effective responses to environmental challenges.

the environmental *systems*, such as air, soil, ecosystems and water; (2) the *stresses* on those systems, in the form of pollution and exploitation levels; (3) the *human vulnerability* to environmental change in the form of loss of food resources or exposure to environmental diseases; (4) the *social and institutional capacity* to cope with environmental challenges; and finally (5) the ability to respond to the demands of *global stewardship* by cooperating in collective efforts to conserve international environmental resources such as the atmosphere. We define environmental sustainability as the ability to produce high levels of performance on each of these dimensions in a lasting manner. We refer to these five dimensions as the core "components" of environmental sustainability.

Scientific knowledge does not permit us to specify precisely what levels of performance are high enough to be truly sustainable, especially at a worldwide scale. Nor are we able to identify in advance whether any given level of performance is capable of being carried out in a lasting manner. Therefore we have built our index in a way that is primarily comparative. Establishing the thresholds of sustainability remains an important endeavor, albeit one that is complicated by the dynamic nature of such economic factors as changes in technology over time.

The basic unit of comparison is a set of 22 environmental sustainability *indicators* which were identified on the basis of a careful review of the environmental literature and substantiated by statistical analysis (see page 13). These indicators were deemed the most relevant constitutive elements of the five core components, and therefore are the central element of analysis. In turn, each of the indicators has associated with it a number of *variables* that are empirically measured. The relationship between these Index building blocks is specified in Table 2.

The choice of variables was driven by a consideration of the theoretical logic and relevance of the indicator in question, data quality, and country coverage. In general we sought variables with extensive country coverage but chose in some cases to make use of variables with narrow coverage if they measured critical aspects of environmental sustainability that would otherwise be lost. Air quality and water quality, for example, were especially disappointing in their poor country coverage but were included anyway because of their central role in environmental sustainability.

After building up the complete database, we selected countries for inclusion in the index based on the extent of their data coverage. We eliminated all countries for which the data were insufficient to

Table 2. Environmental Sustainability Index Building Blocks

Component	Indicator	Variable	Year	Counts*
Environmental Systems	Air Quality	Urban SO2 concentration	MRYA 1990-96	51
		Urban NO2 concentration	MRYA 1990-96	51
		Urban TSP concentration	MRYA 1990-96	51
	Water Quantity	Internal renewable water per capita	1995	122
		Water inflow from other countries per capita	1995	121
	Water Quality	Dissolved oxygen concentration	1994-96 or MRYA	35
		Phosphorus concentration	1994-96 or MRYA	28
		Suspended solids	1994-96 or MRYA	32
		Electrical conductivity	1994-96 or MRYA	42
	Biodiversity	Percentage of mammals threatened	1996	121
		Percentage of breeding birds threatened	1996	118
	Terrestrial Systems	Severity of human induced soil degradation	1990	103
		Land area affected by human activities as a % of total land area	1992-95	121
Reducing Stresses	Reducing Air Pollution	NOx emissions per populated land area	1990	121
		SO2 emissions per populated land area	1990	121
		VOCs emissions per populated land area	1990	121
		Coal consumption per populated land area	1998	100
		Vehicles per populated land area	MRYA 1996-98	115
	Reducing Water Stress	Fertilizer consumption per hectare of arable land	1997	122
		Pesticide use per hectare of crop land	1996	82
		Industrial organic pollutants per available fresh water	1996	57
		Percentage of country's territory under severe water stress	1995	121
	Reducing Ecosystem Stress	Percentage change in forest cover 1990-95	1995	121
		Percentage of country's territory in acidification exceedence	1990	122
	Reducing Waste & Consumption Pressures	Consumption pressure per capita	1996	119
		Radioactive waste	1996	45
	Reducing Population Pressure	Total fertility rate	2000	122
		% change in projected population between 2000 & 2050	2000	122
Reducing Human Vulnerability	Basic Human Sustenance	Daily per capita calorie supply as a % of total requirements	MRYA 1988-90	100
		% of population with access to improved drinking-water supply	2000	96
	Environmental Health	Child death rate from respiratory diseases	MRYA 1990-98	55
		Death rate from intestinal infectious diseases	MRYA 1990-99	63
		Under-5 mortality rate	1998	122

* Number of of countries for which data are available.

Continued on next page.

generate measures for at least 19 of the 22 indicators. We included all countries for which the data permitted measurements of at least 20 indicators (94 countries). For those countries where the data permitted measurements of no more than 19 indicators (54 countries), we applied an additional criterion. If their overall data coverage included at least as many variables as the lowest number for countries missing two indicators, we included them in the Index (28 countries met this criterion). We ended up with 122 countries in the Index, each of which has data for at least 62% of the variables in our analysis.

The median country in the Index is missing 17 of the 67 variables. A quarter are missing 22-26 variables, and quarter are missing 1-7. Altogether this means that 22 percent of the 8,174 data points in our database are missing.

Where we had a sound analytical basis for doing so, we estimated missing values. In total, we estimated just over 60 percent of the missing variables, using a variety of techniques explained in Annex 1, which also describes the techniques used to standardize and aggregate the variables. The estimation protocol permitted us to generate a full set of 22 indicators for each of the countries in the Index.

Table 2. Environmental Sustainability Index Building Blocks (cont'd)

Component	Indicator	Variable	Year	Count*
Social and Institutional Capacity	Science/Technology	R & D scientists and engineers per million population	MRYA 1980-97	94
		Expenditure for R & D as a percentage of GNP	MRYA 1980-1997	88
		Scientific and technical articles per million population	1995	44
	Capacity for Debate	IUCN member organizations per million population	2000	109
		Civil and political liberties	2000	122
	Regulation and Management	Stringency and consistency of environmental regulations	2000	56
		Degree to which environmental regulations promote innovation	2000	56
		Percentage of land area under protected status	1997	122
		Number of sectoral EIA guidelines	1998	122
	Private Sector Responsiveness	No. of ISO14001 certified companies per million dollars GDP	2000	118
		Dow Jones Sustainability Group Index membership	2000	32
		Average Innovest EcoValue'21 rating of firms	2000	20
		World Business Council for Sustainable Development members	2000	122
		Levels of environmental competitiveness	2000	56
	Environmental Information	Availability of sustainable development info. at the national level	1997	60
		Environmental strategies and action plans	1992-1996	122
		Number of ESI variables missing from selected data sets	2001	122
	Eco-Efficiency	Energy efficiency (total energy consumption per unit GDP)	1998	118
		Renewable energy prod. as a % of total energy consumption	1998	122
	Reducing Public Choice Distortions	Price of premium gasoline	1998	121
		Subsidies for energy or materials usage	2000	56
		Reducing corruption	2000	117
Global Stewardship	International Commitment	No. of memberships in environmental intergovernmental orgs.	1998	121
		Percentage of CITES reporting requirements met	2000	122
		Levels of participation in the Vienna Convention/Montreal Prot.	2000	122
		Compliance with environmental agreements	2000	56
	Global-Scale Funding/Participation	Montreal Protocol Multilateral Fund participation	2000	122
		Global Environmental Facility participation	2000	122
	Protecting International Commons	FSC accredited forest area as a % of total forest area	2000	122
		Ecological footprint "deficit"	1996	118
		CO2 emissions (total times per capita)	1997	122
		Historic cumulative CO2 emissions	1997	122
		CFC consumption (total times per capita)	MRYA 1996-98	100

* Number of of countries for which data are available.

Main Findings

To calculate the Environmental Sustainability Index, we averaged the values of the 22 indicators and calculated a standard normal percentile for each country. The results are shown in Table 3. The numerical scores, ranging from 80.5 (Finland) to 24.7 (Haiti), represent the percentage of countries expected to have a lower level of environmental sustainability than that particular country, assuming a distribution of environmental sustainability scores that is "normal" (i.e., a bell curve).

Additional methodological details are elaborated in Annex 1. Annexes 4-6 provide a variety of more detailed reports, including measures of each of the 5 components and 22 indicators, profiles of each of the 122 countries, and descriptions and original data for each of the 67 variables.

Table 3. 2001 Environmental Sustainability Index

Finland	80.5
Norway	78.2
Canada	78.1
Sweden	77.1
Switzerland	74.6
New Zealand	71.3
Australia	70.7
Austria	67.8
Iceland	67.3
Denmark	67.0
United States	66.1
Netherlands	66.0
France	65.8
Uruguay	64.6
Germany	64.2
United Kingdom	64.1
Ireland	64.0
Slovak Republic	63.2
Argentina	62.5
Portugal	61.4
Hungary	61.0
Japan	60.6
Lithuania	60.3
Slovenia	59.9
Spain	59.5
Costa Rica	58.8
Estonia	57.7
Brazil	57.4
Czech Republic	57.2
Bolivia	56.9
Chile	56.6
Latvia	56.3
Russian Federation	56.2
Panama	55.9
Cuba	54.9
Colombia	54.8
Italy	54.3
Peru	54.3
Croatia	54.1
Botswana	53.6
Greece	53.1
Zimbabwe	52.0
Nicaragua	51.9
Ecuador	51.8
South Africa	51.3
Mauritius	51.2
Venezuela	50.8
Armenia	50.6
Gabon	50.5
Mongolia	50.3
Sri Lanka	49.8
Malaysia	49.7
Israel	49.5
Paraguay	48.9
Fiji	48.1
Central African Republic	48.0
Belarus	48.0
Poland	47.6
Moldova	47.4
Bulgaria	47.4
Guatemala	47.3
Papua New Guinea	47.3
Ghana	47.0
Honduras	46.9
Singapore	46.8
Nepal	46.7
Egypt	46.5
Trinidad and Tobago	46.4
Azerbaijan	46.4
Turkey	46.3
Mali	46.2
Dominican Republic	45.4
Mexico	45.3
Thailand	45.2
Bhutan	45.1
Cameroon	44.9
Mozambique	44.2
Albania	44.2
Belgium	44.1
Romania	44.1
Uganda	44.0
Kenya	43.9
Tunisia	43.7
El Salvador	43.7
Pakistan	43.6
Indonesia	42.6
Senegal	42.5
Jamaica	42.3
Morocco	41.9
Uzbekistan	41.6
Kazakhstan	41.6
Malawi	41.3
India	40.9
Tanzania	40.3
South Korea	40.3
Jordan	40.1
Zambia	39.8
Kyrgyz Republic	39.6
Bangladesh	39.5
Macedonia	39.2
Togo	39.1
Algeria	38.9
Benin	38.6
Burkina Faso	38.6
Iran	38.4
Syria	37.9
Sudan	37.7
China	37.6
Lebanon	37.5
Ukraine	36.8
Niger	36.5
Philippines	35.7
Madagascar	35.4
Vietnam	34.2
Rwanda	33.5
Kuwait	31.9
Nigeria	31.8
Libya	31.3
Ethiopia	31.2
Burundi	30.1
Saudi Arabia	29.8
Haiti	24.7

Analysis of Results

We first explored the extent to which the analytical categories we utilized were supported by the data we collected. Are the variables that we think are measures of the same phenomena correlated with each other? Are the indicators that we think are distinctly different aspects of environmental sustainability really distinct?

If the variables we used to serve as measures of the indicators were empirically related, then they ought to be more high correlated with each other than the average pair of variables in the overall data set. This turns out to be true. The average bivariate correlation for variable pairs within the same indicator is 0.36, whereas it is 0.09 for the data set as a whole.

For their part, the 22 indicators had an average bivariate correlation among themselves of only 0.11. Only 36 of the 231 possible pairs of indicators had correlation coefficients greater than 0.5. The highest such correlations are reported in Table 4.

This provides confirmation that we have successfully formulated analytical categories that are capable of measuring distinct aspects of environmental sustainability.

We also determined which individual variables had the highest correlation with the ESI, and report those in Table 5.

The fact that Reducing Corruption is the variable that has the highest correlation with the ESI supports the view that good governance broadly conceived enhances environmental sustainability. Although the significance of the high correlation

Table 4. Most Highly Correlated Indicator Pairs

		Correlation Coefficient
Basic Human Sustenance	Environmental Health	0.85
Environmental Health	Reducing Population Stress	0.82
Basic Human Sustenance	Reducing Population Stress	0.72
Environmental Health	Science/Technology	0.69
Science/Technology	Eco-efficiency	0.68
Science/Technology	Reducing Public Choice Distortions	0.66
Basic Human Sustenance	Science/Technology	0.66
Reducing Population Stress	Science/Technology	0.63
International Commitment	Private Sector Responsiveness	0.63
International Commitment	Eco-efficiency	0.62
Water Quality	Science/Technology	0.61
Regulation and Management	International Commitment	0.60
International Commitment	Regulation and Management	0.60
Reducing Public Choice Distortions	Eco-efficiency	0.60
Basic Human Sustenance	Protecting International Commons	-0.60

Table 5. Variables with Highest Correlation to ESI

Variable	Correlation Coefficient	n
Reducing Corruption	0.75	122
Environmental Regulatory Stringency	0.74	56
Scientific and technical articles per million population	0.73	122
Average Innovest EcoValue'21 rating of firms	0.71	20

coefficient for the Innovest EcoValue'21 rating, which measures the quality of environmental management within firms, is diminished somewhat by the low number of countries for which that variable is available, it is noteworthy that in addition to being highly correlated with the ESI overall the EcoValue rating is the second most highly correlated variable with the Environmental Systems component. Among these 20 countries at least, it appears that good environmental management at the firm level is associated with environmental performance at the broader national level.

We were also eager to explore whether our measure of environmental sustainability was highly correlated with any other phenomena or measures. The results are presented in Table 6.

Although the relationship with GDP per capita is strong, other global indices, such as the Consumption Pressure Index and the Ecological Footprints, show higher correlations with per capita income. The factors that are not strongly correlated are equally interesting. Population density and economic growth rates, in spite of common complaints about their impacts on the environment, are in general not consistently associated with poor environmental performance. These results suggest that countries that are growing quickly need not degrade their environments, nor are densely populated countries doomed to pollution damage and natural resource shortages.

Finally, we wish to point out that the large amount of information contained in the data set that underlies the Environmental Sustainability Index is capable of being utilized for a variety of other purposes. For example, it could serve as the basis for a watch list of countries facing potential environment-driven crises.

Table 6. Correlations Between the ESI and Other Comparative Measures

Measure	Correlation with ESI
WWF Consumption Pressure Index	0.56**
Ecological Footprint	0.60**
Percent of GDP from agriculture	-0.48**
GDP per capita (PPP)	0.76**
1990-1998 GDP per capita growth	0.12
Human Development Index	0.67**
Population Density	-0.06
Percent of territory with population density greater than 5 persons per square km.	-0.19*
WEF Current Competitiveness Index	0.65**

** Correlation is significant at the .01 level,

* Correlation is significant at the .05 level

Relationship to Economic Performance

The precise relationship between economic growth and environmental sustainability deserves more detailed attention because of the significant debate centered on the degree to which environmental and economic values are in conflict. We explored the relationship between environmental and economic performance in a number of ways. We found that although per-capita income is significantly correlated with the Environmental Sustainability Index, measures of economic competitiveness are less strongly correlated and economic growth rates are correlated very weakly.

The relationship between the Environmental Sustainability Index and income is shown in Figure 1.

Clearly levels of per-capita income exert a significant effect on environmental sustainability as measured by the ESI. The World Economic Forum's "Current Competitiveness Index" has a similar though slightly weaker correlation with the Environmental Sustainability Index. That relationship is shown in Figure 2.

Figure 1. Relationship Between the ESI and Per Capita Income

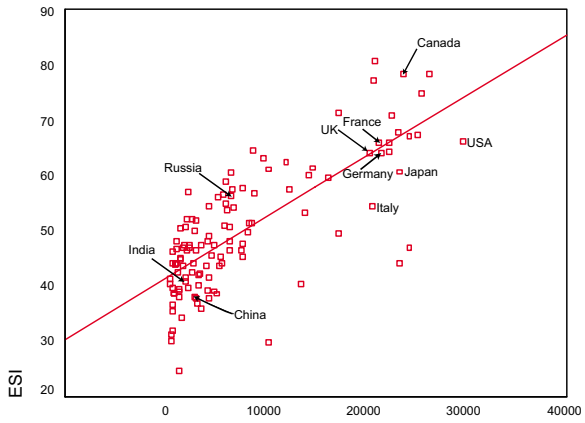


Figure 2. Relationship Between the ESI and WEF's Current Competitiveness Rank

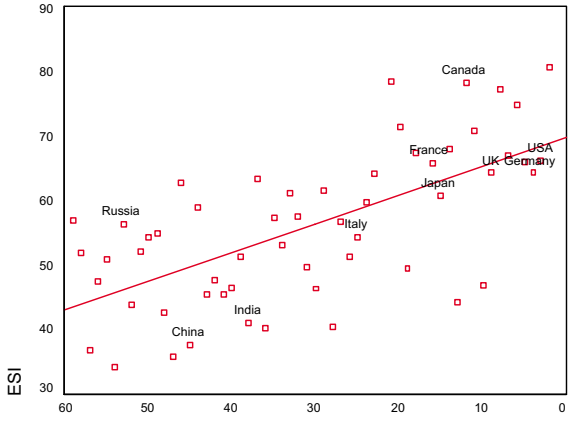


Figure 3. Relationship Between the ESI and Growth in Per Capita Income, 1990-1998

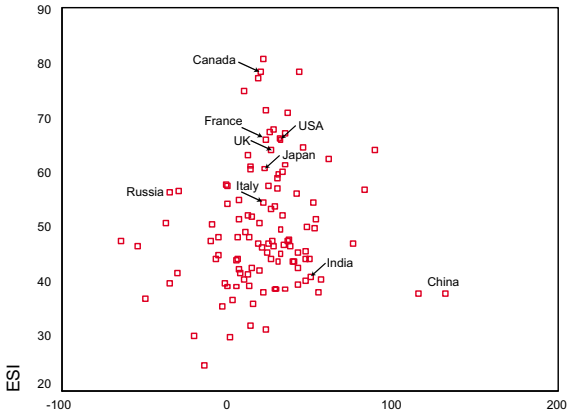


Table 7. Correlation Between ESI and GDP per capita, by Income Quintile

Income quintile	Correlation coefficient with ESI
1	0.21
2	0.07
3	0.58**
4	0.15
5	0.21
All countries	0.76**

** Statistically signicant at the .01 level

Table 8. Among Countries with Similar Levels of Income, Environmental Performance Varies

Country	ESI	GDP per capita (US$, PPP)
Italy	54.3	20,600
Sweden	77.1	20,700
Turkey	46.3	6,400
Lithuania	60.3	6,400
Iran	38.4	5,100
Panama	55.9	5,200
China	37.6	3,100
Ecuador	51.8	3,000
Haiti	24.7	1,400
Cameroon	44.9	1,500

If we compare to growth rates in per-capita income there is practically no relationship at all, as shown in Figure 3.

Given the way we have conceptualized environmental sustainability, it is not terribly surprising that at a broad structural level per-capita income appears to exert a strong effect. A large number of the 22 indicators, especially those concerning social capacity, human vulnerability, and environmental stresses are significantly affected by economic development.

However, it is more surprising how weak the relationship between income and environmental sustainability is when we look only within income quintiles. As Table 7 shows, it is only in the middle-income countries that a strong correlation is found, and even this correlation is significantly lower than the global correlation. Among the other income groups the effect is extremely weak.

We draw an important conclusion from this analysis: for countries in similar economic circumstances, some manage their environmental challenges well; others do not. Table 8 illustrates this point with data drawn from our analysis. It would not make sense to expect Haiti to achieve levels of environmental performance on a par with Sweden, for example; but there is no economic factor preventing Haiti from achieving a level approaching that of Cameroon, and this difference is significant. Similarly, Belgium (GDP per capita of $23,200) should be on a par with Sweden (GDP per capita of $20,700) and yet it ranks 75 slots lower with an ESI score of 44.1 compared with Sweden's fourth-ranking score of 77.1.

This suggests that when it comes to making fundamental policy choices having to do with environmental and economic performance, there is no significant tradeoff. The choices appear to be distinct and separable. This is consistent with the "Porter Hypothesis" that suggests that high levels of environmental protection are compatible with high levels of economic growth, and may even encourage the innovation that supports growth (Porter and van der Linde 1995; Esty and Porter 2000).

Challenges to Measuring Environmental Sustainability

We encountered a number of severe and often discouraging difficulties in the course of seeking measures of the 22 indicators that comprise the Index. In this section of the report we identify these challenges and discuss the strategies we employed to cope with them.

One challenge had to do with issues of **scale**. Environmental sustainability is a phenomenon that rarely unfolds at the level of a nation-state as a whole. More typically it is observed at a smaller scale – a river basin, a forest, an urban center. Yet for the most part environmental data are reported at the level of the nation. This mismatch of scales can lead to systematic errors. If a country's freshwater withdrawals are about equal to its freshwater availability, for example, then using only national level data will lead one to an optimistic assessment. But if withdrawals are highly concentrated in one area and availability is concentrated in a different area, these national figures will be very misleading. We sought wherever feasible to incorporate data that were collected or reported at a more fine-grained resolution, and then to aggregate them up to national levels in a way that took into account the sustainability dynamics at the smallest relevant scale. We did this for measures of acidification damage, water stress, water quality, air quality, land degradation, and private sector responsiveness.

Another challenge had to do with **data gaps**. Many important variables had shockingly poor country coverage. It was extremely frustrating to experience the gulf between statements by global bodies about the high priority of water quality and air quality as critical environmental concerns, and the reality that very little systematic global monitoring of these factors is taking place. We urge a renewed global commitment to developing a worldwide database covering major environmental issues and providing quality information that is comparable across nations and time. Such an initiative would be a worthy focus for the United Nations "Rio+10" World Summit on Sustainable Development to take place in South Africa in 2002.

One strategy we employed to help deal with data gaps was utilization of modeled data. Increasingly global environmental phenomena are the focus of intensive modeling efforts that take the best available empirical observations as inputs, and add tested methods for generating global estimates either of individual variables or of the interaction among variables. For carefully constructed models the resulting data can be quite useful for the purposes of sustainability measurements. We used model data for water quantity, acidification damage, air pollution emissions, industrial organic pollution emissions, and population stress. We were selective in choosing modeled data; the models we drew from had all been subject to scientific peer review and/or endorsed by international organizations.

In a few select cases we constructed our own data sets. We did this for environmental health, land area affected by human activities, and membership in international environmental organizations. We also arranged with a few data holders to construct custom data sets for us; this was the case with our use of the Innovest EcoValue '21 and Dow Jones Sustainability Group Index variables.

In spite of these efforts, major gaps remain. We were unable to locate useful data, for example, on toxic waste contamination, on lead poisoning or exposure, on wetland loss, on compliance with domestic environmental regulations, on extent of natural resource subsidies, or on the number of dangerous nuclear power plants. All of these issues have important theoretical and practical links to environmental sustainability. Each deserves policymaker attention at the national and global scales.

In the following sections we report in more detail how we dealt with four sets of indicators that are often considered to be of high global priority: freshwater resources, biodiversity loss, terrestrial ecosystems, and environmental health.

Freshwater Resources

Water Availability

One of the problems we encountered with existing data sets on internal renewable water resources by country is that they are compiled from many different sources, and they sometimes include and sometimes exclude water flowing from and to other countries. This quote from the data appendix

to the World Resource Institute's (WRI) *World Resources 2000-2001* report illustrates the dilemma: "When data for annual river flows *from* and *to* other countries are not shown, the internal renewable water resources figure *may* include these flows. When such data are shown, they are *not* included in a country's total internal renewable water resources." Although the WRI report is one of the best compilations of water availability figures, the ambiguity of the data definition, and the fact that the data come from eleven different sources, render them less useful for globally comparative analyses.

To address this problem, we worked with hydrological modelers at the Center for Environmental Systems Research at the University of Kassel in Germany to perform some special runs of their WaterGAP 2.1b model (WaterGAP stands for Water Global Assessment and Prognosis; Alcamo, *et al.*, 2000). WaterGAP belongs to a class of environmental models called "integrated" models that were first developed during the 1980s to study large-scale environmental problems. The advantage of the WaterGAP model is that it is based on a consistent set of methodologies utilizing actual hydrological data on precipitation, evaporation, and river flows from 1961-1990. These data were converted by the modelers to a 0.5^{o} by 0.5^{o} latitude-longitude grid (approximately 50km x 50 km at the equator, and 50km on the north-south side and 25km on the east-west side at a latitude of 60 degrees). The model estimates the impact of evaporation, which greatly affects water availability, as well as consumption in upstream nations. The internal renewable water resources data represent 1961-1990 average annual flow of rivers and recharge of groundwater generated from endogenous precipitation, taking into account evaporation losses from lakes and wetlands. The inflow data represent 1961-90 average annual inflow of rivers flowing from other countries, taking into account the loss due to consumptive water use in those countries.

The disadvantage of using WaterGAP is that, owing to the grid cell size (as described above), the model does not easily accommodate "micro-states" such as small islands or city-states. Where possible, we made use of alternative data for these countries.

Water Quality

We obtained original water quality data sets from the UNEP-Global Environmental Monitoring System/Water group (GEMS/Water). The GEMS system yields a consistent data set for 45 countries for a wide range of water quality indicators. We selected from the GEMS/Water data set a smaller sub-set of variables based on the extent of country coverage for each variable, and the degree to which the variable is recognized as an important measure of water quality. We arrived at the following four indicators:

Dissolved oxygen: This is a "headline" indicator for water. It tracks eutrophication levels, and is positively related with stream flow and inversely related to nitrogen and phosphorous levels. The U.S. National Research Council report (2000) listed dissolved oxygen as one of four indicators that provide crucial measures of ecosystem health.

Suspended solids: This is a measure of turbidity, and would be associated most closely with people's visual assessment of what clean water looks like. In heavily agricultural areas with high erosion levels, suspended solids levels can be quite high (e.g., the Ganges or the Yellow River). There is a fairly high natural component to suspended solids in rivers, and the concentration of suspended solids tends to increase in proportion to discharge levels. However, when aggregated across water bodies at the national level, this measure remains an important means of assessing water quality.

Phosphorus concentration: This is a measure of the level of eutrophication: phosphorous is a limiting nutrient for plant photosynthesis in fresh water environments. There is not much natural component measured by this indicator, so we can be reasonably certain that we are measuring anthropogenic impacts on water bodies.

Electrical conductivity: This is a bulk measure of the concentration of metals or salt in the water. Electrical conductivity is one of the most rapid and inexpensive measurements that can be made to assess water quality, and therefore its measurement is precise and widespread. Conductivity of water is affected by the presence of inorganic dissolved solids such as chloride, nitrate, sulfate and phosphate anions, or sodium,

magnesium, calcium, iron and aluminum cations. It is important to note that geology can have a large impact of electrical conductivity. Streams that run through bedrock areas tend to have a lower conductivity whereas streams that run through soils tend to have a higher conductivity.

One limitation of the GEMS water quality data is that the participating countries provide data from monitoring stations that vary in number and which may be located in quite different locations with respect to water quality stressors (e.g., industry and agriculture) within the same country, and from country to country. This makes it challenging to aggregate station data within countries, and also makes it somewhat difficult to compare the resulting measures across countries. Because there is no alternative, however, the GEMS data are what we used. In the interest of developing a more comprehensive worldwide water database with a carefully constructed analytical protocol, support needs to be provided to the GEMS/Water program in order to expand its country coverage.

Biodiversity Loss

The objective of these variables is to derive a relative measure of how well a country is managing its biodiversity, as measured by percent of known species threatened. Biodiversity describes the complexity of life and includes the number, variety and variability of living organisms. Biological diversity is commonly defined in terms of at least three hierarchies: genes, species and ecosystems (WCMC, 1992). The species level was selected for this ESI variable. The logic behind this decision is that species data are readily available and for certain taxonomic groups (such as birds and mammals) and fairly reliable. This approach is, however, limited by the current state of knowledge of species numbers, differences in taxonomic classifications and the assumption that organisms that differ greatly from each other contribute more to the overall diversity than those which are very similar (WCMC, 1992).

Biodiversity loss occurs both directly and indirectly—directly through such activities as hunting and indirectly though activities such as habitat destruction and modification. At the species level, loss means extinction in the wild.

Two species-level variables were calculated, percentage of breeding birds threatened and percentage of mammals threatened. Bird species are well known (Collar *et al*., 1994) and mammals species relatively well known. There is less confidence in the reliability of the number of species of vascular plants, reptiles, amphibians and fishes, and so these data were not used in the ESI.

For the purposes of the ESI, it is not useful to compare the number of existing species in each country because countries obviously cannot make additions to their natural species diversity. Countries do, however, have control over how likely the species found in their country are to go extinct.

Dividing the number of threatened species in a country by the total number of known species gives an estimate of how well a country is managing different groups of species. Threatened is defined as taxa falling into one of three categories: Critically Endangered, Endangered or Vulnerable, all measures of likelihood of extinction in the wild.

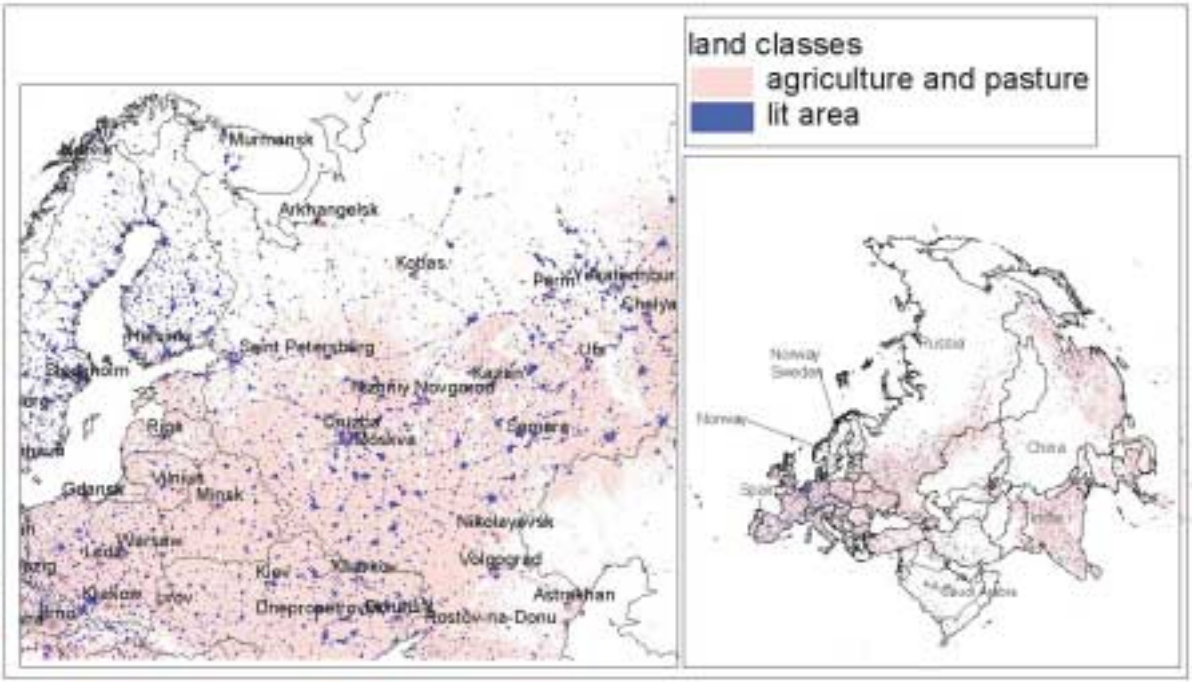
Terrestrial Ecosystems

Anthropogenic Impacts on Land

We created a new variable from selected global datasets that seeks to provide a measure of land affected by human activity within a country. The variable bundles several environmental stresses, including ecological impact of natural vegetation clearing, the environmental impact of specific land use activities and the efficiency of land resource use by a country. At present the variable is experimental and in a developmental stage.

Clearing of natural vegetation results in habitat fragmentation and degradation. If the land is converted to agriculture, there can also be economic and ecological costs from increased soil salinity. If the land is converted to urban area, the change is generally irreversible, resulting in increases in the extent of impermeable surfaces (pavement) and, potentially, pollution-generating activities. There is a direct relationship between cleared natural vegetation and biodiversity loss, including species extinction (Brooks *et al.*, 1999). The anthropogenic impact variable represents an inventory-based approach proxy measure of biodiversity loss to complement the current species based ESI biodiversity variable (see section on biodiversity

Figure 4. Map Depicting the Agricultural, Pasture and Lit Areas in Europe and Asia



loss above). To be useful, it is important to know the area and also type of natural vegetation cleared.

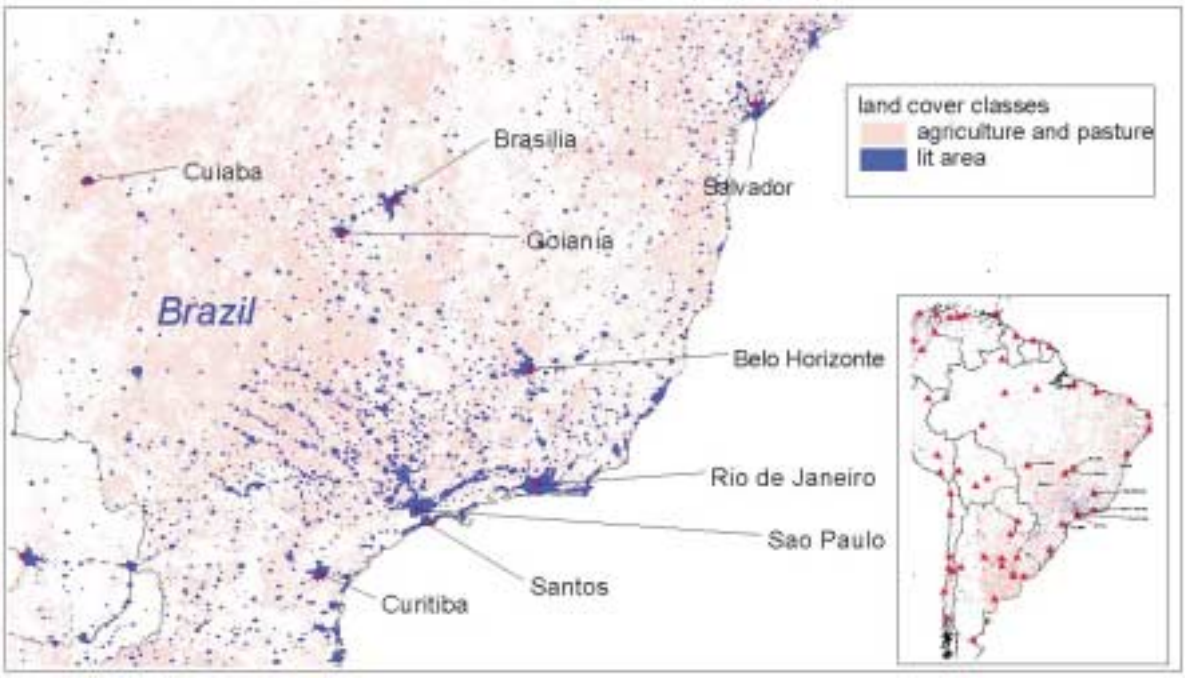
Two types of anthropogenic impacts were identified: the built environment and agricultural (including pasture) land. Two satellite-derived global datasets were combined to estimate the area of land in each country affected by anthropogenic activities. Estimates of built environment were derived from the Nighttime Lights data set and estimates of agricultural land from the Global Land Cover Characteristics (GLCC) database. An estimate of the percent of built environment and agricultural land provides a proxy for the amount of natural vegetation cleared. Two complications are immediately obvious: plantation style forested areas are not included, and some pastureland is natural grassland. Nonetheless, a relative measure of land cleared of its natural vegetation cover is possible.

The methodology was as follows. Version 2.0 of the Global Land Cover Characterization (GLCC) database was obtained for each region (North America, South America, Eurasia, Asia-Pacific and Africa) in Lambert Azimuthal Equal Area projection from an ftp site (edcftp.cr.usgs.gov). Land cover classes over 10% of the earth's surface were revised for version 2.0 based on user feedback (Brown *et al.*, 1999) and broad lessons learned from validation exercises (Scepan, 1999; Muchoney *et al.*, 1999). This version of the database is still based on the 1992-1993 satellite data, and therefore, represents the land cover patterns for that period. The USGS Land Use/Land Cover System Legend (Modified Level 2) was selected for this application.

Urban areas for the GLCC product were extracted from the Digital Chart of the World (Defense Mapping Agency, 1992). A visual inspection of the urban class indicated that not all built environment areas were represented, so the Lights at Night dataset was used as an alternative. The Lights at Night dataset captures a wider range of human activity including residential, commercial, industrial, public facilities and roadways (Elvidge *et al*., 1999).

Elvidge *et al*. (1997a, 1997b) have applied the time series data from the Defense Meteorological Satellite Program (DMSP) Operational Linescan System (OLS) as processed by the NOAA National Geophysical Data Center in Colorado to inventory human settlements. The data product selected for the ESI application was the stable lights for city areas. This data product has been fil-

Figure 5. Map Depicting the Agricultural, Pasture and Lit Areas in South America



tered for clouds, gas flares, fishing lights and fires and thresholded based on the frequency a particular grid cell is lit. This global data layer is at a nominal resolution of 1km and represents data for October 1994 to March 1995.

The two datasets were combined in the following fashion. A global binary version of the stable lights for city areas was created resulting in a grid of lit or not lit areas. The global data set was then cut and projected to match the GLCC database regions. The lit areas from the lights at night dataset were then "added" to the GLCC, replacing the previous classification.

To estimate anthropogenically affected areas, the areas for relevant classes in the composite dataset were tabulated by country. The USGS Land Use/Land Cover System Legend has five classes that include cropland and/or pasture. These are: Dryland Cropland and Pasture, Irrigated Cropland and Pasture, Mixed Dryland/Irrigated Cropland and Pasture, Cropland/Grassland Mosaic and Cropland/Woodland Mosaic. Areas for these five classes and the lights at night derived lit area class were combined resulting in the square kilometers of anthropogenic impact. The land area affected by human activity calculated from the composite dataset was divided by the land area of the country, as reported in the ESRI global country dataset, to calculate the percent of land area affected.

Acidification Exceedance

The objective of this variable was to assess the degree to which terrestrial ecosystems were affected by acidification due to sulfur deposition from industrial air pollution. We calculated the percentage of each country at risk of acidification, based on the "Exceedance of Critical Loads for Terrestrial Ecosystems" map obtained from the Stockholm Environment Institute (SEI) at York, United Kingdom. Critical loads are the maximum amount of deposition a given area can receive before suffering ecological damage. This map was produced as follows (Kuylenstierna *et al.*, 2000):

1. Creation of sulfur deposition map. The Global Emission Inventory Activity (GEIA) sulfur emission inventory for 1990 was used and integrated in the MOGUNTIA model to calculate sulfur deposition. In addition, a model for global emission, transfer and deposition of soil dust (*base cation deposition*) was used. The base cation deposition, and particularly the calcium content, is a measure of the ability of the ecosystem to neutralize the acidifying depositions. Two deposition ranges (10 % of calcium content and 100%) were used in the

model. The acidic deposition derived from sulfur emissions is calculated as sulfur deposition minus the base cation deposition rate.

2. Creation of sensitivity to acidic deposition map. A method that combines three classes of Cation Exchange Capacity with five classes of base saturation to define five classes of sensitivity was implemented and applied to the digital FAO Soil Map of the World.

3. Conversion of sensitivity map to critical loads map. The conversion was made based on the assumption that the critical load is equal to the buffering rate (weathering rate) of the soil.

4. Production of the exceedance of critical loads map. This was obtained by combining the acidic deposition (1) and critical loads (3) maps.

For 1990, Stockholm Environment Institute at York produced two maps of exceedance of critical loads:

- High Risk, obtained by using low critical loads and 10% calcium content of modeled dust
- Low Risk, obtained by using high critical loads and 100% calcium content in dust.

Given the small variability in exceedance values from the Low Risk map, we decided to use only the High Risk map for inclusion in the ESI. The areas at risk have been summed within each country and then the percentage of a country at risk of exceedance was calculated.

Environmental Health

The concept of environmentally related diseases has begun to gain currency, but to date nobody has produced indicators of diseases that are attributable to environmental conditions. The Global Burden of Disease (GBD) study was a step in this direction. It produced some measures of countries' burden of disease for 1990, and among the diseases included were a number that could be directly traced to environmental factors (see http://www.hsph.harvard.edu/organizations/bdu). Smith *et al.* (1999) analyzed the Global Burden of Disease numbers, and demonstrated that of all the diseases included in the GBD study, acute respiratory infections (ARI) and diarrheal diseases were most linked to environmental conditions. They conclude that "25-33% of the global burden of disease can be attributed to environmental risk factors. Children under 5 years of age seem to bear the largest environmental burden, and the portion of disease due to environmental risks seems to decrease with economic development."

Utilizing a large data set from the World Health Organization, we extracted age and sex specific deaths by country for the most recent years available (we utilized no data older than 1990) for the two classes of disease mentioned above: ARI and intestinal infectious diseases. In the first case, we produced an indicator called "Child Death Rate from Respiratory Diseases," which measures deaths from respiratory diseases (WHO classes B31 & B320 & B321) per 100,000 population aged 0-14 (utilizing UN population data broken down by age). The diseases in this category included acute tonsillitis, acute laryngitis and tracheitis, other acute upper respiratory infections, deflected nasal septum and nasal polyps, chronic pharyngitis, nasopharyngitis and sinusitis, chronic diseases of tonsils and adenoids, acute bronchitis and bronchiolitis, pneumonia, and other.

For the intestinal infectious diseases, we followed a similar procedure, except we calculated standardized death rates for each country's entire population that were comparable across countries. The diseases in this category included cholera, typhoid fever, shigellosis, food poisoning, amoebiasis, intestinal infections due to other specified organism, ill-defined intestinal infections, and other.

How Should the Index's Inputs be Weighted?

Nominally, all the inputs into the Environmental Sustainability Index receive equal weight. The 22 indicators are calculated by averaging the values of the appropriate variables. The Index score is calculated by averaging the 22 indicators. No variable or indicator gets more weight than any other.

In fact, however, there are implicit weights that derive from the structure we impose on the Environmental Sustainability Index. We identify seven separate indicators of social and institutional capacity, for example, but only two indicators of human vulnerability. Implicitly we are giving capacity measures more than three times the weight of vulnerability measures.

Not everyone will agree with the implicit weights reflected in this Index. Unfortunately, disputes over the appropriateness of our weights cannot be easily resolved. There is no agreed prioritization among competing environmental issues, and there are no independent measures of environmental sustainability to use as an empirical check. We took three separate steps to address the issue of weights.

First, we explored two techniques for assigning weights based on empirical relationships among the variables. Both these techniques proved to be unfruitful.

In the first instance we sought to construct a time series on a subset of the data that spanned the five components, in an effort to identify causal relationships that could be used as the basis for assigning differential weights. Variables with stronger causal impacts would receive stronger weights. In the end this effort failed for the simple reason that robust time series data across a relevant range of indicators were impossible to construct.

The other such technique we employed was "principal components analysis," in which we sought to identify statistically patterns of variation within the data that would allow us to assign differential weights to variables based on their ability to discriminate efficiently among the observations. This was also unsatisfying. The principal components identified using this technique failed to conform with any analytically or intuitively plausible set of expectations; fifteen components were identified but these included variables from disparate sets of indicators and, more problematically, assigned negative weights to many variables. The fact that we identified a relatively large number of principal components is confirmation of our assumption that environmental sustainability is a complex, highly heterogeneous phenomenon. But it does not help us determine the appropriate weights for variables.

Second, we conducted a survey of environmental experts and members of the business community to determine their views on the relative importance of the indicators used in the Index. The survey asked respondents to rank, on a scale of 1-5, the relative importance of the indicators that comprise the Index. A total of 254 surveys were received, representing 73 countries. One major set of respondents was identified at the October 2000 meeting of the World Conservation Congress in Amman, Jordan (n=158). The survey was circulated in person at that meeting. The other was the World Economic Forum Global Leaders of Tomorrow (GLT) membership (n=58); GLT members were sent the survey by the WEF. A smaller number of questionnaires (n=36) was circulated at other meetings of environmental experts during the fall of 2000 – each of these meetings was attended by recognized experts from a range of countries.

We drew two conclusions from this survey. First, we noted significantly lower importance scores for an indicator we had been developing on "exposure to environmental disasters." The opinion that this indicator should be lower in relative importance was observed across regions, across sectors, and across income levels of the respondents' home countries. In the end we dropped the environmental disasters indicator. In addition to being judged to be of lower importance it had weak variables available to measure it. Second, the other variables were close together – in virtually all cases occupying overlapping 95-percent confidence intervals. Although the Environmental Sustainability Index scores are different if we apply these weights, in the end we decided not to use them because we did not have confidence that they reflected a meaningful set of differences.

A sensitivity analysis suggests further that the weighting methodology developed would not have

changed the rankings in any appreciable fashion. In particular, we calculated an Index score using the survey-generated weights (and applying the average weight for the two indicators that were not part of the survey). The average shift in rank was only 1.7 places out of 122.

Finally, to acknowledge the diversity of views as to the appropriate weights, we have experimented with an interactive version of the Index that operates on a desktop computer and permits users to alter weights and view the results.

Table 9. Results of ESI Indicator Weighting Survey

Indicator	Average Weight
Urban Air Quality	3.8
Water Quantity	3.6
Water Quality	3.9
Biodiversity	3.9
Land	3.7
Air Pollution	3.8
Water pollution and consumption	3.9
Ecosystem Stress	4.0
Waste Production & Consumption Pressure	3.6
Population	3.5
Basic Sustenance	3.5
Public Health	3.5
Disasters Exposure	2.8
Science and Technical Capacity	3.0
Capacity for Policy Debate	3.3
Environmental Regulation & Management	3.5
Tracking Environmental Conditions	3.3
Eco-efficiency	3.3
Public Choice Failures	3.6
Contribution to Int'l Cooperation	3.0
Impact on Global Commons	3.5

Conclusions and Next Steps

Societies are setting ambitious goals concerning sustainability. The Index reported here is intended to contribute to the success of these efforts by making it possible to quantify goals, measure progress and benchmark performance. The ESI will also facilitate more refined investigation into the drivers of environmental sustainability, and help to draw special attention to "best practices" and areas of success as well as lagging performance and potential disasters.

Notably, the ESI:

- provides tangible measures of environmental sustainability, filling a major gap in the environmental policy arena;
- creates a foundation for shifting environmental decision-making onto a more analytically rigorous foundation;
- contains a single measure of environmental sustainability as well as three additional levels of aggregation to meet a wide range of policy and research needs;
- strikes a useful balance between the need for broad country coverage and the need to rely on high-quality data that are often of more limited country coverage.
- builds on an easily understood database using a methodology that is transparent, reproducible, and capable of refinement over time.

The Index is not without its weaknesses. In particular, it:

- assumes a particular set of weights for the Index constituents that imply a set of priorities and values that may not be universally shared;
- relies in some instances on data sources of less than desirable quality;
- suffers substantive gaps attributable to a lack of comparable data on a number of high priority issues;
- lacks time series data, preventing any serious exercise in validation and limiting its value as a tool for identifying empirically the determinants of good environmental performance.

The ESI remains a "work in progress." A number of refinements of the analysis need to be undertaken to deepen our understanding of environmental sustainability and how to measure it:

1. A major investment in data gathering and data creation is clearly called for. We recommend a pluralistic approach to filling critical data gaps, making use of existing international organizations where they are capable, but filling in where they are not with strategies that draw upon networks of scientists, local and regional officials, industries, and non-governmental organizations. The world is sufficiently better connected, better skilled, and better equipped that we need not rely on the institutions of a century ago to meet the needs of the present.

2. Because there are a variety of value judgments and significant scientific uncertainties about causality, it is necessary to augment the Environmental Sustainability Index with a flexible information system that permits users to apply their own value judgments or to experiment with alternative causal hypotheses. We have tried to advance this objective by creating an interactive version of the Index that operates on a desktop computer and by making our data and methods as transparent as possible. More could be done along these lines, including tools to facilitate more powerful integration of environmental sustainability data from different sources.

3. We need more sophisticated methods for measuring and analyzing information that comes from different spatial scales. Environmental Sustainability is a function of the interaction of mechanisms that operate at the level of ecosystems, watersheds, firms, households, economic sectors and other phenomena that we are not well equipped to understand as parts of a whole. The modest efforts to integrate information from different spatial scales utilized in this Index need to be evaluated, improved and supplemented.

4. Consistent measurements over time are vital to create the ability to carry out robust investigations into cause-effect relationships. These measurements should evolve as data availability and aggregation techniques improve. But they must remain fully transparent and adequately archived for it to be possible to conduct meaningful scientific investigation. In addition to continuing measurements into the future, it is possible that retrospective measurements of certain variables could permit more rigorous causal analysis.

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Annex 1. Data Aggregation Methology

This annex discusses in detail the data aggregation methodology underlying the construction of the Index.

After collecting data from appropriate sources, we sought to make the observations as comparable as possible across countries. Initially we divided most observed values by total population, income or land area. We quickly discovered, however, that dividing by total land area had the unintended consequence of rewarding countries with large land areas. We therefore constructed a measure of populated land area, by calculating the area within each country with a population density of 5 or more persons per square kilometer. For some densely populated countries this value was equal to the total area, but for others it was far lower. The values are shown in Table A1. The ESI has only a small correlation with total land area (0.14) that is not statistically significant. The correlation with population density is also small (-0.07) and not significant. The correlation with the percentage of area meeting our threshold cutoff of 5 persons per square kilometer is somewhat significant (-0.19, significant at .05 level).

Once we adjusted the data for population, income or land area, we sought to impute values for missing data. We excluded from the imputation process variables that were derived in a manner that deliberately excluded certain countries or otherwise made imputation untenable. We then calculated bivariate correlations among the variables in the data set, including a set of external benchmarks such as the Human Development Index and GDP per capita. Where correlations were high and there was a plausible justification for presuming the variables to be related, we estimated missing values using those variables. We estimated 574 missing values, for 21 variables, using this method. We then calculated predicted values for the remaining missing values using the three variables in the data set that on average had the strongest correlations with the variables – the Human Development Index, GDP per capita, and Graft. We compared these three predicted values and assigned the worst as the imputed value. We chose the worst value so as to avoid rewarding countries for failing to report data. We estimated 586 missing values for 47 variables using this second method. Altogether, then, we generated imputed values for 62 percent of the missing values in our data set.

Imputation permits us to generate a score for each of the 22 indicators for each country. Had we not imputed missing data some countries would lack values for up to three indicators. After generating the Index scores we explored whether our imputation procedure introduced any bias. We compared our ESI with a version of the ESI with no imputation; the correlation is 0.97. The correlation is lower, obvsiously, for countries with more missing data. Among the third of countries missing the most data the correlation is 0.85, while it is 0.99 for the third missing the least data. In general countries at lower income levels are missing more data (correlation = 0.68); therefore we looked for bias in the imputation process against low income countries. We found a slight correlation between the imputation effect and per capita income (0.16) that was not statistically significant.

Variables with highly skewed distributions were transformed by taking the base-10 log. This was done for the 14 variables having a skewness measure greater than 5.

We set substantive thresholds for two variables. Caloric intake as a percentage of daily requirements was assigned an upper threshold of 120%, so that countries exceeding this value did not receive additional credit. Projected population growth rates to 2050 were assigned a lower threshold of 0, so that countries whose populations are projected to decline were considered no more sustainable than countries that are projected to remain stable over the next 50 years.

We then truncated the observations to the 95 percent level. That is, for each variable we took values in the bottom 2.5 percentile and forced them to be equal to the 2.5 percentile level; we did the same for the 97.5 percentile. We did this for two reasons. First, we were less confident about the accuracy of data at the extreme tails of the distribution. And second, we intended the Index to be utilized as a primarily comparative measure, and we did not want very extreme outliers to become benchmarks for the entire population; truncation makes the variables more justifiably comparable.

Table A1. Percentage of Country's Territory Populated at 5 persons/Km2 or Higher

Country	%
Albania	100
Algeria	15
Argentina	32
Armenia	100
Australia	3
Austria	100
Azerbaijan	99
Bangladesh	100
Belarus	100
Belgium	93
Benin	100
Bhutan	84
Bolivia	24
Botswana	17
Brazil	40
Bulgaria	100
Burkina Faso	95
Burundi	100
Cameroon	83
Canada	4
Central African Republic	37
Chile	39
China	65
Colombia	50
Costa Rica	100
Croatia	100
Cuba	96
Czech Republic	100
Denmark	100
Dominican Republic	100
Ecuador	60
Egypt	18
El Salvador	99
Estonia	100
Ethiopia	90
Fiji	99
Finland	54
France	98
Gabon	9
Germany	100
Ghana	100
Country	%
Greece	100
Guatemala	87
Haiti	99
Honduras	83
Hungary	100
Iceland	3
India	100
Indonesia	86
Iran	99
Ireland	100
Israel	100
Italy	100
Jamaica	100
Japan	98
Jordan	57
Kazakhstan	22
Kenya	48
Kuwait	94
Kyrgyz Republic	85
Latvia	100
Lebanon	100
Libya	6
Lithuania	100
Macedonia	99
Madagascar	78
Malawi	100
Malaysia	67
Mali	31
Mauritius	99
Mexico	70
Moldova	100
Mongolia	6
Morocco	76
Mozambique	71
Nepal	93
Netherlands	100
New Zealand	22
Nicaragua	78
Niger	21
Nigeria	100
Norway	40
Country	%
Pakistan	100
Panama	77
Papua New Guinea	60
Paraguay	35
Peru	45
Philippines	97
Poland	100
Portugal	98
Romania	100
Russian Federation	19
Rwanda	100
Saudi Arabia	42
Senegal	86
Singapore	91
Slovak Republic	100
Slovenia	100
South Africa	50
South Korea	98
Spain	86
Sri Lanka	100
Sudan	53
Sweden	53
Switzerland	98
Syria	100
Tanzania	98
Thailand	99
Togo	100
Trinidad and Tobago	95
Tunisia	72
Turkey	100
Uganda	100
Ukraine	100
United Kingdom	94
United States	38
Uruguay	100
Uzbekistan	53
Venezuela	41
Vietnam	100

Table A2. Summary of ESI Data Aggregation Methodology

1	Collect data.
2	Make variables comparable where necessary by dividing by population, income or populated land area.
3	Impute missing data where appropriate.
4	Take logs of highly skewed variables.
5	Set substantive thresholds where appropriate.
6	Truncate distributions to 95-percent range.
7	Standardize variables to permit aggregation.
8	Calculate 22 indicators by averaging underlying variables.
9	Calculate ESI averaging 22 indicators and calculating standard normal percentile (5 Components calculated in same way).

We standardized the variables to make aggregation possible. We calculated the Z score (value minus mean, divided by standard deviation) for those variables for which high observed values corresponded to high levels of environmental sustainability. For variables where high observed values corresponded to low levels of environmental sustainability (for example, pollution levels) we standardized by dividing mean minus value by the standard deviation. Annex 4 explains the properties of Z scores.

The 22 indicators were then calculated by taking the average of the constituent variables' Z scores.

The Environmental Sustainability Index was calculated by taking the average of the 22 indicators, and then converting this value to a standard normal percentile. We chose percentile so as to end up with a number with greater intuitive understanding than a z score. We use the standard normal percentile because we do not wish to assume that the highest and lowest observed average in our data set corresponds to maximum and minimum levels of environmental sustainability, respectively. Rather, we consider a more reasoned assumption to be that our figures represent a range of estimates of an actual distribution that is in fact wider – wherever minimum and maximum environmental sustainability might be, we are fairly confident that they are outside our measured range.

For the measures of the five components that we report in the country profiles, we also calculate the standard normal percentile of the underlying average scores, based on the same logic.

Table A2 summarizes these steps.

Annex 2. Relationship to 2000 Pilot ESI

The analysis in this report builds on the Pilot Environmental Sustainability Index (World Economic Forum, 2000) released in January 2000. The Pilot ESI represented our first pass at collecting the requisite data and designing an appropriate methodology to rank national environmental sustainability. The Pilot proved to be a valuable learning exercise, and has helped us to refine the ESI methodology applied here.

More than five thousand copies of the 2000 Pilot Index were distributed through web sites and in print versions, and dozens of personal presentations were made over the year in a range of developed and developing countries. This outreach generated a significant set of commentaries on the Index, some published and some communicated directly to us. In addition, we commissioned a set of focused peer reviews on the part of recognized international experts on environmental sustainability indicators. These critiques proved to be especially helpful in focusing the ESI team on the central methodological issues.

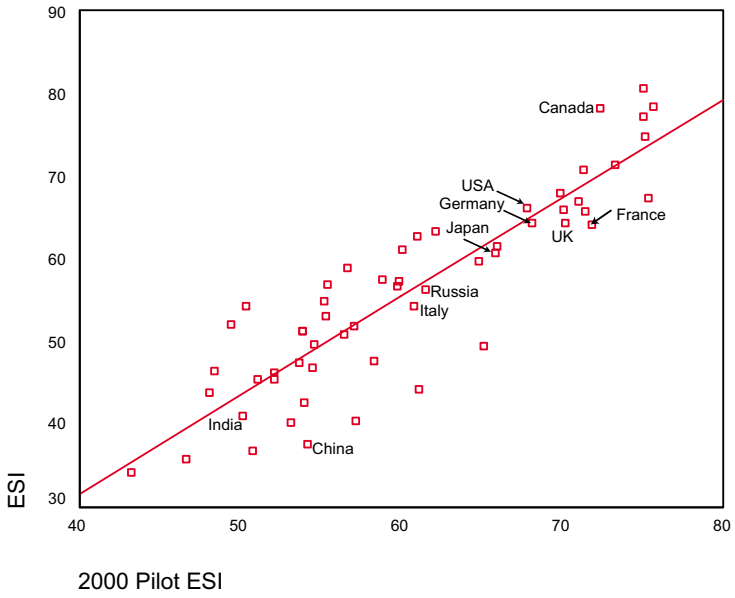
Based on the commentaries and criticisms, we made a number of changes in data and methods. Notably, we:

- dropped the indicator on Exposure to Environmental Disasters based on an assessment of its low importance relative to the other indicators, and concerns over the quality of the underlying variables;
- added indicators on Global-Scale Funding/Participation and on Private Sector Responsiveness to take into account the high importance associated with those factors;
- utilized a set of strategies to cope with gaps in data coverage, including reliance on global model data and selective imputation of missing data;
- created three new data sets from scratch to help fill gaps in high priority areas (Child Death Rates from Respiratory Diseases, Death Rate from Intestinal Infectious Diseases Deaths, and Land Area Affected by Human Activities);
- changed the aggregation scheme in important ways. We utilized standardized variable scores as the basic unit of aggregation as opposed to an arithmetic 0-100 scale; we truncated the extreme outliers; and we took the base 10 log of highly skewed variables. These steps all were designed to make the values for the individual variables more robustly comparable prior to the aggregation steps; and
- broadened the coverage from the 56 countries in the 2000 Pilot to the 122 covered here.

Although these differences are significant and, we think, markedly improve the Index, the core approach has not changed. Twenty of the twenty-two indicators remain the same; more than half of the variables remain in the index; and the basic methodological approach remains based on a comparative aggregation strategy. For the 56 countries that appear in both the 2000 Pilot and the current Index, the correlation is 0.89 (see Figure A1).

We did not adopt every change suggested, and some critics will continue to be disappointed with the assumptions and methodological choices we have made. We discuss some of the recurring criticisms and issues in the “Frequently Asked Questions” section of this report, found in Annex 3. Measuring environmental sustainability and performance is not an easy thing to do. We recognize that an such exercise must remain open to criticism and refinement. In this spirit, we see the ESI as a “work in progress” and intend to continue to refine it over time.

Figure A1. Relationship Between the 2001 ESI and the 2000 Pilot ESI



Annex 3. Frequently Asked Questions

Over the past year the 2000 Pilot Environmental Sustainability Index generated a number of criticisms, commentaries and suggestions, and has elicited a number of questions. We provide below some of the most common questions and criticisms, along with our responses.

1. Isn't Russia's score too high?

Russia received a score of 61.5 in the 2000 Pilot ESI (22nd of the 56 countries), which many commentators considered to be anomalously high given what we know about Russian environmental conditions. We agreed with this assessment, and discussed it in the Pilot report. We suspected that a combination of faulty data, inadequate mechanisms to control for countries with large uninhabited land areas, and a mismatch between the particular kinds of environmental problems Russia is suffering and the types of data collected through global efforts all combined to create this situation.

For the current index we sought to improve the quality of the data where possible and to more precisely apply our inhabited land area control. We also thought that the creation of two new environmental health measures would help address the problem, though that was not the primary motivation. Russia' score is lower in the current Index (56.2) but still probably too high. As Feshbach (1995) and others have documented, Russian environmental conditions are catastrophic.

Faulty and missing data are most likely driving this continuing anomaly, we believe. Consider the environmental health measures. Russia is one of the only industrial countries in history ever to experience a decline in life expectancy, and environmental health problems are rampant. Yet Russia reports to the World Health Organization a set of deaths from intestinal infections about equal to the World median (in between the United Kingdom and Norway), and does not report any information on deaths from acute respiratory diseases. Russia's self-reported water quality data are similarly out of sync with its well-documented water quality problems.

We could have adjusted these scores based on the individual studies that have been done on Russia's environmental conditions. We deliberately chose not to because we thought it would dilute the ability of the Environmental Sustainability Index to measure conditions in a comprehensive, global and consistent manner. For each country-specific change we might implement based on particular knowledge of that country, there would be an unknown number of equally compelling changes that we didn't know enough to make. Over time we are committed to strategies that will reduce anomalies across the board by improving the data and methods for all countries.

2. Isn't Singapore's score too low?

Singapore, widely considered to be a well-managed, prosperous country, received a relatively low score (46.8) in the 2000 Pilot Index. It was a clear outlier in explorations of the relationship between the Pilot Index and GDP per capita. Some commentators suggested that Singapore's unexpectedly low score reflected a flaw in the Index's methodology. They suggested that had we adequately taken into account Singapore's high population density, its existence as a city-state with virtually complete urbanization, and the fact that it occupies a small island, we would have arrived at a higher, more accurate, score for Singapore.

We do not agree with these suggestions. There are compelling analytical reasons to believe that small islands with large populations and considerable economic activity will approach, if not exceed, the limits of environmental sustainability. We do not wish to "control" for such factors; in fact we wish to do precisely the opposite: to illuminate cases where such limits are being approached.

This does not mean that we are critical, either implicitly or explicitly, of the choices Singapore has made. To the contrary, given its limited environmental endowments and many natural resource challenges, Singapore performs remarkably well. In a number of critical areas, especially ones that go to performance such as the eco-efficiency of the economy, Singapore's results are top-notch. In fact, if one estimates ESI as a function of income and population density, Singapore's observed ESI is higher than its estimated score. Singapore's data demonstrate that wise management can dramatically reduce a nation's exposure to environmental threats even where critical sustainability thresh-

olds are close by. The fact remains, however, that any country experiencing the extreme levels of environmental stress (especially in terms of water) that one observes in Singapore is in danger of exceeding fundamental environmental limits. We believe the Environmental Sustainability Index as constructed accurately flags such danger points.

3. Isn't the ESI biased in favor of rich countries?

Environmental Sustainability Index scores correlate positively with per-capita wealth. Some other global sustainability metrics are negatively correlated with wealth, and advocates of those alternatives have suggested that our methods may reflect a rich country bias. The World Wildlife Fund's Consumption Pressure Index, for example, has a correlation of 0.56 with the ESI, and assigns bad scores to a number of countries with high ESI scores. Norway is rated as placing the highest pressure on the environment by the WWF, for example, yet is ranked second best in our Index. The Ecological Footprint has a similar relationship to the ESI.

Our Index does correlate differently with wealth than do these other indexes, but that does not reflect an inherent bias in favor of wealthy countries, any more than these other indexes reflect a bias in favor of poor countries. Rather, these indexes differ because of different emphases they place on competing aspects of environmental sustainability.

The Consumption Pressure Index and the Ecological Footprint place all their emphasis on extraction of natural resources and emissions of greenhouse gases. We share the belief that these are both important features to measure and to which attention should be drawn. In fact, both the Consumption Pressure Index and the Ecological Footprint are inputs into the ESI. But we believe that environmental sustainability is a broader concept. Thus, the ESI includes data on a much wider set of issues. The ESI, for example, measures environmental threats to human health, and captures local-level environmental dynamics (such as air and water quality). For many of these local-level environmental issues wealthy countries exhibit superior results. Water quality is better in Norway than it is in Bangladesh.

If one examines the graphs on the country profile pages, one can see that there is a distinct pattern among the wealthiest countries in which relatively good scores on most of the dimensions are contrasted with comparably poorer scores on the environmental stresses. We think this is an accurate portrayal of the environmental sustainability conditions in the rich countries of the world. We don't believe that the rich countries' good scores on some measures get them "off the hook" for their poor scores on other measures, any more than the consumption-based indexes imply that low levels of consumption pressure make up for poor sanitation or water quality. The Environmental Sustainability Index permits us to track relevant conditions and actions in an objective and useful manner.

4. Isn't the Index biased in favor of countries with large land areas?

In part because countries with large expanses of relatively uninhabited land areas scored notably high in the 2000 Pilot Index, some observers concluded that there was a systematic bias in favor of such countries. However, this is not the case.

For the countries in the 2001 Environmental Sustainability Index, the relevant correlations are found in Table A3.

These weak correlations are not entirely due to coincidence. As discussed in detail in the methodology section of this report in Annex 1, we were

Table A3. Correlation between 2001 ESI and select density and land area indicators

	Correlation
Population Density	-0.06
Percent of territory with population density greater than 5 persons per square km.	-0.19*
Total Land Area	-0.08
Land Area inhabited at greater than 5 persons per square km	0.14

* Statistically significant at .05 level

careful not to assume that pollution would be spread across total land areas. Instead, precisely because we wished to avoid biasing results toward large countries, we divided environmental stress variables by populated land area, using a specially constructed measure of land area inhabited at greater than 5 persons per square kilometer.

The modest significant correlation with percent of land area populated at greater than 5 persons per square kilometer reflects not a bias, but rather an empirical relationship. The more of a country's territory that is populated at this level, the more likely it is to be stressing the environment in measurable ways.

5. Why don't we assign different weights to the indicators?

A large number of critics have pointed out that it is highly unlikely that our approach of assigning equal weights to the indicators in the Environmental Sustainability Index reflects a defensible conclusion about the actual proportional contributions that these indicators make to environmental sustainability. We agree. But, as we discuss in the main body of this report, no viable strategies for determining robust differential weights currently exist.

If there were an independent, accepted measure of environmental sustainability we could assign weights based on their ability to match that measure efficiently and accurately. But environmental priorities and values vary widely based on development status, existing pollution levels, population density, and other factors. If principle components analysis generated a set of components that both discriminated efficiently among the observations in our data set and comported with accepted understandings of environmental sustainability, we could use such analysis to assign different weights. But the data do not generate principle components with these characteristics. If there were reliable time series data for a meaningful cross-section of our data, we could use causal analysis to assign differential weights based on an assessment of differences in predictive power. But there are no adequate time series data on most environmental variables.

Under the circumstances we think we have taken a sensible approach. We have arrived at five broad categories of indicators based on analytical judgments that are defensible. Within these broad categories we have identified a set of 22 indicators based on a combination of analytical judgments about their causal role in environmental sustainability dynamics, on their overall substantive importance to environmental sustainability, and on the viability of available measurements. Lacking any other basis, we assign these 22 indicators equal weight.

To help make this approach more rigorous we conducted a survey of environmental experts and activists, which is described in more detail in the main body of this report. We dropped the indicator that was considered to be of lowest importance; the others revealed roughly comparable levels of importance as measured by the survey.

We have been very open and transparent in identifying the weighting issue as an ongoing question. In fact, we have developed an interactive version of the ESI (available at http://www.ciesin.columbia.edu/indicators/ESI) to permit users to apply their own weights.

Annex 4. Component & Indicator Scores

This section provides tables summarizing the country scores for each of the ESI components and indicators, sorted in order from highest to lowest scores. Note that the component scores are presented as standardized normal distributions ranging from a theoretical low of 0 to a high of 100. The indicator scores are presented as averages of the constituent variable values. These variable values, as described in Annex 1, are in the form of Z scores, with zero indicating the mean for the 122 countries, +1 and -1 respectively representing one standard deviation above and below the mean, +2 and -2 respectively representing two standard deviations above and below the mean, and so on. In a "normal," bell-shaped distribution, 68 percent of the scores will fall between +1 and -1, 95 percent between +2 and -2, and 99.7 percent between +3 and -3. The actual distributions vary from variable to variable.

Component: Environmental Systems

This component includes the following indicators:

- Air Quality
- Water Quantity
- Water Quality
- Biodiversity
- Terrestrial Systems

High numbers represent higher sustainability.

Canada	91.2
Norway	87.4
Finland	85.3
Sweden	79.3
Iceland	79.1
Gabon	78.0
Venezuela	72.6
Argentina	71.2
Colombia	70.5
Bolivia	70.1
Ireland	69.7
Uruguay	69.7
Central African Republic	67.7
Botswana	66.3
Nicaragua	66.2
Peru	66.1
Austria	65.8
Australia	65.7
Paraguay	65.6
Russian Federation	65.4
Mali	64.6
Papua New Guinea	64.4
Slovenia	63.8
United States	63.1
Ecuador	62.6
Mongolia	61.3
Slovak Republic	60.9
Switzerland	60.3
Estonia	59.1
France	58.8
Portugal	58.8
Latvia	58.3
Ghana	58.2
Zimbabwe	58.1
United Kingdom	58.1
Brazil	58.0
Netherlands	58.0
Lithuania	57.9
New Zealand	57.6
Croatia	57.0
Denmark	57.0

Trinidad and Tobago	56.6
Cameroon	56.5
Bhutan	55.8
Benin	55.0
Honduras	54.5
Zambia	53.7
Belarus	53.6
Chile	53.3
Czech Republic	53.3
Malaysia	52.9
Germany	51.6
Costa Rica	51.2
El Salvador	51.0
Panama	50.8
Guatemala	50.7
Togo	50.6
Hungary	50.4
Mozambique	50.4
Japan	50.3
Armenia	50.3
Malawi	50.2
Kenya	49.9
Moldova	49.4
Kazakhstan	48.8
Sudan	48.0
Libya	47.7
Senegal	47.1
Uzbekistan	46.9
Spain	46.8
Israel	46.1
Nepal	46.0
Cuba	45.8
Egypt	45.6
Niger	45.0
Singapore	44.6
Albania	44.6
Greece	44.2
Tanzania	44.2
Syria	43.9
Pakistan	43.4
South Africa	43.4

Kyrgyz Republic	42.8
Uganda	42.7
Nigeria	41.6
Algeria	40.7
Bangladesh	40.1
Fiji	40.1
Tunisia	39.9
Kuwait	39.8
Saudi Arabia	39.0
Azerbaijan	38.8
Lebanon	38.8
Macedonia	38.7
Mauritius	38.3
Turkey	38.1
Burkina Faso	37.4
Jordan	37.1
Romania	36.8
Italy	36.8
Thailand	36.3
South Korea	35.1
Iran	34.9
Rwanda	34.8
Poland	34.2
Jamaica	33.8
Indonesia	33.5
Vietnam	33.2
Ukraine	32.8
Dominican Republic	32.2
Burundi	31.5
Ethiopia	31.5
Sri Lanka	29.5
Morocco	29.5
Bulgaria	25.7
Belgium	25.5
Mexico	25.0
India	24.0
Madagascar	23.4
Philippines	22.0
China	20.8
Haiti	12.2

Component: Reducing Stresses

This component includes the following indicators:

- Reducing Air Pollution
- Reducing Water Stress
- Reducing Ecosystem Stress
- Reducing Waste and Consumption Pressures
- Reducing Population Pressure

High numbers represent higher sustainability.

Kazakhstan	76.8
Armenia	74.2
Mongolia	73.8
Mozambique	71.2
Russian Federation	69.8
Cuba	68.9
Zimbabwe	68.8
Moldova	68.7
Kyrgyz Republic	67.8
Argentina	67.5
Estonia	66.5
Belarus	66.0
Central African Republic	65.6
Albania	65.4
Azerbaijan	65.2
Uzbekistan	64.8
Peru	64.5
Lithuania	64.4
Hungary	64.1
Bolivia	64.0
Bhutan	62.9
Brazil	62.6
Romania	62.1
Uruguay	62.0
Kenya	60.9
Rwanda	60.4
Colombia	60.4
Panama	60.1
Morocco	59.9
Bulgaria	59.2
Botswana	59.1
Croatia	59.1
Venezuela	58.9
Cameroon	58.9
Chile	58.6
Madagascar	58.4
Turkey	58.1
Finland	58.0
Dominican Republic	57.8
Indonesia	57.8
South Africa	57.7

Niger	57.5
Mexico	57.2
India	57.0
Sri Lanka	57.0
Sudan	56.4
Iran	56.4
New Zealand	56.3
Bangladesh	56.3
Ethiopia	55.5
Greece	55.3
Latvia	55.2
Gabon	55.2
Malawi	54.9
Ecuador	54.2
Mali	54.1
Fiji	54.1
Nicaragua	54.0
Sweden	53.9
Algeria	53.6
Ghana	53.5
Burkina Faso	52.6
Spain	52.6
China	52.6
Norway	52.3
Portugal	52.2
Papua New Guinea	52.2
Tunisia	52.1
Tanzania	51.9
Togo	51.9
Uganda	51.8
Senegal	51.5
Canada	51.2
Thailand	50.8
Australia	50.4
Nepal	50.3
Slovak Republic	49.5
Honduras	49.5
Haiti	49.3
Nigeria	49.3
Zambia	48.5
Egypt	48.3

Pakistan	47.9
Vietnam	45.8
Ukraine	45.7
Poland	45.5
Trinidad and Tobago	44.8
Switzerland	44.8
Jamaica	44.5
Syria	44.3
Burundi	44.3
Ireland	44.2
Slovenia	43.4
El Salvador	43.3
Guatemala	42.8
Benin	42.4
Libya	41.6
Mauritius	41.3
France	40.9
Italy	40.7
Paraguay	40.0
Macedonia	37.8
Austria	37.1
United States	37.0
Philippines	36.8
Germany	35.2
Saudi Arabia	35.0
Costa Rica	34.5
Malaysia	31.9
Jordan	31.8
Czech Republic	31.0
Denmark	30.6
Iceland	27.9
Japan	25.4
Netherlands	23.7
United Kingdom	23.7
Lebanon	21.3
Kuwait	20.0
Israel	17.8
Singapore	16.8
South Korea	14.2
Belgium	10.0

Component: Reducing Human Vulnerability

This component includes the following indicators:

- Basic Human Sustenance
- Environmental Health

High numbers represent higher sustainability.

Japan	83.0
Denmark	82.9
Switzerland	82.9
Germany	82.8
France	82.8
Iceland	82.7
Canada	82.6
Slovenia	82.6
Italy	82.6
Ireland	82.4
Norway	82.4
United Kingdom	82.3
New Zealand	82.3
Spain	82.3
United States	82.3
Singapore	82.1
Israel	81.7
Hungary	81.6
Greece	81.5
Slovak Republic	81.5
Australia	81.3
Belgium	81.2
Portugal	81.0
Mauritius	80.5
Austria	80.5
Czech Republic	80.3
Bulgaria	80.0
Kuwait	79.5
Netherlands	79.4
Poland	79.0
Finland	78.5
South Korea	78.4
Croatia	78.4
Sweden	77.6
Estonia	77.5
Lithuania	77.2
Costa Rica	77.2
Cuba	76.4
Russian Federation	76.0
Belarus	75.4
Moldova	73.4

Latvia	72.4
Lebanon	72.2
Malaysia	70.7
Saudi Arabia	70.4
Trinidad and Tobago	69.1
Kazakhstan	68.4
Ukraine	68.0
Iran	67.9
Argentina	66.3
Macedonia	65.9
Uruguay	65.6
Chile	65.2
Colombia	63.3
Mexico	62.7
Armenia	62.4
Turkey	62.4
Paraguay	61.8
Jordan	61.8
Brazil	61.1
Tunisia	59.5
Azerbaijan	58.7
Syria	56.5
Libya	56.2
South Africa	56.1
Uzbekistan	55.8
Jamaica	53.7
Kyrgyz Republic	53.0
Indonesia	52.7
Egypt	51.1
Romania	50.6
Panama	50.0
Philippines	49.5
Sri Lanka	49.4
China	49.1
Morocco	49.1
Thailand	48.5
Albania	48.3
Algeria	46.2
Venezuela	45.9
Guatemala	45.0
Fiji	44.8

Dominican Republic	43.9
Ecuador	43.1
Honduras	43.0
Botswana	40.5
Nicaragua	37.9
Vietnam	36.0
Zimbabwe	33.8
El Salvador	33.6
India	32.7
Peru	32.3
Pakistan	26.3
Gabon	24.5
Nepal	23.5
Papua New Guinea	18.0
Senegal	16.8
Ghana	16.4
Bhutan	16.2
Mongolia	15.5
Bangladesh	13.8
Sudan	13.5
Bolivia	13.1
Cameroon	13.0
Togo	10.6
Kenya	8.1
Tanzania	7.7
Benin	7.7
Madagascar	7.5
Nigeria	6.9
Uganda	6.4
Mali	6.4
Zambia	5.8
Haiti	5.5
Burkina Faso	4.3
Burundi	4.1
Malawi	4.1
Central African Republic	4.0
Niger	3.1
Mozambique	3.0
Rwanda	2.3
Ethiopia	1.7

Component: Social and Institutional Capacity

This component includes the following indicators:

- Science/Technology
- Capacity for Debate
- Regulation and Management
- Private Sector Responsiveness
- Environmental Information
- Eco-Efficiency
- Reducing Public Choice Distortions

High numbers represent higher sustainability.

Switzerland	92.3
Finland	91.2
Denmark	87.4
Netherlands	87.1
United Kingdom	86.6
Sweden	86.3
Norway	85.3
Iceland	84.1
United States	83.4
New Zealand	83.3
Austria	83.2
Australia	82.8
Japan	82.8
Germany	82.5
Canada	82.5
France	80.7
Israel	72.9
Ireland	72.5
Costa Rica	68.8
Belgium	68.2
Spain	66.9
Italy	66.7
Portugal	66.5
Slovenia	66.2
Singapore	65.2
Chile	60.6
South Korea	60.2
Slovak Republic	60.0
Czech Republic	60.0
Uruguay	59.9
Fiji	57.1
Hungary	56.6
Argentina	56.2
Estonia	54.0
Sri Lanka	53.9
Panama	53.7
Brazil	53.1
Bolivia	51.7
Latvia	50.7
Nepal	49.7
South Africa	49.7

Botswana	49.5
Croatia	49.3
Lithuania	49.1
Mauritius	48.0
Thailand	47.6
Malaysia	47.1
Greece	46.6
Uganda	46.2
Cuba	46.2
Ecuador	45.8
Poland	45.8
Dominican Republic	45.6
Guatemala	45.1
Mexico	44.6
El Salvador	44.5
Paraguay	43.8
India	43.7
Peru	43.7
Honduras	43.1
Russian Federation	42.5
Turkey	42.4
Pakistan	42.1
Egypt	41.7
Tanzania	41.1
Colombia	41.0
Zimbabwe	40.8
China	40.4
Nicaragua	40.4
Jordan	40.4
Malawi	39.9
Ghana	39.8
Albania	39.6
Armenia	39.3
Burkina Faso	38.7
Macedonia	38.4
Jamaica	38.4
Romania	38.4
Bhutan	38.3
Morocco	37.9
Kenya	37.8
Philippines	37.8

Zambia	37.8
Lebanon	37.6
Mali	37.5
Central African Republic	36.2
Moldova	36.0
Rwanda	35.4
Senegal	34.4
Indonesia	34.3
Mongolia	34.3
Madagascar	34.2
Gabon	34.1
Mozambique	34.0
Trinidad and Tobago	34.0
Bulgaria	33.5
Bangladesh	33.2
Papua New Guinea	33.1
Venezuela	32.8
Burundi	32.7
Togo	32.1
Tunisia	31.6
Cameroon	31.4
Benin	30.6
Ethiopia	29.6
Kuwait	29.4
Belarus	28.6
Haiti	28.5
Ukraine	28.2
Nigeria	28.2
Azerbaijan	27.8
Iran	27.2
Kyrgyz Republic	26.8
Algeria	25.5
Sudan	25.4
Niger	25.2
Syria	24.9
Vietnam	23.9
Kazakhstan	21.5
Uzbekistan	20.5
Saudi Arabia	18.1
Libya	18.1

Component: Global Stewardship

This component includes the following indicators:

- International Commitment
- Global Scale Funding/Participation
- Protecting International Commons

High numbers represent higher sustainability.

Czech Republic	80.6
Sweden	80.5
Slovak Republic	80.0
Netherlands	75.6
Switzerland	75.3
New Zealand	74.9
Bulgaria	74.3
Norway	73.9
Mauritius	73.8
Costa Rica	72.7
Canada	72.1
Finland	69.9
Uruguay	69.8
Lithuania	69.8
Australia	69.5
Denmark	68.4
Austria	67.6
Belgium	67.4
Bolivia	67.3
Hungary	67.3
Malaysia	66.3
Papua New Guinea	66.1
Panama	66.0
Germany	66.0
Azerbaijan	64.7
Uganda	64.2
Sri Lanka	63.9
France	63.7
United Kingdom	61.8
Cameroon	61.5
Nicaragua	60.6
Mali	60.1
Senegal	59.9
Ghana	58.3
Japan	58.3
Mozambique	57.9
Central African Republic	57.6
Greece	57.6
Latvia	56.5
United States	56.4
Peru	56.3

Niger	56.1
Spain	55.9
Guatemala	55.9
Tunisia	55.5
Mongolia	55.4
Jamaica	55.4
Poland	55.3
Brazil	55.2
Benin	54.9
Italy	54.8
South Africa	54.6
Burkina Faso	54.2
Kenya	53.0
Egypt	52.9
Portugal	52.9
Pakistan	52.5
Mexico	52.2
Nepal	51.6
Zimbabwe	51.3
Madagascar	50.4
Gabon	50.1
Argentina	50.1
Cuba	50.0
Ireland	49.8
Ecuador	49.5
Iceland	48.3
Dominican Republic	48.1
Malawi	47.4
Bangladesh	47.4
Slovenia	47.3
Trinidad and Tobago	46.6
Indonesia	46.4
Philippines	45.6
Venezuela	45.2
Jordan	44.9
India	44.3
Colombia	44.1
Tanzania	43.7
Thailand	43.3
Chile	43.2
Lebanon	42.6

Vietnam	42.4
Sudan	42.2
Honduras	41.6
Togo	41.5
Zambia	41.4
Algeria	41.3
Botswana	41.0
Uzbekistan	40.9
Turkey	39.2
Morocco	39.0
Singapore	39.0
Paraguay	38.6
Syria	38.1
El Salvador	37.4
Bhutan	36.7
Ethiopia	36.4
Belarus	36.3
Romania	35.9
Croatia	34.4
Israel	34.1
Estonia	33.8
Russian Federation	33.8
Fiji	33.1
China	31.0
South Korea	30.7
Ukraine	30.2
Armenia	28.6
Burundi	27.9
Macedonia	27.5
Haiti	25.8
Iran	24.9
Rwanda	23.5
Nigeria	22.7
Moldova	20.1
Albania	19.3
Kuwait	18.4
Saudi Arabia	15.8
Kyrgyz Republic	15.7
Libya	13.7
Kazakhstan	11.4

Indicator: Air Quality

This indicator includes the following variables:

- Urban Sulfur Dioxide (SO2) Concentration
- Urban Nitrogen Dioxide (NO2) Concentration
- Urban Total Suspended Particulates (TSP) Concentration

High numbers represent higher sustainability; zero represents the mean.

New Zealand	1.62
Cuba	1.58
Sweden	1.45
Australia	1.45
Malaysia	1.36
Finland	1.28
Iceland	1.13
Lithuania	1.10
Spain	1.03
Norway	1.02
Slovak Republic	1.00
Switzerland	0.99
Canada	0.98
Germany	0.95
Austria	0.94
Belarus	0.93
Singapore	0.91
Czech Republic	0.88
Portugal	0.78
Argentina	0.76
France	0.70
Denmark	0.69
Netherlands	0.63
United States	0.61
Thailand	0.60
Ireland	0.58
Belgium	0.52
Slovenia	0.52
Israel	0.48
Turkey	0.41
United Kingdom	0.41
Bangladesh	0.40
Kuwait	0.36
Latvia	0.35
Hungary	0.32
Estonia	0.32
South Africa	0.29
Croatia	0.28
Japan	0.28
Macedonia	0.22
Sri Lanka	0.21

Ecuador	0.20
Venezuela	0.19
Romania	0.18
Mongolia	0.17
Kenya	0.17
Moldova	0.16
Vietnam	0.15
Armenia	0.14
Uruguay	0.12
Nicaragua	0.11
Mauritius	0.11
Trinidad and Tobago	0.07
Albania	0.06
Panama	0.05
Morocco	0.02
Bhutan	0.00
Jordan	0.00
Colombia	0.00
Nepal	-0.03
Russian Federation	-0.03
Tunisia	-0.03
India	-0.06
Ghana	-0.06
Fiji	-0.08
Peru	-0.10
Jamaica	-0.13
Lebanon	-0.14
Pakistan	-0.14
Mali	-0.14
Botswana	-0.16
South Korea	-0.19
Saudi Arabia	-0.20
Bolivia	-0.21
Ukraine	-0.27
Philippines	-0.28
Zimbabwe	-0.29
Kyrgyz Republic	-0.29
Dominican Republic	-0.29
Syria	-0.30
Poland	-0.32
Honduras	-0.33

Kazakhstan	-0.34
Algeria	-0.34
Libya	-0.34
Paraguay	-0.38
Uzbekistan	-0.38
Azerbaijan	-0.40
Indonesia	-0.40
Gabon	-0.41
Papua New Guinea	-0.42
Madagascar	-0.44
Togo	-0.45
Costa Rica	-0.47
Rwanda	-0.49
Greece	-0.49
Cameroon	-0.50
Sudan	-0.53
Haiti	-0.53
El Salvador	-0.55
Senegal	-0.56
Zambia	-0.58
Uganda	-0.59
Nigeria	-0.60
Benin	-0.61
Malawi	-0.63
Tanzania	-0.63
Central African Republic	-0.64
Brazil	-0.67
Chile	-0.69
Mozambique	-0.74
Italy	-0.74
Burundi	-0.75
Egypt	-0.79
Ethiopia	-0.80
Burkina Faso	-0.81
Niger	-0.98
Guatemala	-1.08
Iran	-1.65
Bulgaria	-1.87
China	-2.24
Mexico	-2.58

Indicator: Water Quantity

This indicator includes the following variables:

- Internal Renewable Water Per Capita
- Water Inflow from Other Countries Per Capita

High numbers represent higher sustainability; zero represents the mean.

Gabon	2.37
Bolivia	1.75
Colombia	1.74
Papua New Guinea	1.73
Canada	1.70
Peru	1.62
Central African Republic	1.50
Venezuela	1.49
Brazil	1.45
Uruguay	1.38
Norway	1.33
Paraguay	0.99
Nicaragua	0.94
Iceland	0.86
Ecuador	0.81
Costa Rica	0.79
Bhutan	0.73
Argentina	0.72
Croatia	0.72
Honduras	0.69
Russian Federation	0.69
Cameroon	0.68
Finland	0.66
Mongolia	0.62
Zambia	0.58
Chile	0.56
Slovenia	0.52
Mozambique	0.48
Latvia	0.46
Estonia	0.46
New Zealand	0.45
Guatemala	0.44
Bulgaria	0.42
Sweden	0.41
Malaysia	0.41
Ireland	0.39
Austria	0.38
Slovak Republic	0.33
Botswana	0.25
Thailand	0.23
Vietnam	0.22

Lithuania	0.22
Hungary	0.21
Benin	0.21
Kazakhstan	0.21
Romania	0.17
Zimbabwe	0.17
United States	0.16
Albania	0.15
Bangladesh	0.14
Nepal	0.08
Portugal	0.06
Moldova	0.05
Netherlands	0.04
Indonesia	0.04
Mali	0.03
Belarus	0.00
Niger	-0.03
Tanzania	-0.05
Greece	-0.09
Sudan	-0.10
Panama	-0.12
Azerbaijan	-0.13
El Salvador	-0.13
Uzbekistan	-0.15
Togo	-0.15
France	-0.16
Senegal	-0.17
Australia	-0.17
Mexico	-0.18
Ghana	-0.20
Germany	-0.21
Syria	-0.21
Fiji	-0.21
Nigeria	-0.22
Uganda	-0.24
Kenya	-0.28
Madagascar	-0.29
Rwanda	-0.29
Burundi	-0.31
Egypt	-0.34
Czech Republic	-0.35

Belgium	-0.36
Ukraine	-0.37
Armenia	-0.38
Malawi	-0.41
India	-0.42
Pakistan	-0.42
Iran	-0.48
Turkey	-0.50
Poland	-0.53
Dominican Republic	-0.62
Libya	-0.63
China	-0.64
Tunisia	-0.64
Haiti	-0.69
South Africa	-0.70
Jordan	-0.71
South Korea	-0.75
Burkina Faso	-0.76
Spain	-0.77
Italy	-0.79
United Kingdom	-0.80
Ethiopia	-0.85
Switzerland	-0.86
Singapore	-0.87
Kyrgyz Republic	-0.87
Philippines	-0.97
Algeria	-1.00
Jamaica	-1.00
Japan	-1.05
Macedonia	-1.05
Denmark	-1.05
Cuba	-1.09
Sri Lanka	-1.12
Trinidad and Tobago	-1.12
Lebanon	-1.19
Mauritius	-1.21
Morocco	-1.21
Israel	-1.22
Saudi Arabia	-1.23
Kuwait	-1.27

Indicator: Water Quality

This indicator includes the following variables:

- Dissolved Oxygen Concentration
- Phosphorus Concentration
- Suspended Solids
- Electrical Conductivity

High numbers represent higher sustainability; zero represents the mean.

Finland	1.85
Canada	1.54
New Zealand	1.53
United Kingdom	1.42
Japan	1.32
Norway	1.31
Russian Federation	1.30
South Korea	1.27
Sweden	1.19
France	1.13
Portugal	1.09
United States	1.04
Argentina	1.03
Hungary	0.93
Philippines	0.91
Switzerland	0.87
Ireland	0.86
Austria	0.85
Iceland	0.74
Australia	0.73
Netherlands	0.70
Mali	0.66
Brazil	0.64
Slovenia	0.63
Singapore	0.62
Greece	0.61
Cuba	0.60
Spain	0.58
Denmark	0.55
Iran	0.52
Italy	0.47
Uruguay	0.39
Kuwait	0.39
Poland	0.37
Colombia	0.27
Czech Republic	0.27
Ghana	0.23
Costa Rica	0.23
Chile	0.19
Bangladesh	0.18
Latvia	0.15

Estonia	0.11
Panama	0.11
Slovak Republic	0.10
Turkey	0.10
Trinidad and Tobago	0.10
South Africa	0.09
Croatia	0.09
El Salvador	0.08
Fiji	0.06
Bulgaria	0.04
Botswana	0.04
Venezuela	-0.01
Lithuania	-0.02
Jamaica	-0.04
Ecuador	-0.06
Germany	-0.06
Zimbabwe	-0.08
Peru	-0.08
Lebanon	-0.11
Romania	-0.13
Albania	-0.14
Egypt	-0.15
Sri Lanka	-0.16
Saudi Arabia	-0.18
Armenia	-0.19
Bolivia	-0.20
Cameroon	-0.20
Moldova	-0.22
Tanzania	-0.22
Belarus	-0.22
Macedonia	-0.23
Vietnam	-0.23
Mongolia	-0.24
Kenya	-0.26
Dominican Republic	-0.28
Kyrgyz Republic	-0.28
Nepal	-0.28
Syria	-0.29
Pakistan	-0.30
Guatemala	-0.30
Nicaragua	-0.32

Kazakhstan	-0.33
China	-0.33
Libya	-0.33
Papua New Guinea	-0.35
Malaysia	-0.35
Israel	-0.35
Honduras	-0.36
Paraguay	-0.37
Uzbekistan	-0.37
Azerbaijan	-0.39
Gabon	-0.40
Senegal	-0.42
Ukraine	-0.47
Bhutan	-0.49
Madagascar	-0.49
Togo	-0.53
Tunisia	-0.54
Thailand	-0.59
Haiti	-0.61
Nigeria	-0.62
Mozambique	-0.64
Algeria	-0.64
Zambia	-0.67
Mexico	-0.69
Benin	-0.70
Uganda	-0.70
Ethiopia	-0.74
Indonesia	-0.77
Malawi	-0.77
Mauritius	-0.77
Rwanda	-0.78
Central African Republic	-0.81
Burundi	-0.95
Burkina Faso	-1.00
Niger	-1.04
Sudan	-1.06
Jordan	-1.26
India	-1.31
Morocco	-1.36
Belgium	-2.25

Indicator: Biodiversity

This indicator includes the following variables:

- Percentage of Mammals Threatened
- Percentage of Breeding Birds Threatened

High numbers represent higher sustainability; zero represents the mean.

El Salvador	1.65
Nicaragua	1.60
Trinidad and Tobago	1.53
Guatemala	1.25
Togo	1.16
Botswana	1.15
Burkina Faso	1.15
Canada	1.12
Zimbabwe	1.11
Honduras	1.07
Malawi	1.05
Benin	1.03
Albania	1.01
Central African Republic	0.96
Burundi	0.91
Moldova	0.89
Zambia	0.86
Uganda	0.83
Armenia	0.80
Estonia	0.76
Gabon	0.76
Rwanda	0.76
Belarus	0.74
Paraguay	0.71
Latvia	0.69
Ghana	0.67
Denmark	0.66
Finland	0.61
Senegal	0.61
Ireland	0.61
Norway	0.59
United Kingdom	0.58
Niger	0.58
Iceland	0.58
Panama	0.53
Sudan	0.53
Venezuela	0.53
Costa Rica	0.52
Lithuania	0.49
Sweden	0.45
Cameroon	0.44

Switzerland	0.42
Syria	0.40
Nigeria	0.40
Mozambique	0.39
Mali	0.37
Uzbekistan	0.35
Kyrgyz Republic	0.35
Austria	0.34
Slovak Republic	0.32
Bolivia	0.30
Belgium	0.29
Netherlands	0.26
Uruguay	0.26
Czech Republic	0.23
Germany	0.22
Lebanon	0.19
Mongolia	0.17
Macedonia	0.17
Jordan	0.16
Kazakhstan	0.15
Slovenia	0.13
Croatia	0.10
Ecuador	0.07
Italy	0.06
Poland	0.05
Colombia	0.04
Argentina	0.04
Azerbaijan	0.02
Kenya	0.02
Tanzania	0.01
South Africa	-0.01
Peru	-0.03
Libya	-0.03
France	-0.06
Hungary	-0.10
Ethiopia	-0.13
Israel	-0.15
Tunisia	-0.18
Ukraine	-0.22
Greece	-0.23
Singapore	-0.25

Pakistan	-0.26
Turkey	-0.28
Mauritius	-0.29
Mexico	-0.29
Iran	-0.31
United States	-0.36
Nepal	-0.38
Algeria	-0.38
Russian Federation	-0.39
Bhutan	-0.40
Sri Lanka	-0.40
Portugal	-0.45
Bulgaria	-0.49
Romania	-0.53
Saudi Arabia	-0.54
Spain	-0.56
Morocco	-0.57
Malaysia	-0.62
Thailand	-0.64
Jamaica	-0.68
Chile	-0.70
Egypt	-0.75
Brazil	-0.78
Papua New Guinea	-0.79
Kuwait	-0.97
Australia	-0.99
China	-1.03
Dominican Republic	-1.07
Vietnam	-1.08
Indonesia	-1.14
India	-1.16
Bangladesh	-1.21
Cuba	-1.53
Japan	-1.58
South Korea	-1.91
Madagascar	-2.21
Philippines	-2.58
Fiji	-2.73
Haiti	-3.07
New Zealand	-3.37

Indicator: Terrestrial Systems

This indicator includes the following variables:

- Severity of Human Induced Soil Degradation
- Land Area Affected by Human Activities as a Percentage of Total Land Area

High numbers represent higher sustainability; zero represents the mean.

Fiji	1.70
Papua New Guinea	1.67
Gabon	1.54
Egypt	1.48
Norway	1.47
Canada	1.45
Central African Republic	1.29
Algeria	1.19
Japan	1.07
Chile	1.06
Paraguay	1.06
Libya	1.04
Australia	1.00
Bolivia	0.98
Mali	0.95
Sudan	0.90
Bhutan	0.88
Niger	0.85
Finland	0.84
Botswana	0.82
Venezuela	0.81
Malawi	0.78
Saudi Arabia	0.77
Israel	0.76
Iceland	0.75
New Zealand	0.72
Mongolia	0.71
Benin	0.69
Mauritius	0.67
Peru	0.67
Colombia	0.65
Ecuador	0.59
Sweden	0.59
Mozambique	0.56
Morocco	0.43
Uruguay	0.42
Russian Federation	0.41
Cameroon	0.41
Ghana	0.40
Brazil	0.39
Mexico	0.36

Kenya	0.33
Pakistan	0.29
Zambia	0.27
Trinidad and Tobago	0.26
Argentina	0.25
United States	0.22
Kuwait	0.20
Kyrgyz Republic	0.19
Senegal	0.18
China	0.18
Tanzania	0.16
Uzbekistan	0.16
Jordan	0.15
Kazakhstan	0.15
Ireland	0.15
Indonesia	0.14
Tunisia	0.12
Nepal	0.11
Zimbabwe	0.11
Ethiopia	0.10
Togo	0.04
Denmark	0.04
Iran	-0.02
Nigeria	-0.02
Slovenia	-0.04
Dominican Republic	-0.05
Cuba	-0.09
Switzerland	-0.12
Lebanon	-0.18
Burkina Faso	-0.20
Madagascar	-0.20
Uganda	-0.22
Guatemala	-0.22
Jamaica	-0.23
Nicaragua	-0.25
Croatia	-0.30
Armenia	-0.33
South Korea	-0.33
Syria	-0.37
Slovak Republic	-0.37
Portugal	-0.37

Malaysia	-0.44
Panama	-0.47
Austria	-0.48
Estonia	-0.50
South Africa	-0.50
Honduras	-0.50
France	-0.50
Greece	-0.52
Azerbaijan	-0.52
Macedonia	-0.55
India	-0.58
United Kingdom	-0.60
Latvia	-0.60
Czech Republic	-0.62
Netherlands	-0.62
Spain	-0.67
Italy	-0.68
Germany	-0.70
Bangladesh	-0.77
Lithuania	-0.79
Ukraine	-0.90
El Salvador	-0.91
Costa Rica	-0.92
Haiti	-0.93
Philippines	-0.94
Moldova	-0.96
Belarus	-0.99
Singapore	-1.08
Rwanda	-1.16
Sri Lanka	-1.23
Vietnam	-1.23
Turkey	-1.25
Burundi	-1.31
Hungary	-1.32
Thailand	-1.36
Bulgaria	-1.37
Romania	-1.39
Belgium	-1.48
Poland	-1.60
Albania	-1.75

Indicator: Reducing Air Pollution

This indicator includes the following variables:

- Nitrogen Oxide (NOx) Emissions Per Populated Land Area
- Sulfur Dioxide (SO2) Emissions Per Populated Land Area
- Volatile Organic Compound (VOCs) Emissions Per Populated Land Area
- Coal Consumption Per Populated Land Area
- Vehicles Per Populated Land Area

High numbers represent higher sustainability; zero represents the mean.

Bhutan	1.36
Madagascar	1.29
Papua New Guinea	1.25
Mali	1.20
Mozambique	1.11
Niger	1.11
Peru	1.08
Ethiopia	1.06
Burkina Faso	0.99
Sudan	0.95
Fiji	0.92
Argentina	0.86
Tanzania	0.86
Bolivia	0.82
Mongolia	0.82
Nicaragua	0.80
Gabon	0.80
Morocco	0.79
Iran	0.79
Kazakhstan	0.78
Cameroon	0.77
Zimbabwe	0.75
Honduras	0.64
Panama	0.63
Central African Republic	0.60
Uruguay	0.60
Senegal	0.59
Zambia	0.57
Cuba	0.57
Pakistan	0.57
Ghana	0.55
Kyrgyz Republic	0.55
Chile	0.54
Costa Rica	0.52
Uganda	0.52
Kenya	0.52
Algeria	0.49
Tunisia	0.48
Colombia	0.48
Brazil	0.48
Paraguay	0.46

Dominican Republic	0.42
Malawi	0.39
Benin	0.38
Syria	0.36
Guatemala	0.34
New Zealand	0.34
Haiti	0.33
Nigeria	0.32
Saudi Arabia	0.32
Ecuador	0.27
Mexico	0.24
Sri Lanka	0.23
Indonesia	0.23
Togo	0.22
Russian Federation	0.22
Turkey	0.20
Belarus	0.19
Venezuela	0.19
Estonia	0.18
Sweden	0.18
Nepal	0.17
Uzbekistan	0.17
Latvia	0.15
China	0.09
Jordan	0.08
Thailand	0.08
Norway	0.08
India	0.07
Finland	0.06
El Salvador	0.04
Ireland	0.03
Malaysia	0.02
Albania	-0.06
Azerbaijan	-0.09
Vietnam	-0.09
Spain	-0.09
Philippines	-0.10
Lithuania	-0.13
South Africa	-0.13
Romania	-0.17
Botswana	-0.20

Singapore	-0.24
Portugal	-0.26
Ukraine	-0.28
Jamaica	-0.29
Armenia	-0.31
Egypt	-0.35
Macedonia	-0.36
Bangladesh	-0.41
Rwanda	-0.44
Mauritius	-0.45
Libya	-0.49
Moldova	-0.51
Canada	-0.51
France	-0.51
Hungary	-0.59
Iceland	-0.60
Bulgaria	-0.61
Italy	-0.61
United States	-0.64
Greece	-0.66
Burundi	-0.66
Switzerland	-0.69
Austria	-0.70
Croatia	-0.76
Poland	-0.76
Trinidad and Tobago	-0.81
Lebanon	-0.90
Slovenia	-0.99
Australia	-1.02
Kuwait	-1.06
Slovak Republic	-1.19
Germany	-1.44
United Kingdom	-1.45
Japan	-1.49
Denmark	-1.54
Israel	-1.72
Czech Republic	-2.42
South Korea	-2.48
Belgium	-2.88
Netherlands	-2.92

Indicator: Reducing Water Stresses

This indicator includes the following variables:

- Fertilizer Consumption Per Hectare of Arable Land
- Pesticide Use Per Hectare of Crop Land
- Industrial Organic Pollutants Per Available Fresh Water
- Percentage of Country's Territory Under Severe Water Stress

High numbers represent higher sustainability; zero represents the mean.

Central African Republic	1.06
Rwanda	1.05
Uganda	1.05
Gabon	0.98
Bhutan	0.96
Mozambique	0.93
Cameroon	0.90
Mongolia	0.79
Senegal	0.74
Madagascar	0.74
Russian Federation	0.71
Botswana	0.70
Burundi	0.68
Albania	0.67
Mali	0.66
Latvia	0.66
Togo	0.66
Ethiopia	0.60
Burkina Faso	0.57
Zambia	0.57
Nigeria	0.55
Lithuania	0.53
Haiti	0.52
Niger	0.52
Canada	0.52
Ghana	0.50
Nicaragua	0.48
Tanzania	0.47
Bolivia	0.47
Estonia	0.46
Paraguay	0.44
Panama	0.44
Indonesia	0.42
Uruguay	0.41
Argentina	0.41
Benin	0.41
Sweden	0.41
Zimbabwe	0.40
Venezuela	0.37
Brazil	0.37
Ecuador	0.37

Finland	0.36
Kenya	0.35
Malawi	0.35
Cuba	0.31
Romania	0.31
Norway	0.30
Hungary	0.26
Kazakhstan	0.25
Croatia	0.20
El Salvador	0.20
Bulgaria	0.20
Austria	0.20
Moldova	0.19
Czech Republic	0.17
Guatemala	0.17
Jamaica	0.13
New Zealand	0.13
Australia	0.13
Fiji	0.12
Peru	0.12
Thailand	0.11
Dominican Republic	0.10
Philippines	0.09
United States	0.07
Belarus	0.07
Bangladesh	0.05
Papua New Guinea	0.05
Poland	0.05
Ukraine	0.03
Slovak Republic	0.03
Turkey	-0.04
Colombia	-0.04
Armenia	-0.05
Nepal	-0.08
Mexico	-0.10
Honduras	-0.10
Germany	-0.12
Chile	-0.13
Switzerland	-0.13
Slovenia	-0.15
South Africa	-0.17

India	-0.17
Azerbaijan	-0.18
Malaysia	-0.19
Denmark	-0.19
Portugal	-0.25
Vietnam	-0.26
Libya	-0.26
Kyrgyz Republic	-0.31
Pakistan	-0.32
France	-0.32
Greece	-0.34
United Kingdom	-0.38
Algeria	-0.38
Ireland	-0.40
Iran	-0.43
Saudi Arabia	-0.51
Spain	-0.53
Syria	-0.54
Sri Lanka	-0.54
Morocco	-0.56
Japan	-0.57
Uzbekistan	-0.57
Sudan	-0.57
China	-0.58
Egypt	-0.64
Kuwait	-0.82
Netherlands	-0.84
Tunisia	-0.87
Lebanon	-0.93
Macedonia	-0.94
Costa Rica	-1.00
Trinidad and Tobago	-1.25
Jordan	-1.27
Italy	-1.28
Iceland	-1.30
South Korea	-1.39
Mauritius	-1.39
Singapore	-1.98
Israel	-2.13
Belgium	-2.20

Indicator: Reducing Ecosystem Stresses

This indicator includes the following variables:

- Percentage Change in Forest Cover 1990-1995
- Percentage of Country's Territory with Acidification Exceedence

High numbers represent higher sustainability; zero represents the mean.

Armenia	1.33
Uzbekistan	1.33
Greece	1.16
Kazakhstan	1.12
Hungary	0.83
Portugal	0.68
Lithuania	0.67
New Zealand	0.67
Belarus	0.67
Estonia	0.63
Australia	0.48
India	0.47
Azerbaijan	0.46
Egypt	0.46
Iceland	0.46
Israel	0.46
Kuwait	0.46
Kyrgyz Republic	0.46
Libya	0.46
Mauritius	0.46
Moldova	0.46
Mongolia	0.46
Niger	0.46
Singapore	0.46
Turkey	0.46
Russian Federation	0.46
Uruguay	0.45
Latvia	0.41
Rwanda	0.40
Finland	0.40
South Africa	0.40
Albania	0.39
Ukraine	0.37
Kenya	0.37
Argentina	0.37
Spain	0.36
Morocco	0.35
Peru	0.34
Canada	0.34
Croatia	0.34
Bhutan	0.34

Papua New Guinea	0.33
Chile	0.33
France	0.32
Central African Republic	0.30
Fiji	0.30
Burundi	0.30
Ethiopia	0.29
Brazil	0.29
Colombia	0.28
Botswana	0.27
Gabon	0.27
Tunisia	0.26
Zimbabwe	0.25
Cameroon	0.21
Senegal	0.21
Mozambique	0.20
United States	0.18
Burkina Faso	0.18
Saudi Arabia	0.16
Sudan	0.14
Norway	0.14
Madagascar	0.14
Japan	0.14
Bangladesh	0.13
Nigeria	0.13
Mexico	0.10
Uganda	0.09
Mali	0.09
Tanzania	0.09
Bulgaria	0.08
Sri Lanka	0.03
Nepal	0.03
Venezuela	0.03
Bolivia	0.00
China	0.00
Zambia	0.00
Italy	-0.01
Algeria	-0.02
Cuba	-0.03
Benin	-0.03
Ghana	-0.04

Romania	-0.08
Togo	-0.12
Indonesia	-0.14
Trinidad and Tobago	-0.16
Malawi	-0.17
Dominican Republic	-0.19
Ireland	-0.19
Ecuador	-0.20
Slovak Republic	-0.25
Iran	-0.26
Guatemala	-0.39
Panama	-0.44
Syria	-0.49
Sweden	-0.50
Honduras	-0.53
Switzerland	-0.57
Malaysia	-0.58
Jordan	-0.61
United Kingdom	-0.62
Nicaragua	-0.64
Slovenia	-0.66
Paraguay	-0.69
Thailand	-0.70
Netherlands	-0.76
Pakistan	-0.83
Costa Rica	-0.92
Austria	-0.96
Poland	-0.98
Germany	-0.99
Vietnam	-1.01
El Salvador	-1.06
Denmark	-1.07
Haiti	-1.16
Jamaica	-1.19
Lebanon	-1.19
Philippines	-1.19
South Korea	-1.25
Czech Republic	-1.36
Belgium	-1.52
Macedonia	-1.63

Indicator: Reducing Waste and Consumption Pressures

This indicator includes the following variables:

- Consumption Pressure Per Capita
- Radioactive Waste

High numbers represent higher sustainability; the mean is 0.07.

Azerbaijan	1.31
Moldova	1.31
Pakistan	1.31
Armenia	1.25
Kyrgyz Republic	1.23
Bangladesh	1.12
Sudan	1.08
Bolivia	1.08
Mongolia	1.05
Niger	1.02
Rwanda	0.98
Ethiopia	0.97
Mozambique	0.94
Madagascar	0.92
Haiti	0.92
Syria	0.91
Burundi	0.90
Nicaragua	0.85
Uganda	0.82
Dominican Republic	0.81
Central African Republic	0.81
Trinidad and Tobago	0.81
Burkina Faso	0.80
Zimbabwe	0.80
Algeria	0.79
Colombia	0.79
Nepal	0.78
Malawi	0.71
Uzbekistan	0.71
Morocco	0.69
Mali	0.68
Togo	0.66
Albania	0.64
Sri Lanka	0.64
Vietnam	0.64
Cuba	0.64
El Salvador	0.63
Venezuela	0.62
India	0.62
Iran	0.60
Kazakhstan	0.58

Peru	0.57
Macedonia	0.56
Nigeria	0.53
Jordan	0.50
Egypt	0.49
Honduras	0.49
Mexico	0.49
Romania	0.45
Cameroon	0.43
Panama	0.43
Bulgaria	0.42
Argentina	0.40
Jamaica	0.40
Guatemala	0.37
Croatia	0.37
Tanzania	0.37
Bhutan	0.36
Slovak Republic	0.34
Kenya	0.34
Benin	0.31
South Africa	0.30
Tunisia	0.29
Indonesia	0.28
Hungary	0.27
Ecuador	0.23
Turkey	0.18
Senegal	0.15
Botswana	0.14
Russian Federation	0.13
Brazil	0.13
Poland	0.12
Belarus	0.09
Netherlands	0.07
Chile	0.05
Czech Republic	0.05
Zambia	0.00
China	-0.01
Libya	-0.03
Slovenia	-0.08
Saudi Arabia	-0.12
Thailand	-0.12

Ghana	-0.13
Philippines	-0.18
Australia	-0.20
Gabon	-0.20
Estonia	-0.21
Switzerland	-0.22
Costa Rica	-0.24
Lithuania	-0.25
Mauritius	-0.35
Italy	-0.35
Germany	-0.39
Uruguay	-0.44
Spain	-0.50
Papua New Guinea	-0.50
Paraguay	-0.51
Denmark	-0.51
Greece	-0.54
Sweden	-0.54
Finland	-0.73
Fiji	-0.75
Belgium	-0.79
Ireland	-0.86
Portugal	-0.88
Canada	-0.92
Norway	-1.01
New Zealand	-1.03
Malaysia	-1.14
South Korea	-1.15
Lebanon	-1.21
Austria	-1.22
Israel	-1.34
France	-1.47
Latvia	-1.64
United States	-1.68
Ukraine	-1.70
United Kingdom	-1.99
Iceland	-2.14
Kuwait	-2.39
Japan	-2.42
Singapore	-2.63

Indicator: Reducing Population Pressure

This indicator includes the following variables:

- Total Fertility Rate
- Percentage Change in Projected Population Between 2000 and 2050

High numbers represent higher sustainability; zero represents the mean.

Bulgaria	1.08
Czech Republic	1.08
Spain	1.08
Latvia	1.08
Russian Federation	1.07
Italy	1.07
Estonia	1.07
Slovenia	1.06
Belarus	1.05
Ukraine	1.05
Greece	1.04
Armenia	1.04
Hungary	1.04
Germany	1.03
Romania	1.03
Austria	1.03
Lithuania	1.03
Japan	1.03
Slovak Republic	1.02
Poland	1.01
Croatia	1.00
Portugal	0.99
Moldova	0.98
Cuba	0.97
Switzerland	0.97
Belgium	0.96
Sweden	0.95
Kazakhstan	0.92
Finland	0.92
South Korea	0.92
Netherlands	0.88
United Kingdom	0.86
Macedonia	0.83
China	0.82
France	0.82
Denmark	0.78
Norway	0.78
Trinidad and Tobago	0.76
Thailand	0.73
Canada	0.72
New Zealand	0.70

Ireland	0.69
Australia	0.66
Iceland	0.65
Mauritius	0.62
South Africa	0.58
Uruguay	0.52
Sri Lanka	0.51
Azerbaijan	0.44
United States	0.40
Kyrgyz Republic	0.38
Albania	0.33
Brazil	0.32
Chile	0.30
Uzbekistan	0.27
Zimbabwe	0.26
Lebanon	0.25
Jamaica	0.25
Argentina	0.24
Botswana	0.23
Panama	0.23
Turkey	0.22
Indonesia	0.20
Vietnam	0.19
Mexico	0.18
Israel	0.11
Iran	0.10
Tunisia	0.10
Mongolia	0.06
Morocco	-0.01
Venezuela	-0.08
Fiji	-0.08
Bangladesh	-0.10
India	-0.10
Ecuador	-0.14
Dominican Republic	-0.16
Egypt	-0.17
Kenya	-0.19
Colombia	-0.19
Peru	-0.25
Philippines	-0.31
Costa Rica	-0.36

Mozambique	-0.39
Kuwait	-0.40
Singapore	-0.42
Algeria	-0.43
Ghana	-0.44
Malaysia	-0.46
Honduras	-0.56
Bolivia	-0.57
El Salvador	-0.66
Malawi	-0.66
Rwanda	-0.67
Haiti	-0.70
Libya	-0.74
Central African Republic	-0.77
Sudan	-0.80
Papua New Guinea	-0.85
Nepal	-0.86
Syria	-0.95
Paraguay	-0.96
Pakistan	-1.00
Nicaragua	-1.00
Jordan	-1.06
Togo	-1.19
Cameroon	-1.19
Gabon	-1.20
Zambia	-1.33
Bhutan	-1.37
Guatemala	-1.40
Senegal	-1.51
Tanzania	-1.54
Nigeria	-1.61
Saudi Arabia	-1.77
Burundi	-1.93
Madagascar	-2.02
Benin	-2.03
Mali	-2.11
Niger	-2.17
Burkina Faso	-2.21
Ethiopia	-2.23
Uganda	-2.26

Indicator: Basic Human Sustenance

This indicator includes the following variables:

- Daily Per Capita Calorie Supply as a Percentage of Total Requirements
- Percentage of Population with Access to Improved Drinking-Water Supply

High numbers represent higher sustainability; zero represents the mean.

Belgium	0.97
Iceland	0.97
Japan	0.97
France	0.95
Germany	0.94
Ireland	0.93
Australia	0.92
Austria	0.92
Belarus	0.92
Bulgaria	0.92
Canada	0.92
Denmark	0.92
Lebanon	0.92
Mauritius	0.92
Norway	0.92
Singapore	0.92
Slovak Republic	0.92
Slovenia	0.92
Switzerland	0.92
United Kingdom	0.92
United States	0.92
Italy	0.92
New Zealand	0.92
Spain	0.91
Hungary	0.89
Russian Federation	0.87
Israel	0.87
Costa Rica	0.87
Greece	0.85
Portugal	0.82
Cuba	0.78
Egypt	0.78
Iran	0.78
Saudi Arabia	0.78
Czech Republic	0.77
Kuwait	0.75
Algeria	0.75
Poland	0.69
South Korea	0.69
Moldova	0.68
Netherlands	0.68

Estonia	0.66
Croatia	0.65
Finland	0.64
Lithuania	0.63
Malaysia	0.59
Kazakhstan	0.58
Latvia	0.56
Sweden	0.56
Macedonia	0.52
Mexico	0.51
South Africa	0.51
Turkey	0.42
Ukraine	0.41
Jordan	0.40
Morocco	0.39
Paraguay	0.34
Syria	0.33
Tunisia	0.33
Argentina	0.30
Brazil	0.30
Azerbaijan	0.29
Armenia	0.28
Trinidad and Tobago	0.27
Indonesia	0.21
Uzbekistan	0.20
Libya	0.10
Uruguay	0.09
Colombia	0.09
Kyrgyz Republic	0.02
Chile	0.02
Guatemala	0.00
Albania	-0.09
Philippines	-0.11
China	-0.14
Botswana	-0.16
Jamaica	-0.18
Bhutan	-0.20
India	-0.20
Honduras	-0.26
Pakistan	-0.28
Sri Lanka	-0.35

Panama	-0.35
Thailand	-0.36
Venezuela	-0.40
Dominican Republic	-0.43
Nepal	-0.45
Bangladesh	-0.46
Romania	-0.48
Ecuador	-0.54
Nicaragua	-0.55
Zimbabwe	-0.57
El Salvador	-0.58
Gabon	-0.61
Senegal	-0.62
Fiji	-0.68
Vietnam	-0.70
Benin	-0.82
Papua New Guinea	-1.03
Mali	-1.09
Peru	-1.10
Sudan	-1.15
Bolivia	-1.16
Mongolia	-1.19
Cameroon	-1.21
Ghana	-1.24
Togo	-1.29
Niger	-1.30
Nigeria	-1.44
Tanzania	-1.45
Zambia	-1.48
Burkina Faso	-1.52
Burundi	-1.57
Malawi	-1.65
Uganda	-1.65
Madagascar	-1.66
Central African Republic	-1.80
Mozambique	-1.80
Kenya	-1.84
Haiti	-1.93
Ethiopia	-2.33
Rwanda	-2.33

Indicator: Environmental Health

This indicator includes the following variables:

- Child Death Rate from Respiratory Diseases
- Death Rate from Intestinal Infectious Diseases
- Under-5 Mortality Rate

High numbers represent higher sustainability; zero represents the mean.

Denmark	0.97
Switzerland	0.97
Italy	0.96
Germany	0.96
Netherlands	0.96
Sweden	0.96
Canada	0.95
Slovenia	0.95
Greece	0.95
Spain	0.95
Israel	0.94
Finland	0.94
Japan	0.94
New Zealand	0.94
France	0.94
Czech Republic	0.94
Norway	0.94
Ireland	0.94
Portugal	0.93
United Kingdom	0.93
United States	0.93
Croatia	0.92
Poland	0.92
Iceland	0.92
Singapore	0.91
Hungary	0.91
Kuwait	0.90
South Korea	0.88
Slovak Republic	0.87
Australia	0.86
Lithuania	0.86
Estonia	0.85
Belgium	0.80
Mauritius	0.80
Austria	0.79
Chile	0.77
Bulgaria	0.76
Trinidad and Tobago	0.73
Uruguay	0.71
Cuba	0.66
Latvia	0.63

Costa Rica	0.62
Colombia	0.59
Moldova	0.57
Russian Federation	0.54
Argentina	0.54
Ukraine	0.52
Romania	0.51
Malaysia	0.50
Belarus	0.45
Fiji	0.41
Kazakhstan	0.38
Jamaica	0.36
Panama	0.35
Armenia	0.35
Sri Lanka	0.32
Macedonia	0.30
Saudi Arabia	0.29
Thailand	0.28
Brazil	0.27
Paraguay	0.26
Lebanon	0.25
Libya	0.22
Turkey	0.21
Jordan	0.20
Venezuela	0.20
Ecuador	0.19
Peru	0.17
Iran	0.15
Tunisia	0.15
Azerbaijan	0.15
Mexico	0.14
Kyrgyz Republic	0.13
Dominican Republic	0.12
China	0.09
Uzbekistan	0.09
Philippines	0.09
Albania	0.00
Syria	-0.01
Vietnam	-0.01
Nicaragua	-0.07
Indonesia	-0.08

Honduras	-0.09
South Africa	-0.20
Guatemala	-0.25
Zimbabwe	-0.26
El Salvador	-0.27
Botswana	-0.32
Morocco	-0.44
India	-0.69
Ghana	-0.72
Egypt	-0.72
Gabon	-0.77
Papua New Guinea	-0.80
Mongolia	-0.84
Algeria	-0.94
Kenya	-0.95
Pakistan	-0.98
Nepal	-1.00
Cameroon	-1.04
Sudan	-1.05
Bolivia	-1.09
Togo	-1.21
Madagascar	-1.22
Haiti	-1.26
Senegal	-1.30
Uganda	-1.39
Tanzania	-1.40
Nigeria	-1.52
Rwanda	-1.65
Zambia	-1.66
Central African Republic	-1.70
Bangladesh	-1.71
Bhutan	-1.77
Malawi	-1.84
Burundi	-1.90
Burkina Faso	-1.90
Ethiopia	-1.93
Mali	-1.96
Mozambique	-1.96
Benin	-2.04
Niger	-2.42

Indicator: Science/Technology

This indicator includes the following variables:

- Research & Development Scientists and Engineers Per Million Population
- Expenditure for Research and Development as a Percentage of GNP
- Scientific and Technical Articles Per Million Population

High numbers represent higher sustainability; zero represents the mean.

Sweden	2.61
Israel	2.50
Switzerland	2.30
United States	2.27
Japan	2.17
Finland	2.04
Denmark	1.92
Australia	1.92
Canada	1.80
Germany	1.79
France	1.72
Iceland	1.72
Norway	1.68
Netherlands	1.63
United Kingdom	1.62
South Korea	1.20
Belgium	1.18
New Zealand	1.09
Singapore	0.97
Italy	0.97
Ireland	0.92
Russian Federation	0.91
Slovenia	0.90
Austria	0.85
Belarus	0.85
Azerbaijan	0.76
Uzbekistan	0.64
Lithuania	0.58
Slovak Republic	0.56
Ukraine	0.55
Estonia	0.51
Czech Republic	0.45
Armenia	0.43
Spain	0.42
Cuba	0.42
Croatia	0.41
Romania	0.25
Poland	0.20
Bulgaria	0.19
El Salvador	0.18
Hungary	0.14

Trinidad and Tobago	0.05
Macedonia	0.05
Bolivia	0.03
Mongolia	0.01
Portugal	-0.03
Greece	-0.03
Latvia	-0.05
South Africa	-0.12
Uruguay	-0.17
Moldova	-0.22
Lebanon	-0.25
Fiji	-0.26
Iran	-0.28
Chile	-0.30
Saudi Arabia	-0.32
Pakistan	-0.34
Argentina	-0.36
Kazakhstan	-0.36
Brazil	-0.37
China	-0.38
Benin	-0.39
Kyrgyz Republic	-0.39
Costa Rica	-0.41
Vietnam	-0.42
India	-0.42
Botswana	-0.43
Morocco	-0.45
Dominican Republic	-0.45
Mauritius	-0.45
Venezuela	-0.46
Turkey	-0.49
Libya	-0.50
Nicaragua	-0.52
Togo	-0.52
Uganda	-0.52
Algeria	-0.53
Egypt	-0.53
Peru	-0.55
Mexico	-0.57
Honduras	-0.57
Paraguay	-0.58

Tunisia	-0.59
Ghana	-0.59
Zimbabwe	-0.59
Kuwait	-0.59
Sri Lanka	-0.60
Albania	-0.60
Philippines	-0.60
Jordan	-0.62
Malaysia	-0.63
Burundi	-0.63
Central African Republic	-0.64
Papua New Guinea	-0.64
Panama	-0.64
Gabon	-0.65
Indonesia	-0.66
Guatemala	-0.66
Thailand	-0.67
Syria	-0.68
Burkina Faso	-0.69
Ecuador	-0.70
Madagascar	-0.70
Colombia	-0.71
Cameroon	-0.73
Bangladesh	-0.74
Rwanda	-0.74
Kenya	-0.75
Nigeria	-0.75
Jamaica	-0.76
Senegal	-0.77
Bhutan	-0.89
Sudan	-0.91
Nepal	-0.92
Haiti	-1.06
Zambia	-1.15
Tanzania	-1.17
Malawi	-1.29
Mali	-1.31
Ethiopia	-1.46
Mozambique	-1.46
Niger	-1.46

Indicator: Capacity for Debate

This indicator includes the following variables:

- IUCN Member Organizations Per Million Population
- Civil and Political Liberties

High numbers represent higher sustainability; zero represents the mean.

Iceland	2.41
Panama	2.27
Botswana	2.14
Costa Rica	1.82
Australia	1.66
Fiji	1.63
New Zealand	1.59
Mauritius	1.32
Norway	1.13
Uruguay	1.13
Denmark	1.10
Netherlands	1.08
Jordan	0.97
Switzerland	0.97
Canada	0.90
Estonia	0.90
Finland	0.85
Trinidad and Tobago	0.82
Lebanon	0.80
Jamaica	0.76
Ecuador	0.75
Ireland	0.75
Sweden	0.73
Bolivia	0.72
Austria	0.70
El Salvador	0.69
Israel	0.62
United Kingdom	0.55
Spain	0.52
Belgium	0.51
South Africa	0.47
Slovak Republic	0.42
France	0.42
Lithuania	0.40
Slovenia	0.39
Portugal	0.38
Czech Republic	0.36
Guatemala	0.34
Honduras	0.32
Zimbabwe	0.32
United States	0.31

Hungary	0.30
Greece	0.30
Latvia	0.29
Italy	0.26
Argentina	0.22
Germany	0.18
Poland	0.18
Kuwait	0.16
Japan	0.15
Paraguay	0.13
Benin	0.10
Mali	0.08
Mongolia	0.07
Chile	0.05
Dominican Republic	0.05
South Korea	-0.01
Romania	-0.02
Macedonia	-0.02
Nicaragua	-0.02
Singapore	-0.02
Sri Lanka	-0.03
Papua New Guinea	-0.06
Moldova	-0.07
Bulgaria	-0.08
Zambia	-0.13
Malawi	-0.16
Nepal	-0.19
Croatia	-0.20
Thailand	-0.20
Central African Republic	-0.20
Philippines	-0.21
India	-0.23
Ghana	-0.24
Senegal	-0.28
Madagascar	-0.32
Armenia	-0.32
Mozambique	-0.37
Venezuela	-0.41
Colombia	-0.42
Burkina Faso	-0.43
Bangladesh	-0.43

Mexico	-0.44
Brazil	-0.44
Ukraine	-0.47
Nigeria	-0.49
Haiti	-0.50
Albania	-0.52
Gabon	-0.53
Peru	-0.54
Tanzania	-0.57
Morocco	-0.62
Indonesia	-0.64
Tunisia	-0.64
Azerbaijan	-0.66
Malaysia	-0.70
Uganda	-0.72
Togo	-0.73
Turkey	-0.74
Niger	-0.75
Russian Federation	-0.75
Cuba	-0.76
Kyrgyz Republic	-0.77
Bhutan	-0.81
Belarus	-0.81
Kenya	-0.86
Kazakhstan	-0.90
Ethiopia	-0.91
Algeria	-0.98
Burundi	-0.98
Rwanda	-1.00
Egypt	-1.02
Pakistan	-1.07
Iran	-1.19
Cameroon	-1.28
Uzbekistan	-1.30
Libya	-1.32
China	-1.32
Saudi Arabia	-1.34
Syria	-1.42
Vietnam	-1.44
Sudan	-1.44

Indicator: Regulation and Management

This indicator includes the following variables:

- Stringency and Consistency of Environmental Regulations
- Degree to which Environmental Regulations Promote Innovation
- Percentage of Land Area Under Protected Status
- Number of Sectoral Environmental Impact Assessment Guidelines

High numbers represent higher sustainability; zero represents the mean.

United Kingdom	1.54
Denmark	1.54
Switzerland	1.46
Germany	1.34
United States	1.30
Austria	1.26
Dominican Republic	1.24
Finland	1.21
Canada	1.21
New Zealand	1.10
Slovak Republic	0.89
Sweden	0.84
France	0.82
Pakistan	0.78
Netherlands	0.75
Belgium	0.72
Singapore	0.68
Chile	0.66
Nepal	0.65
Bhutan	0.55
Costa Rica	0.53
Malaysia	0.43
Spain	0.43
Norway	0.42
Australia	0.40
Panama	0.40
Botswana	0.36
South Africa	0.36
Portugal	0.35
Japan	0.35
Sri Lanka	0.35
Tanzania	0.34
Cuba	0.29
Venezuela	0.28
Guatemala	0.25
Malawi	0.21
Iceland	0.19
Czech Republic	0.17
Thailand	0.12
Zimbabwe	0.12
Egypt	0.11

Rwanda	0.10
Italy	0.08
Ireland	0.07
Israel	0.05
Paraguay	0.03
India	0.01
Latvia	-0.04
Bolivia	-0.05
Ecuador	-0.06
Estonia	-0.08
Senegal	-0.12
Burkina Faso	-0.18
Mongolia	-0.19
Niger	-0.20
Lithuania	-0.21
Honduras	-0.21
Indonesia	-0.23
Uganda	-0.24
South Korea	-0.28
Brazil	-0.29
Kenya	-0.30
Colombia	-0.30
Mozambique	-0.31
Peru	-0.31
Zambia	-0.31
Bangladesh	-0.33
Central African Republic	-0.33
Togo	-0.35
Hungary	-0.36
Argentina	-0.36
Armenia	-0.37
Nicaragua	-0.38
Ghana	-0.39
Russian Federation	-0.39
Jordan	-0.40
Macedonia	-0.41
Benin	-0.41
Croatia	-0.43
Poland	-0.44
Kuwait	-0.45
Mexico	-0.45

Greece	-0.45
Nigeria	-0.49
Slovenia	-0.50
Burundi	-0.51
Turkey	-0.51
China	-0.51
Ethiopia	-0.51
Azerbaijan	-0.51
Iran	-0.54
Romania	-0.57
Cameroon	-0.58
Belarus	-0.60
Mali	-0.63
Sudan	-0.64
Mauritius	-0.64
Kyrgyz Republic	-0.64
Trinidad and Tobago	-0.68
Gabon	-0.69
Albania	-0.70
Kazakhstan	-0.70
Bulgaria	-0.71
Algeria	-0.72
Philippines	-0.72
Saudi Arabia	-0.73
Uzbekistan	-0.75
Madagascar	-0.75
Moldova	-0.80
Vietnam	-0.81
Fiji	-0.81
Morocco	-0.84
Haiti	-0.86
Lebanon	-0.86
Tunisia	-0.86
Uruguay	-0.87
Jamaica	-0.87
Libya	-0.88
Papua New Guinea	-0.88
Syria	-0.88
Ukraine	-0.93
El Salvador	-1.32

Indicator: Private Sector Responsiveness

This indicator includes the following variables:

- Number of ISO 14001 Certified Companies Per Million Dollars GDP
- Dow Jones Sustainbility Group Index
- Average Innovest EcoValue'21 Rating of Firms
- World Business Council for Sustainable Development Members
- Levels of Environmental Competitiveness

High numbers represent higher sustainability; mean is -0.13.

Switzerland	2.12
Japan	1.83
Germany	1.09
United Kingdom	1.02
New Zealand	0.93
Finland	0.89
Czech Republic	0.86
United States	0.84
Hungary	0.83
Costa Rica	0.82
Australia	0.78
Denmark	0.72
Canada	0.71
Brazil	0.68
Slovenia	0.68
Sweden	0.67
South Korea	0.62
Russian Federation	0.61
Singapore	0.58
Thailand	0.46
Austria	0.42
China	0.40
Croatia	0.38
Paraguay	0.38
Netherlands	0.37
Slovak Republic	0.25
Algeria	0.22
Mexico	0.20
Lebanon	0.15
France	0.14
Israel	0.05
Zambia	0.05
Uruguay	0.04
Norway	0.03
Jordan	0.03
Belgium	0.02
Ireland	0.00
Estonia	-0.02
Egypt	-0.03
Fiji	-0.03
Iceland	-0.03

South Africa	-0.07
Malaysia	-0.10
Spain	-0.12
Portugal	-0.18
Chile	-0.20
Honduras	-0.24
Argentina	-0.26
Turkey	-0.28
Trinidad and Tobago	-0.33
Italy	-0.35
Mauritius	-0.37
Latvia	-0.39
Morocco	-0.39
Zimbabwe	-0.39
Syria	-0.40
Iran	-0.41
Ecuador	-0.42
Lithuania	-0.42
Sri Lanka	-0.42
Cuba	-0.43
Kuwait	-0.43
Libya	-0.43
Rwanda	-0.43
Guatemala	-0.43
Saudi Arabia	-0.43
Dominican Republic	-0.43
Peru	-0.44
India	-0.44
Tunisia	-0.45
Nigeria	-0.46
Poland	-0.46
Pakistan	-0.46
Romania	-0.47
Albania	-0.48
Armenia	-0.48
Azerbaijan	-0.48
Bangladesh	-0.48
Belarus	-0.48
Benin	-0.48
Bhutan	-0.48
Botswana	-0.48

Burkina Faso	-0.48
Burundi	-0.48
Cameroon	-0.48
Central African Republic	-0.48
Ethiopia	-0.48
Gabon	-0.48
Ghana	-0.48
Haiti	-0.48
Jamaica	-0.48
Kazakhstan	-0.48
Kenya	-0.48
Kyrgyz Republic	-0.48
Macedonia	-0.48
Madagascar	-0.48
Malawi	-0.48
Mali	-0.48
Moldova	-0.48
Mongolia	-0.48
Mozambique	-0.48
Nepal	-0.48
Nicaragua	-0.48
Niger	-0.48
Panama	-0.48
Papua New Guinea	-0.48
Senegal	-0.48
Sudan	-0.48
Tanzania	-0.48
Togo	-0.48
Uganda	-0.48
Uzbekistan	-0.48
Philippines	-0.49
Colombia	-0.50
Greece	-0.50
Vietnam	-0.70
Indonesia	-0.73
Bulgaria	-0.73
Bolivia	-0.77
Venezuela	-0.79
El Salvador	-0.87
Ukraine	-0.89

Indicator: Environmental Information

This indicator includes the following variables:

- Availability of Sustainable Development Information at the National Level
- Environmental Strategies and Action Plans
- Number of ESI Variables Missing from Selected Data Sets

High numbers represent higher sustainability; zero represents the mean.

Netherlands	2.25
Norway	1.88
United States	1.57
Finland	1.54
United Kingdom	1.31
Austria	1.30
France	1.12
China	1.12
Slovak Republic	1.04
Indonesia	1.01
Portugal	0.97
Switzerland	0.89
Malaysia	0.84
Hungary	0.83
India	0.83
Ecuador	0.81
Japan	0.79
Germany	0.79
Poland	0.79
Australia	0.79
Egypt	0.77
Ireland	0.73
Czech Republic	0.70
Argentina	0.69
Canada	0.68
Chile	0.66
Mexico	0.64
Denmark	0.63
Colombia	0.62
Spain	0.61
Italy	0.58
Thailand	0.56
Israel	0.56
Lithuania	0.56
Sweden	0.51
Nepal	0.46
Singapore	0.39
Sri Lanka	0.38
Ukraine	0.36
Pakistan	0.30
Iceland	0.30

Nicaragua	0.29
Estonia	0.27
Slovenia	0.26
Cuba	0.24
Russian Federation	0.23
Latvia	0.23
South Korea	0.23
Moldova	0.21
South Africa	0.20
Mongolia	0.20
El Salvador	0.19
Albania	0.16
Costa Rica	0.12
Jamaica	0.12
Uganda	0.08
Turkey	-0.01
Uruguay	-0.02
Tanzania	-0.04
Philippines	-0.05
Belgium	-0.07
Brazil	-0.08
Bulgaria	-0.12
New Zealand	-0.18
Macedonia	-0.18
Benin	-0.18
Vietnam	-0.18
Bolivia	-0.19
Fiji	-0.21
Guatemala	-0.22
Romania	-0.23
Iran	-0.23
Kenya	-0.26
Ghana	-0.27
Croatia	-0.29
Zimbabwe	-0.30
Tunisia	-0.30
Peru	-0.34
Venezuela	-0.35
Greece	-0.35
Senegal	-0.46
Jordan	-0.51

Trinidad and Tobago	-0.52
Nigeria	-0.56
Honduras	-0.58
Gabon	-0.59
Belarus	-0.60
Botswana	-0.62
Mozambique	-0.62
Morocco	-0.63
Mauritius	-0.64
Togo	-0.65
Malawi	-0.67
Ethiopia	-0.67
Kuwait	-0.68
Kazakhstan	-0.70
Cameroon	-0.71
Zambia	-0.72
Algeria	-0.75
Dominican Republic	-0.75
Niger	-0.76
Papua New Guinea	-0.76
Bangladesh	-0.77
Mali	-0.78
Azerbaijan	-0.80
Panama	-0.81
Burkina Faso	-0.82
Sudan	-0.85
Central African Republic	-0.86
Uzbekistan	-0.87
Kyrgyz Republic	-0.89
Rwanda	-0.90
Bhutan	-0.91
Libya	-0.91
Madagascar	-0.91
Burundi	-0.92
Syria	-0.95
Lebanon	-0.95
Armenia	-0.96
Saudi Arabia	-0.98
Paraguay	-1.15
Haiti	-1.44

Indicator: Eco-Efficiency

This indicator includes the following variables:

- Energy Efficiency (Total Energy Consumption Per Unit GDP)
- Renewable Energy Production as a Percentage of Total Energy Consumption

High numbers represent higher sustainability; zero represents the mean.

Uganda	0.95
Ethiopia	0.93
Cameroon	0.88
Switzerland	0.86
Norway	0.85
Malawi	0.84
Uruguay	0.83
Bhutan	0.83
Paraguay	0.83
Nepal	0.82
Austria	0.82
Sweden	0.80
Mali	0.80
Iceland	0.80
Ghana	0.80
Madagascar	0.77
Tanzania	0.77
Honduras	0.74
Burundi	0.72
Sudan	0.71
Mozambique	0.71
Peru	0.70
Brazil	0.70
Costa Rica	0.69
Finland	0.69
Rwanda	0.67
New Zealand	0.66
Fiji	0.64
Haiti	0.63
Guatemala	0.61
Sri Lanka	0.60
El Salvador	0.60
Kenya	0.60
Burkina Faso	0.60
Portugal	0.56
Canada	0.55
Papua New Guinea	0.55
Gabon	0.54
Argentina	0.52
Italy	0.51
Slovenia	0.51

Turkey	0.50
Zambia	0.50
Spain	0.49
France	0.49
Denmark	0.48
Panama	0.48
Japan	0.48
Chile	0.47
Philippines	0.40
Armenia	0.40
Colombia	0.36
Bolivia	0.35
Dominican Republic	0.34
Morocco	0.32
Australia	0.31
Albania	0.31
Latvia	0.29
Ireland	0.28
Mauritius	0.27
United States	0.26
Syria	0.25
Germany	0.24
Mexico	0.22
Ecuador	0.22
Central African Republic	0.20
Greece	0.19
Zimbabwe	0.13
Croatia	0.10
United Kingdom	0.10
Nigeria	0.07
Nicaragua	0.07
Bangladesh	0.06
Pakistan	0.05
Thailand	0.04
Netherlands	0.02
India	-0.03
Indonesia	-0.05
Togo	-0.09
Egypt	-0.09
Belgium	-0.15
Malaysia	-0.17

Venezuela	-0.18
South Korea	-0.27
Iran	-0.29
China	-0.31
Jamaica	-0.37
Cuba	-0.41
Lebanon	-0.45
Kyrgyz Republic	-0.54
Tunisia	-0.56
Israel	-0.61
Vietnam	-0.65
Romania	-0.69
Moldova	-0.70
Niger	-0.77
Poland	-0.77
Senegal	-0.81
Botswana	-0.84
Algeria	-0.88
South Africa	-0.88
Hungary	-0.93
Lithuania	-0.94
Estonia	-0.95
Macedonia	-0.96
Slovak Republic	-0.97
Bulgaria	-0.98
Jordan	-0.99
Czech Republic	-1.04
Singapore	-1.12
Russian Federation	-1.19
Libya	-1.20
Kuwait	-1.38
Kazakhstan	-1.39
Benin	-1.42
Saudi Arabia	-1.48
Belarus	-1.51
Uzbekistan	-1.64
Azerbaijan	-1.67
Mongolia	-1.71
Ukraine	-1.77
Trinidad and Tobago	-2.16

Indicator: Reducing Public Choice Failures

This indicator includes the following variables:

- Price of Premium Gasoline
- Subsidies for Energy or Materials Usage
- Reducing Corruption

High numbers represent higher sustainability; the mean is -0.07.

Finland	2.25
Netherlands	1.80
Denmark	1.62
Iceland	1.61
United Kingdom	1.60
New Zealand	1.57
Sweden	1.48
Ireland	1.44
Austria	1.38
Switzerland	1.38
France	1.36
Norway	1.35
Singapore	1.25
Germany	1.11
Belgium	1.10
Israel	1.09
Italy	0.98
Portugal	0.95
Japan	0.86
Uruguay	0.82
Australia	0.76
Spain	0.72
Slovenia	0.70
Canada	0.68
Argentina	0.63
Chile	0.54
Morocco	0.45
Sri Lanka	0.41
Peru	0.36
Hungary	0.36
Brazil	0.35
South Korea	0.31
Fiji	0.28
Czech Republic	0.27
Uganda	0.26
Greece	0.25
United States	0.24
Bolivia	0.20
Turkey	0.17
Mauritius	0.15
Senegal	0.11

Mali	0.09
Estonia	0.07
Tunisia	0.04
Cuba	-0.01
Burkina Faso	-0.02
Albania	-0.02
South Africa	-0.02
Macedonia	-0.06
Trinidad and Tobago	-0.08
Croatia	-0.09
Lithuania	-0.12
Costa Rica	-0.13
Kenya	-0.14
Central African Republic	-0.17
Malaysia	-0.18
Jordan	-0.19
Latvia	-0.20
Botswana	-0.22
Poland	-0.23
Malawi	-0.24
Niger	-0.27
Haiti	-0.28
Rwanda	-0.32
Burundi	-0.34
Romania	-0.35
Mozambique	-0.35
Bangladesh	-0.37
Bhutan	-0.37
Nepal	-0.39
Slovak Republic	-0.40
Tanzania	-0.41
Zambia	-0.43
Kuwait	-0.43
Togo	-0.43
El Salvador	-0.45
Moldova	-0.46
Jamaica	-0.46
Gabon	-0.46
Madagascar	-0.46
Cameroon	-0.49
Philippines	-0.51

Mexico	-0.55
Bulgaria	-0.55
Panama	-0.57
Armenia	-0.61
Kyrgyz Republic	-0.62
Colombia	-0.64
Pakistan	-0.65
Lebanon	-0.65
Ethiopia	-0.65
Ghana	-0.65
Honduras	-0.66
Nicaragua	-0.66
Syria	-0.67
Egypt	-0.68
China	-0.70
Thailand	-0.72
Russian Federation	-0.73
Paraguay	-0.73
Mongolia	-0.73
Dominican Republic	-0.76
Vietnam	-0.77
Guatemala	-0.77
Azerbaijan	-0.77
Benin	-0.78
Papua New Guinea	-0.78
Belarus	-0.81
India	-0.82
Ukraine	-0.89
Zimbabwe	-0.92
Algeria	-0.98
Kazakhstan	-1.00
Sudan	-1.02
Saudi Arabia	-1.10
Libya	-1.15
Venezuela	-1.21
Iran	-1.30
Ecuador	-1.35
Nigeria	-1.36
Uzbekistan	-1.36
Indonesia	-1.54

Indicator: International Commitment

This indicator includes the following variables:

- Number of Memberships in Environmental Intergovernmental Organizations
- Percentage of Convention on International Trade in Endangered Species (CITES) Reporting Requirements Met
- Levels of Participation in the Vienna Convention and the Montreal Protocol on Ozone Depleting Substances
- Compliance with Environmental Agreements

High numbers represent higher sustainability; the mean -0.06.

Netherlands	1.58
Germany	1.53
Sweden	1.50
Norway	1.29
Denmark	1.28
Austria	1.20
France	1.19
United Kingdom	1.12
Finland	1.11
Switzerland	1.09
Spain	1.01
Japan	0.91
Belgium	0.91
Canada	0.91
Australia	0.88
Italy	0.81
Tunisia	0.80
United States	0.78
New Zealand	0.68
Greece	0.62
Singapore	0.58
South Korea	0.56
Czech Republic	0.53
Senegal	0.53
Panama	0.52
Hungary	0.47
Portugal	0.44
Sri Lanka	0.42
Cameroon	0.39
India	0.30
Slovak Republic	0.30
Cuba	0.29
Morocco	0.29
Trinidad and Tobago	0.28
Colombia	0.27
Poland	0.27
Kenya	0.27
Nicaragua	0.26
Pakistan	0.24
Malaysia	0.24
Uruguay	0.19

Uganda	0.17
Mexico	0.16
Togo	0.16
Tanzania	0.15
Brazil	0.15
Costa Rica	0.14
Latvia	0.13
Malawi	0.13
China	0.12
Chile	0.12
Egypt	0.10
Mali	0.09
Indonesia	0.09
Russian Federation	0.08
Algeria	0.07
Bulgaria	0.04
Ghana	0.02
Niger	0.02
Iran	0.00
Estonia	0.00
Argentina	-0.01
South Africa	-0.02
Mongolia	-0.02
Turkey	-0.02
Mauritius	-0.03
Ecuador	-0.06
Thailand	-0.06
Botswana	-0.06
Iceland	-0.06
Ireland	-0.10
Bolivia	-0.10
Israel	-0.13
Jordan	-0.15
Venezuela	-0.16
Mozambique	-0.18
Peru	-0.18
Zimbabwe	-0.19
Syria	-0.20
Papua New Guinea	-0.21
Burkina Faso	-0.23
Jamaica	-0.24

Philippines	-0.25
Zambia	-0.28
Paraguay	-0.37
Slovenia	-0.40
Vietnam	-0.42
Romania	-0.43
Bangladesh	-0.45
Benin	-0.46
Lebanon	-0.46
Nepal	-0.46
Guatemala	-0.46
Uzbekistan	-0.50
Croatia	-0.51
Dominican Republic	-0.52
Gabon	-0.65
Macedonia	-0.66
Ethiopia	-0.67
Nigeria	-0.67
Sudan	-0.67
Madagascar	-0.69
Kuwait	-0.71
Azerbaijan	-0.72
Belarus	-0.75
Fiji	-0.81
Lithuania	-0.81
Saudi Arabia	-0.81
Ukraine	-1.03
Haiti	-1.07
Central African Republic	-1.17
El Salvador	-1.27
Honduras	-1.32
Libya	-1.47
Burundi	-1.47
Rwanda	-1.57
Albania	-1.68
Kazakhstan	-1.73
Moldova	-1.73
Armenia	-1.78
Bhutan	-1.78
Kyrgyz Republic	-1.78

Indicator: Global-Scale Funding/Participation

This indicator includes the following variables:

- Montreal Protocol Multilateral Fund Participation
- Global Environmental Facility Participation

High numbers represent higher sustainability; zero represents the mean.

Lithuania	2.34
Bulgaria	2.28
Azerbaijan	2.12
Slovak Republic	1.97
Czech Republic	1.85
Mauritius	1.56
Uruguay	1.27
Malaysia	1.11
Costa Rica	1.05
Jamaica	0.84
Hungary	0.79
Sweden	0.75
Canada	0.73
Finland	0.71
New Zealand	0.69
Denmark	0.68
Panama	0.67
Switzerland	0.63
Norway	0.63
Greece	0.63
Australia	0.62
Egypt	0.62
Belgium	0.61
Netherlands	0.56
Austria	0.53
United States	0.49
Ireland	0.49
Poland	0.49
Dominican Republic	0.45
Germany	0.44
Spain	0.44
Argentina	0.44
United Kingdom	0.43
France	0.40
Mexico	0.40
Japan	0.39
Venezuela	0.39
South Africa	0.34
Thailand	0.31
Lebanon	0.29
Peru	0.28

Italy	0.28
Portugal	0.25
Philippines	0.21
El Salvador	0.20
Guatemala	0.16
Bangladesh	0.14
Brazil	0.14
Bhutan	0.13
Sri Lanka	0.12
Slovenia	0.12
Ghana	0.11
Pakistan	0.11
Jordan	0.07
Bolivia	0.06
India	0.06
Latvia	0.04
Uzbekistan	0.04
Mongolia	0.04
Papua New Guinea	0.02
China	0.02
Cuba	0.02
Central African Republic	0.01
Ecuador	0.01
Zimbabwe	-0.01
Belarus	-0.03
Turkey	-0.03
Ukraine	-0.04
Benin	-0.04
Nicaragua	-0.06
Uganda	-0.07
Madagascar	-0.08
Honduras	-0.08
Cameroon	-0.10
Mozambique	-0.10
Armenia	-0.12
Senegal	-0.12
Tunisia	-0.13
Mali	-0.14
Romania	-0.14
Nepal	-0.14
Algeria	-0.15

Trinidad and Tobago	-0.15
Syria	-0.17
Vietnam	-0.17
Russian Federation	-0.17
Chile	-0.18
Niger	-0.20
Burkina Faso	-0.23
Indonesia	-0.25
Kenya	-0.27
Sudan	-0.31
Gabon	-0.52
Colombia	-0.58
Iceland	-0.59
Israel	-0.77
Morocco	-0.87
Paraguay	-0.93
Moldova	-1.00
Singapore	-1.03
Nigeria	-1.06
Kuwait	-1.07
Estonia	-1.07
Malawi	-1.09
Burundi	-1.12
Zambia	-1.13
Botswana	-1.13
Tanzania	-1.15
Iran	-1.15
Albania	-1.17
Croatia	-1.17
Ethiopia	-1.17
Fiji	-1.17
Haiti	-1.17
Kazakhstan	-1.17
South Korea	-1.17
Kyrgyz Republic	-1.17
Libya	-1.17
Macedonia	-1.17
Rwanda	-1.17
Saudi Arabia	-1.17
Togo	-1.17

Indicator: Protecting International Commons

This indicator includes the following variables:

- Forest Stewardship Council (FSC) Accredited Forest Area as a Percentage of Total Forest Area
- Ecological Footprint "Deficit"
- Carbon-Dioxide (CO2) Emissions (Total times Per Capita)
- Historic Cumulative Carbon-Dioxide (CO2) Emissions
- Cluorofluorocarbon (CFC) Consumption (Total times Per Capita)
- Sulfur Dioxide (SO2) Exports

High numbers represent higher sustainability; the mean is 0.02.

Central African Republic	1.74
Papua New Guinea	1.43
Bolivia	1.38
Gabon	1.17
Uganda	0.99
Mozambique	0.87
Benin	0.87
Burundi	0.83
Mali	0.82
Madagascar	0.80
Ethiopia	0.79
Burkina Faso	0.78
Honduras	0.76
Malawi	0.76
Zambia	0.75
Guatemala	0.74
Nepal	0.72
Fiji	0.67
New Zealand	0.65
Niger	0.65
Bhutan	0.62
Costa Rica	0.62
Nicaragua	0.61
Cameroon	0.58
Rwanda	0.57
Sri Lanka	0.53
Iceland	0.53
Tanzania	0.52
Botswana	0.51
Ghana	0.50
Croatia	0.47
Paraguay	0.43
Mongolia	0.40
Sudan	0.39
Mauritius	0.38
Peru	0.37
Togo	0.37
Senegal	0.35
Sweden	0.34
Switzerland	0.33
Latvia	0.31

Zimbabwe	0.30
Haiti	0.28
Slovak Republic	0.26
Albania	0.24
Kenya	0.22
Czech Republic	0.22
Moldova	0.22
Armenia	0.19
Canada	0.11
Bangladesh	0.11
El Salvador	0.11
Brazil	0.10
Uruguay	0.10
Hungary	0.08
Slovenia	0.08
Panama	0.05
Macedonia	0.04
Australia	0.03
South Africa	0.03
Lithuania	0.02
Vietnam	0.02
Ecuador	0.01
Norway	0.00
Netherlands	-0.07
Dominican Republic	-0.07
Kyrgyz Republic	-0.07
Malaysia	-0.09
Indonesia	-0.11
Colombia	-0.15
Pakistan	-0.17
Belgium	-0.17
Estonia	-0.18
Jamaica	-0.19
Uzbekistan	-0.24
Finland	-0.25
Morocco	-0.25
Tunisia	-0.26
Azerbaijan	-0.27
Belarus	-0.27
Philippines	-0.30
Jordan	-0.30

Cuba	-0.30
Israel	-0.33
Poland	-0.36
Austria	-0.36
Bulgaria	-0.37
Singapore	-0.38
Trinidad and Tobago	-0.38
Lebanon	-0.39
Mexico	-0.39
Ireland	-0.41
Argentina	-0.43
Chile	-0.46
Portugal	-0.48
Ukraine	-0.49
Egypt	-0.49
Romania	-0.51
Nigeria	-0.52
Denmark	-0.53
France	-0.54
Syria	-0.55
Algeria	-0.57
Venezuela	-0.59
Libya	-0.64
United Kingdom	-0.65
Greece	-0.67
Japan	-0.68
Italy	-0.73
Kazakhstan	-0.73
Germany	-0.74
Thailand	-0.76
Turkey	-0.76
India	-0.79
United States	-0.79
Iran	-0.88
South Korea	-0.90
Kuwait	-0.93
Spain	-1.00
Saudi Arabia	-1.03
Russian Federation	-1.16
China	-1.63

2001 Environmental Sustainability Index

Annex 5: Country Profiles

An Initiative of the
Global Leaders of Tomorrow Environment Task Force,
World Economic Forum

Annual Meeting 2001
Davos, Switzerland

In collaboration with:

Yale Center for Environmental Law and Policy (YCELP)
Yale University
Center for International Earth Science Information Network (CIESIN)
Columbia University

Annex 5. Country Profiles

The following pages provide information about the 122 countries in the Environmental Sustainability Index.

In the upper right of each page we report a country's Environmental Sustainability Index score, and the average Index score for the countries in the country's peer group as defined by GDP per capita (Purchasing Power Parity). Peer groups were assigned by dividing the countries of the index into five equal groups, sorted by GDP per capita, as follows:

Quintile	GDP per capita	Average ESI score
1	$14,375 - $29,605	65.2
2	$6,190 - $14,375	52.2
3	$3,330 - $6,190	45.7
4	$1,540 - $3,300	45.2
5	$480 - $1,540	39.3

We use income to assign peer groups not because we wish to privilege the view that income determines environmental performance. To the contrary, one of our conclusions is that within similar levels of economic performance countries exhibit significant variation in their levels of environmental sustainability. By comparing a country's Index score with that of others in its peer group, one can get a useful measure of how effective its environmental efforts are.

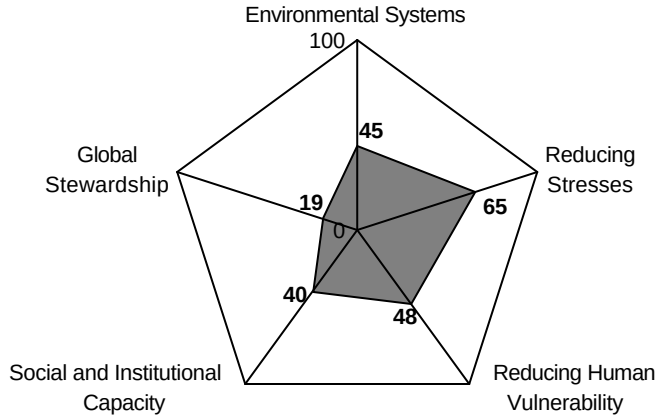
In the upper right of each page we show a graph that provides a snapshot of a country's performance along the five components of environmental sustainability. These graphs have five axes that begin at a single point and radiate out in opposite directions. A country's score for each component is marked on each axis, and then the points are connected to form a closed area. The size of this area is a measure of its overall performance on these five components. The shape of the area reflects the particular distribution of scores across the five components. These provide a useful benchmark for comparing performance in a slightly more precise manner than the single Index score.

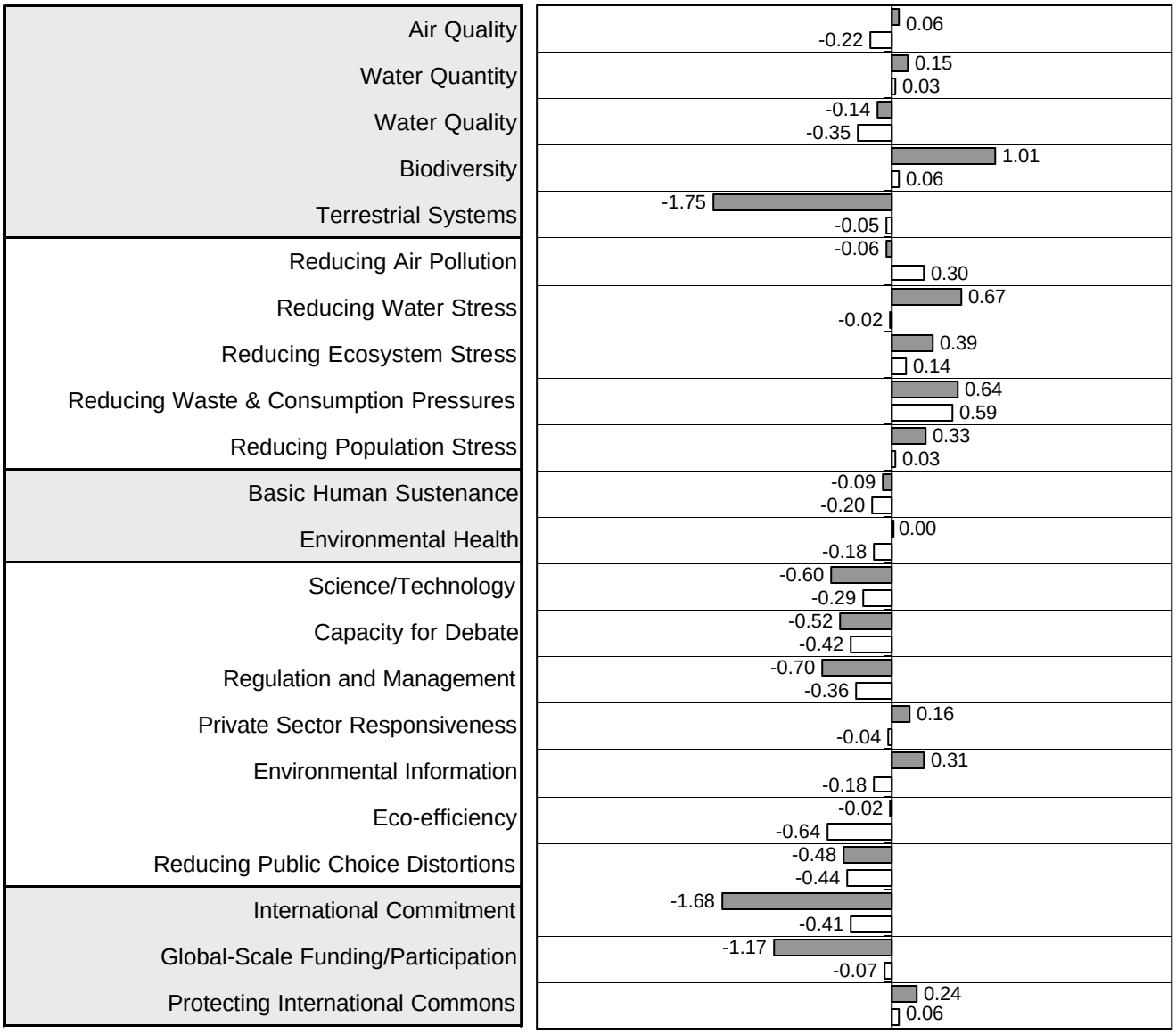
Both the Index score and the Component scores are presented as standard normal percentiles. These have a theoretically possible range of 0-100; the actual range is determined by the shape of the distribution of scores across all the countries (see Annex 1 for the ranges of each component). In all cases higher scores represent higher measures of environmental sustainability.

Finally, we present the scores of the 22 indicators in a set of bar graphs. The shaded bars represent the scores of the country, and the empty bars show the average scores for the peer group. These scores represent the average of the standardized ("z") scores of the variables that comprise the indicators. Higher numbers represent higher levels of performance.

Albania

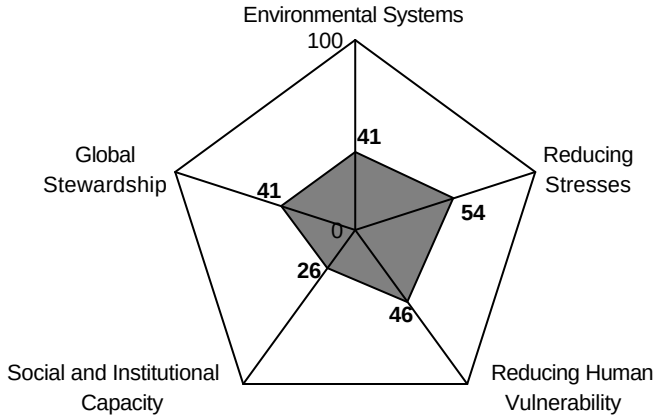
ESI:	44.2
Ranking:	78
GDP/Capita:	$2,804
Peer group ESI:	45.2
Variable coverage:	46 of 67
Missing variables imputed:	14

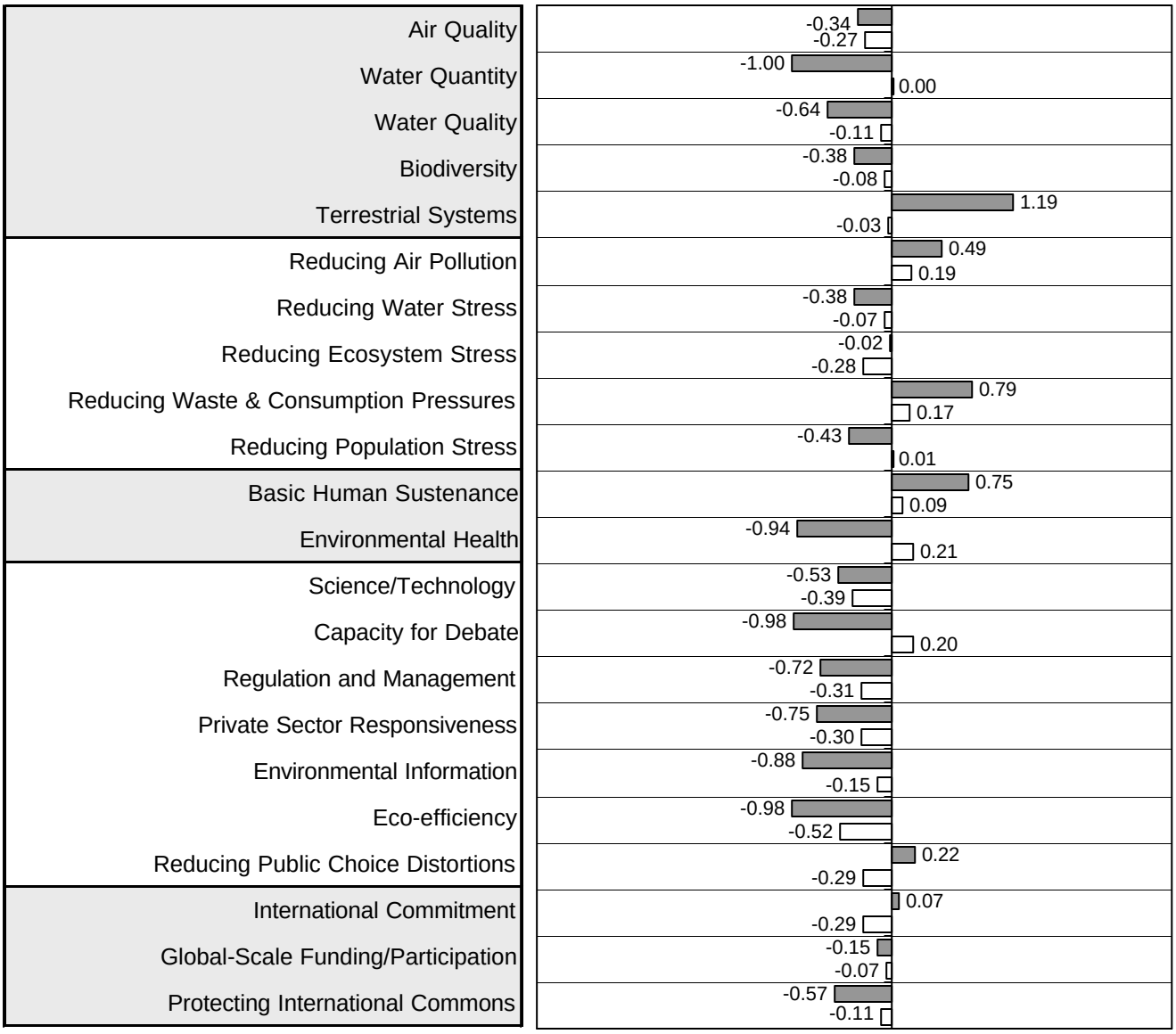




Algeria

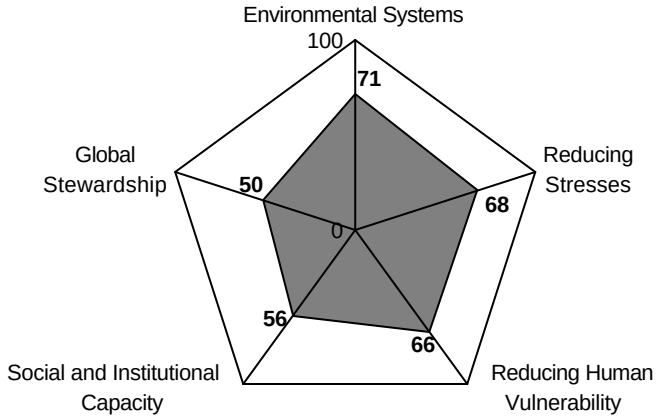
ESI:	38.9
Ranking:	102
GDP/Capita:	$4,792
Peer group ESI:	45.7
Variable coverage:	46 of 67
Missing variables imputed:	12

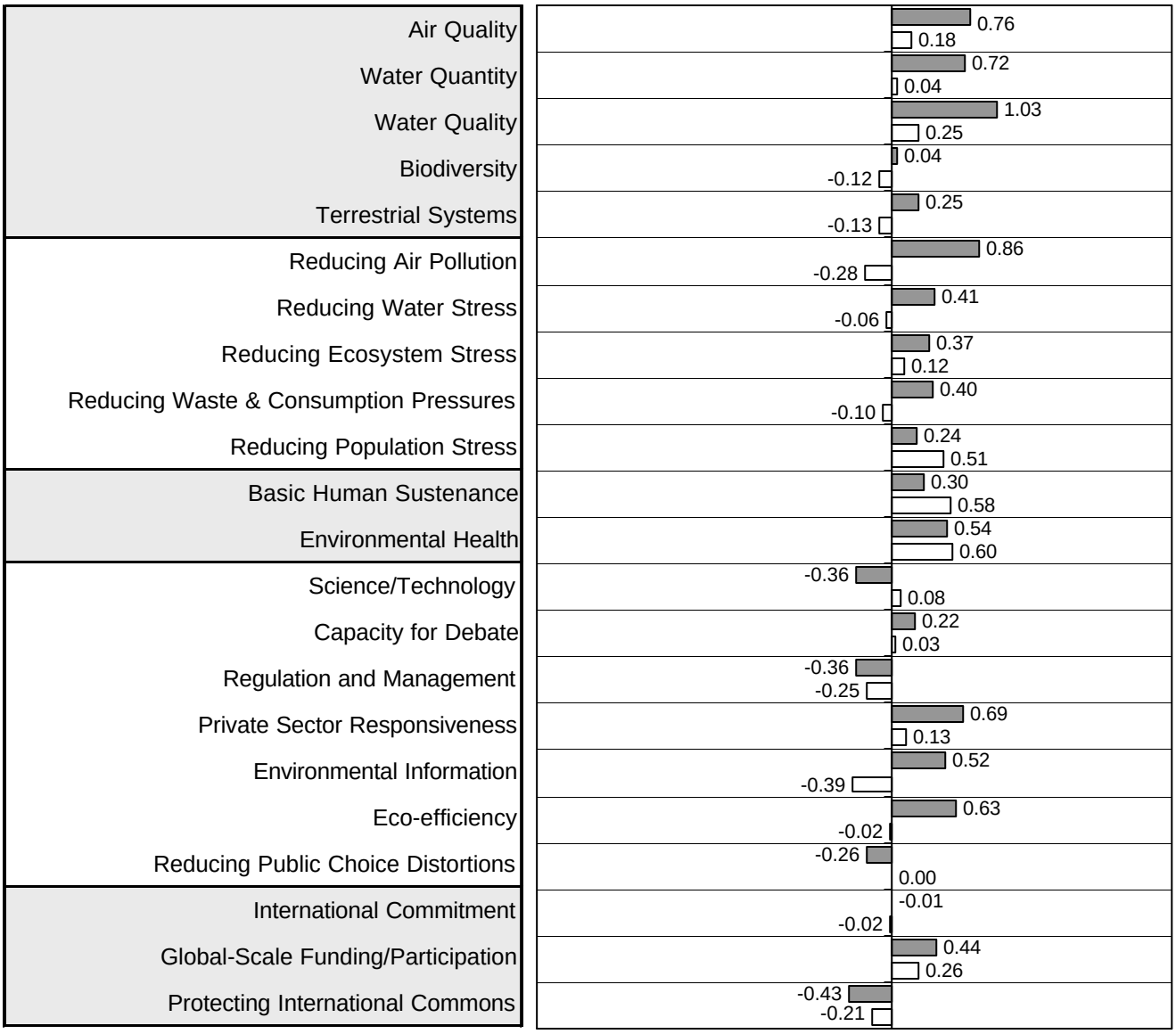




Argentina

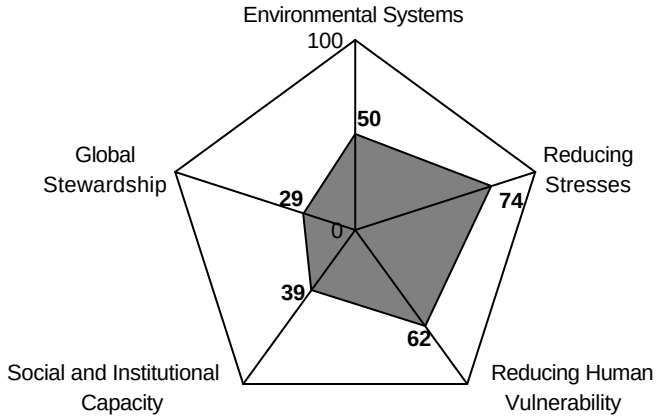
ESI:	62.5
Ranking:	19
GDP/Capita:	$12,013
Peer group ESI:	52.2
Variable coverage:	62 of 67
Missing variables imputed:	2

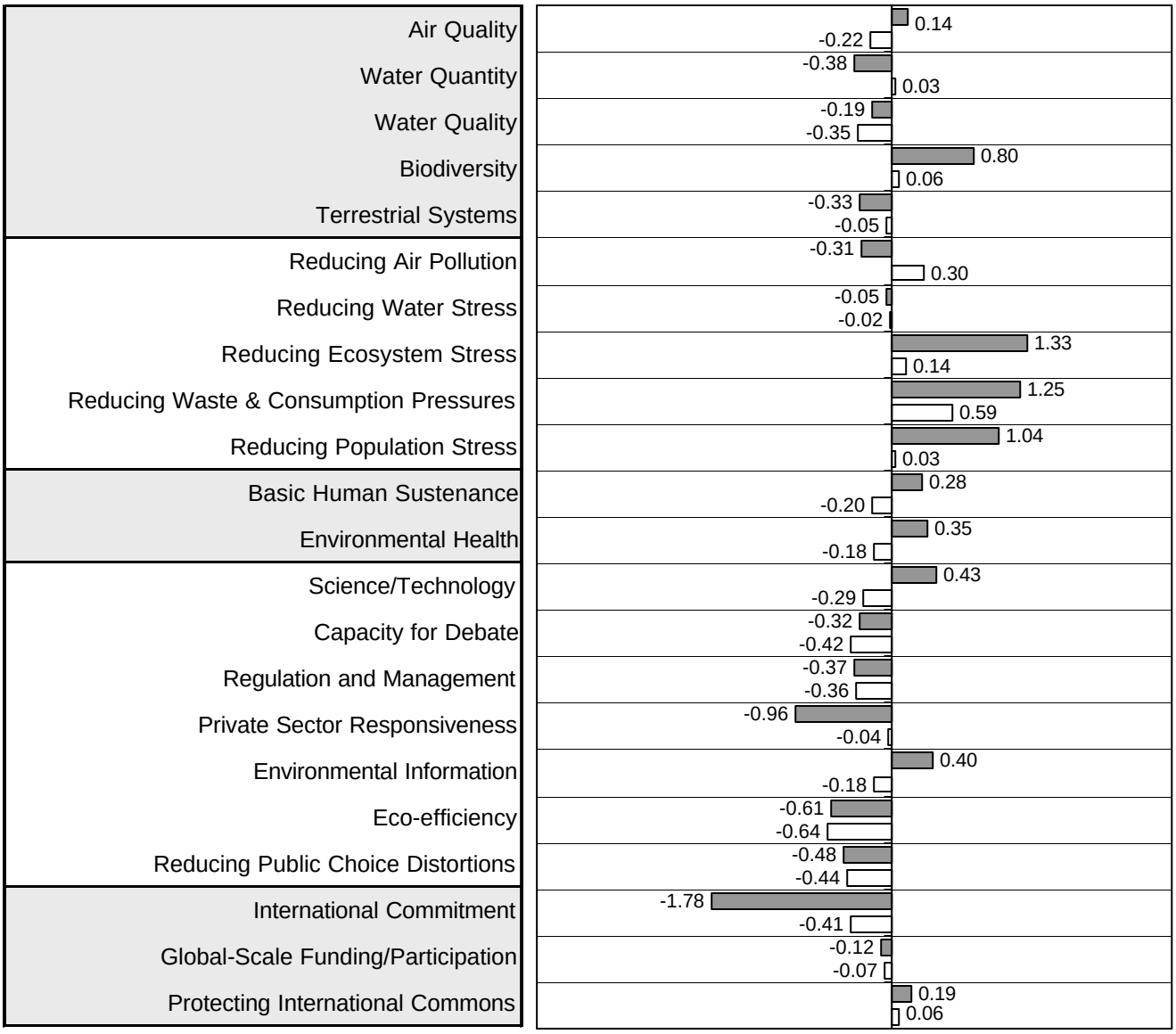




Armenia

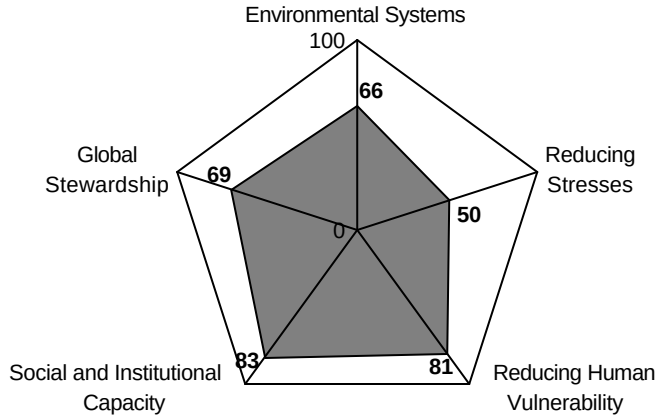
ESI:	50.6
Ranking:	48
GDP/Capita:	$2,072
Peer group ESI:	45.2
Variable coverage:	42 of 67
Missing variables imputed:	18

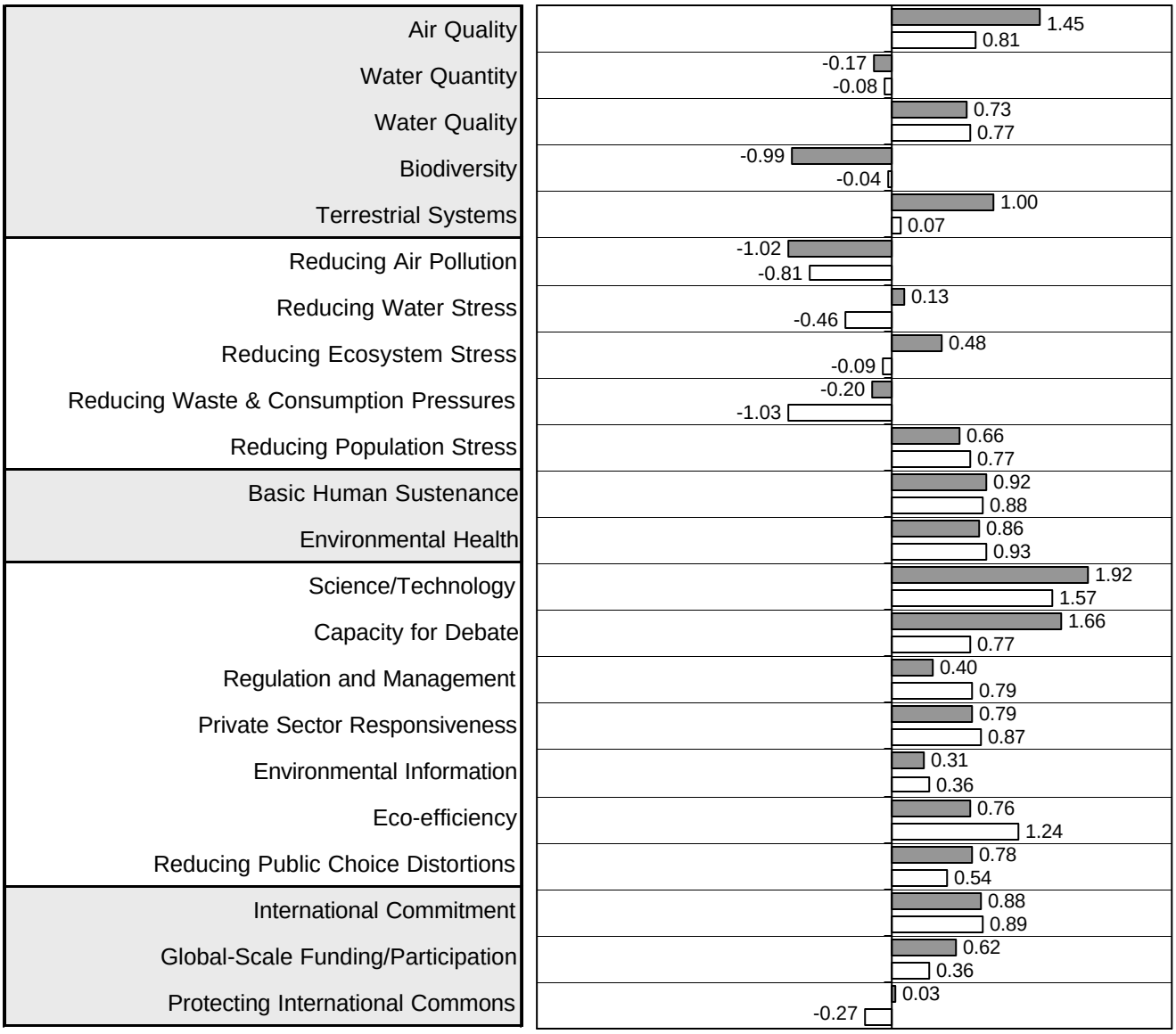




Australia

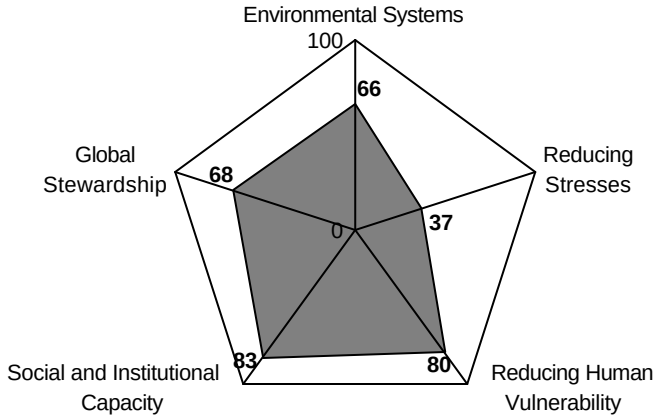
ESI:	70.7
Ranking:	7
GDP/Capita:	$22,452
Peer group ESI:	65.2
Variable coverage:	60 of 67
Missing variables imputed:	6

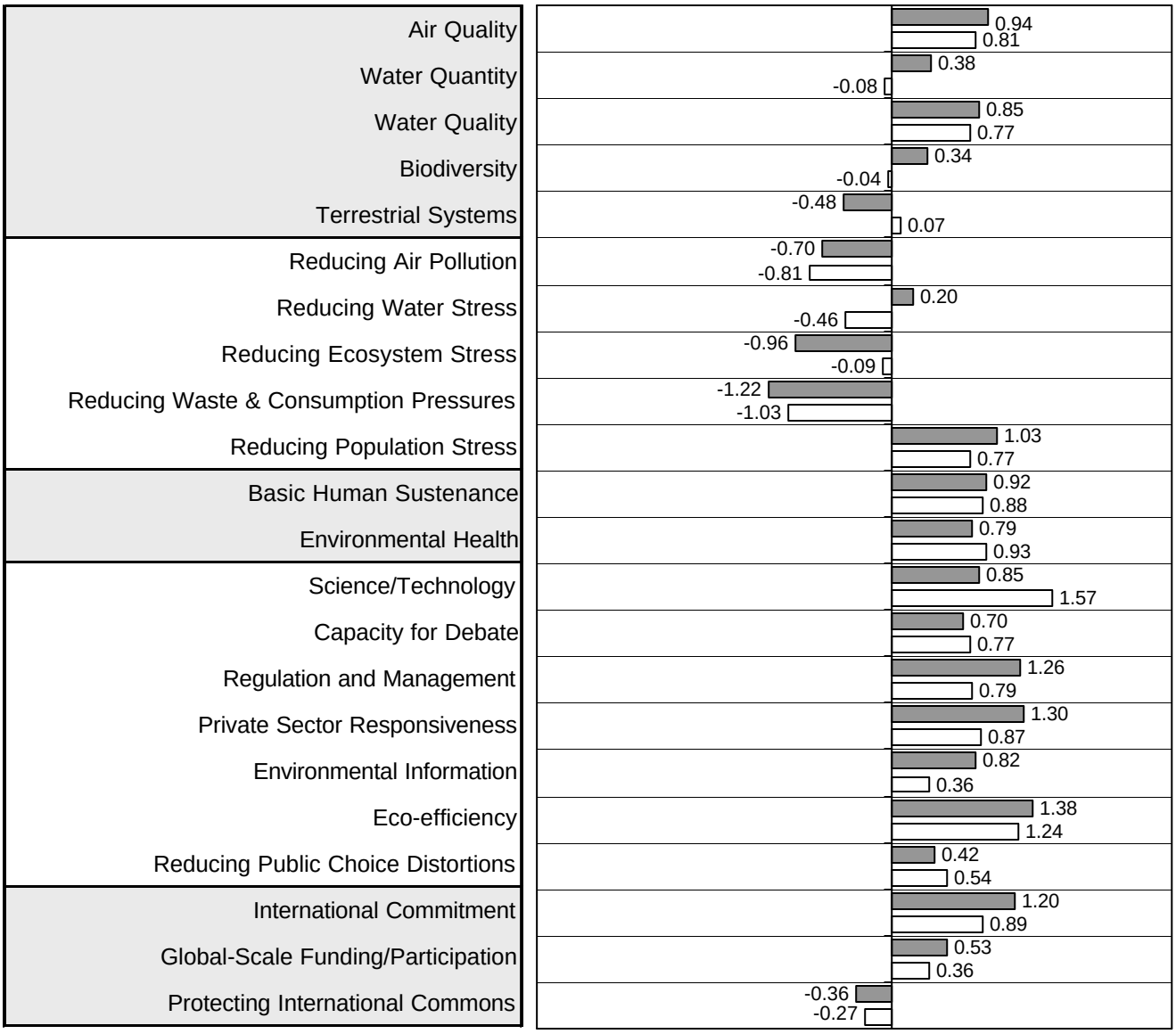




Austria

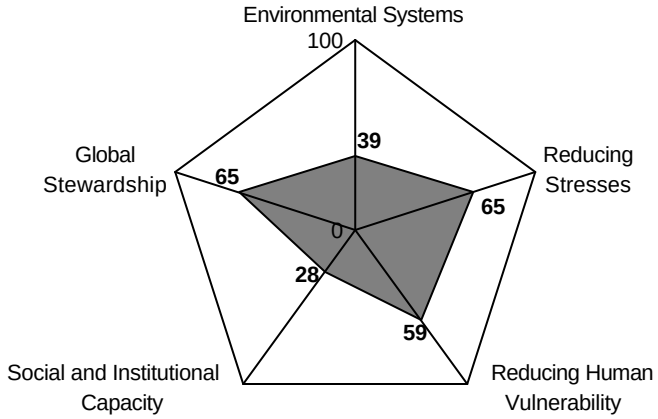
ESI:	67.8
Ranking:	8
GDP/Capita:	$23,166
Peer group ESI:	65.2
Variable coverage:	60 of 67
Missing variables imputed:	5





Azerbaijan

ESI:	46.4
Ranking:	69
GDP/Capita:	$2,175
Peer group ESI:	45.2
Variable coverage:	42 of 67
Missing variables imputed:	17

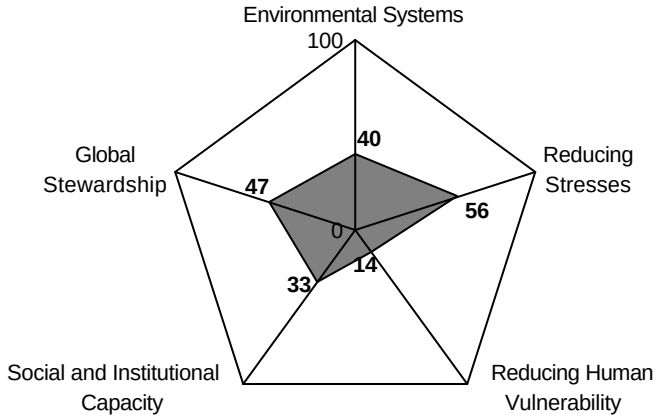


Air Quality	-0.40 / -0.22
Water Quantity	-0.13 / 0.03
Water Quality	-0.39 / -0.35
Biodiversity	0.02 / 0.06
Terrestrial Systems	-0.52 / -0.05
Reducing Air Pollution	-0.09 / 0.30
Reducing Water Stress	-0.18 / -0.02
Reducing Ecosystem Stress	0.46 / 0.14
Reducing Waste & Consumption Pressures	1.31 / 0.59
Reducing Population Stress	0.44 / 0.03
Basic Human Sustenance	0.29 / -0.20
Environmental Health	0.15 / -0.18
Science/Technology	0.76 / -0.29
Capacity for Debate	-0.66 / -0.42
Regulation and Management	-0.51 / -0.36
Private Sector Responsiveness	-0.80 / -0.04
Environmental Information	-1.67 / -0.18
Eco-efficiency	-0.77 / -0.64
Reducing Public Choice Distortions	-0.48 / -0.44
International Commitment	-0.72 / -0.41
Global-Scale Funding/Participation	2.12 / -0.07
Protecting International Commons	-0.27 / 0.06

= Indicator value
= Reference (average value for peer group)

Bangladesh

ESI:	39.5
Ranking:	99
GDP/Capita:	$1,361
Peer group ESI:	39.3
Variable coverage:	49 of 67
Missing variables imputed:	10

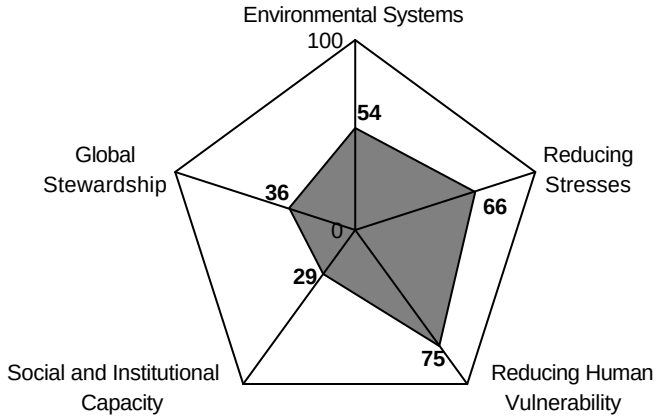


Air Quality	0.40	-0.48
Water Quantity	0.14	-0.02
Water Quality	0.18	-0.55
Biodiversity	0.19	-1.21
Terrestrial Systems	0.15	-0.77
Reducing Air Pollution	0.57	-0.41
Reducing Water Stress	0.57	0.05
Reducing Ecosystem Stress	0.11	0.13
Reducing Waste & Consumption Pressures	1.12	0.69
Reducing Population Stress	-0.10	-1.33
Basic Human Sustenance	-0.46	-1.38
Environmental Health	-1.71	-1.57
Science/Technology	-0.74	-0.90
Capacity for Debate	-0.43	-0.56
Regulation and Management	-0.33	-0.26
Private Sector Responsiveness	-0.77	-0.62
Environmental Information	0.06	0.42
Eco-efficiency	-0.37	-0.37
Reducing Public Choice Distortions	-0.48	-0.45
International Commitment	-0.45	-0.41
Global-Scale Funding/Participation	0.14	-0.49
Protecting International Commons	0.11	0.62

= Indicator value
= Reference (average value for peer group)

Belarus

ESI:	48.0
Ranking:	57
GDP/Capita:	$6,319
Peer group ESI:	52.2
Variable coverage:	47 of 67
Missing variables imputed:	13

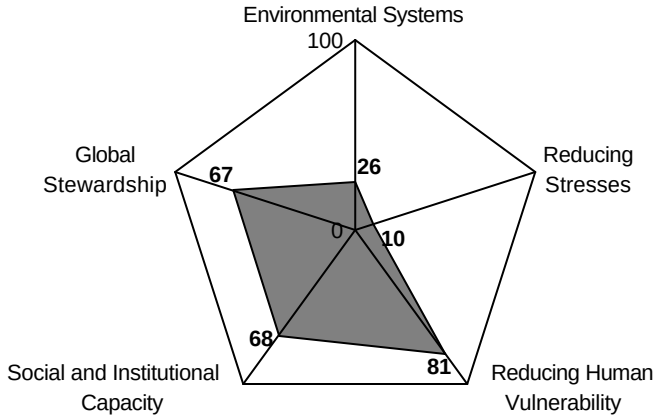


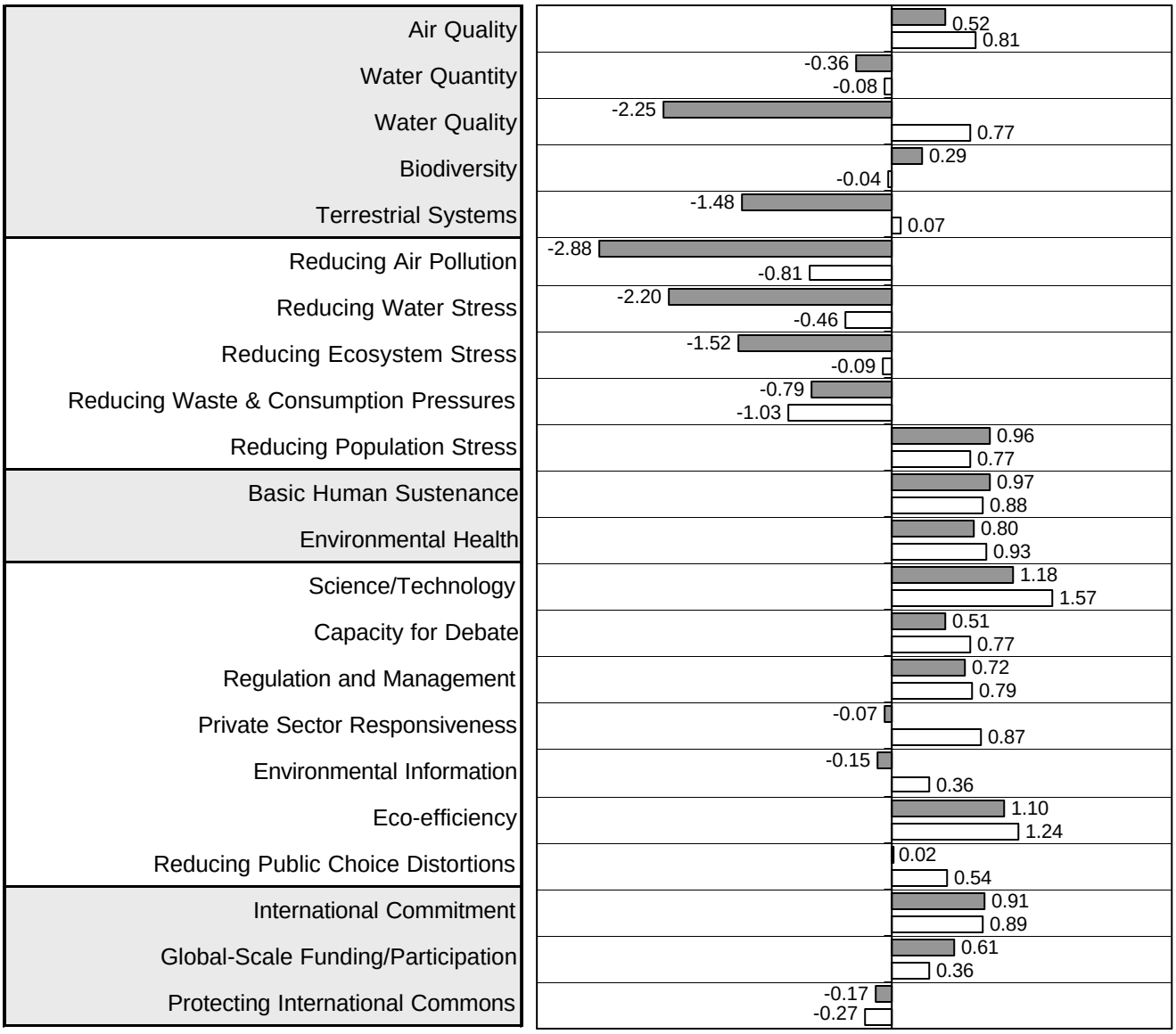
Air Quality	0.93 / 0.18
Water Quantity	0.00 / 0.04
Water Quality	-0.22 / 0.25
Biodiversity	0.74 / -0.12
Terrestrial Systems	-0.99 / -0.13
Reducing Air Pollution	0.19 / -0.28
Reducing Water Stress	0.07 / -0.06
Reducing Ecosystem Stress	0.67 / 0.12
Reducing Waste & Consumption Pressures	0.09 / -0.10
Reducing Population Stress	1.05 / 0.51
Basic Human Sustenance	0.92 / 0.58
Environmental Health	0.45 / 0.60
Science/Technology	0.85 / 0.08
Capacity for Debate	-0.81 / 0.03
Regulation and Management	-0.60 / -0.25
Private Sector Responsiveness	-0.60 / 0.13
Environmental Information	-1.51 / -0.39
Eco-efficiency	-0.81 / -0.02
Reducing Public Choice Distortions	-0.48 / 0.00
International Commitment	-0.75 / -0.02
Global-Scale Funding/Participation	-0.03 / 0.26
Protecting International Commons	-0.27 / -0.21

= Indicator value
= Reference (average value for peer group)

Belgium

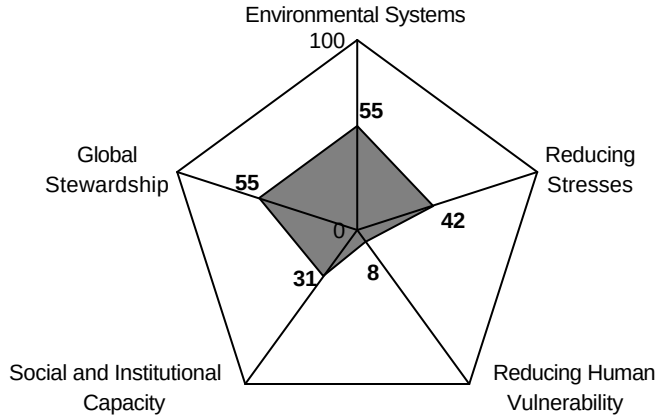
ESI:	44.1
Ranking:	79
GDP/Capita:	$23,223
Peer group ESI:	65.2
Variable coverage:	59 of 67
Missing variables imputed:	8

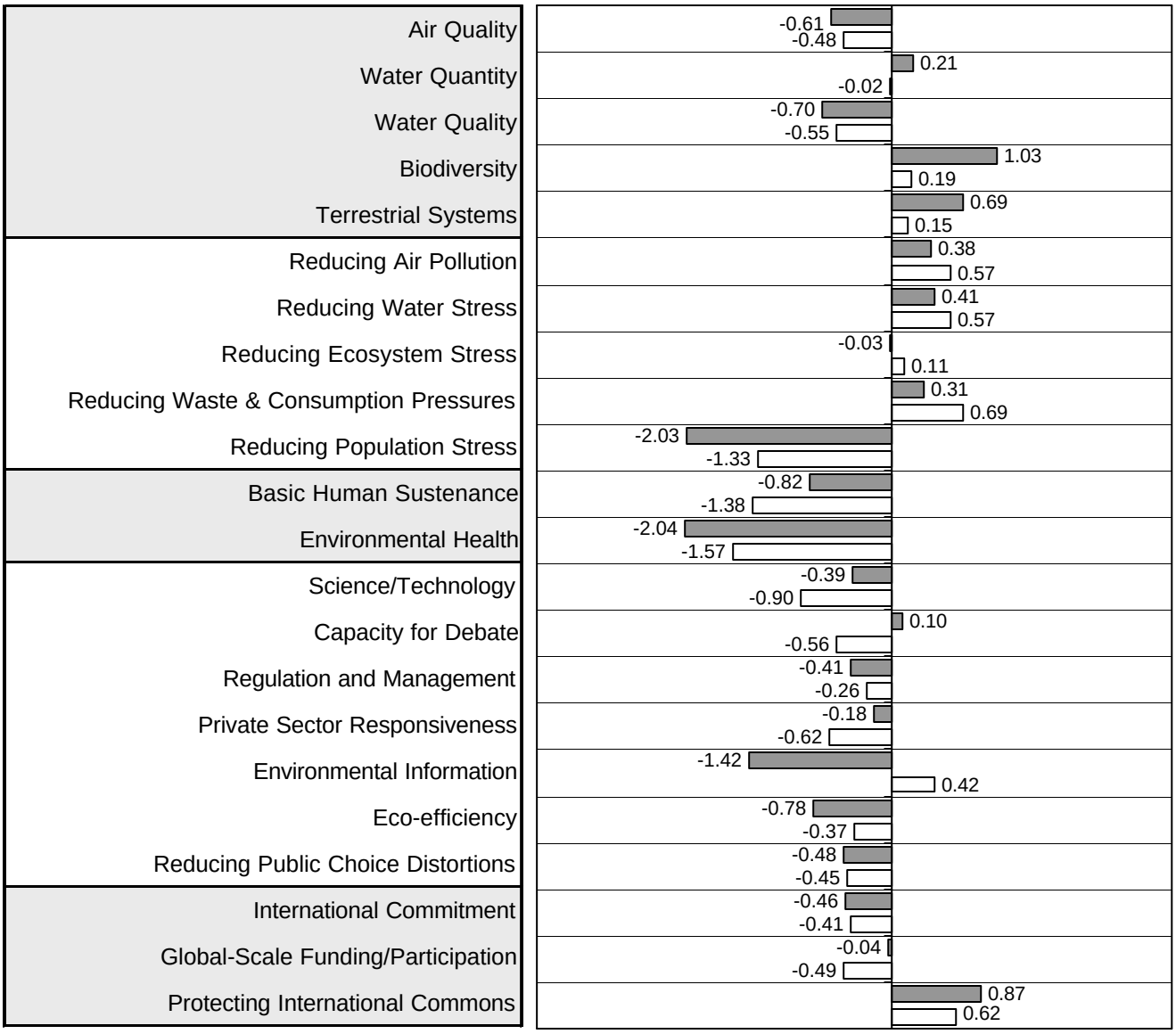




Benin

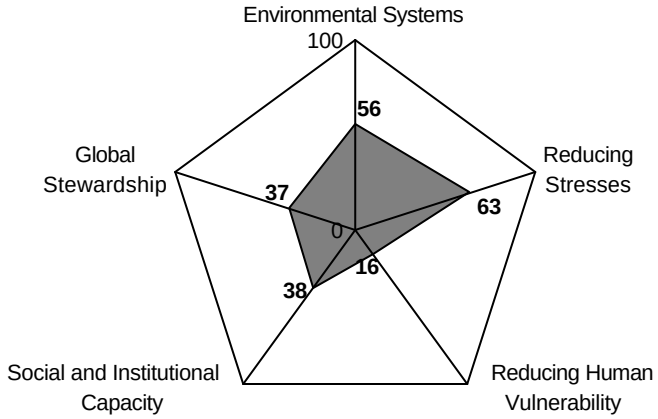
ESI:	38.6
Ranking:	103
GDP/Capita:	$867
Peer group ESI:	39.3
Variable coverage:	43 of 67
Missing variables imputed:	15

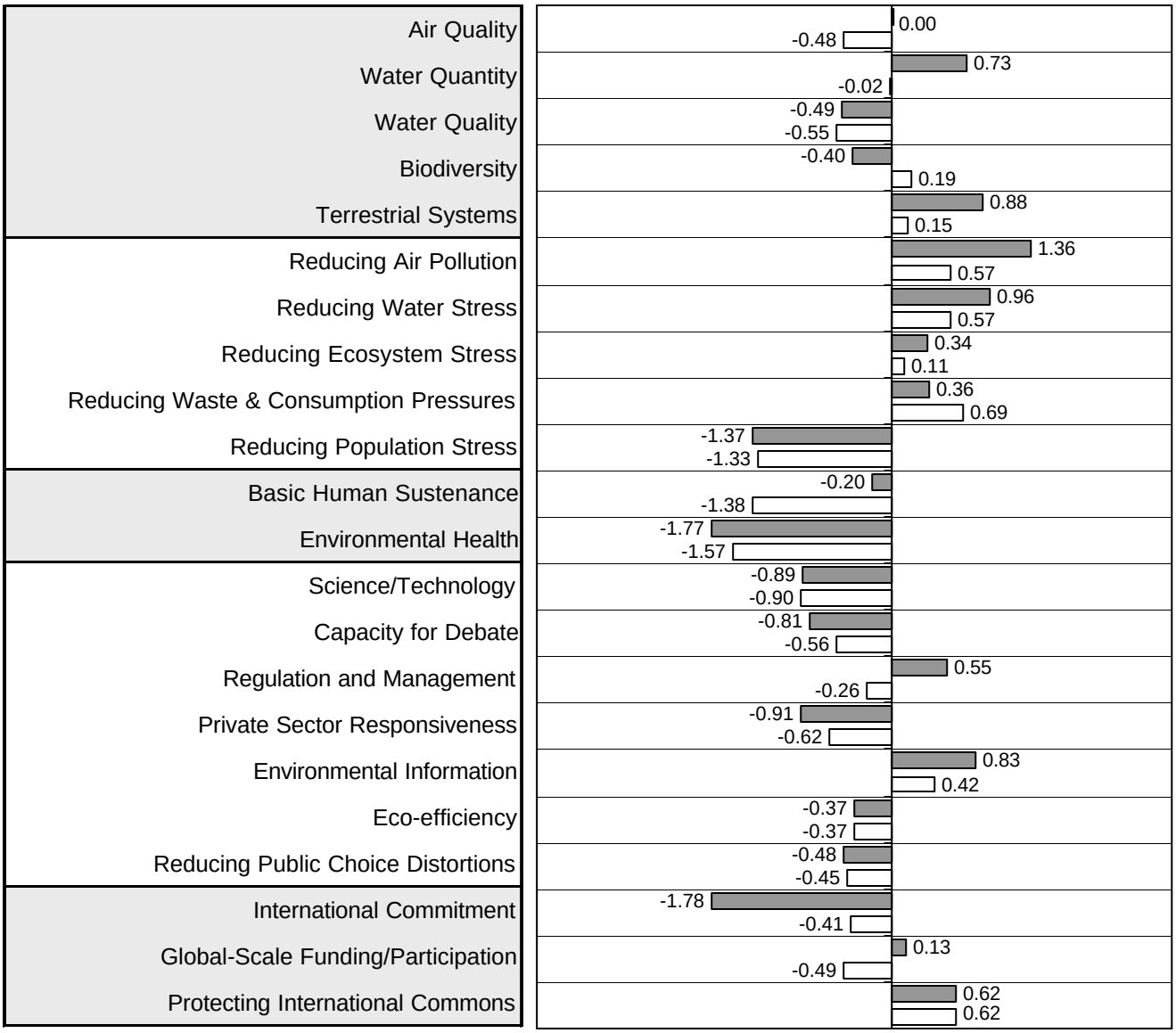




Bhutan

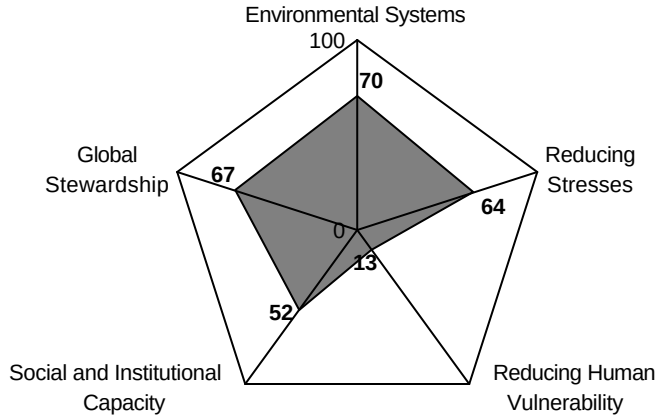
ESI:	45.1
Ranking:	75
GDP/Capita:	$1,536
Peer group ESI:	39.3
Variable coverage:	42 of 67
Missing variables imputed:	18

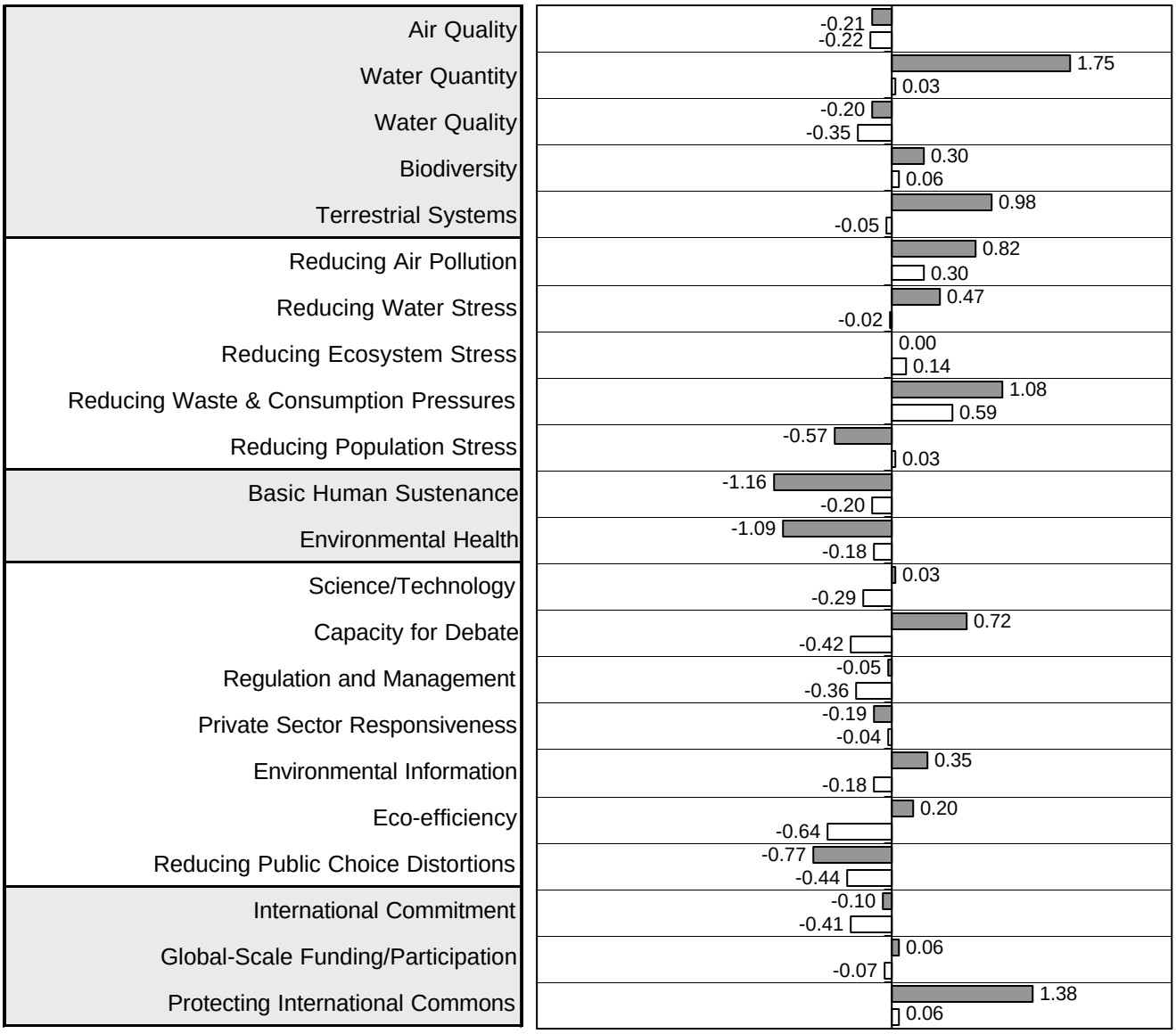




Bolivia

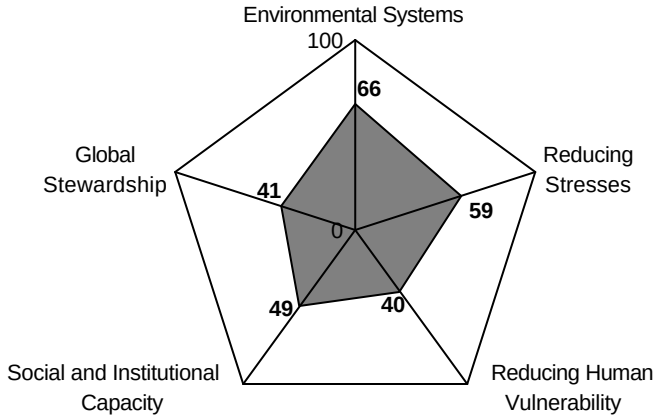
ESI:	56.9
Ranking:	30
GDP/Capita:	$2,269
Peer group ESI:	45.2
Variable coverage:	50 of 67
Missing variables imputed:	13

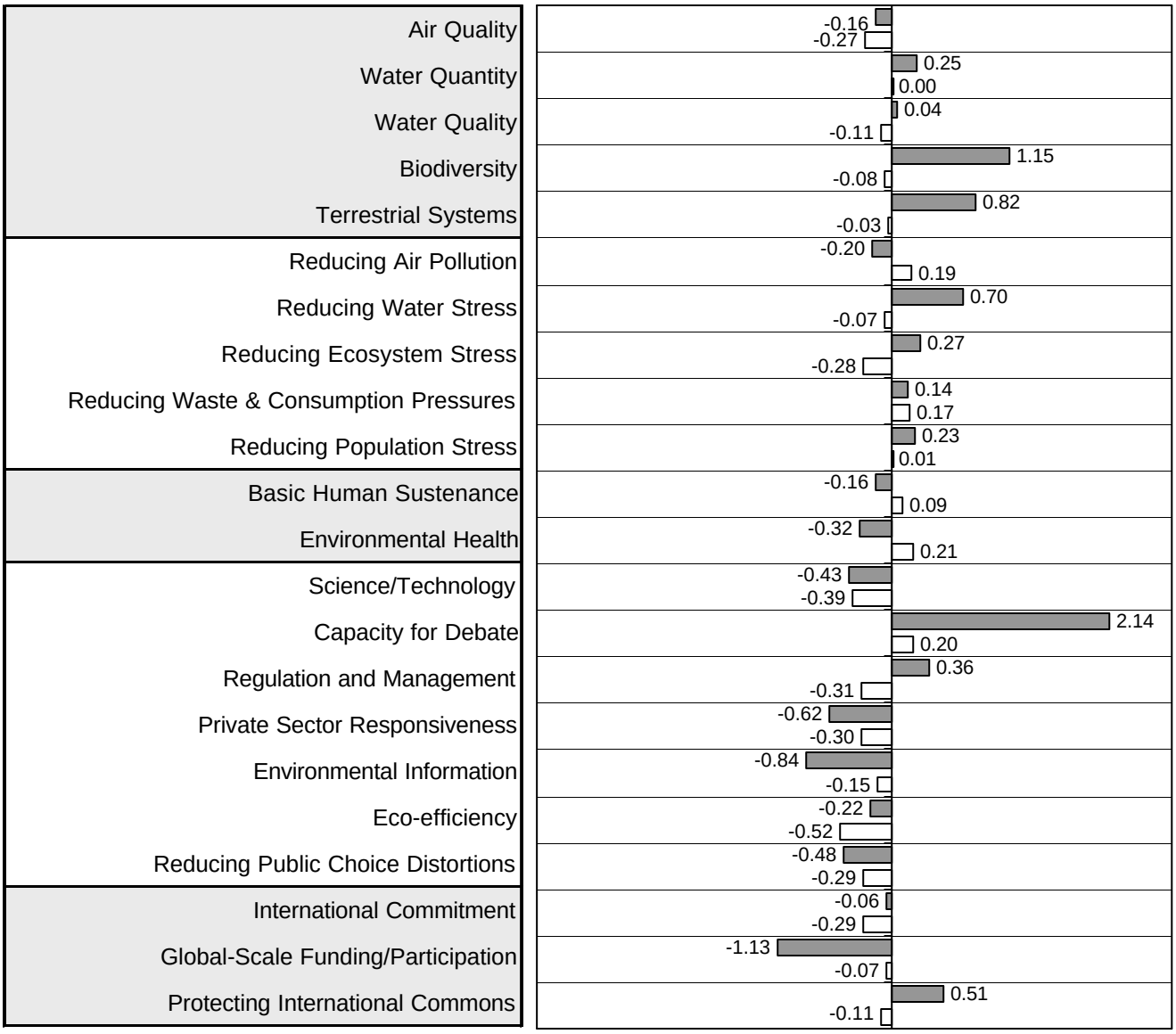




Botswana

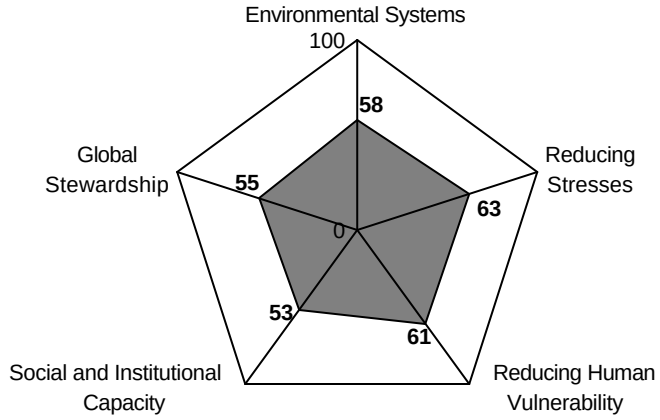
ESI:	53.6
Ranking:	40
GDP/Capita:	$6,103
Peer group ESI:	45.7
Variable coverage:	45 of 67
Missing variables imputed:	13





Brazil

ESI:	57.4
Ranking:	28
GDP/Capita:	$6,625
Peer group ESI:	52.2
Variable coverage:	62 of 67
Missing variables imputed:	3

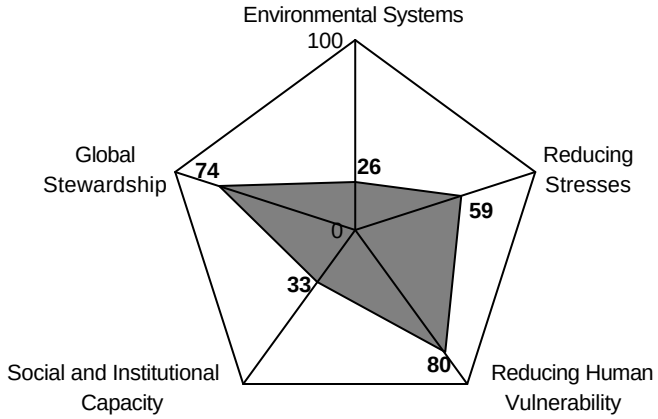


Air Quality	-0.67 / 0.18
Water Quantity	1.45 / 0.04
Water Quality	0.64 / 0.25
Biodiversity	-0.78 / -0.12
Terrestrial Systems	0.39 / -0.13
Reducing Air Pollution	0.48 / -0.28
Reducing Water Stress	0.37 / -0.06
Reducing Ecosystem Stress	0.29 / 0.12
Reducing Waste & Consumption Pressures	0.13 / -0.10
Reducing Population Stress	0.32 / 0.51
Basic Human Sustenance	0.30 / 0.58
Environmental Health	0.27 / 0.60
Science/Technology	-0.37 / 0.08
Capacity for Debate	-0.44 / 0.03
Regulation and Management	-0.29 / -0.25
Private Sector Responsiveness	-0.08 / 0.13
Environmental Information	0.70 / -0.39
Eco-efficiency	0.35 / -0.02
Reducing Public Choice Distortions	0.68 / 0.00
International Commitment	0.15 / -0.02
Global-Scale Funding/Participation	0.14 / 0.26
Protecting International Commons	0.10 / -0.21

= Indicator value
= Reference (average value for peer group)

Bulgaria

ESI:	47.4
Ranking:	60
GDP/Capita:	$4,809
Peer group ESI:	45.7
Variable coverage:	60 of 67
Missing variables imputed:	5

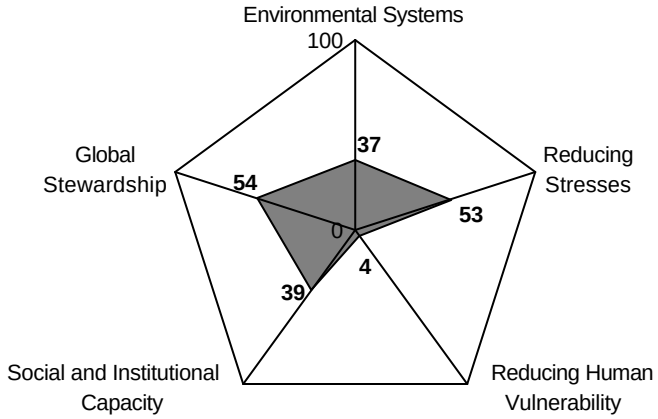


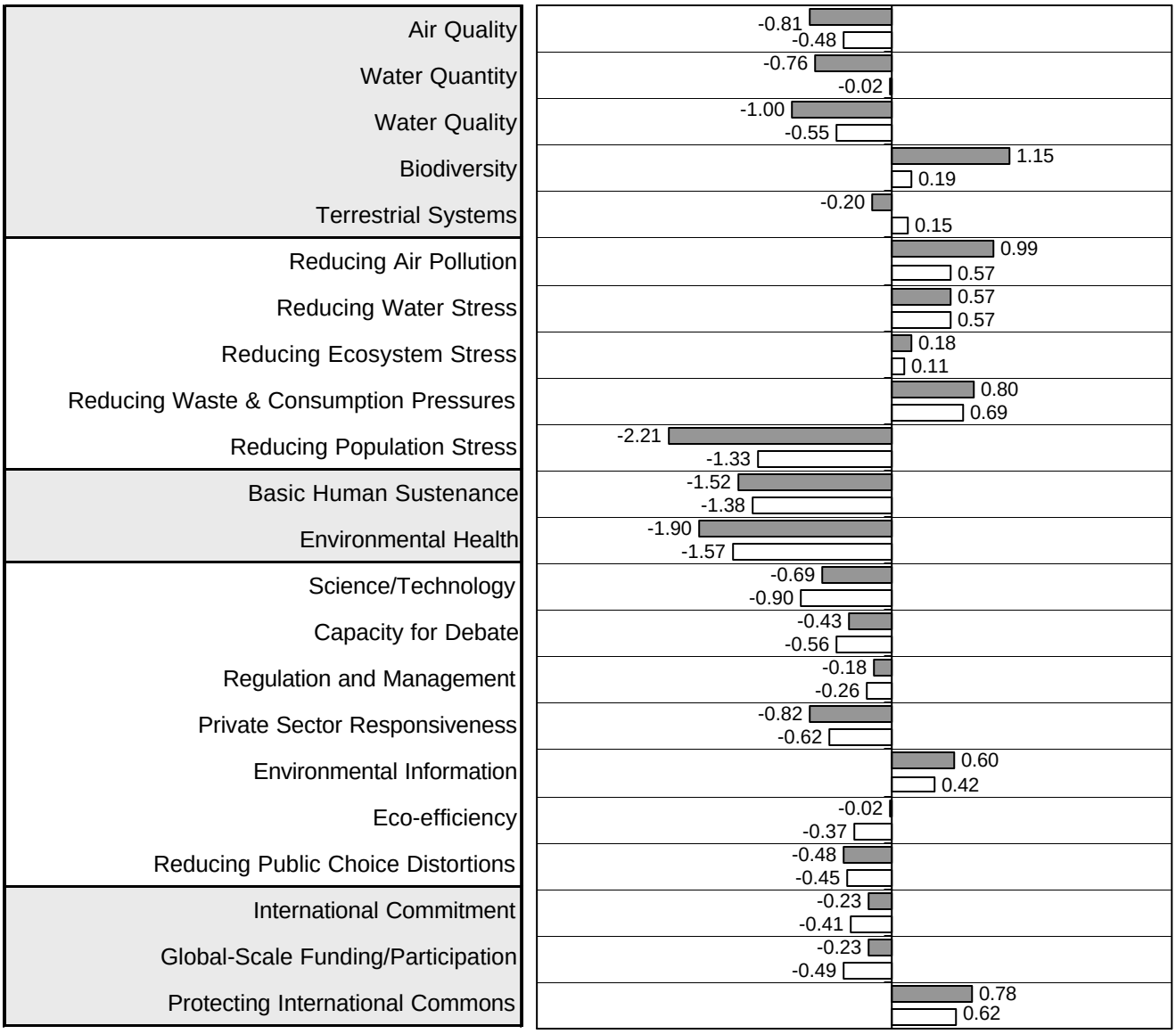
Air Quality	-1.87 / -0.27
Water Quantity	0.42 / 0.00
Water Quality	0.04 / -0.11
Biodiversity	-0.49 / -0.08
Terrestrial Systems	-1.37 / -0.03
Reducing Air Pollution	-0.61 / 0.19
Reducing Water Stress	0.20 / -0.07
Reducing Ecosystem Stress	0.08 / -0.28
Reducing Waste & Consumption Pressures	0.42 / 0.17
Reducing Population Stress	1.08 / 0.01
Basic Human Sustenance	0.92 / 0.09
Environmental Health	0.76 / 0.21
Science/Technology	0.19 / -0.39
Capacity for Debate	-0.08 / 0.20
Regulation and Management	-0.71 / -0.31
Private Sector Responsiveness	-0.12 / -0.30
Environmental Information	-0.98 / -0.15
Eco-efficiency	-0.55 / -0.52
Reducing Public Choice Distortions	-0.73 / -0.29
International Commitment	0.04 / -0.29
Global-Scale Funding/Participation	2.28 / -0.07
Protecting International Commons	-0.37 / -0.11

= Indicator value
= Reference (average value for peer group)

Burkina Faso

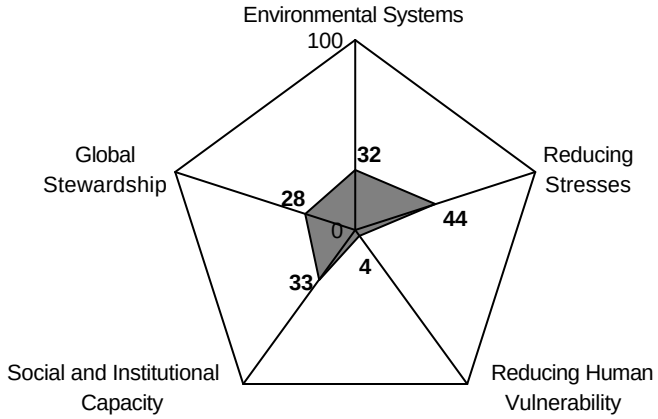
ESI:	38.6
Ranking:	104
GDP/Capita:	$870
Peer group ESI:	39.3
Variable coverage:	45 of 67
Missing variables imputed:	13

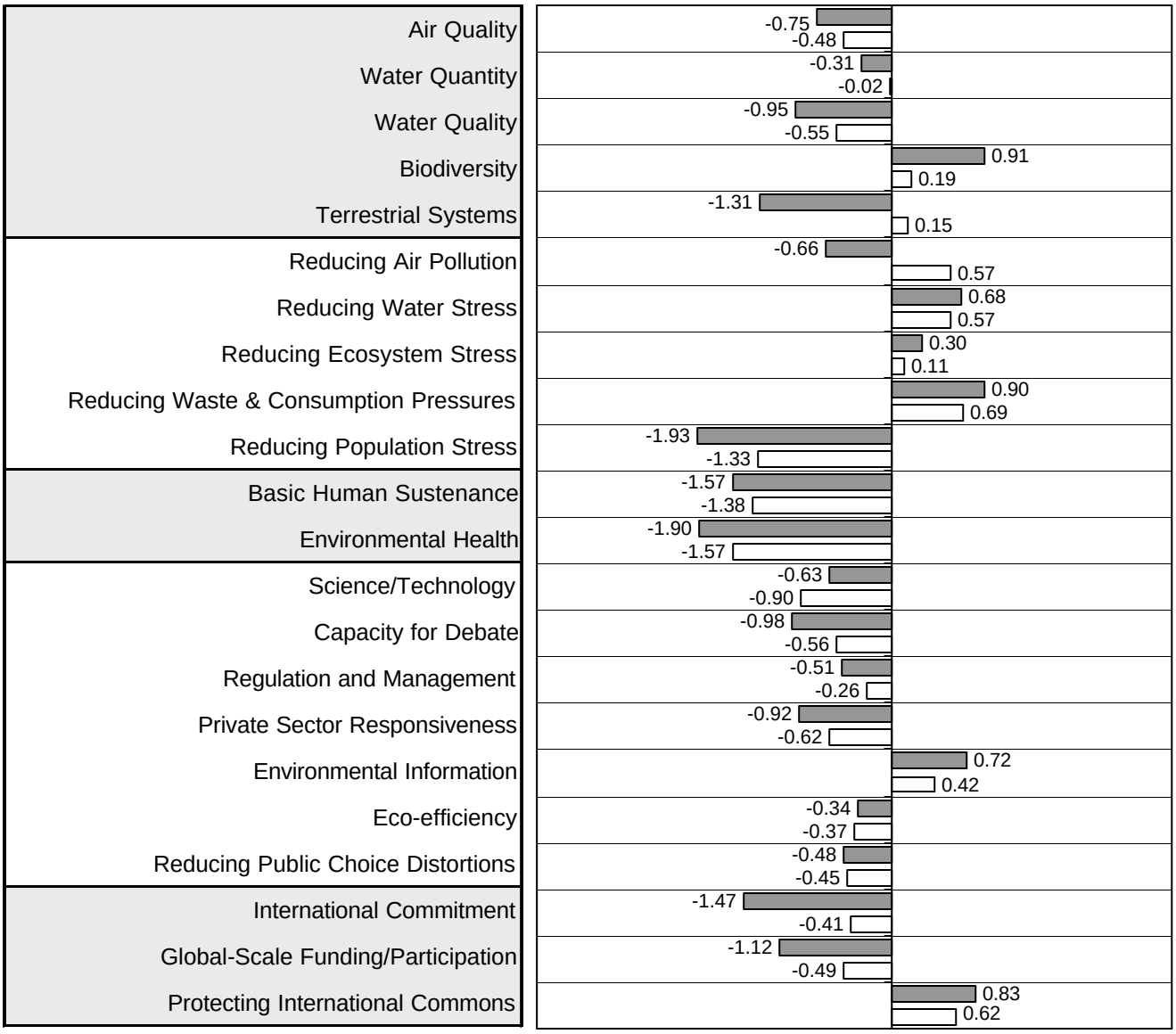




Burundi

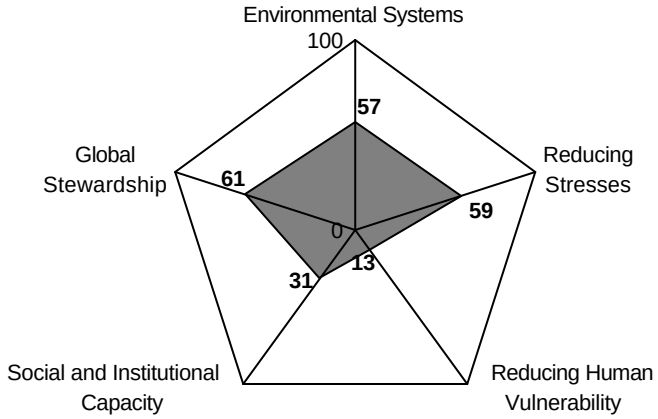
ESI:	30.1
Ranking:	120
GDP/Capita:	$570
Peer group ESI:	39.3
Variable coverage:	42 of 67
Missing variables imputed:	16





Cameroon

ESI:	44.9
Ranking:	76
GDP/Capita:	$1,474
Peer group ESI:	39.3
Variable coverage:	45 of 67
Missing variables imputed:	13

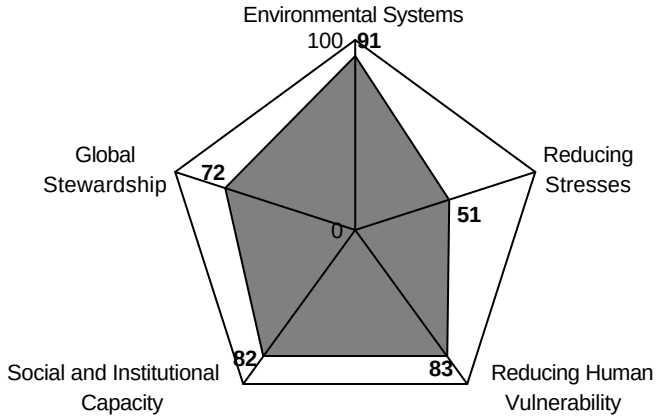


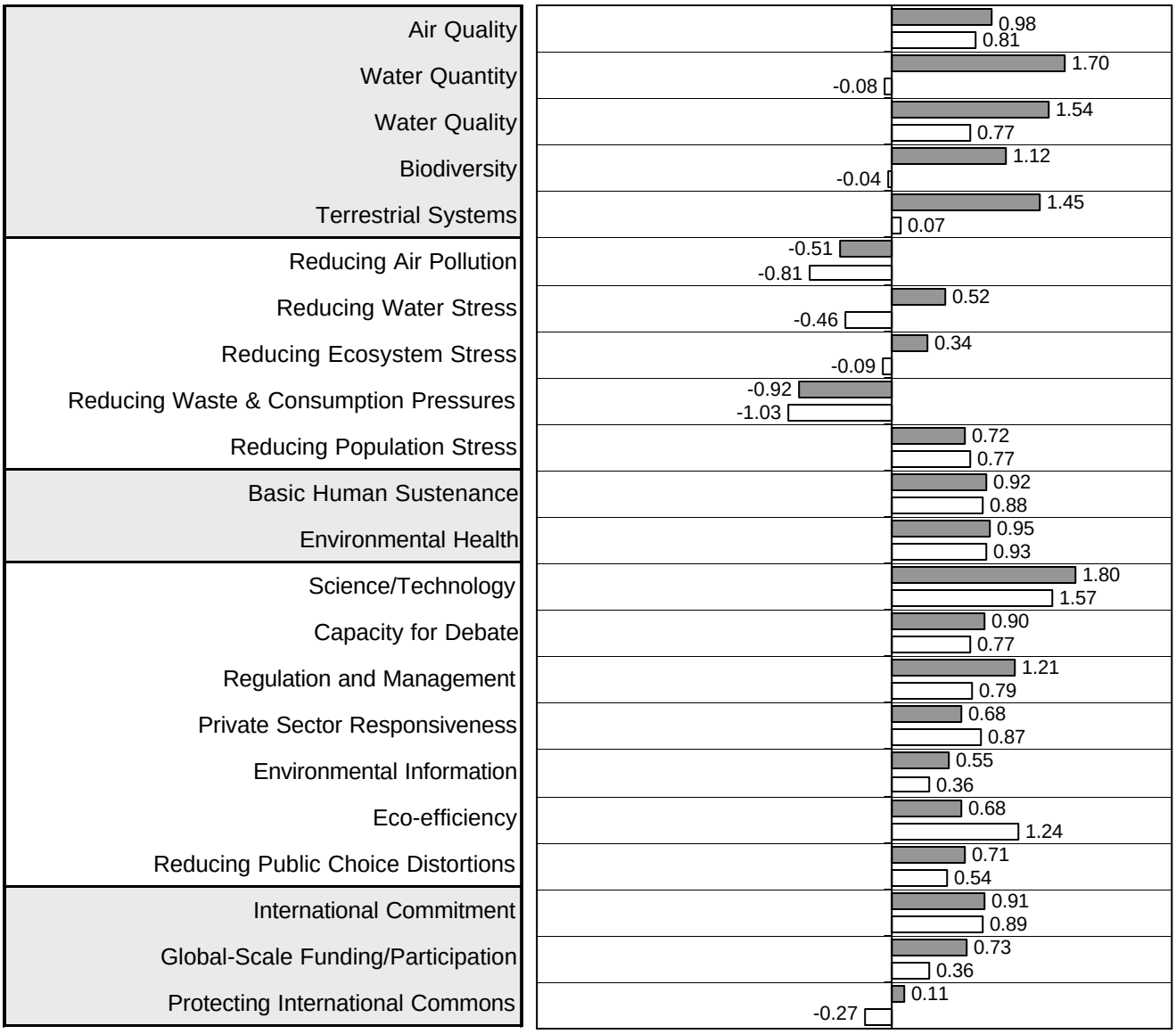
Air Quality	-0.50 / -0.48
Water Quantity	0.68 / -0.02
Water Quality	-0.20 / -0.55
Biodiversity	0.44 / 0.19
Terrestrial Systems	0.41 / 0.15
Reducing Air Pollution	0.77 / 0.57
Reducing Water Stress	0.90 / 0.57
Reducing Ecosystem Stress	0.21 / 0.11
Reducing Waste & Consumption Pressures	0.43 / 0.69
Reducing Population Stress	-1.19 / -1.33
Basic Human Sustenance	-1.21 / -1.38
Environmental Health	-1.04 / -1.57
Science/Technology	-0.73 / -0.90
Capacity for Debate	-1.28 / -0.56
Regulation and Management	-0.58 / -0.26
Private Sector Responsiveness	-0.71 / -0.62
Environmental Information	0.88 / 0.42
Eco-efficiency	-0.49 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	0.39 / -0.41
Global-Scale Funding/Participation	-0.10 / -0.49
Protecting International Commons	0.58 / 0.62

= Indicator value
= Reference (average value for peer group)

Canada

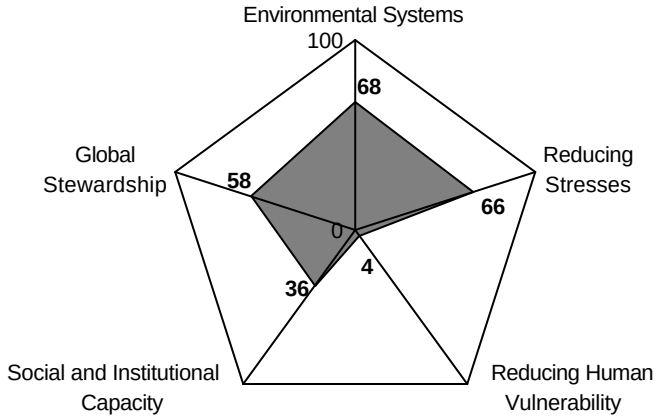
ESI:	78.1
Ranking:	3
GDP/Capita:	$23,582
Peer group ESI:	65.2
Variable coverage:	66 of 67
Missing variables imputed:	0





Central African Republic

ESI:	48.0
Ranking:	56
GDP/Capita:	$1,118
Peer group ESI:	39.3
Variable coverage:	42 of 67
Missing variables imputed:	16

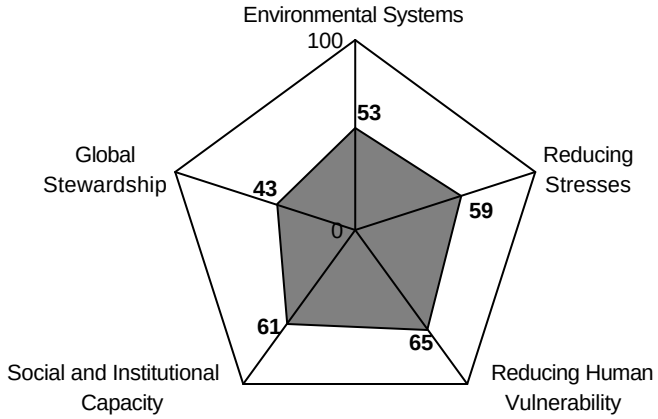


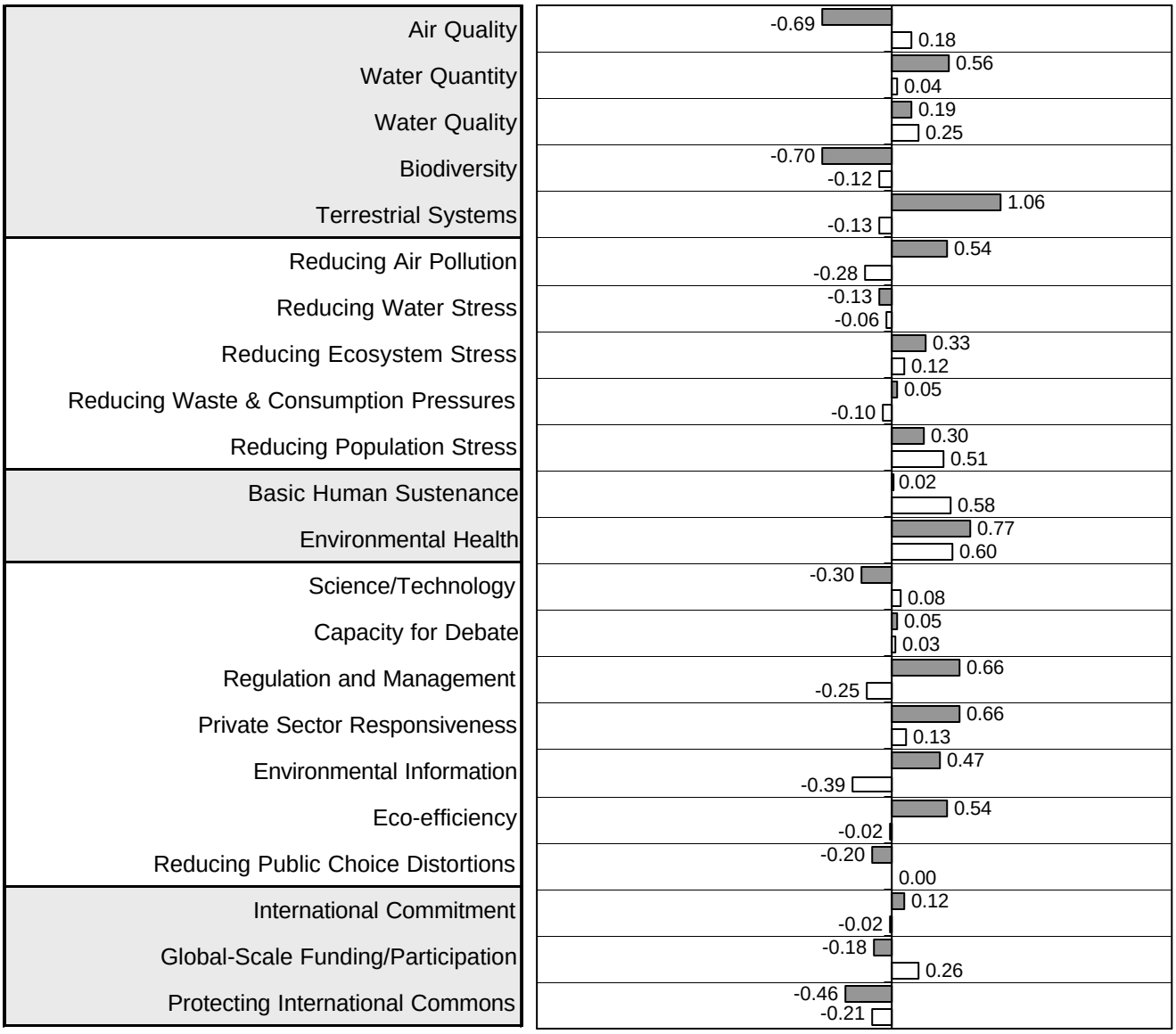
Air Quality	-0.64 / -0.48
Water Quantity	1.50 / -0.02
Water Quality	-0.81 / -0.55
Biodiversity	0.96 / 0.19
Terrestrial Systems	1.29 / 0.15
Reducing Air Pollution	0.60 / 0.57
Reducing Water Stress	1.06 / 0.57
Reducing Ecosystem Stress	0.30 / 0.11
Reducing Waste & Consumption Pressures	0.81 / 0.69
Reducing Population Stress	-0.77 / -1.33
Basic Human Sustenance	-1.80 / -1.38
Environmental Health	-1.70 / -1.57
Science/Technology	-0.64 / -0.90
Capacity for Debate	-0.20 / -0.56
Regulation and Management	-0.33 / -0.26
Private Sector Responsiveness	-0.86 / -0.62
Environmental Information	0.20 / 0.42
Eco-efficiency	-0.17 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-1.17 / -0.41
Global-Scale Funding/Participation	0.01 / -0.49
Protecting International Commons	1.74 / 0.62

= Indicator value
= Reference (average value for peer group)

Chile

ESI:	56.6
Ranking:	31
GDP/Capita:	$8,787
Peer group ESI:	52.2
Variable coverage:	61 of 67
Missing variables imputed:	4

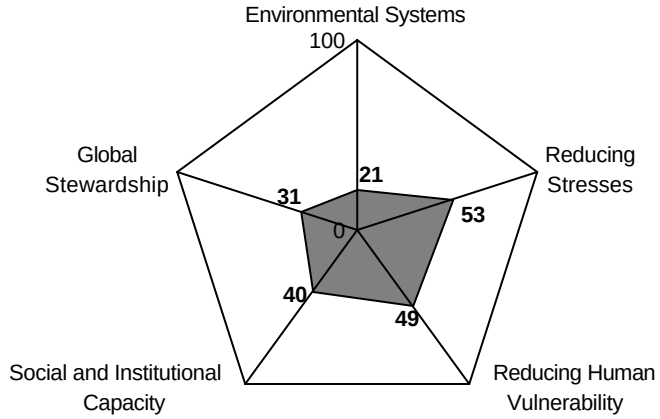




= Indicator value
= Reference (average value for peer group)

China

ESI:	37.6
Ranking:	108
GDP/Capita:	$3,105
Peer group ESI:	45.2
Variable coverage:	60 of 67
Missing variables imputed:	4

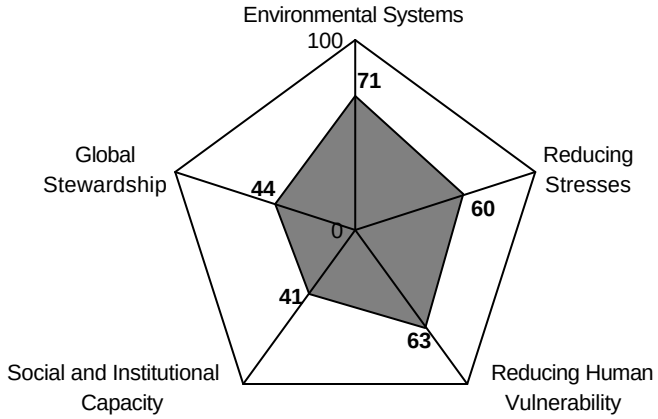


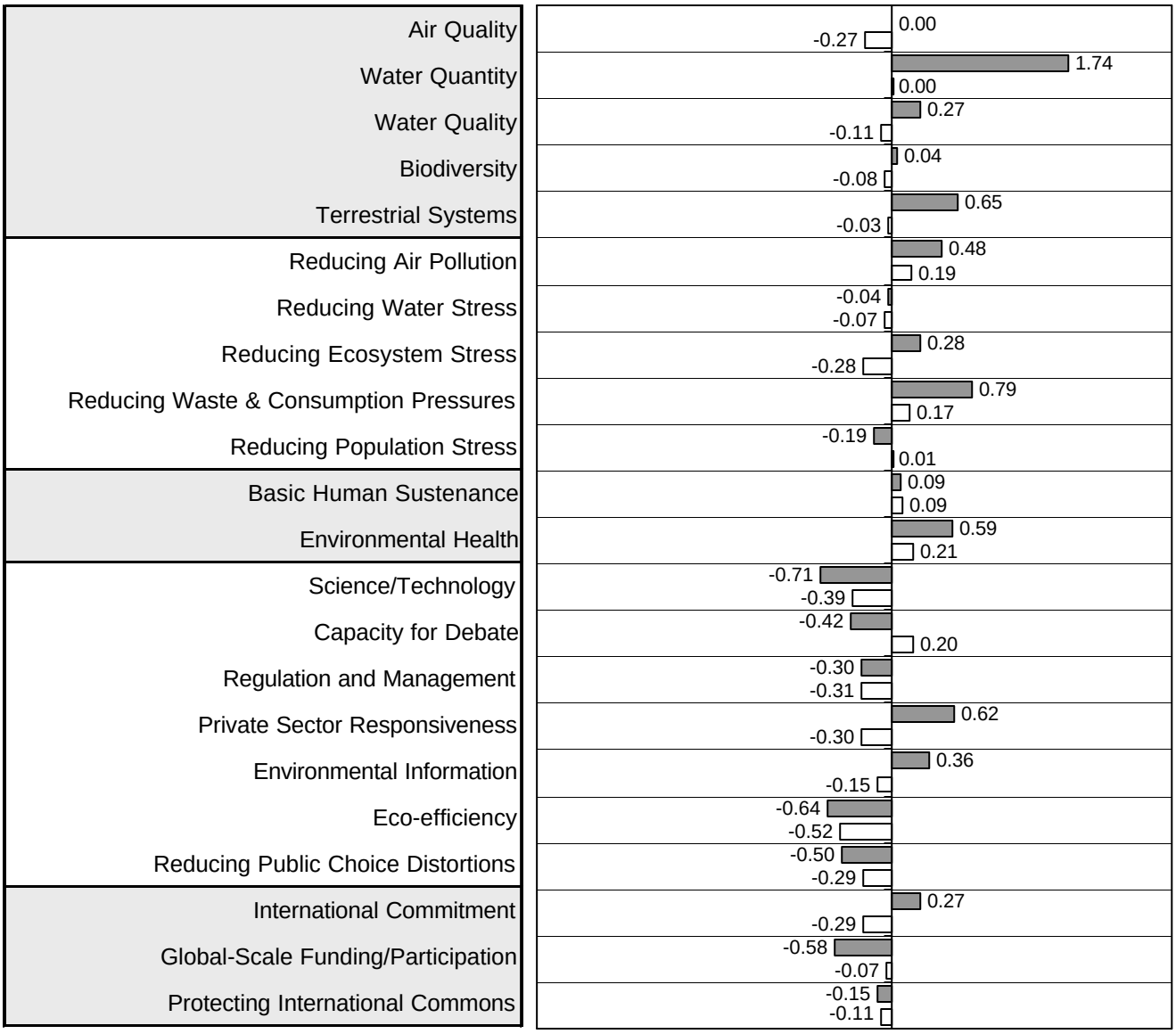
Air Quality	-2.24	-0.22
Water Quantity	-0.64	0.03
Water Quality	-0.33	-0.35
Biodiversity	-1.03	0.06
Terrestrial Systems	0.18	-0.05
Reducing Air Pollution	0.09	0.30
Reducing Water Stress	-0.58	-0.02
Reducing Ecosystem Stress	0.00	0.14
Reducing Waste & Consumption Pressures	-0.01	0.59
Reducing Population Stress	0.82	0.03
Basic Human Sustenance	-0.14	-0.20
Environmental Health	0.09	-0.18
Science/Technology	-0.38	-0.29
Capacity for Debate	-1.32	-0.42
Regulation and Management	-0.51	-0.36
Private Sector Responsiveness	1.12	-0.04
Environmental Information	-0.31	-0.18
Eco-efficiency	-0.70	-0.64
Reducing Public Choice Distortions	0.40	-0.44
International Commitment	0.12	-0.41
Global-Scale Funding/Participation	0.02	-0.07
Protecting International Commons	-1.63	0.06

= Indicator value
= Reference (average value for peer group)

Colombia

ESI:	54.8
Ranking:	36
GDP/Capita:	$6,006
Peer group ESI:	45.7
Variable coverage:	59 of 67
Missing variables imputed:	4

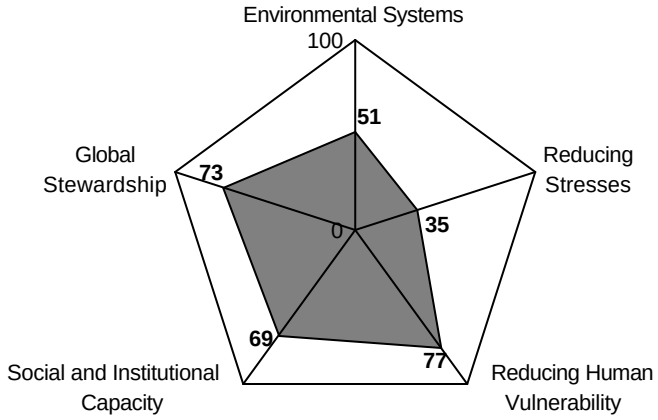


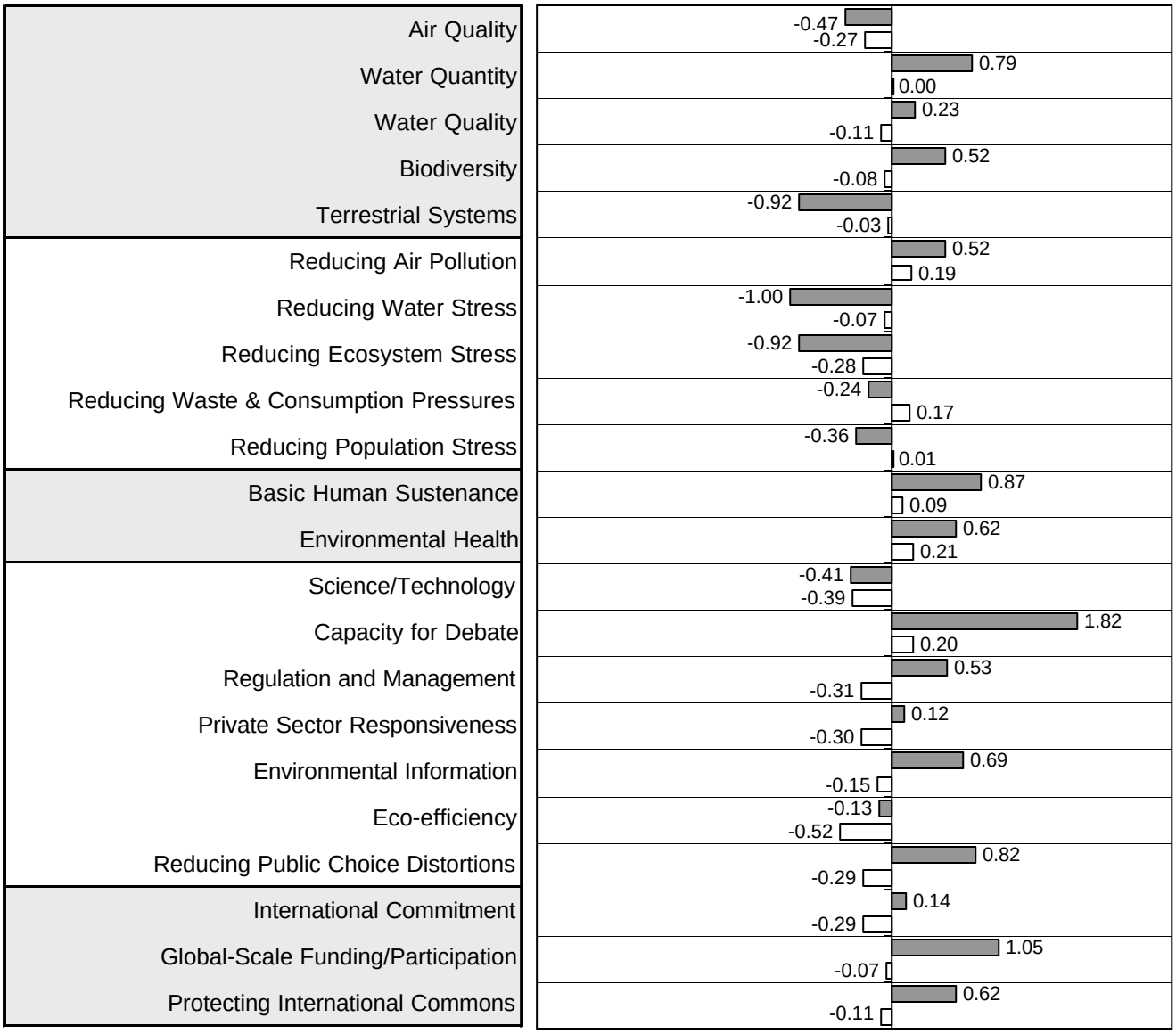


= Indicator value
= Reference (average value for peer group)

Costa Rica

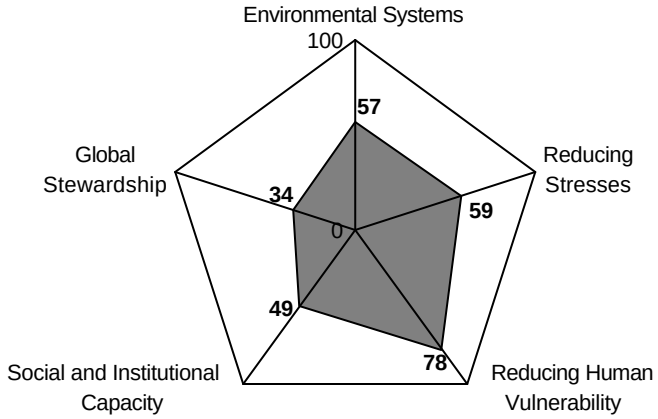
ESI:	58.8
Ranking:	26
GDP/Capita:	$5,987
Peer group ESI:	45.7
Variable coverage:	58 of 67
Missing variables imputed:	5

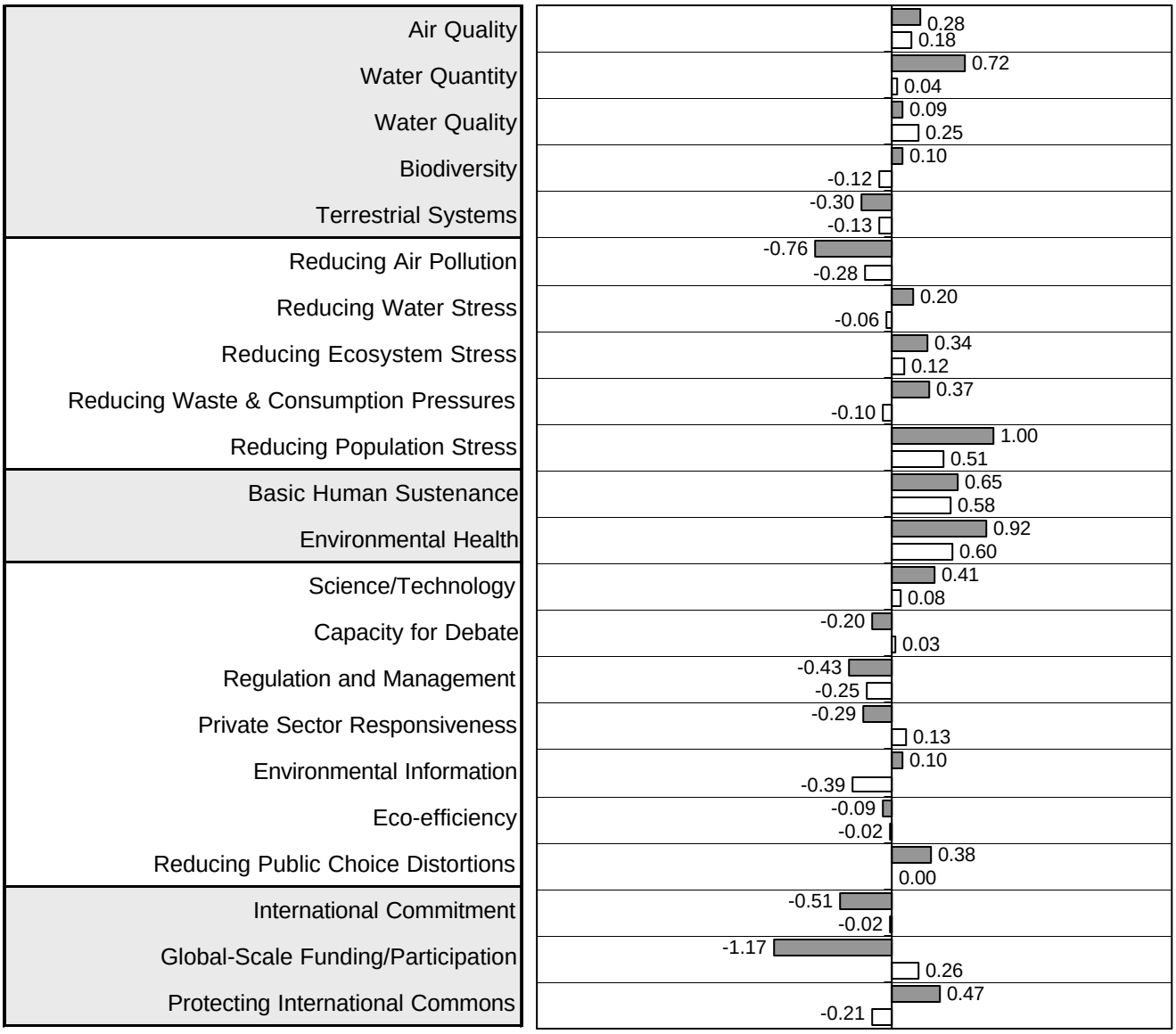




Croatia

ESI:	54.1
Ranking:	39
GDP/Capita:	$6,749
Peer group ESI:	52.2
Variable coverage:	48 of 67
Missing variables imputed:	11

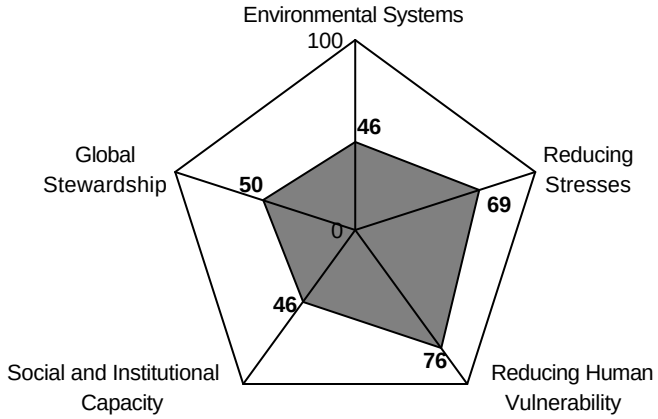


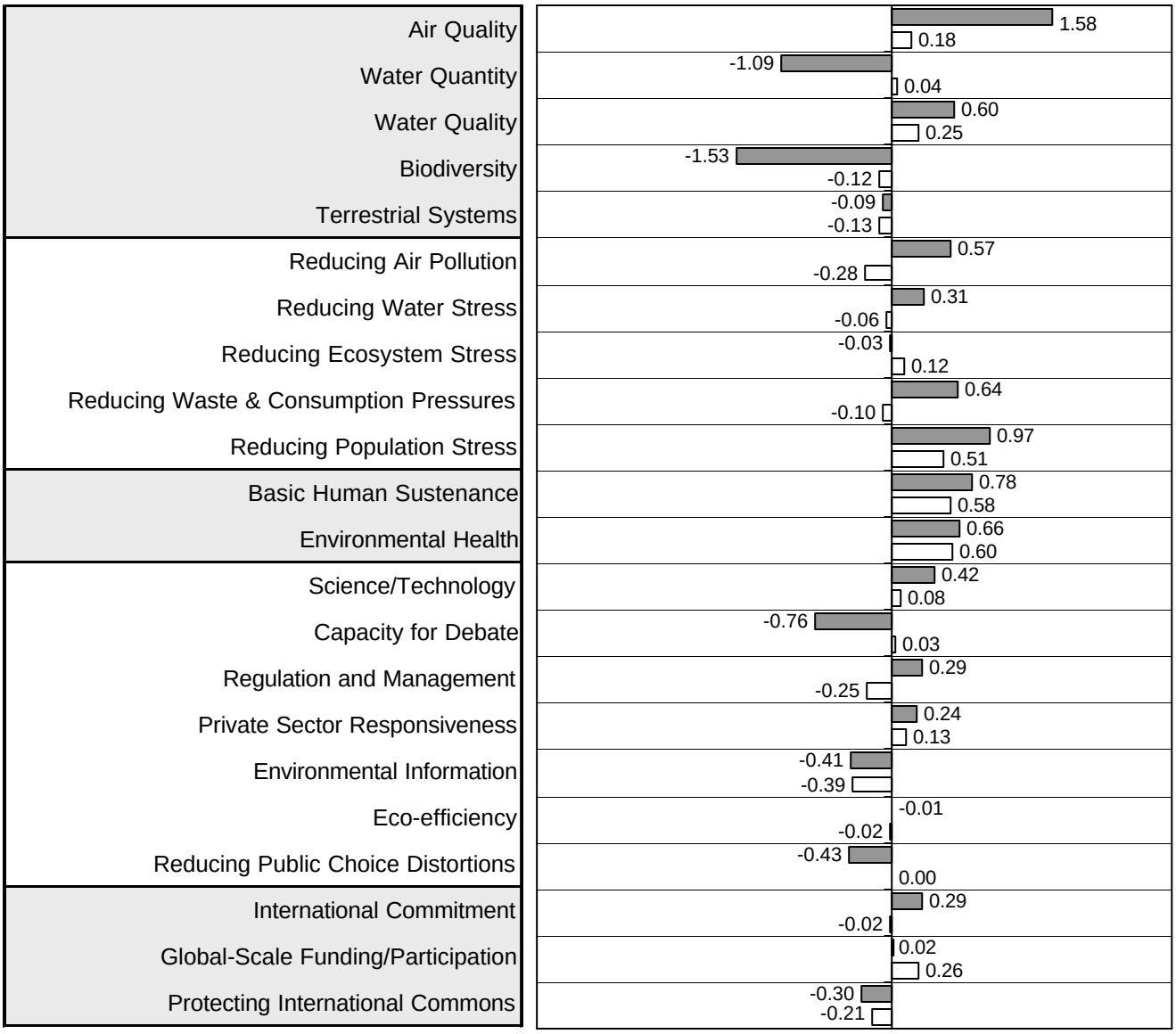


= Indicator value
= Reference (average value for peer group)

Cuba

ESI:	54.9
Ranking:	35
GDP/Capita:	
Peer group ESI:	52.2
Variable coverage:	52 of 67
Missing variables imputed:	6

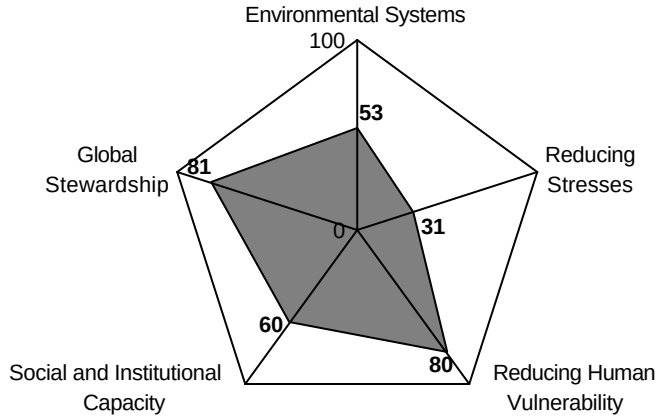




= Indicator value
= Reference (average value for peer group)

Czech Republic

ESI:	57.2
Ranking:	29
GDP/Capita:	$12,362
Peer group ESI:	52.2
Variable coverage:	56 of 67
Missing variables imputed:	9

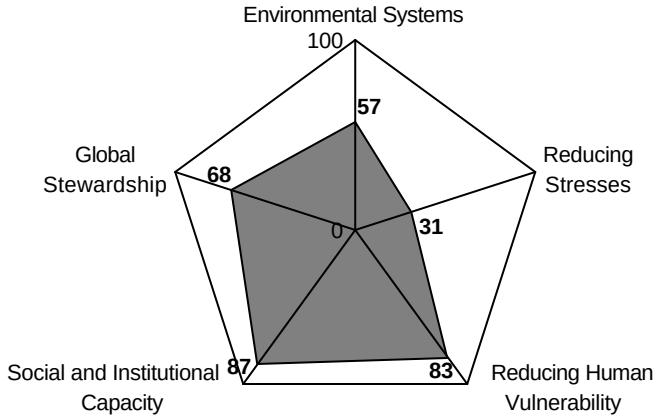


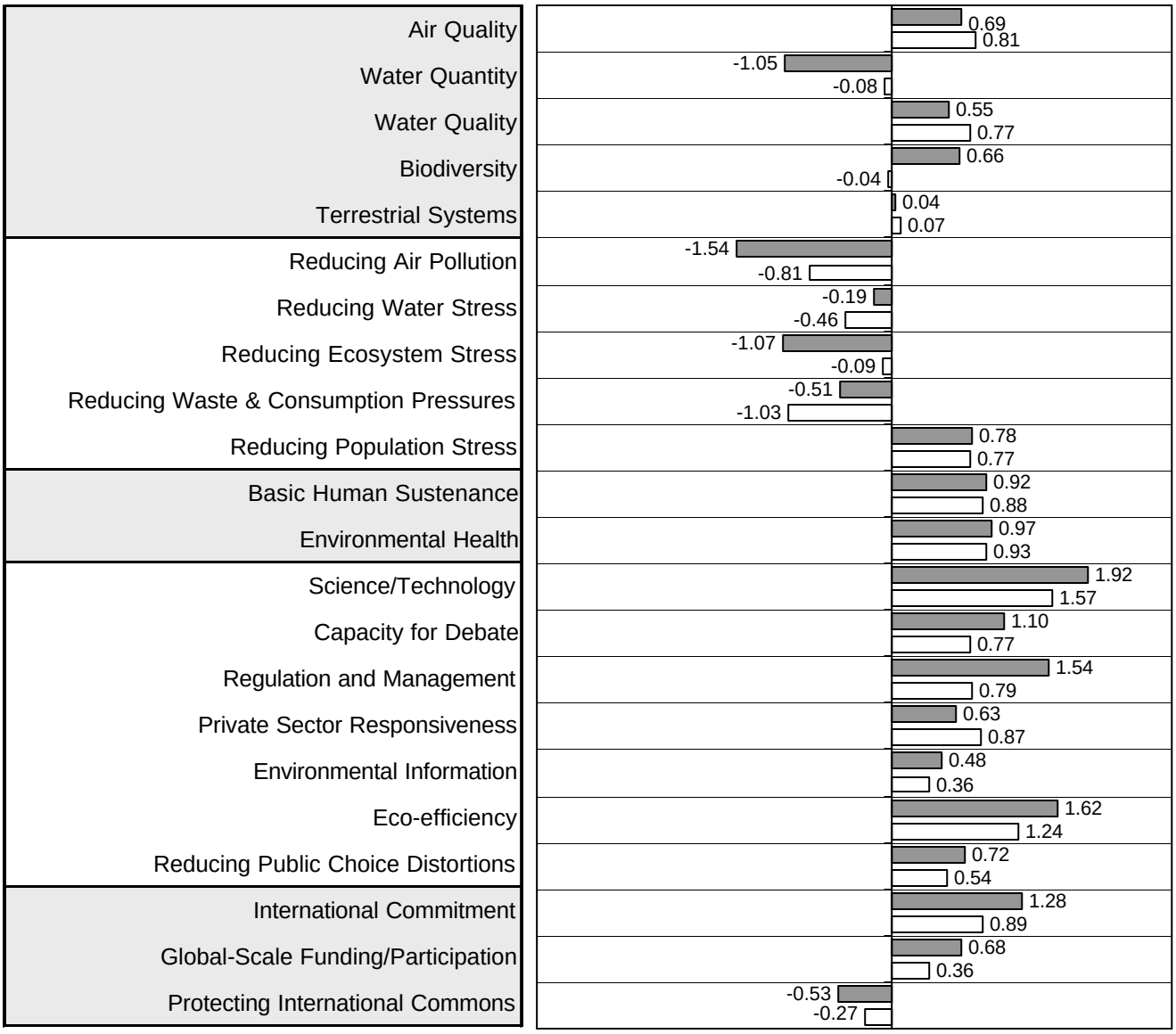
Air Quality	0.88 / 0.18
Water Quantity	-0.35 / 0.04
Water Quality	0.27 / 0.25
Biodiversity	0.23 / -0.12
Terrestrial Systems	-0.62 / -0.13
Reducing Air Pollution	-2.42 / -0.28
Reducing Water Stress	0.17 / -0.06
Reducing Ecosystem Stress	-1.36 / 0.12
Reducing Waste & Consumption Pressures	0.05 / -0.10
Reducing Population Stress	1.08 / 0.51
Basic Human Sustenance	0.77 / 0.58
Environmental Health	0.94 / 0.60
Science/Technology	0.45 / 0.08
Capacity for Debate	0.36 / 0.03
Regulation and Management	0.17 / -0.25
Private Sector Responsiveness	0.70 / 0.13
Environmental Information	-1.04 / -0.39
Eco-efficiency	0.27 / -0.02
Reducing Public Choice Distortions	0.86 / 0.00
International Commitment	0.53 / -0.02
Global-Scale Funding/Participation	1.85 / 0.26
Protecting International Commons	0.22 / -0.21

= Indicator value
= Reference (average value for peer group)

Denmark

ESI:	67.0
Ranking:	10
GDP/Capita:	$24,218
Peer group ESI:	65.2
Variable coverage:	60 of 67
Missing variables imputed:	7

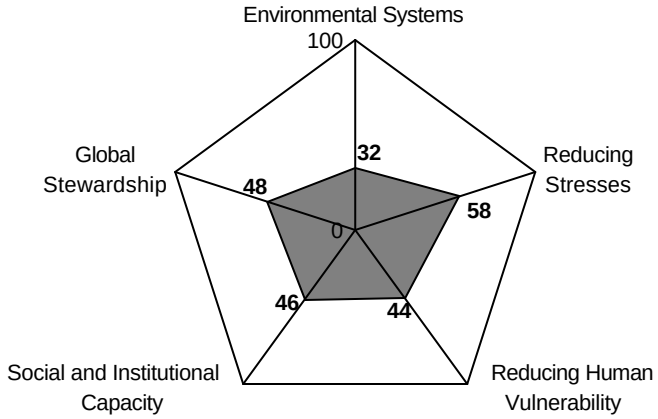


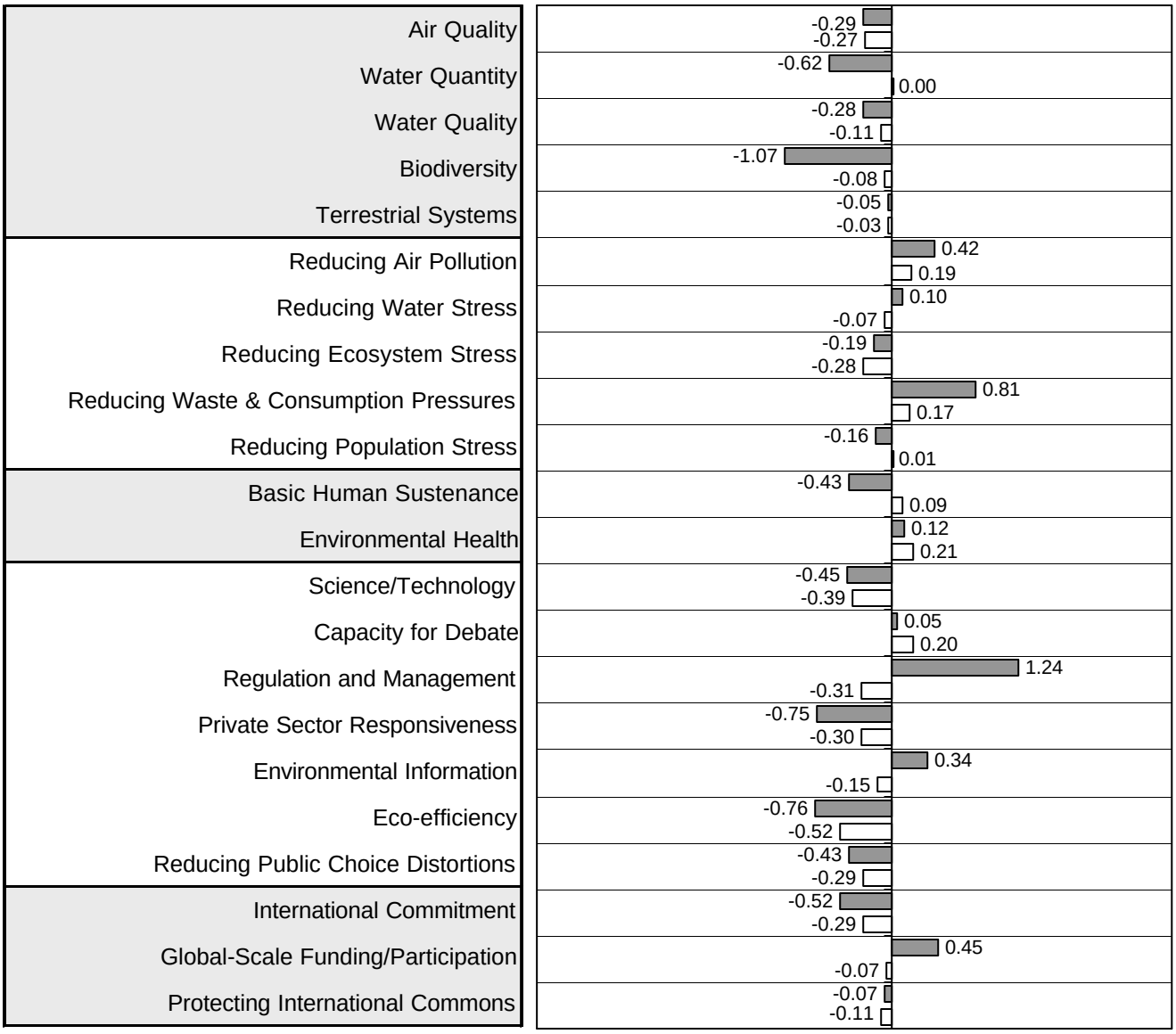


= Indicator value
= Reference (average value for peer group)

Dominican Republic

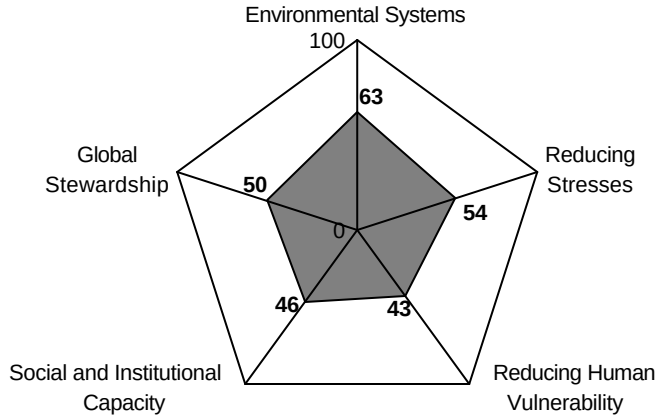
ESI:	45.4
Ranking:	72
GDP/Capita:	$4,598
Peer group ESI:	45.7
Variable coverage:	43 of 67
Missing variables imputed:	15





Ecuador

ESI:	51.8
Ranking:	44
GDP/Capita:	$3,003
Peer group ESI:	45.2
Variable coverage:	56 of 67
Missing variables imputed:	7

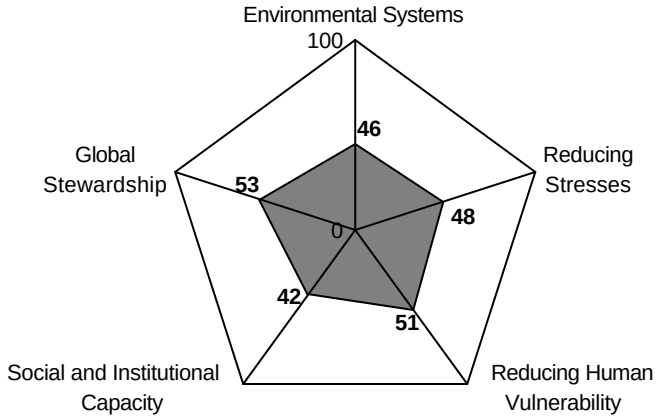


Air Quality	0.20 / -0.22
Water Quantity	0.81 / 0.03
Water Quality	-0.06 / -0.35
Biodiversity	0.07 / 0.06
Terrestrial Systems	0.59 / -0.05
Reducing Air Pollution	0.27 / 0.30
Reducing Water Stress	0.37 / -0.02
Reducing Ecosystem Stress	-0.20 / 0.14
Reducing Waste & Consumption Pressures	0.23 / 0.59
Reducing Population Stress	-0.14 / 0.03
Basic Human Sustenance	-0.54 / -0.20
Environmental Health	0.19 / -0.18
Science/Technology	-0.70 / -0.29
Capacity for Debate	0.75 / -0.42
Regulation and Management	-0.06 / -0.36
Private Sector Responsiveness	0.81 / -0.04
Environmental Information	0.22 / -0.18
Eco-efficiency	-1.35 / -0.64
Reducing Public Choice Distortions	-0.42 / -0.44
International Commitment	-0.06 / -0.41
Global-Scale Funding/Participation	0.01 / -0.07
Protecting International Commons	0.01 / 0.06

= Indicator value
= Reference (average value for peer group)

Egypt

ESI:	46.5
Ranking:	67
GDP/Capita:	$3,041
Peer group ESI:	45.2
Variable coverage:	57 of 67
Missing variables imputed:	7

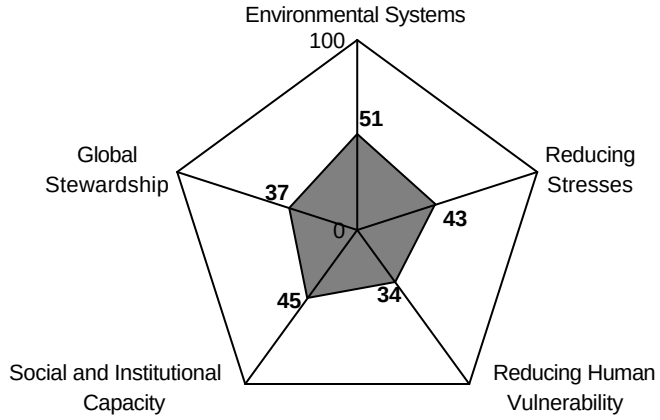


Air Quality	-0.79 / -0.22
Water Quantity	-0.34 / 0.03
Water Quality	-0.15 / -0.35
Biodiversity	-0.75 / 0.06
Terrestrial Systems	1.48 / -0.05
Reducing Air Pollution	-0.35 / 0.30
Reducing Water Stress	-0.64 / -0.02
Reducing Ecosystem Stress	0.46 / 0.14
Reducing Waste & Consumption Pressures	0.49 / 0.59
Reducing Population Stress	-0.17 / 0.03
Basic Human Sustenance	0.78 / -0.20
Environmental Health	-0.72 / -0.18
Science/Technology	-0.53 / -0.29
Capacity for Debate	-1.02 / -0.42
Regulation and Management	0.11 / -0.36
Private Sector Responsiveness	0.77 / -0.04
Environmental Information	-0.09 / -0.18
Eco-efficiency	-0.68 / -0.64
Reducing Public Choice Distortions	-0.03 / -0.44
International Commitment	0.10 / -0.41
Global-Scale Funding/Participation	0.62 / -0.07
Protecting International Commons	-0.49 / 0.06

= Indicator value
= Reference (average value for peer group)

El Salvador

ESI:	43.7
Ranking:	84
GDP/Capita:	$4,036
Peer group ESI:	45.7
Variable coverage:	55 of 67
Missing variables imputed:	8

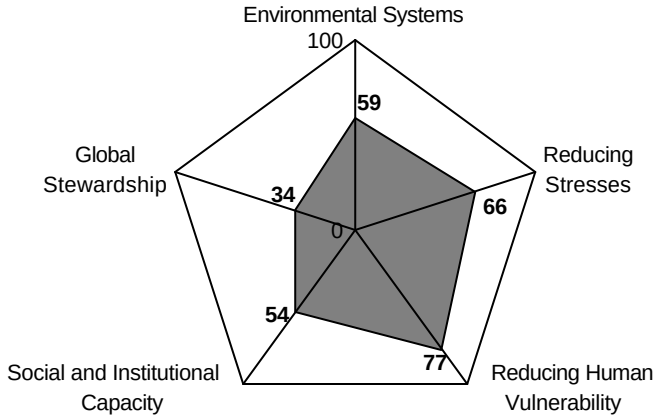


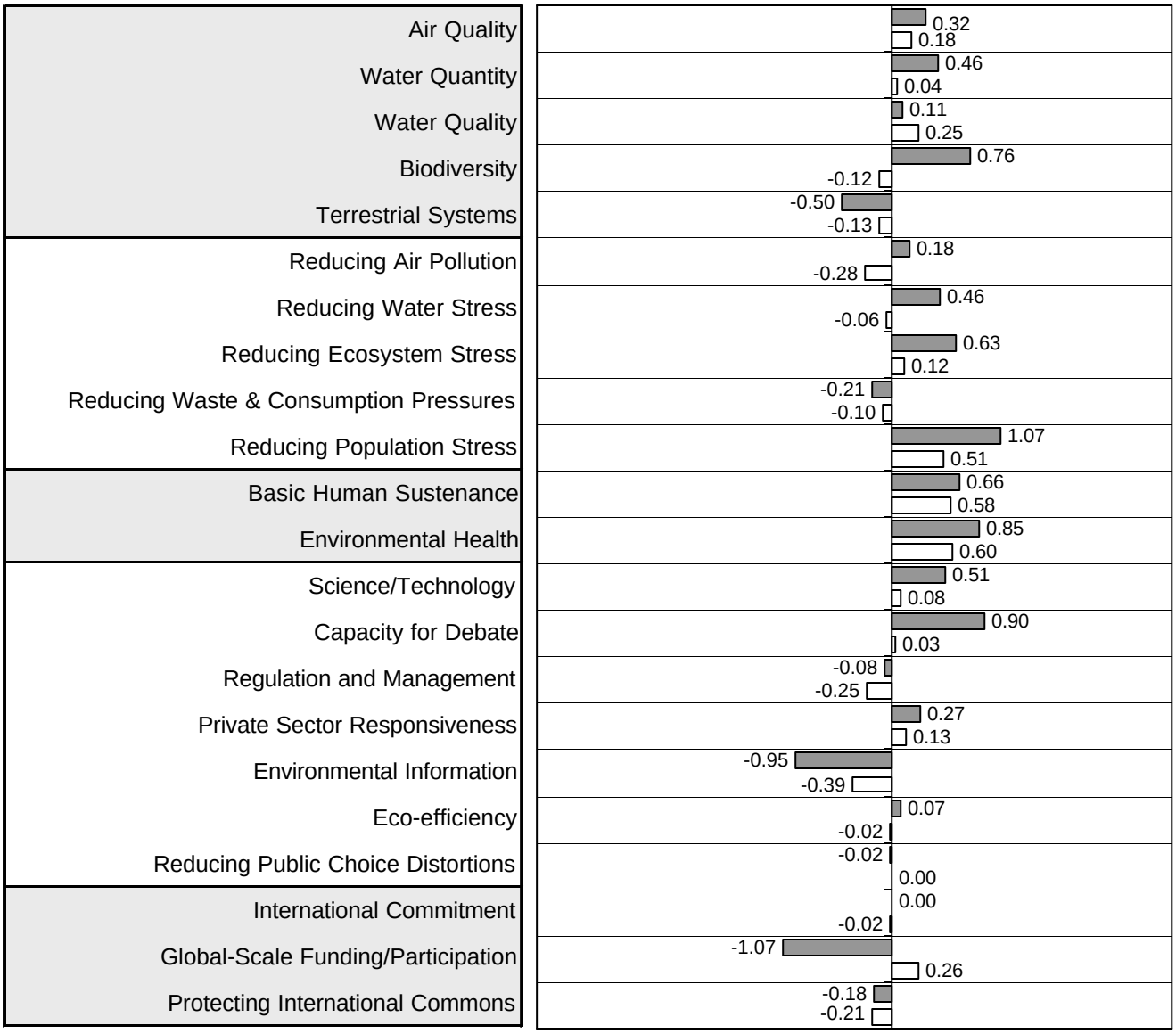
Air Quality	-0.55 / -0.27
Water Quantity	-0.13 / 0.00
Water Quality	0.08 / -0.11
Biodiversity	1.65 / -0.08
Terrestrial Systems	-0.91 / -0.03
Reducing Air Pollution	0.04 / 0.19
Reducing Water Stress	0.20 / -0.07
Reducing Ecosystem Stress	-1.06 / -0.28
Reducing Waste & Consumption Pressures	0.63 / 0.17
Reducing Population Stress	-0.66 / 0.01
Basic Human Sustenance	-0.58 / 0.09
Environmental Health	-0.27 / 0.21
Science/Technology	0.18 / -0.39
Capacity for Debate	0.69 / 0.20
Regulation and Management	-1.32 / -0.31
Private Sector Responsiveness	0.19 / -0.30
Environmental Information	0.60 / -0.15
Eco-efficiency	-0.45 / -0.52
Reducing Public Choice Distortions	-0.87 / -0.29
International Commitment	-1.27 / -0.29
Global-Scale Funding/Participation	0.20 / -0.07
Protecting International Commons	0.11 / -0.11

= Indicator value
= Reference (average value for peer group)

Estonia

ESI:	57.7
Ranking:	27
GDP/Capita:	$7,682
Peer group ESI:	52.2
Variable coverage:	48 of 67
Missing variables imputed:	12

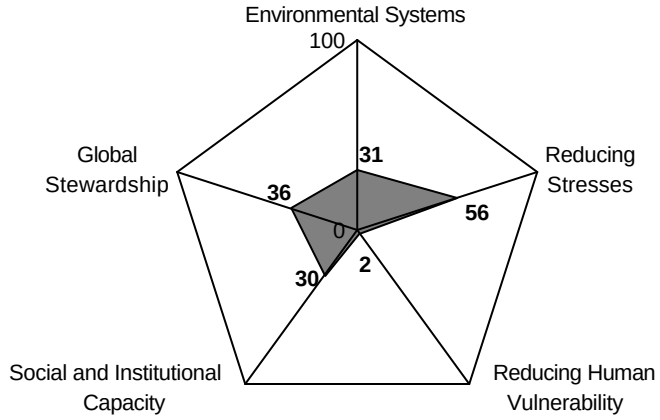




= Indicator value
= Reference (average value for peer group)

Ethiopia

ESI:	31.2
Ranking:	119
GDP/Capita:	$574
Peer group ESI:	39.3
Variable coverage:	44 of 67
Missing variables imputed:	14

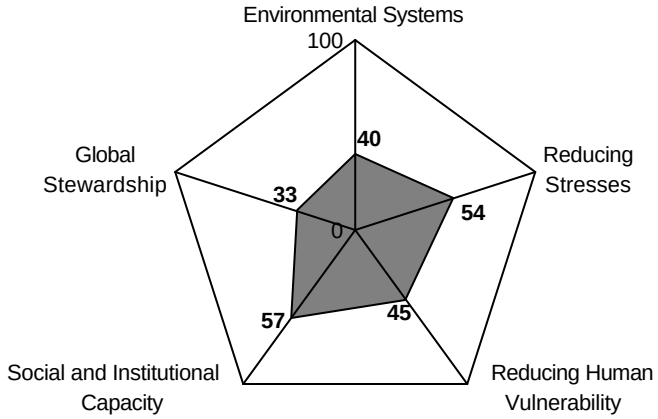


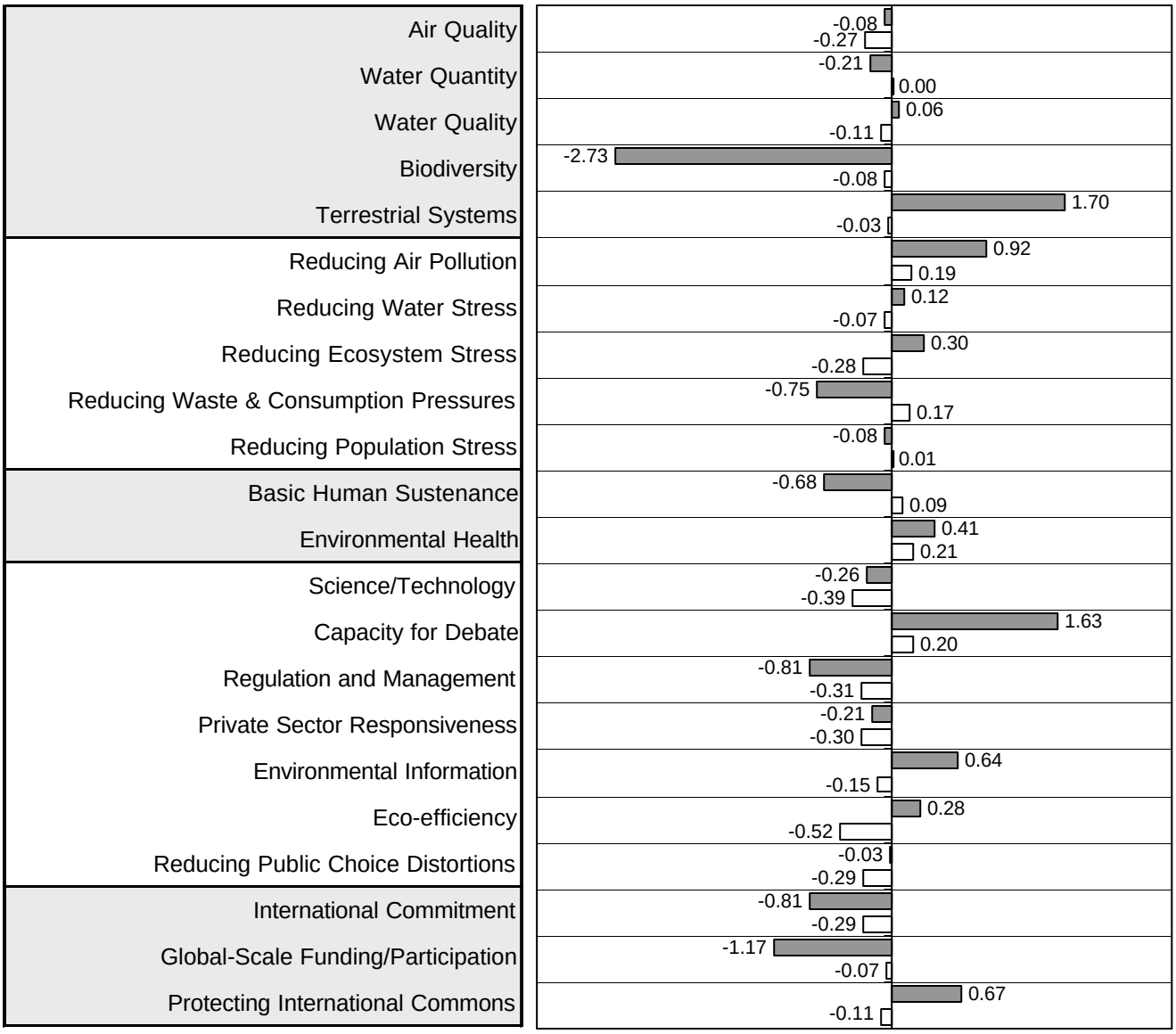
Air Quality	-0.80 / -0.48
Water Quantity	-0.85 / -0.02
Water Quality	-0.74 / -0.55
Biodiversity	-0.13 / 0.19
Terrestrial Systems	0.10 / 0.15
Reducing Air Pollution	1.06 / 0.57
Reducing Water Stress	0.60 / 0.57
Reducing Ecosystem Stress	0.29 / 0.11
Reducing Waste & Consumption Pressures	0.97 / 0.69
Reducing Population Stress	-2.23 / -1.33
Basic Human Sustenance	-2.33 / -1.38
Environmental Health	-1.93 / -1.57
Science/Technology	-1.46 / -0.90
Capacity for Debate	-0.91 / -0.56
Regulation and Management	-0.51 / -0.26
Private Sector Responsiveness	-0.67 / -0.62
Environmental Information	0.93 / 0.42
Eco-efficiency	-0.65 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-0.67 / -0.41
Global-Scale Funding/Participation	-1.17 / -0.49
Protecting International Commons	0.79 / 0.62

= Indicator value
= Reference (average value for peer group)

Fiji

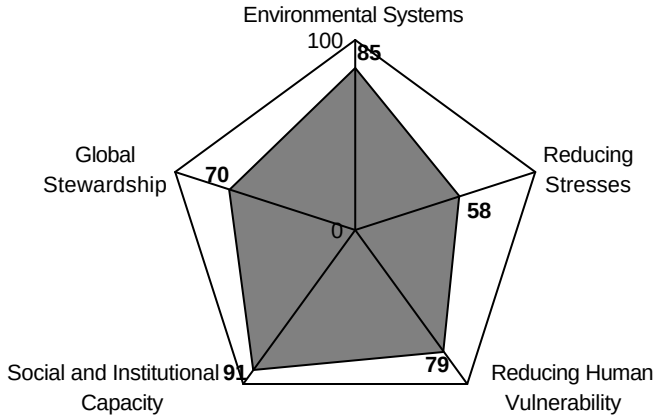
ESI:	48.1
Ranking:	55
GDP/Capita:	$4,231
Peer group ESI:	45.7
Variable coverage:	43 of 67
Missing variables imputed:	15

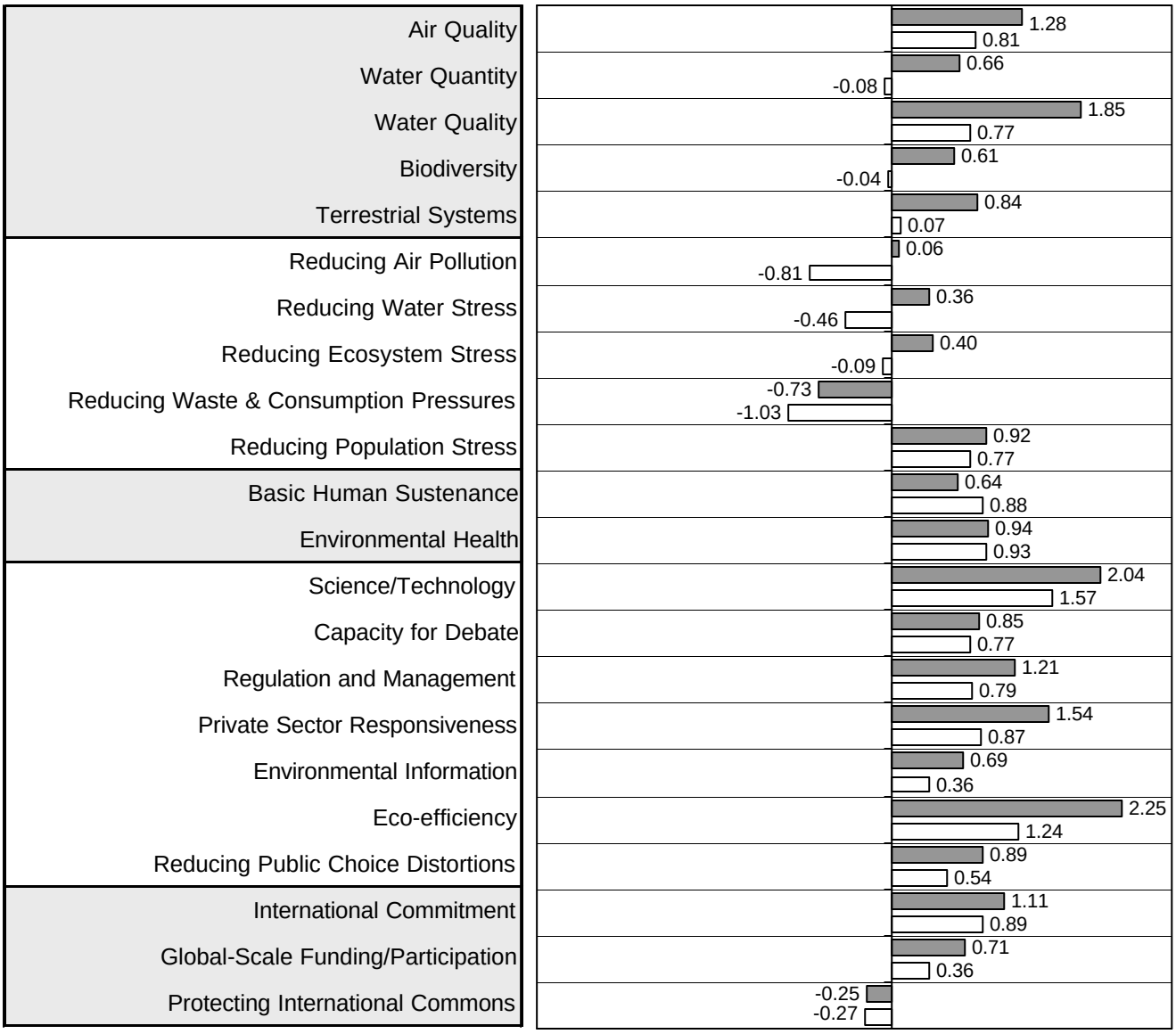




Finland

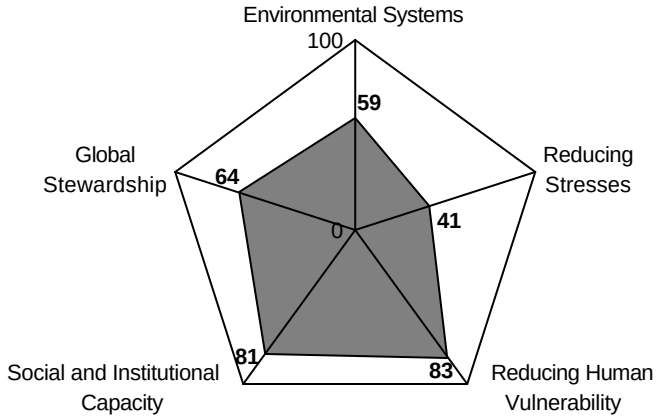
ESI:	80.5
Ranking:	1
GDP/Capita:	$20,847
Peer group ESI:	65.2
Variable coverage:	66 of 67
Missing variables imputed:	1

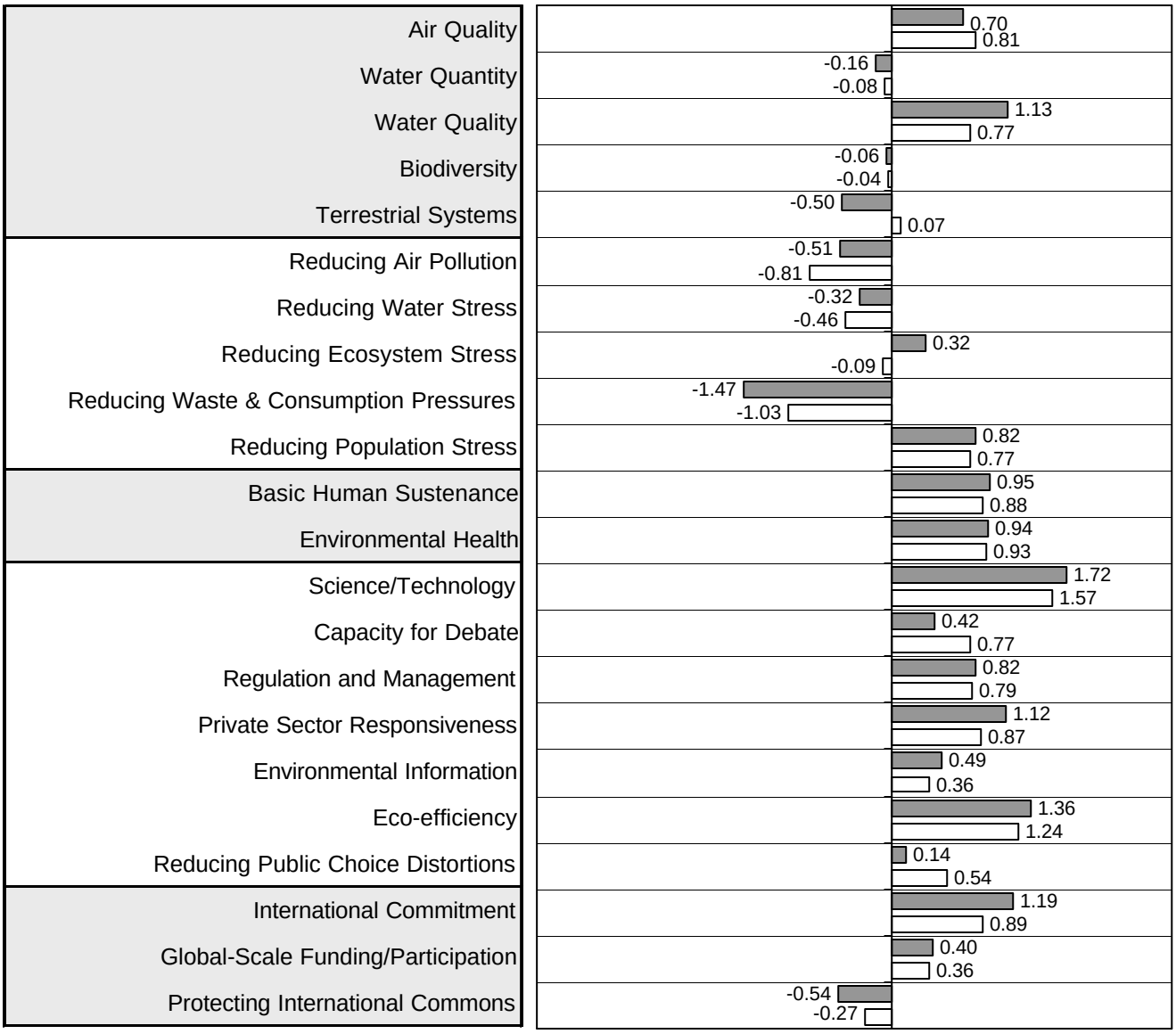




France

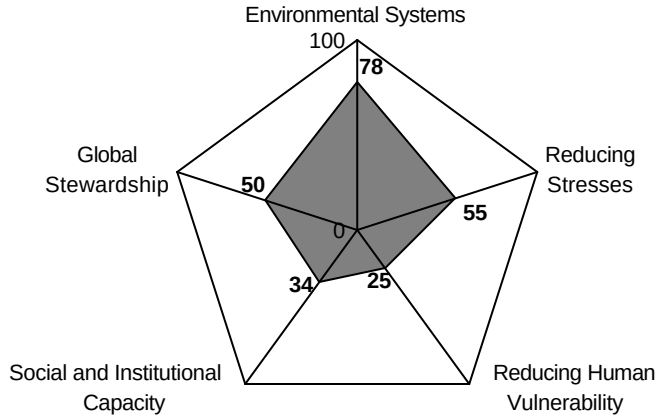
ESI:	65.8
Ranking:	13
GDP/Capita:	$21,175
Peer group ESI:	65.2
Variable coverage:	63 of 67
Missing variables imputed:	4

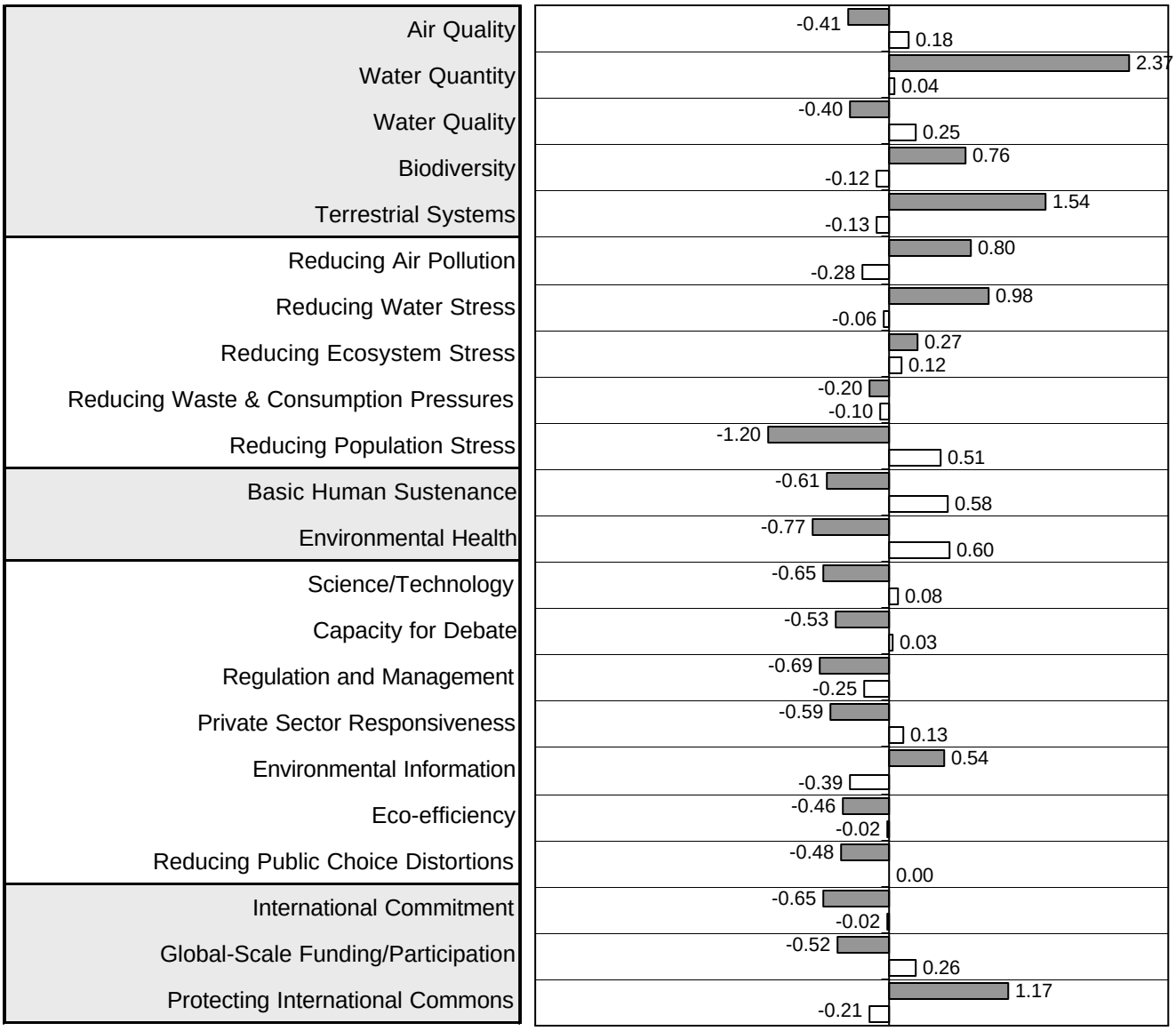




Gabon

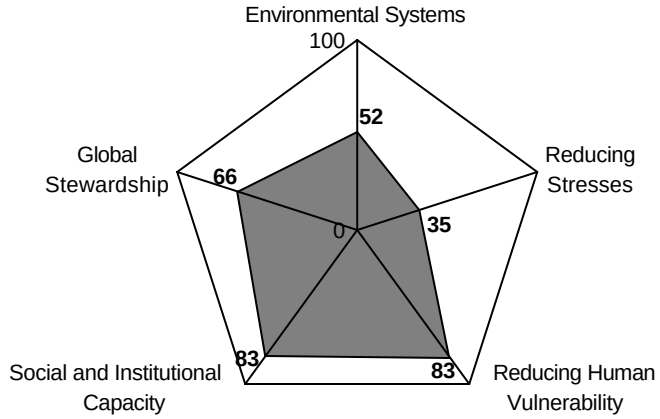
ESI:	50.5
Ranking:	49
GDP/Capita:	$6,353
Peer group ESI:	52.2
Variable coverage:	43 of 67
Missing variables imputed:	15

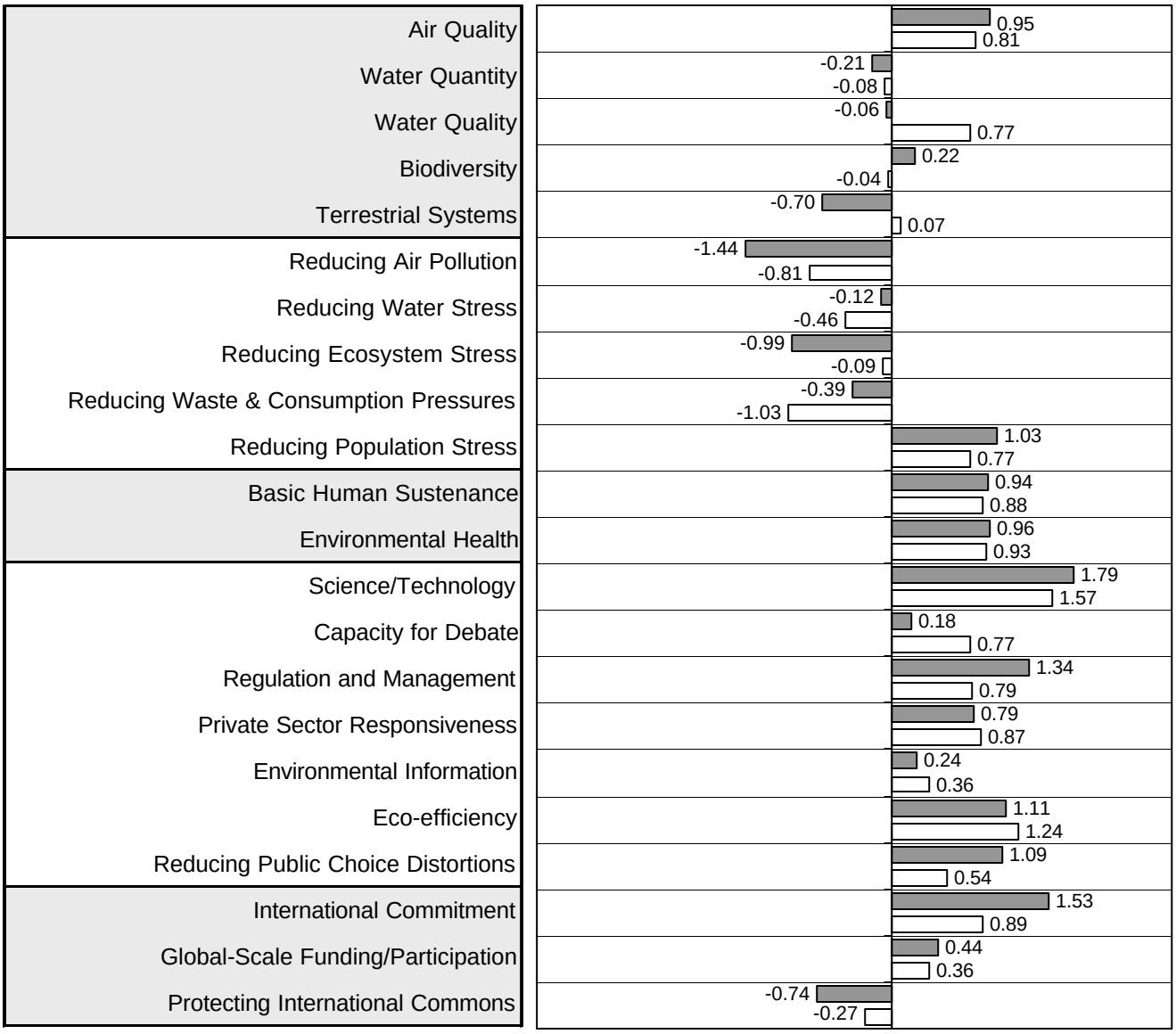




Germany

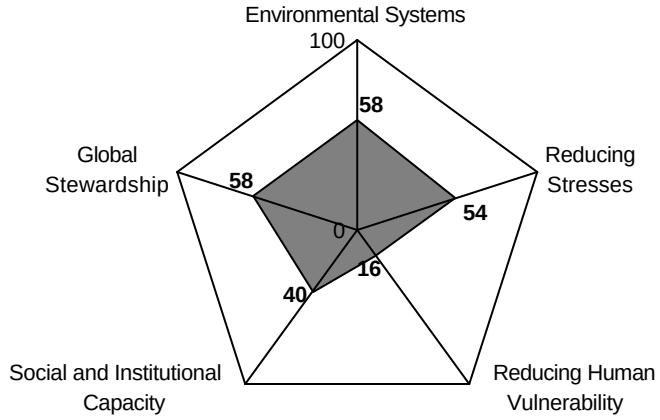
ESI:	64.2
Ranking:	15
GDP/Capita:	$22,169
Peer group ESI:	65.2
Variable coverage:	60 of 67
Missing variables imputed:	7

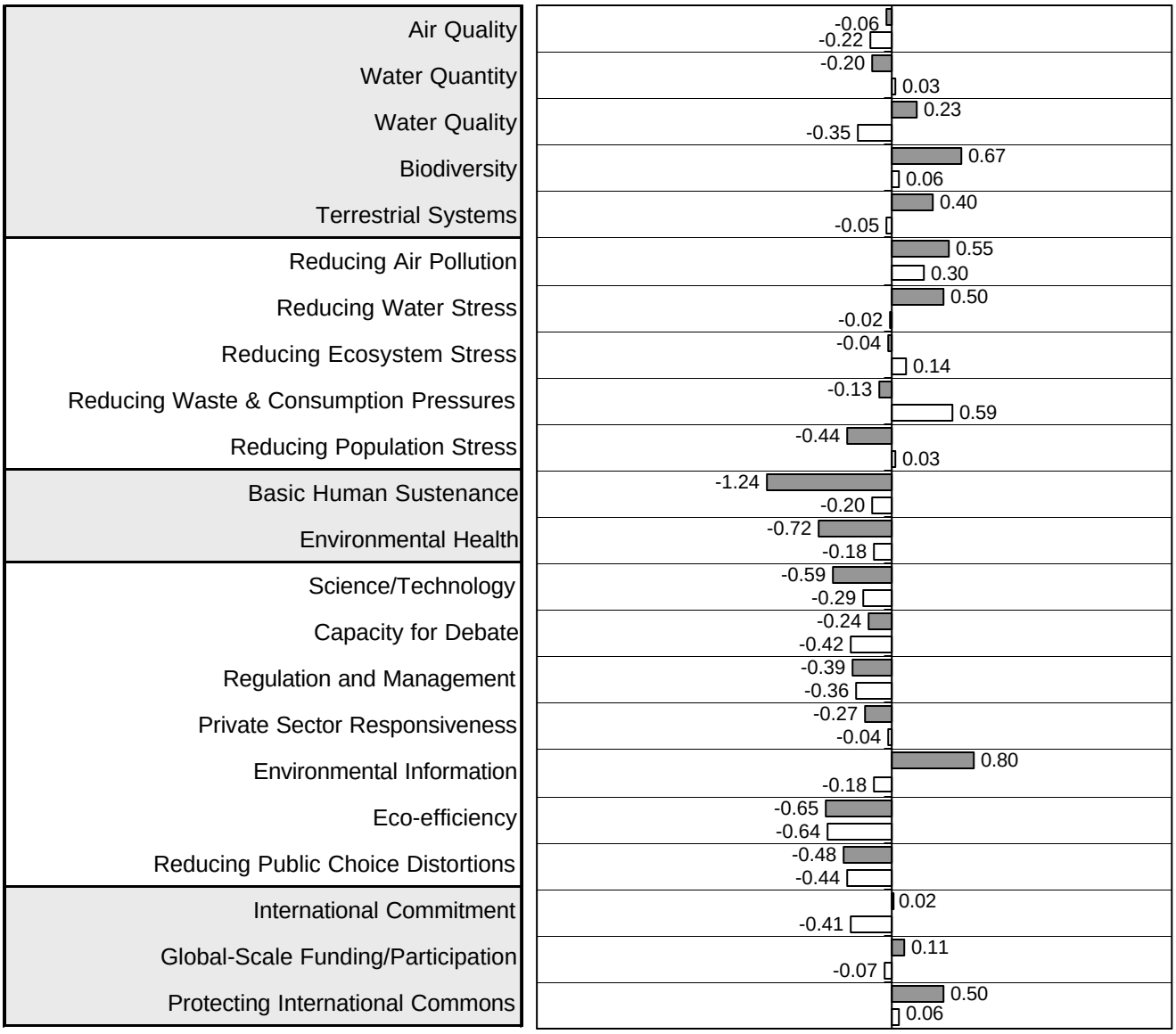




Ghana

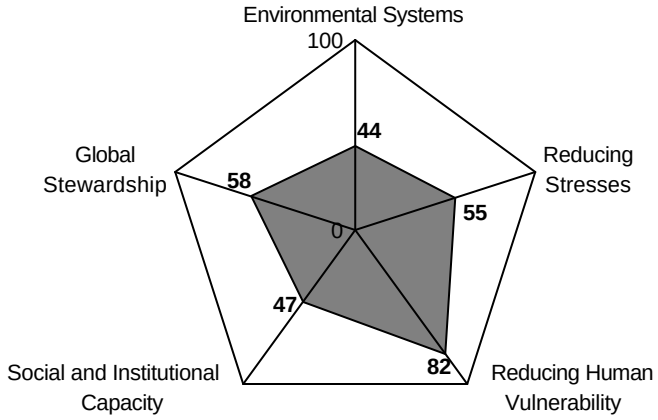
ESI:	47.0
Ranking:	63
GDP/Capita:	$1,735
Peer group ESI:	45.2
Variable coverage:	48 of 67
Missing variables imputed:	10

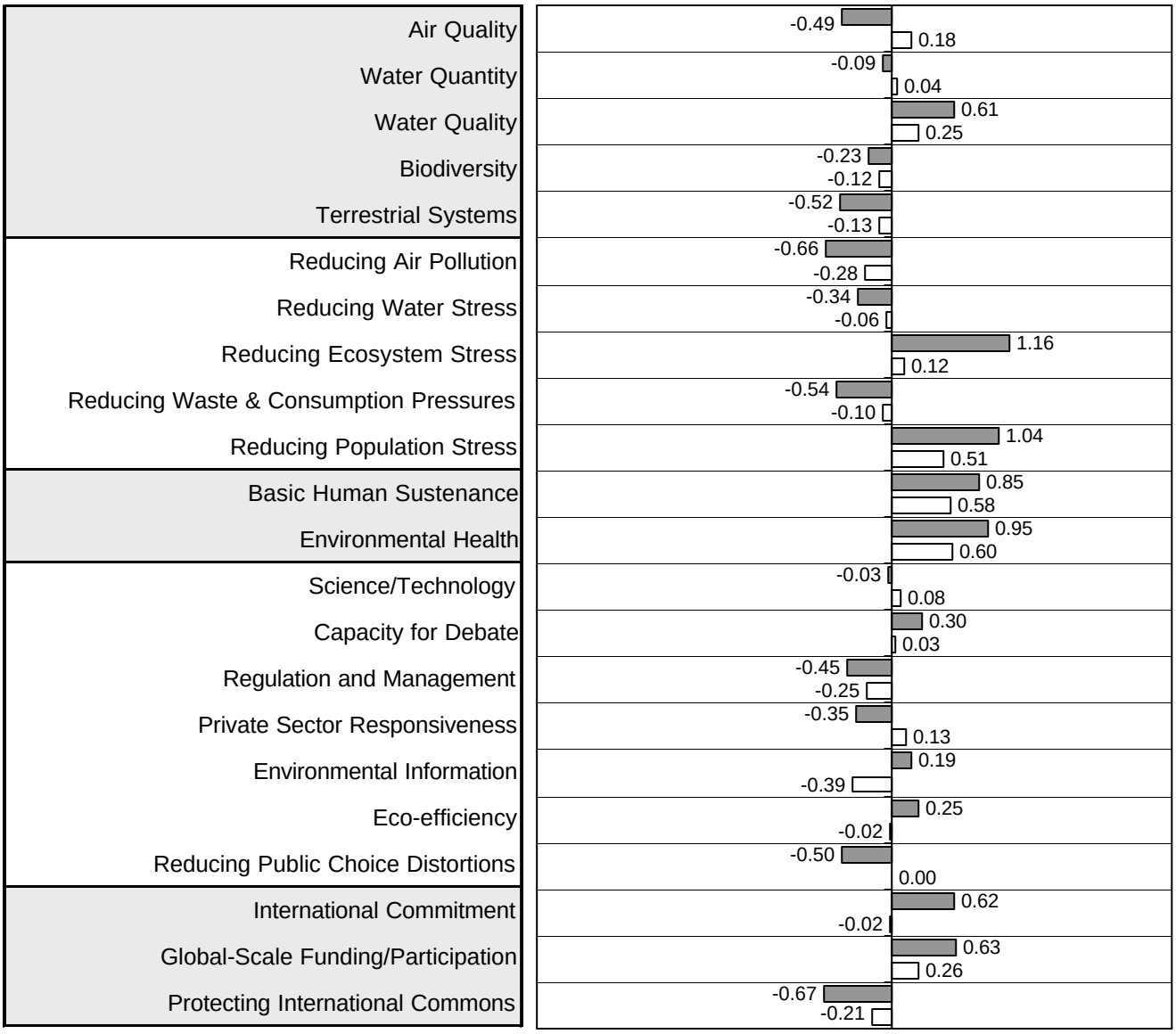




Greece

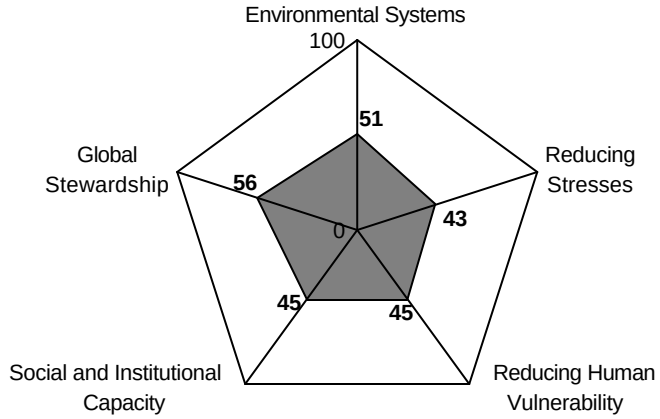
ESI:	53.1
Ranking:	41
GDP/Capita:	$13,943
Peer group ESI:	52.2
Variable coverage:	58 of 67
Missing variables imputed:	7

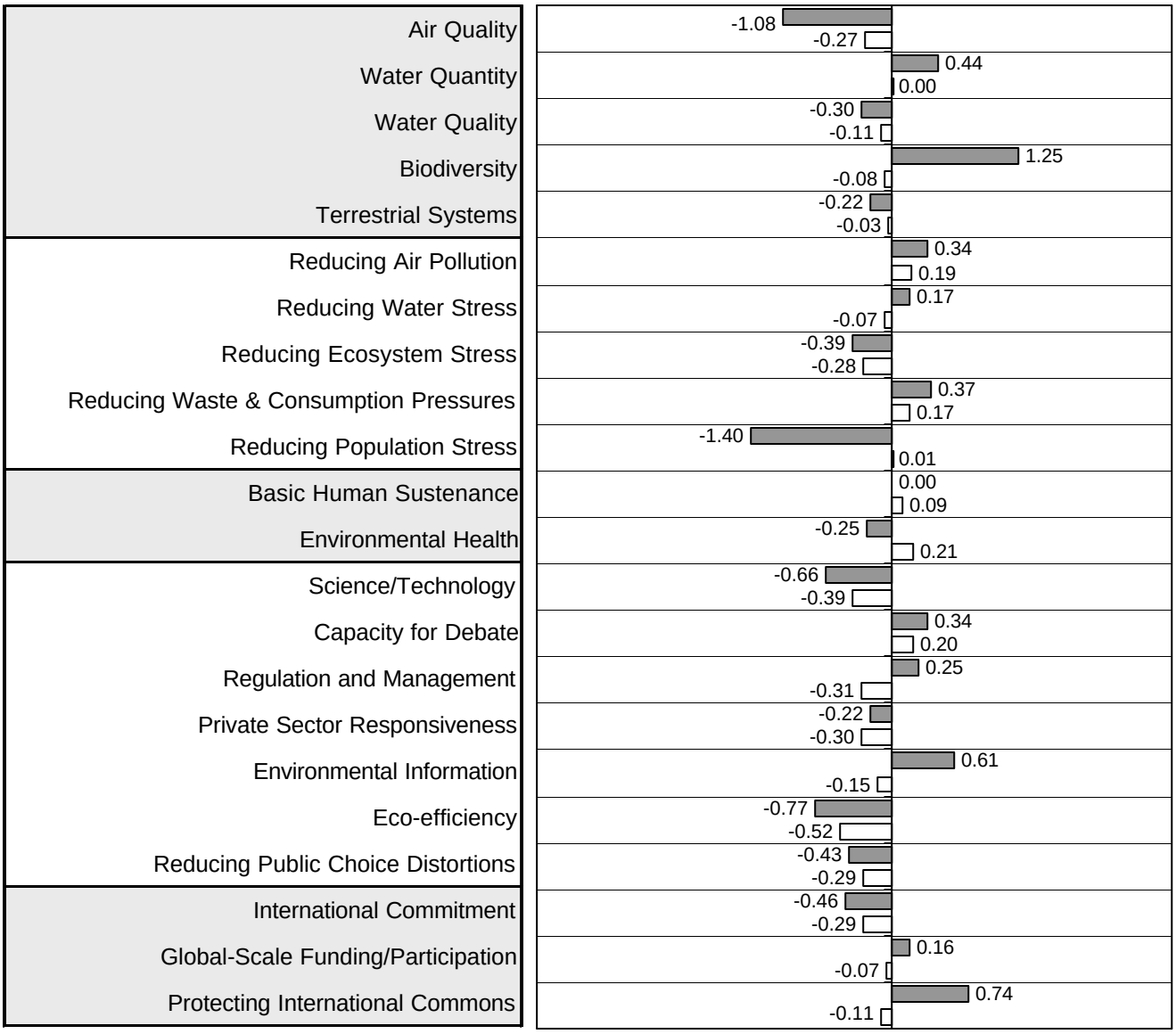




Guatemala

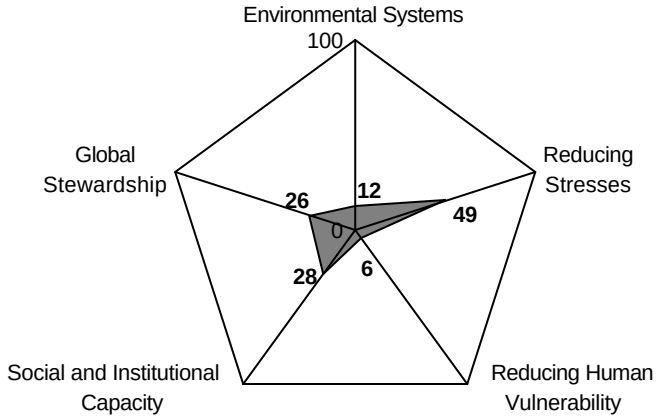
ESI:	47.3
Ranking:	61
GDP/Capita:	$3,505
Peer group ESI:	45.7
Variable coverage:	48 of 67
Missing variables imputed:	11





Haiti

ESI:	24.7
Ranking:	122
GDP/Capita:	$1,383
Peer group ESI:	39.3
Variable coverage:	42 of 67
Missing variables imputed:	16

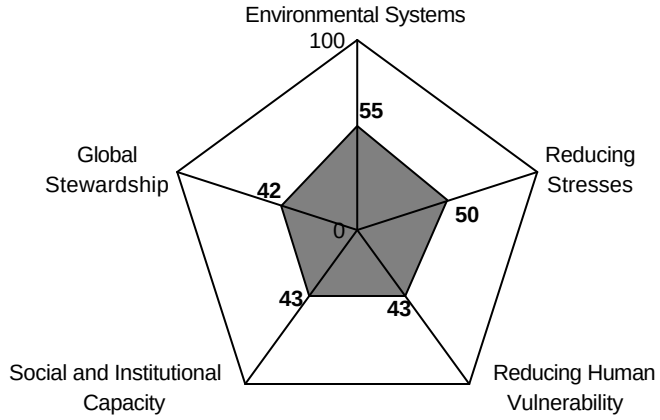


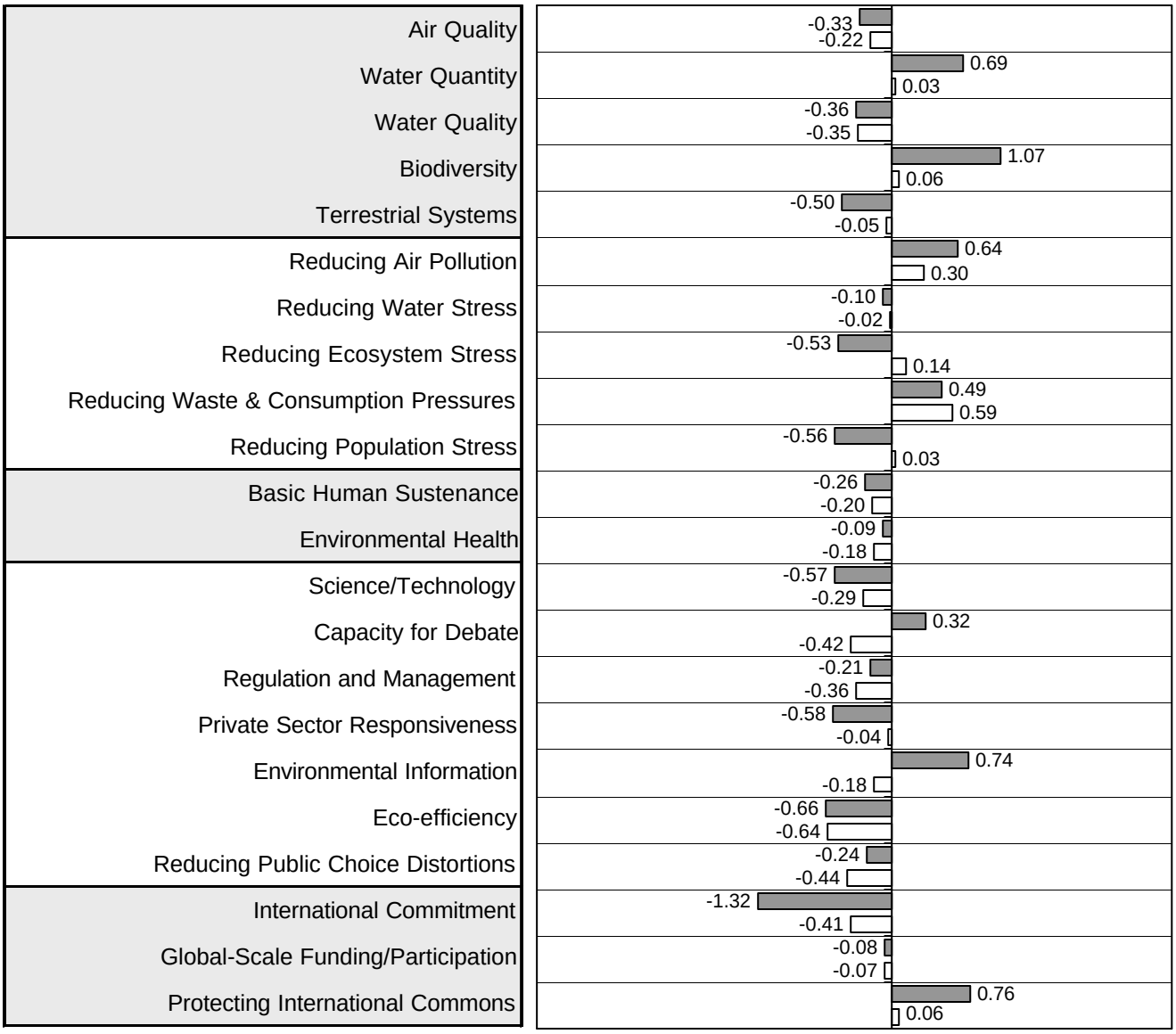
Air Quality	-0.53 / -0.48
Water Quantity	-0.69 / -0.02
Water Quality	-0.61 / -0.55
Biodiversity	-3.07 / 0.19
Terrestrial Systems	-0.93 / 0.15
Reducing Air Pollution	0.33 / 0.57
Reducing Water Stress	0.52 / 0.57
Reducing Ecosystem Stress	-1.16 / 0.11
Reducing Waste & Consumption Pressures	0.92 / 0.69
Reducing Population Stress	-0.70 / -1.33
Basic Human Sustenance	-1.93 / -1.38
Environmental Health	-1.26 / -1.57
Science/Technology	-1.06 / -0.90
Capacity for Debate	-0.50 / -0.56
Regulation and Management	-0.86 / -0.26
Private Sector Responsiveness	-1.44 / -0.62
Environmental Information	0.63 / 0.42
Eco-efficiency	-0.28 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-1.07 / -0.41
Global-Scale Funding/Participation	-1.17 / -0.49
Protecting International Commons	0.28 / 0.62

= Indicator value
= Reference (average value for peer group)

Honduras

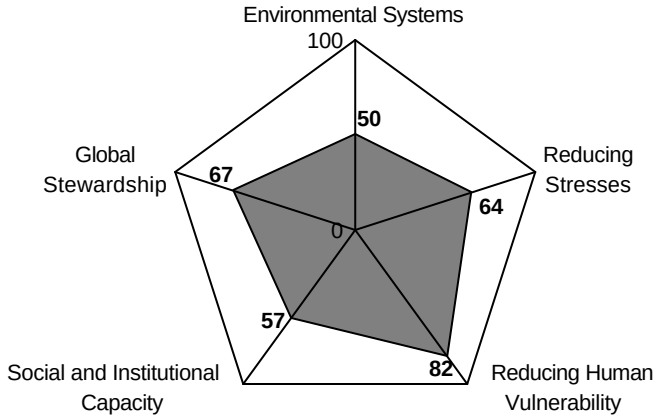
ESI:	46.9
Ranking:	64
GDP/Capita:	$2,433
Peer group ESI:	45.2
Variable coverage:	46 of 67
Missing variables imputed:	12





Hungary

ESI:	61.0
Ranking:	21
GDP/Capita:	$10,232
Peer group ESI:	52.2
Variable coverage:	65 of 67
Missing variables imputed:	0

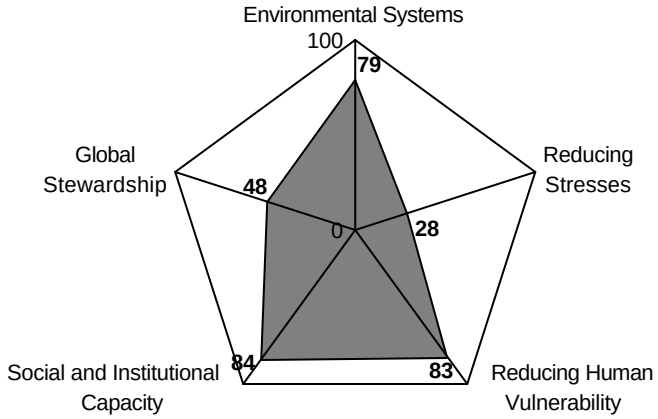


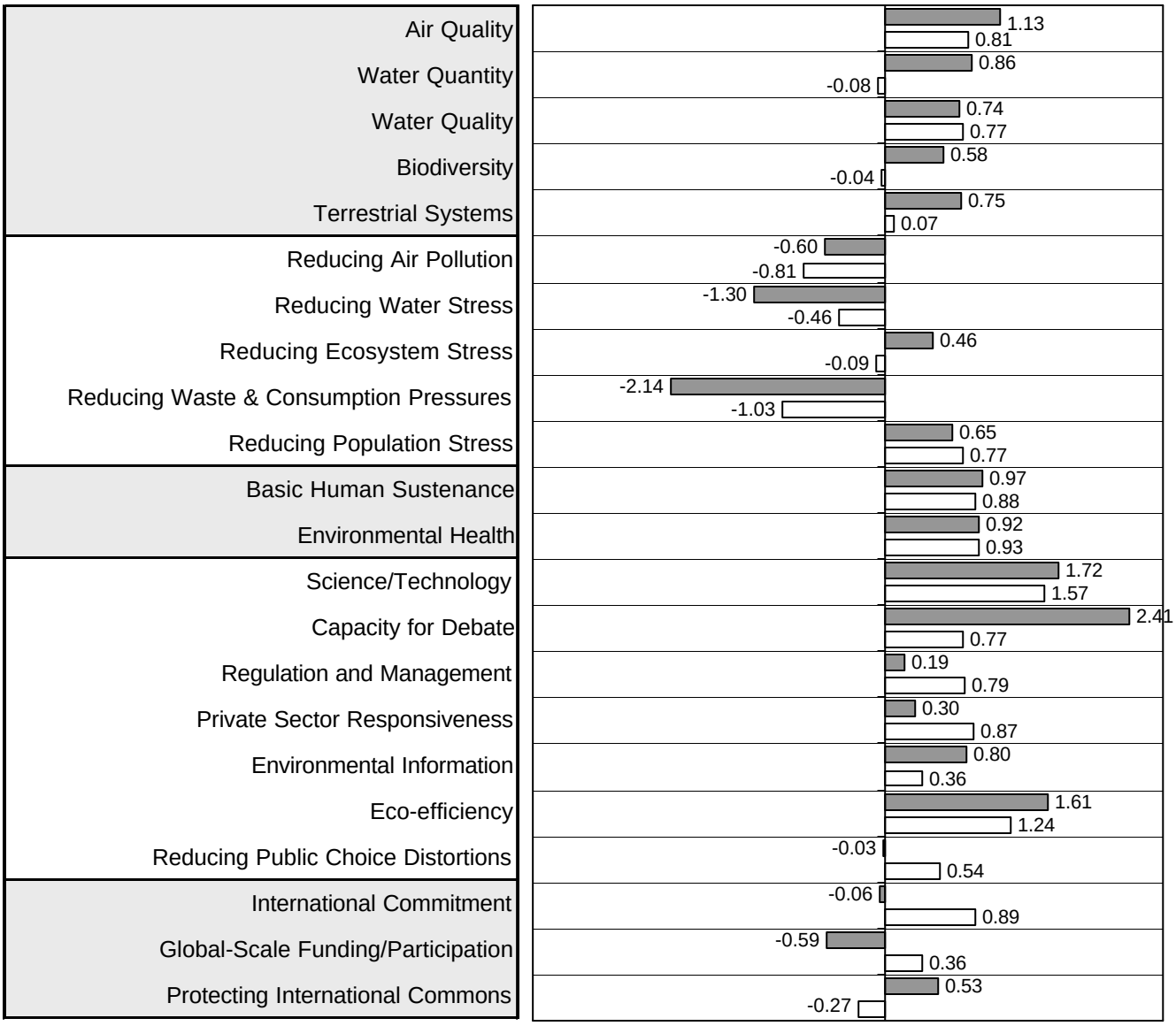
Air Quality	0.32 / 0.18
Water Quantity	0.21 / 0.04
Water Quality	0.93 / 0.25
Biodiversity	-0.10 / -0.12
Terrestrial Systems	-1.32 / -0.13
Reducing Air Pollution	-0.59 / -0.28
Reducing Water Stress	0.26 / -0.06
Reducing Ecosystem Stress	0.83 / 0.12
Reducing Waste & Consumption Pressures	0.27 / -0.10
Reducing Population Stress	1.04 / 0.51
Basic Human Sustenance	0.89 / 0.58
Environmental Health	0.91 / 0.60
Science/Technology	0.14 / 0.08
Capacity for Debate	0.30 / 0.03
Regulation and Management	-0.36 / -0.25
Private Sector Responsiveness	0.83 / 0.13
Environmental Information	-0.93 / -0.39
Eco-efficiency	0.36 / -0.02
Reducing Public Choice Distortions	0.83 / 0.00
International Commitment	0.47 / -0.02
Global-Scale Funding/Participation	0.79 / 0.26
Protecting International Commons	0.08 / -0.21

= Indicator value
= Reference (average value for peer group)

Iceland

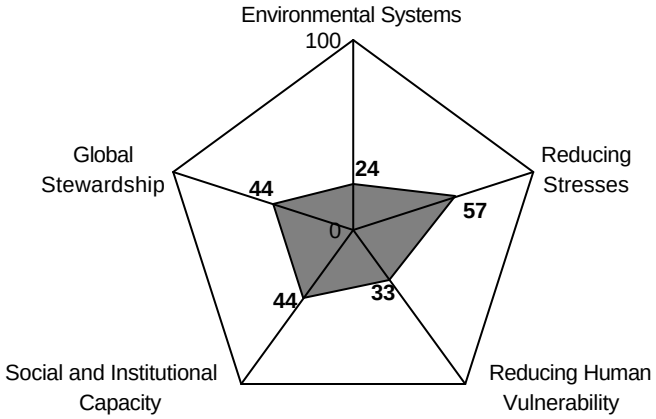
ESI:	67.3
Ranking:	9
GDP/Capita:	$25,110
Peer group ESI:	65.2
Variable coverage:	52 of 67
Missing variables imputed:	12





India

ESI:	40.9
Ranking:	93
GDP/Capita:	$2,077
Peer group ESI:	45.2
Variable coverage:	60 of 67
Missing variables imputed:	5

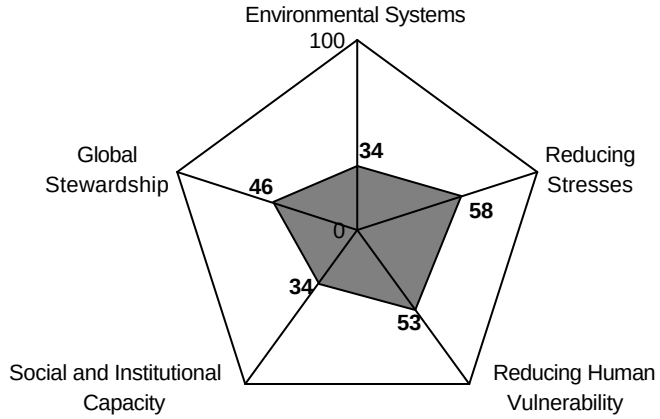


Air Quality	-0.06 / -0.22
Water Quantity	-0.42 / 0.03
Water Quality	-1.31 / -0.35
Biodiversity	-1.16 / 0.06
Terrestrial Systems	-0.58 / -0.05
Reducing Air Pollution	0.07 / 0.30
Reducing Water Stress	-0.17 / -0.02
Reducing Ecosystem Stress	0.47 / 0.14
Reducing Waste & Consumption Pressures	0.62 / 0.59
Reducing Population Stress	-0.10 / 0.03
Basic Human Sustenance	-0.20 / -0.20
Environmental Health	-0.69 / -0.18
Science/Technology	-0.42 / -0.29
Capacity for Debate	-0.23 / -0.42
Regulation and Management	0.01 / -0.36
Private Sector Responsiveness	0.83 / -0.04
Environmental Information	-0.03 / -0.18
Eco-efficiency	-0.82 / -0.64
Reducing Public Choice Distortions	-0.44 / -0.44
International Commitment	0.30 / -0.41
Global-Scale Funding/Participation	0.06 / -0.07
Protecting International Commons	-0.79 / 0.06

= Indicator value
= Reference (average value for peer group)

Indonesia

ESI:	42.6
Ranking:	86
GDP/Capita:	$2,651
Peer group ESI:	45.2
Variable coverage:	60 of 67
Missing variables imputed:	6

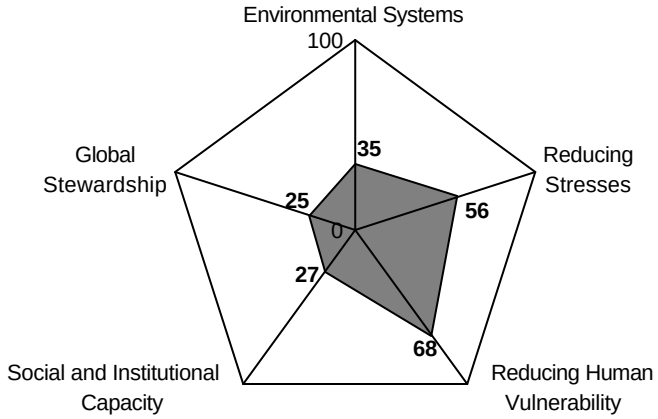


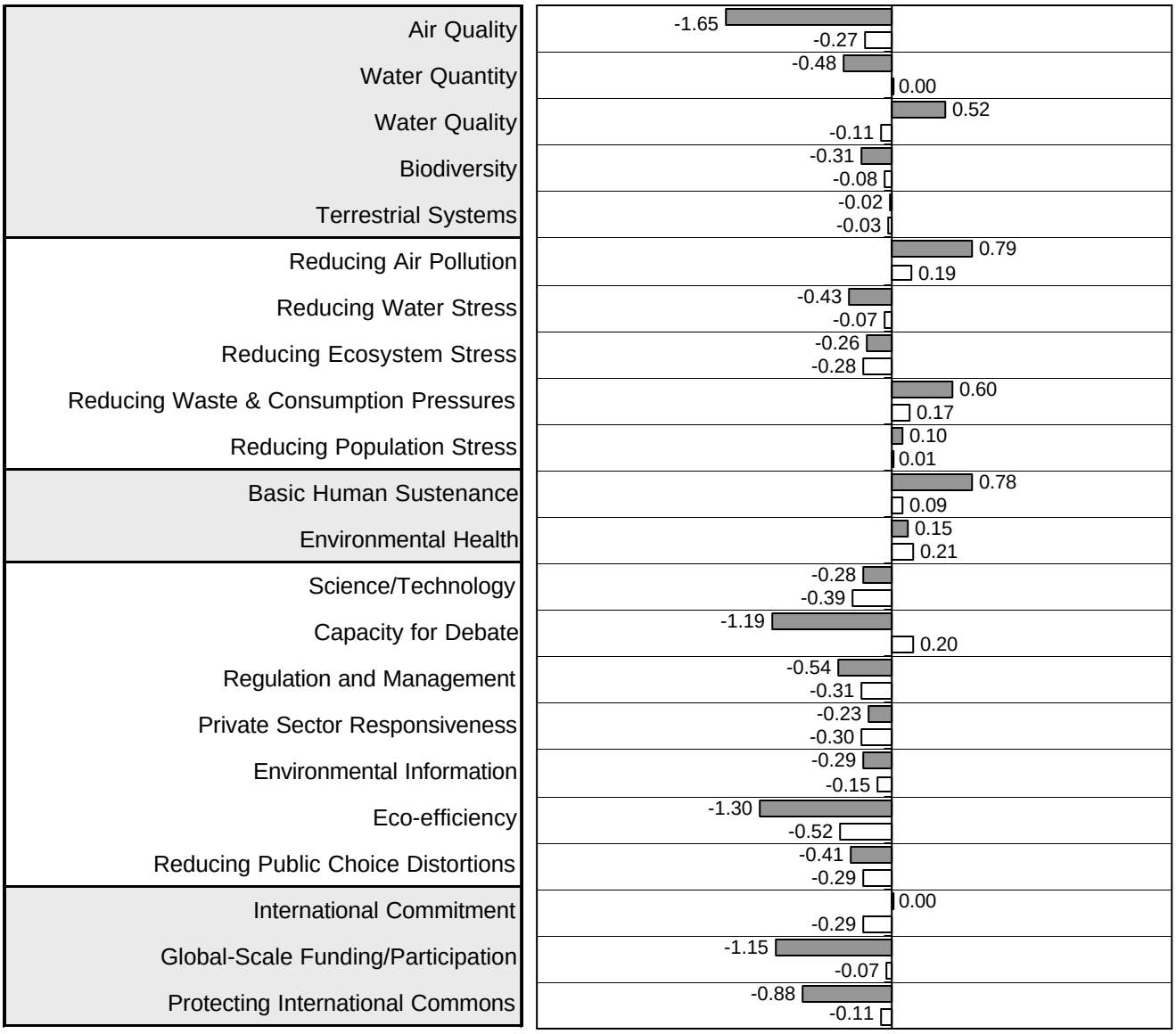
Air Quality	-0.40 / -0.22
Water Quantity	0.04 / 0.03
Water Quality	-0.77 / -0.35
Biodiversity	-1.14 / 0.06
Terrestrial Systems	0.14 / -0.05
Reducing Air Pollution	0.23 / 0.30
Reducing Water Stress	0.42 / -0.02
Reducing Ecosystem Stress	-0.14 / 0.14
Reducing Waste & Consumption Pressures	0.28 / 0.59
Reducing Population Stress	0.20 / 0.03
Basic Human Sustenance	0.21 / -0.20
Environmental Health	-0.08 / -0.18
Science/Technology	-0.66 / -0.29
Capacity for Debate	-0.64 / -0.42
Regulation and Management	-0.23 / -0.36
Private Sector Responsiveness	1.01 / -0.04
Environmental Information	-0.05 / -0.18
Eco-efficiency	-1.54 / -0.64
Reducing Public Choice Distortions	-0.73 / -0.44
International Commitment	0.09 / -0.41
Global-Scale Funding/Participation	-0.25 / -0.07
Protecting International Commons	-0.11 / 0.06

= Indicator value
= Reference (average value for peer group)

Iran

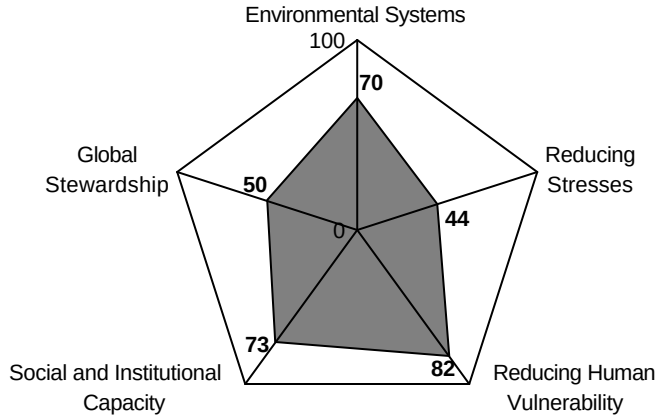
ESI:	38.4
Ranking:	105
GDP/Capita:	$5,121
Peer group ESI:	45.7
Variable coverage:	51 of 67
Missing variables imputed:	8

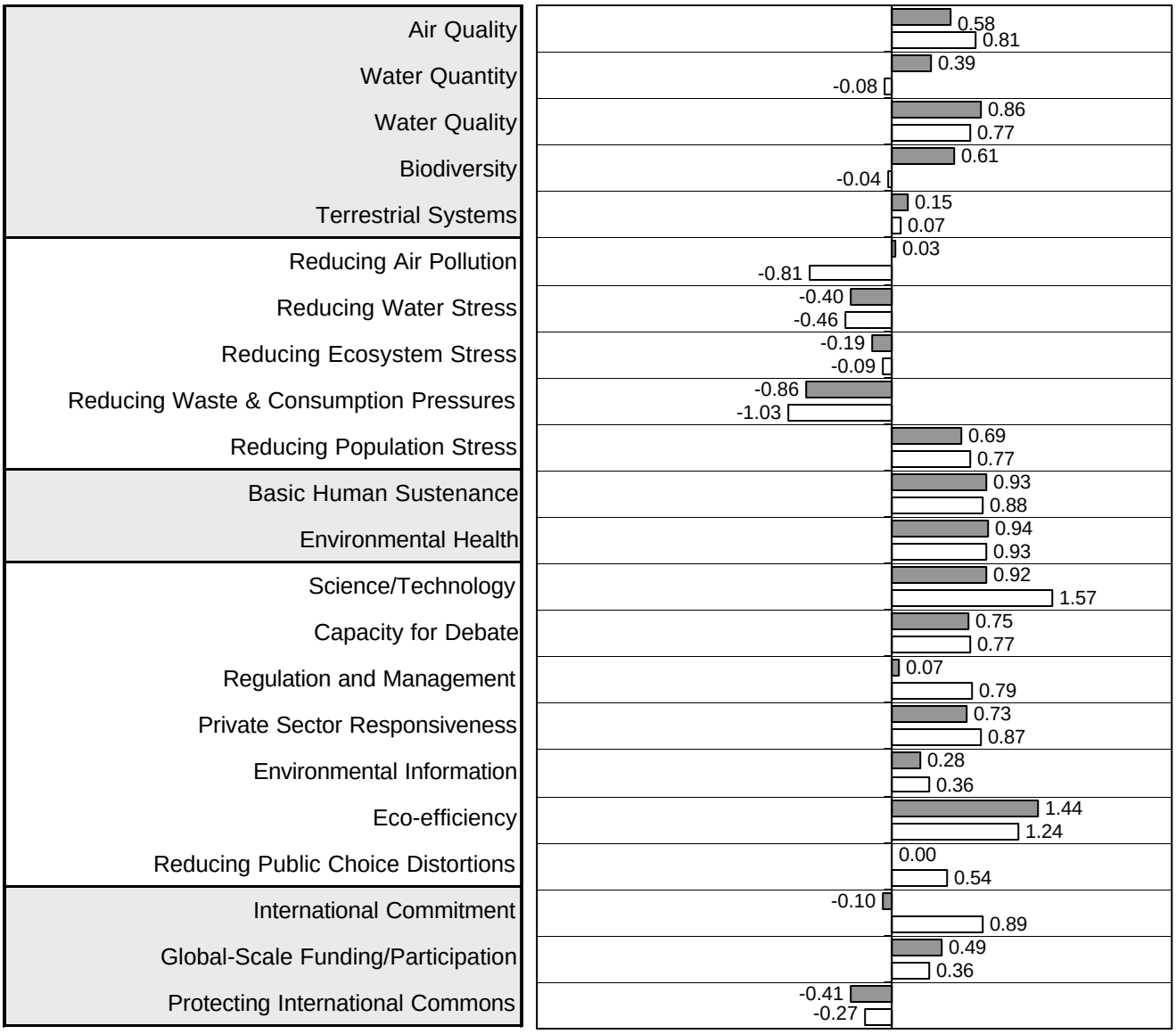




Ireland

ESI:	64.0
Ranking:	17
GDP/Capita:	$21,482
Peer group ESI:	65.2
Variable coverage:	57 of 67
Missing variables imputed:	9

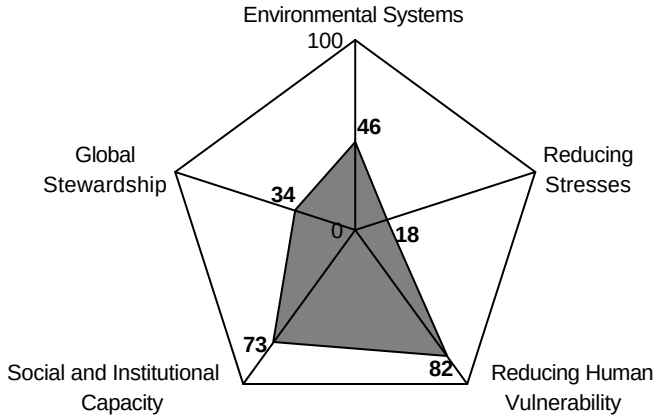


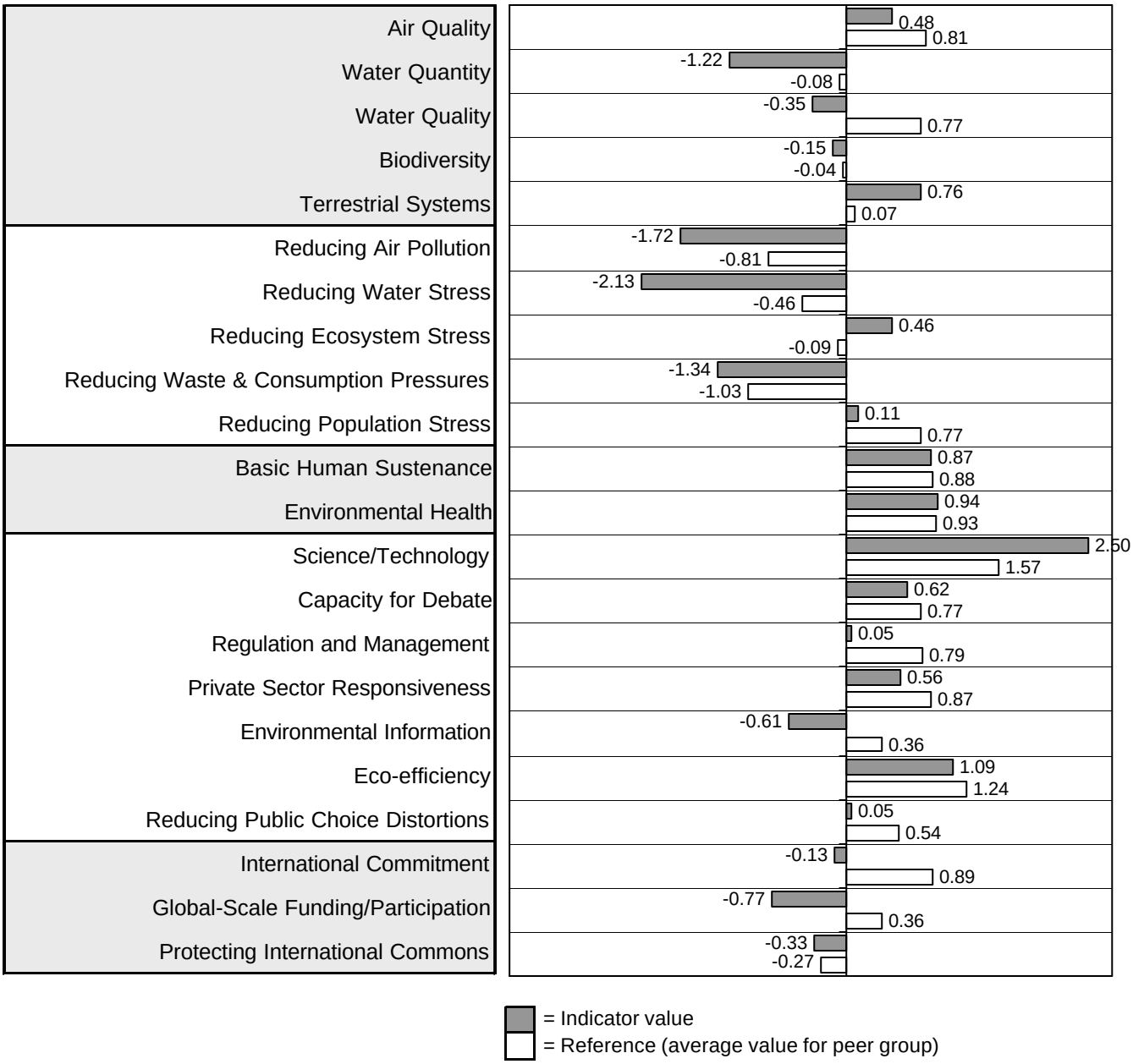


= Indicator value
= Reference (average value for peer group)

Israel

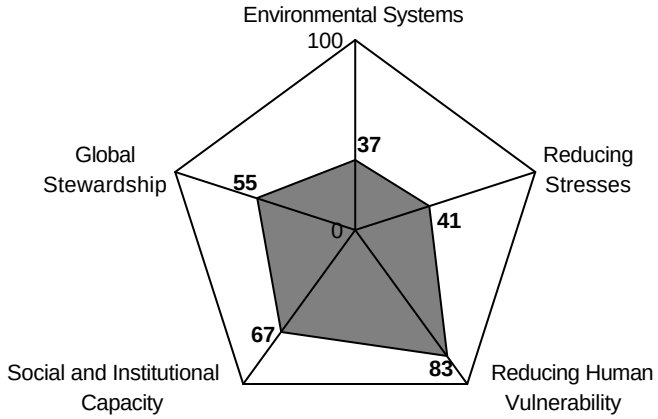
ESI:	49.5
Ranking:	53
GDP/Capita:	$17,301
Peer group ESI:	65.2
Variable coverage:	54 of 67
Missing variables imputed:	9

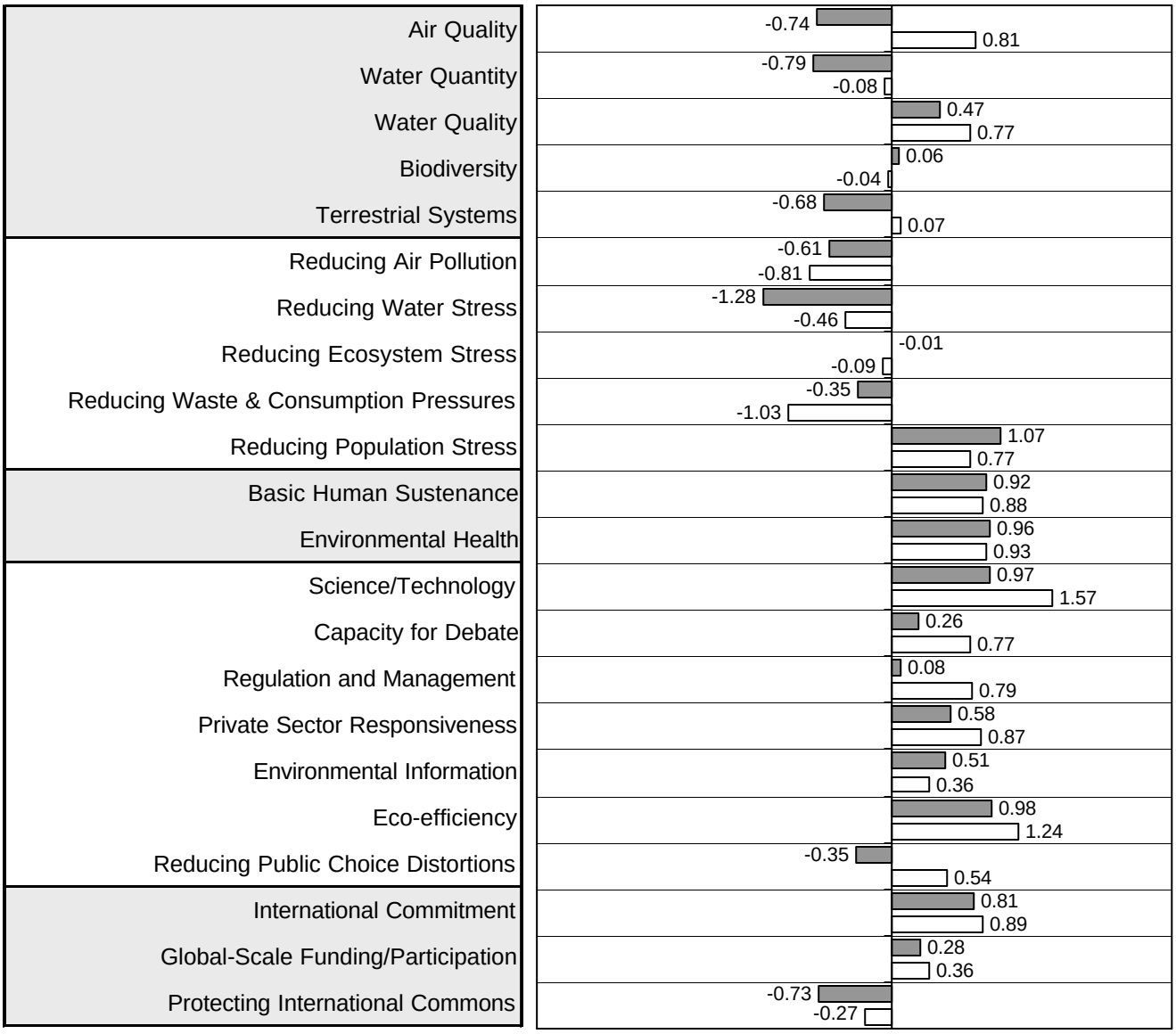




Italy

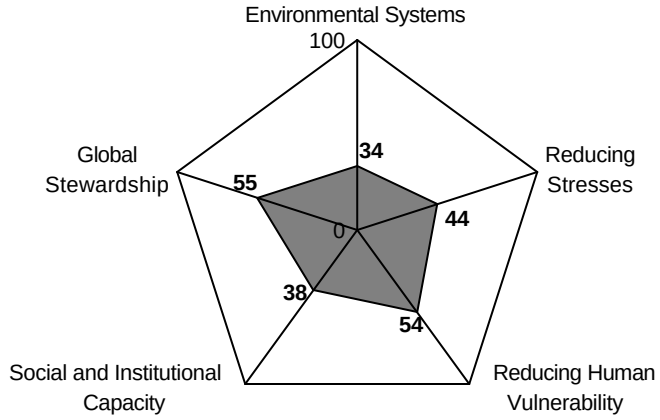
ESI:	54.3
Ranking:	37
GDP/Capita:	$20,585
Peer group ESI:	65.2
Variable coverage:	59 of 67
Missing variables imputed:	8

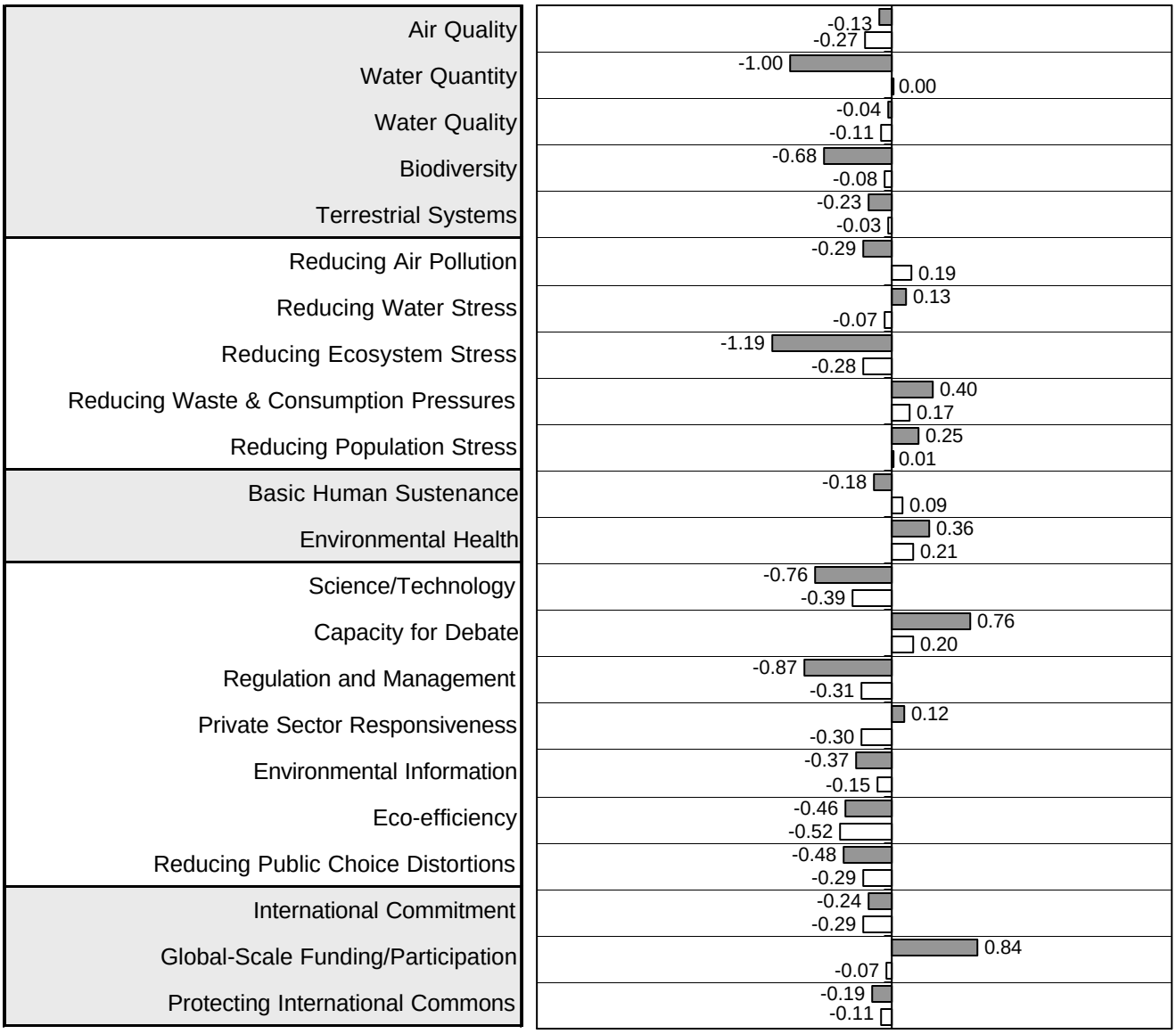




Jamaica

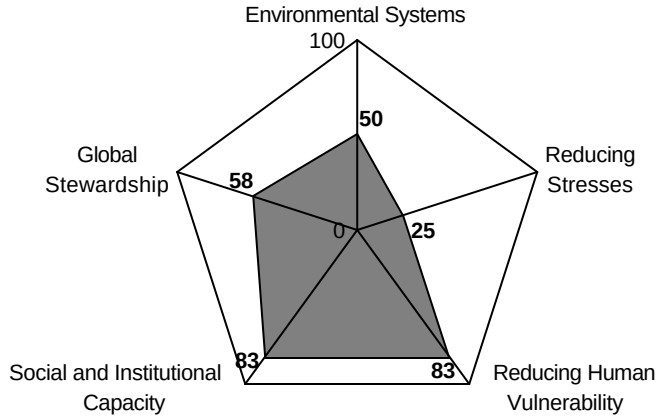
ESI:	42.3
Ranking:	88
GDP/Capita:	$3,389
Peer group ESI:	45.7
Variable coverage:	46 of 67
Missing variables imputed:	12

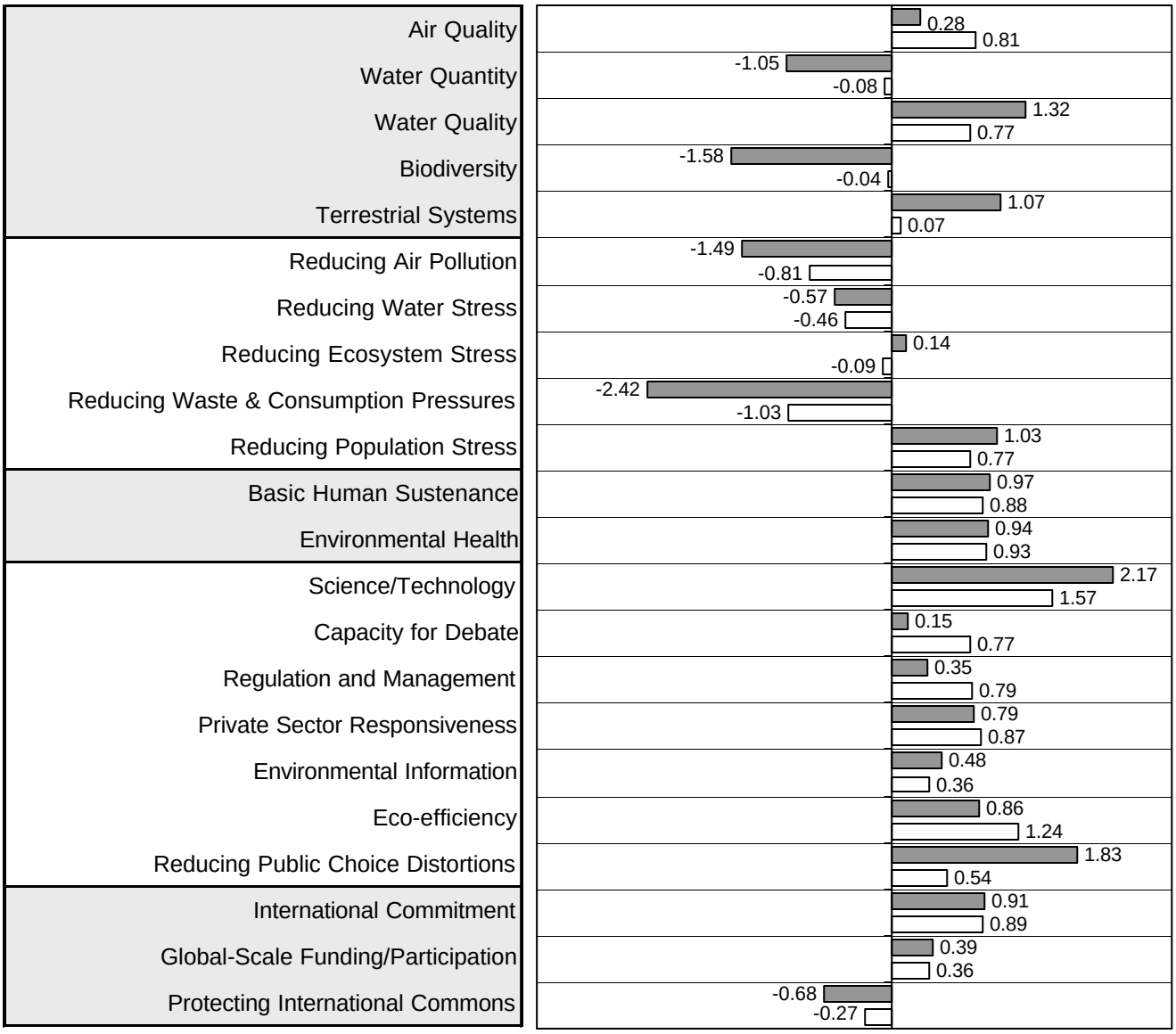




Japan

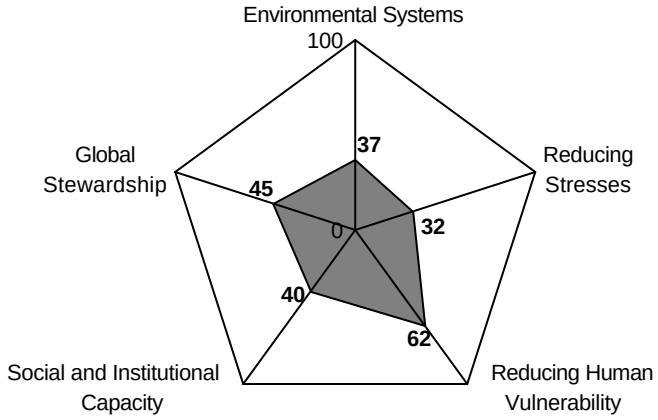
ESI:	60.6
Ranking:	22
GDP/Capita:	$23,257
Peer group ESI:	65.2
Variable coverage:	64 of 67
Missing variables imputed:	2

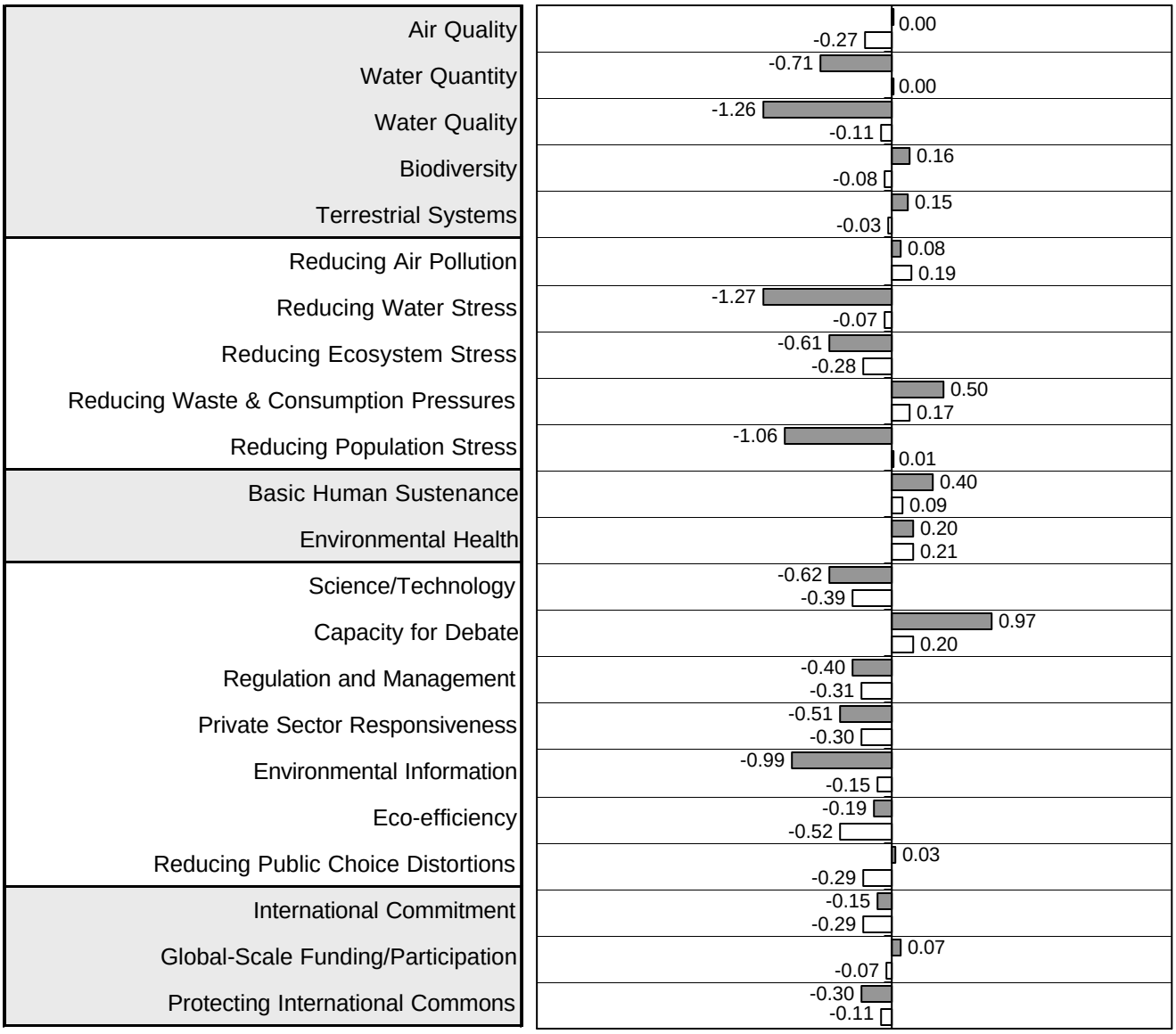




Jordan

ESI:	40.1
Ranking:	96
GDP/Capita:	$3,347
Peer group ESI:	45.7
Variable coverage:	54 of 67
Missing variables imputed:	9

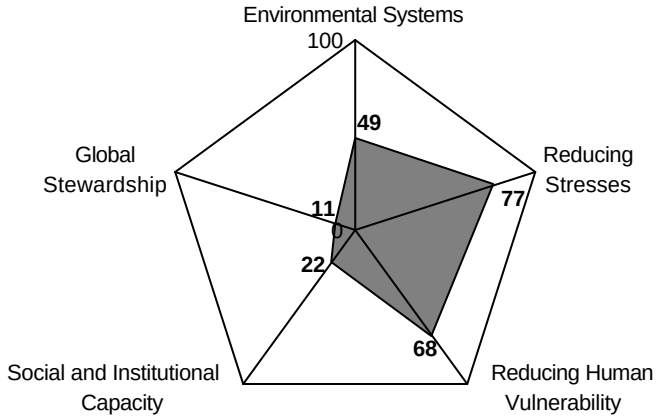




= Indicator value
= Reference (average value for peer group)

Kazakhstan

ESI:	41.6
Ranking:	91
GDP/Capita:	$4,378
Peer group ESI:	45.7
Variable coverage:	43 of 67
Missing variables imputed:	15

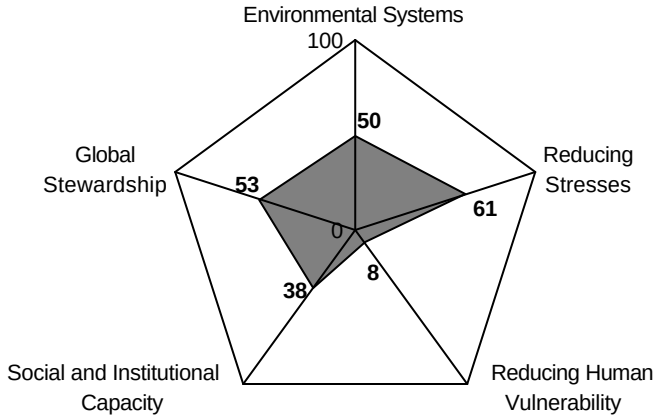


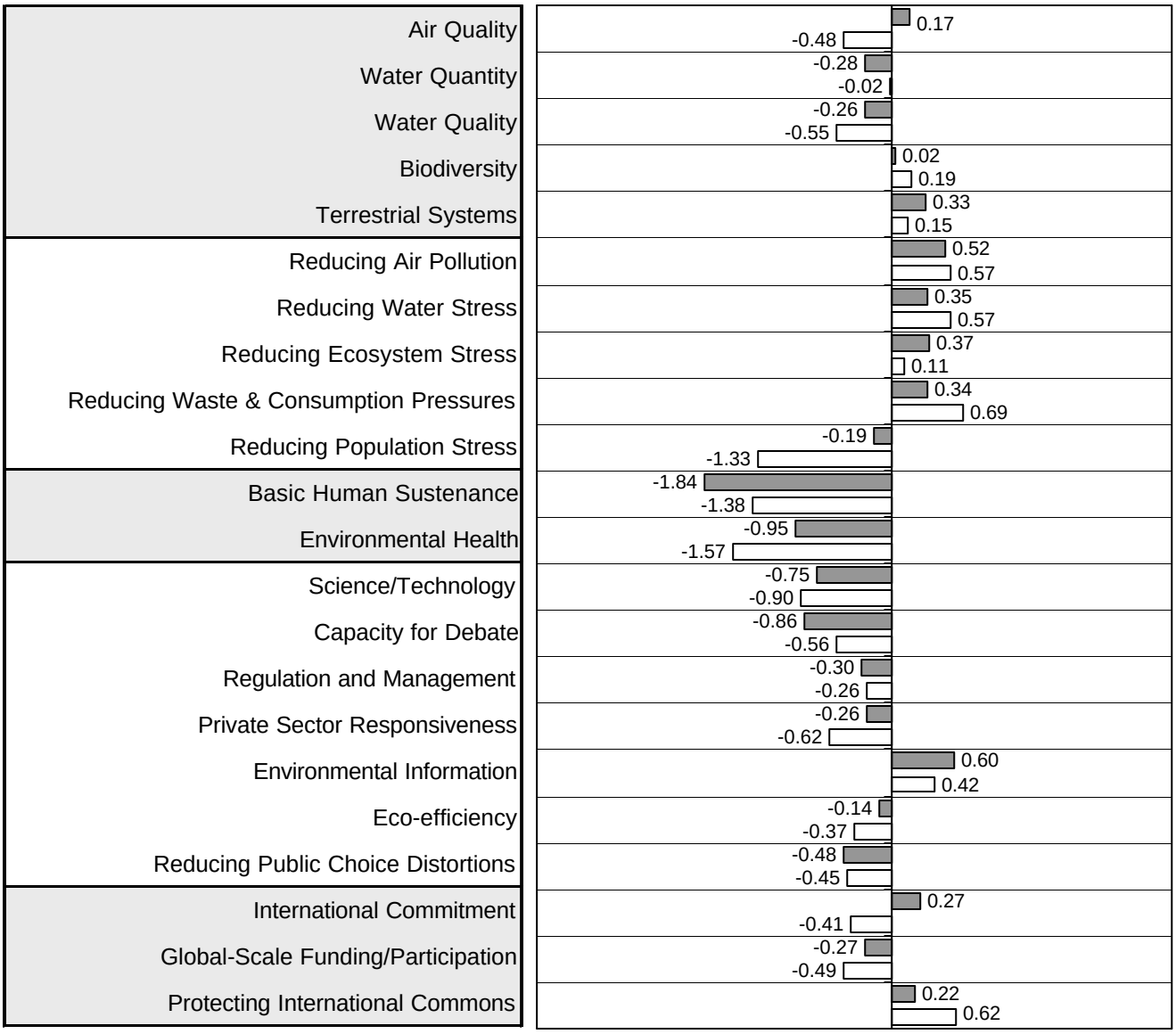
Air Quality	-0.34 / -0.27
Water Quantity	0.21 / 0.00
Water Quality	-0.33 / -0.11
Biodiversity	0.15 / -0.08
Terrestrial Systems	0.15 / -0.03
Reducing Air Pollution	0.78 / 0.19
Reducing Water Stress	0.25 / -0.07
Reducing Ecosystem Stress	1.12 / -0.28
Reducing Waste & Consumption Pressures	0.58 / 0.17
Reducing Population Stress	0.92 / 0.01
Basic Human Sustenance	0.58 / 0.09
Environmental Health	0.38 / 0.21
Science/Technology	-0.36 / -0.39
Capacity for Debate	-0.90 / 0.20
Regulation and Management	-0.70 / -0.31
Private Sector Responsiveness	-0.70 / -0.30
Environmental Information	-1.39 / -0.15
Eco-efficiency	-1.00 / -0.52
Reducing Public Choice Distortions	-0.48 / -0.29
International Commitment	-1.73 / -0.29
Global-Scale Funding/Participation	-1.17 / -0.07
Protecting International Commons	-0.73 / -0.11

= Indicator value
= Reference (average value for peer group)

Kenya

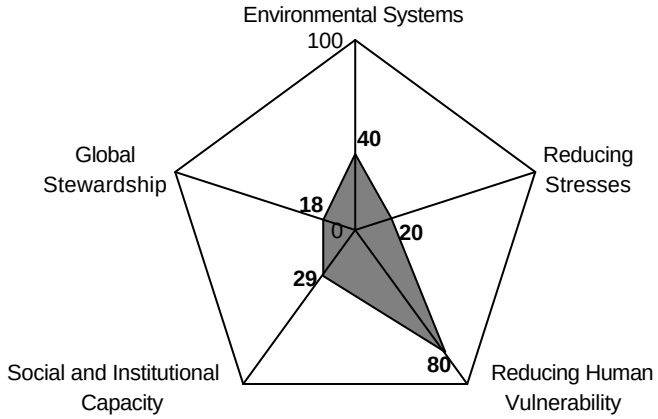
ESI:	43.9
Ranking:	82
GDP/Capita:	$980
Peer group ESI:	39.3
Variable coverage:	46 of 67
Missing variables imputed:	12

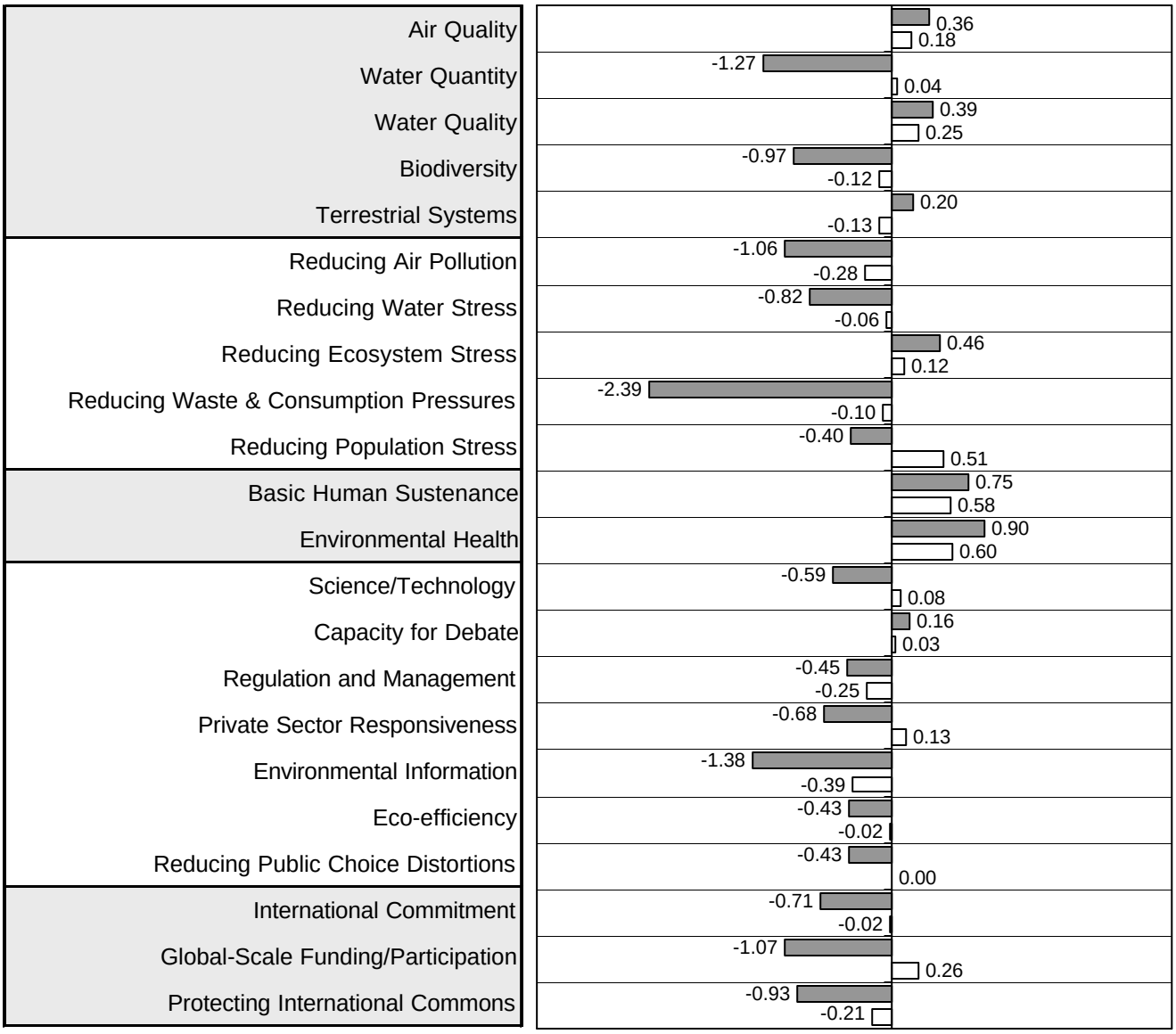




Kuwait

ESI:	31.9
Ranking:	116
GDP/Capita:	
Peer group ESI:	52.2
Variable coverage:	43 of 67
Missing variables imputed:	14

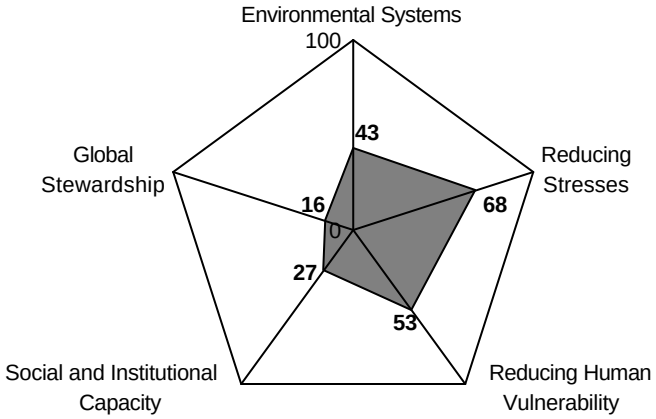




= Indicator value
= Reference (average value for peer group)

Kyrgyz Republic

ESI:	39.6
Ranking:	98
GDP/Capita:	$2,317
Peer group ESI:	45.2
Variable coverage:	43 of 67
Missing variables imputed:	16

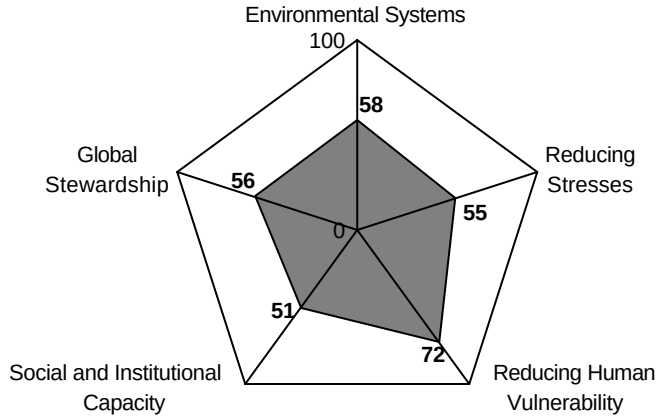


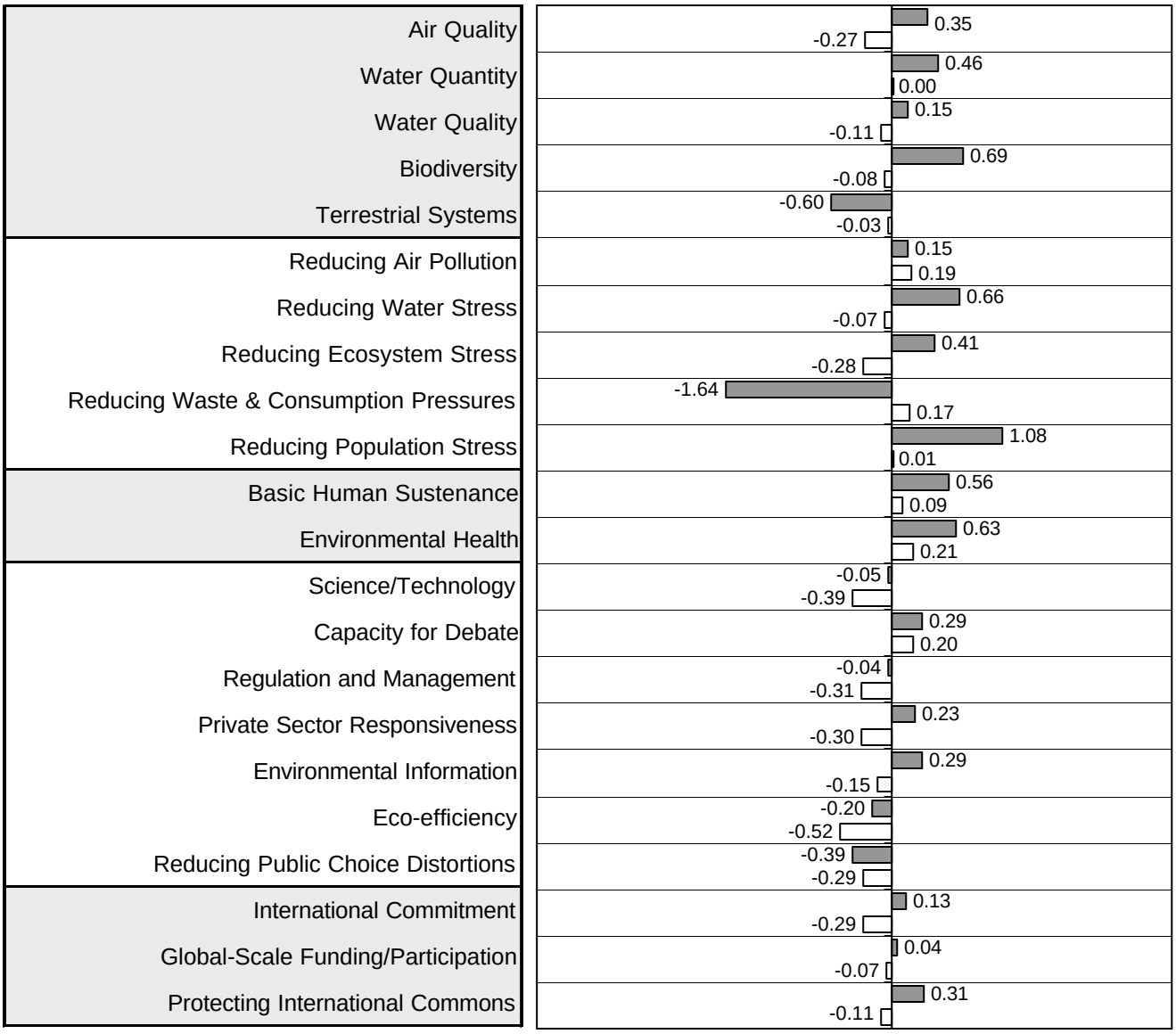
Air Quality	-0.29	-0.22
Water Quantity	-0.87	0.03
Water Quality	-0.28	-0.35
Biodiversity	0.35	0.06
Terrestrial Systems	0.19	-0.05
Reducing Air Pollution	0.55	0.30
Reducing Water Stress	-0.31	-0.02
Reducing Ecosystem Stress	0.46	0.14
Reducing Waste & Consumption Pressures	1.23	0.59
Reducing Population Stress	0.38	0.03
Basic Human Sustenance	0.02	-0.20
Environmental Health	0.13	-0.18
Science/Technology	-0.39	-0.29
Capacity for Debate	-0.77	-0.42
Regulation and Management	-0.64	-0.36
Private Sector Responsiveness	-0.89	-0.04
Environmental Information	-0.54	-0.18
Eco-efficiency	-0.62	-0.64
Reducing Public Choice Distortions	-0.48	-0.44
International Commitment	-1.78	-0.41
Global-Scale Funding/Participation	-1.17	-0.07
Protecting International Commons	-0.07	0.06

= Indicator value
= Reference (average value for peer group)

Latvia

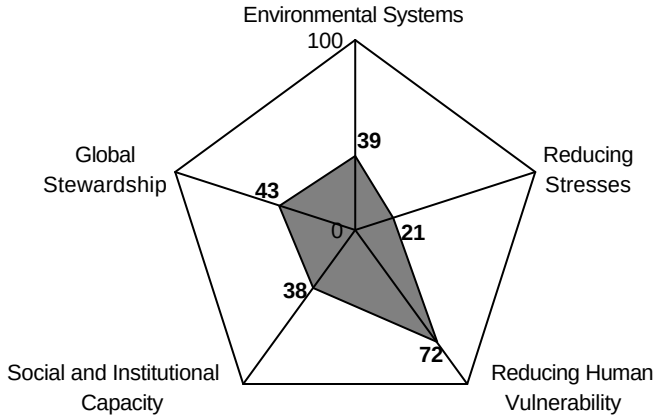
ESI:	56.3
Ranking:	32
GDP/Capita:	$5,728
Peer group ESI:	45.7
Variable coverage:	49 of 67
Missing variables imputed:	10

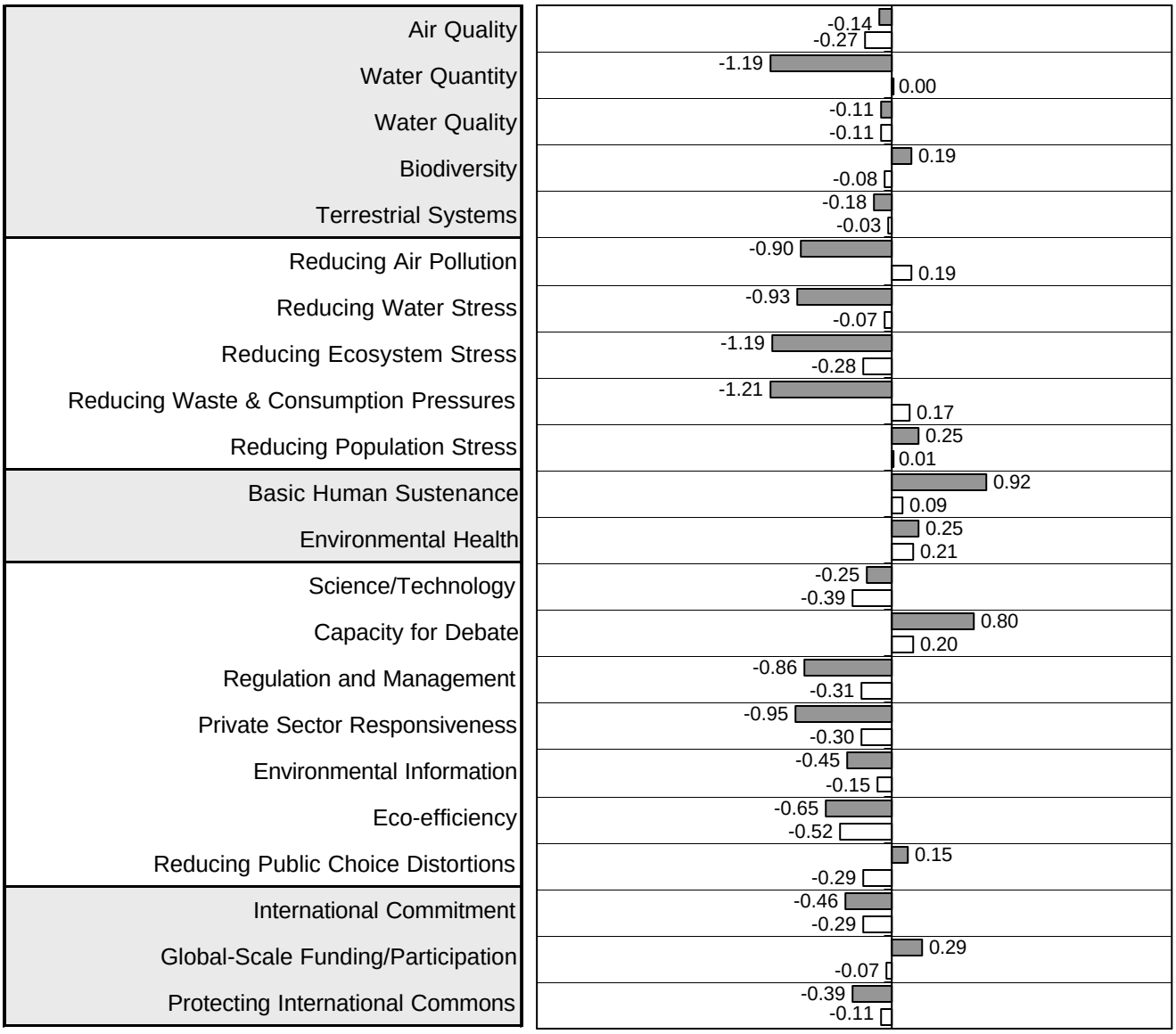




Lebanon

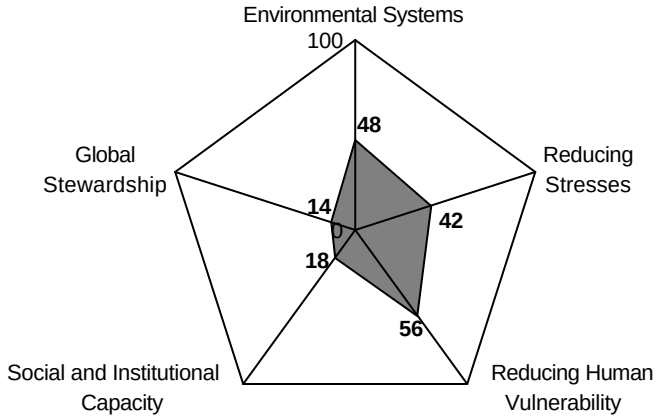
ESI:	37.5
Ranking:	109
GDP/Capita:	$4,326
Peer group ESI:	45.7
Variable coverage:	43 of 67
Missing variables imputed:	15

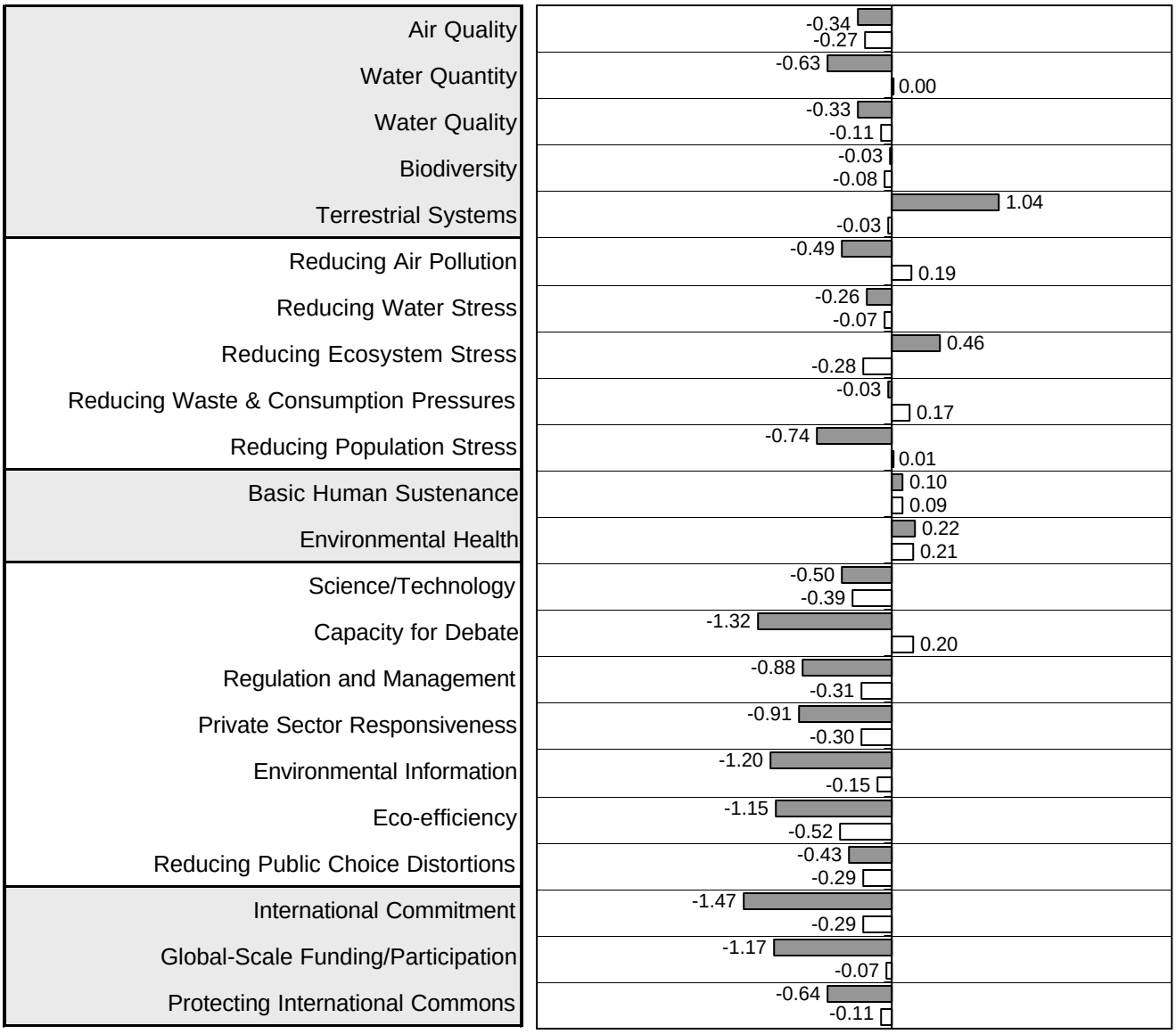




Libya

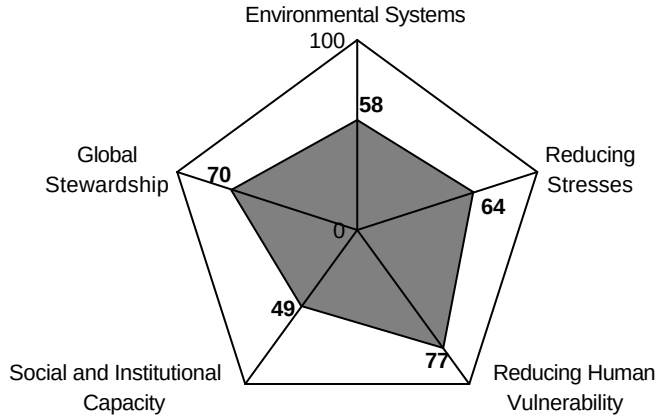
ESI:	31.3
Ranking:	118
GDP/Capita:	
Peer group ESI:	45.7
Variable coverage:	44 of 67
Missing variables imputed:	13

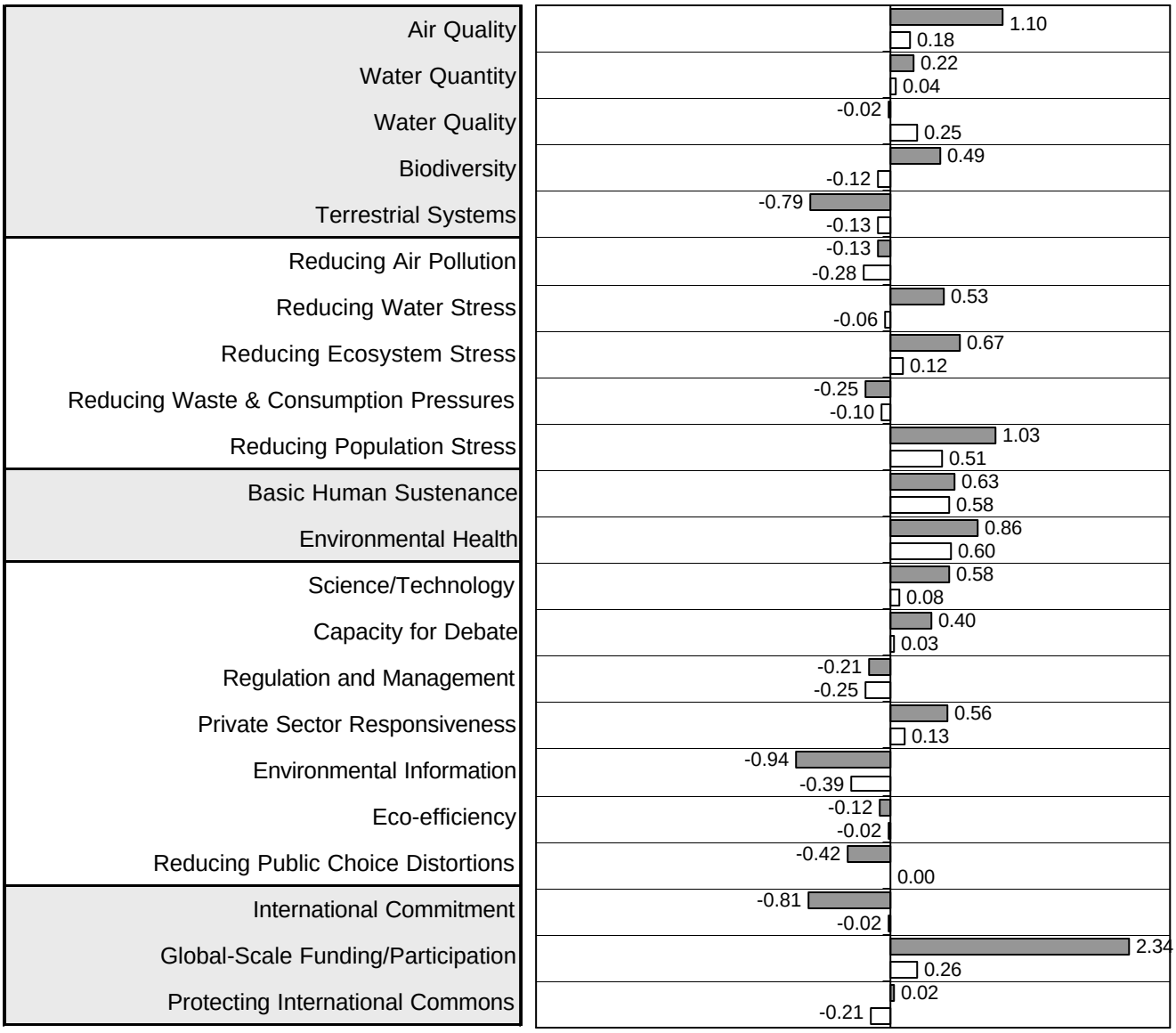




Lithuania

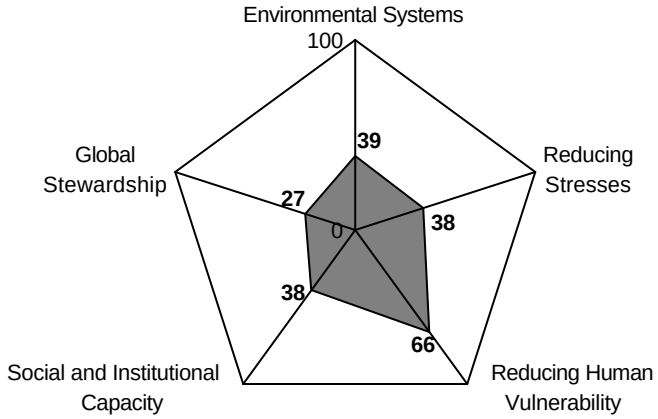
ESI:	60.3
Ranking:	23
GDP/Capita:	$6,436
Peer group ESI:	52.2
Variable coverage:	54 of 67
Missing variables imputed:	6





Macedonia

ESI:	39.2
Ranking:	100
GDP/Capita:	$4,254
Peer group ESI:	45.7
Variable coverage:	46 of 67
Missing variables imputed:	13

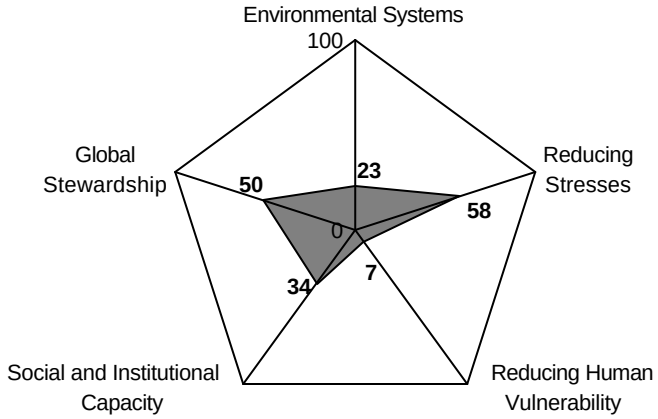


Air Quality	0.22 / -0.27
Water Quantity	-1.05 / 0.00
Water Quality	-0.23 / -0.11
Biodiversity	0.17 / -0.08
Terrestrial Systems	-0.55 / -0.03
Reducing Air Pollution	-0.36 / 0.19
Reducing Water Stress	-0.94 / -0.07
Reducing Ecosystem Stress	-1.63 / -0.28
Reducing Waste & Consumption Pressures	0.56 / 0.17
Reducing Population Stress	0.83 / 0.01
Basic Human Sustenance	0.52 / 0.09
Environmental Health	0.30 / 0.21
Science/Technology	0.05 / -0.39
Capacity for Debate	-0.02 / 0.20
Regulation and Management	-0.41 / -0.31
Private Sector Responsiveness	-0.18 / -0.30
Environmental Information	-0.96 / -0.15
Eco-efficiency	-0.06 / -0.52
Reducing Public Choice Distortions	-0.48 / -0.29
International Commitment	-0.66 / -0.29
Global-Scale Funding/Participation	-1.17 / -0.07
Protecting International Commons	0.04 / -0.11

= Indicator value
= Reference (average value for peer group)

Madagascar

ESI:	35.4
Ranking:	113
GDP/Capita:	$756
Peer group ESI:	39.3
Variable coverage:	46 of 67
Missing variables imputed:	12

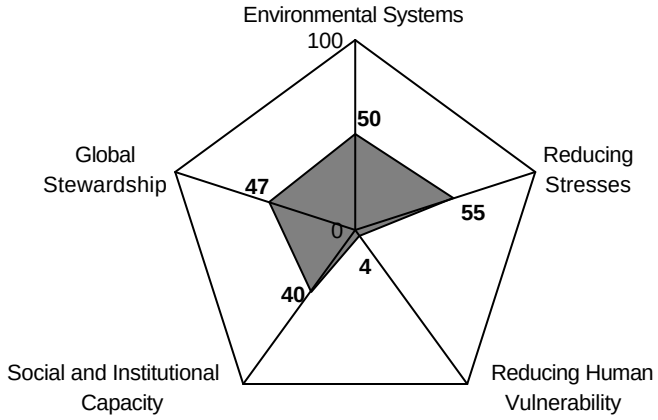


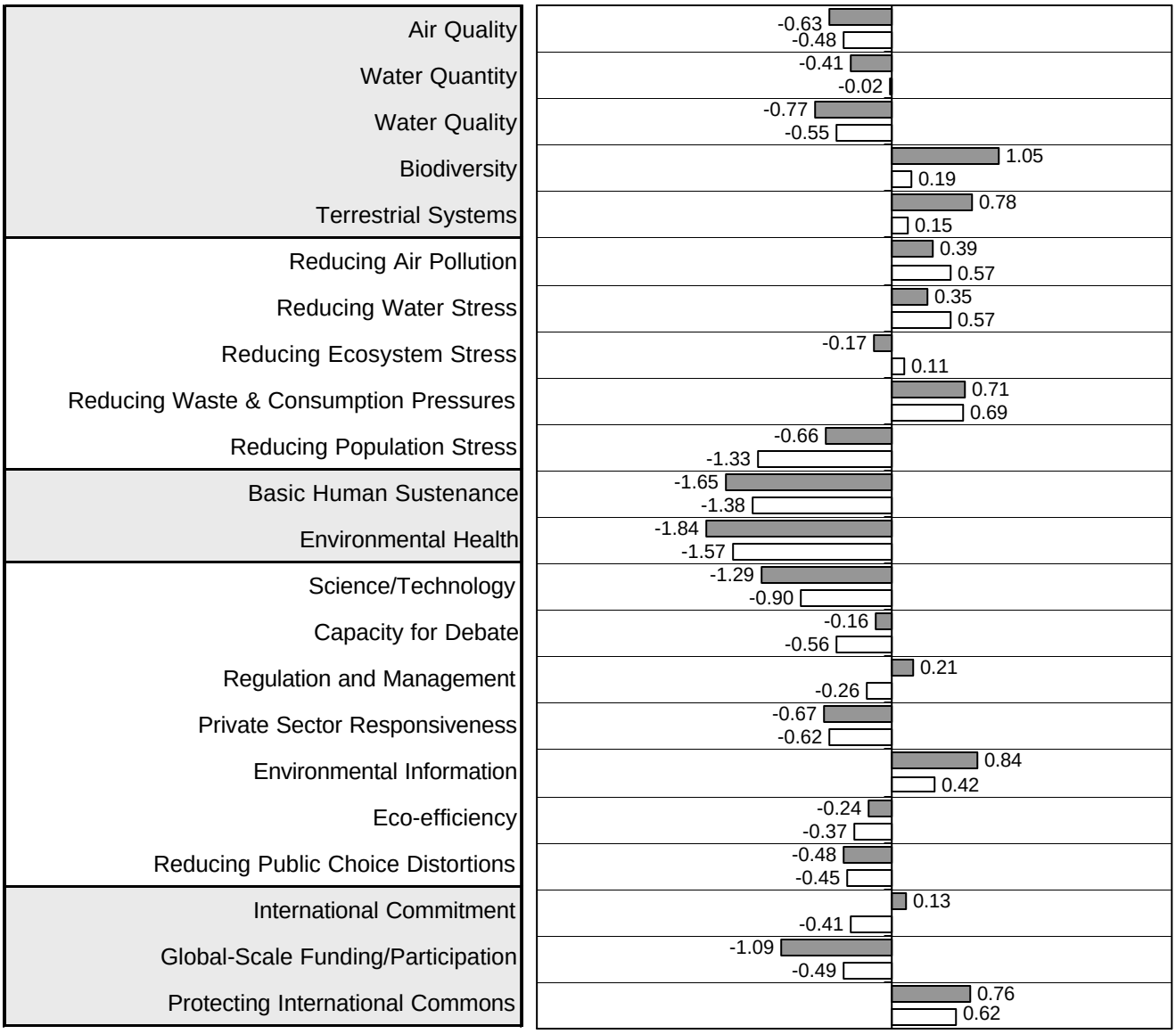
Air Quality	-0.44 / -0.48
Water Quantity	-0.29 / -0.02
Water Quality	-0.49 / -0.55
Biodiversity	-2.21 / 0.19
Terrestrial Systems	-0.20 / 0.15
Reducing Air Pollution	1.29 / 0.57
Reducing Water Stress	0.74 / 0.57
Reducing Ecosystem Stress	0.14 / 0.11
Reducing Waste & Consumption Pressures	0.92 / 0.69
Reducing Population Stress	-2.02 / -1.33
Basic Human Sustenance	-1.66 / -1.38
Environmental Health	-1.22 / -1.57
Science/Technology	-0.70 / -0.90
Capacity for Debate	-0.32 / -0.56
Regulation and Management	-0.75 / -0.26
Private Sector Responsiveness	-0.91 / -0.62
Environmental Information	0.77 / 0.42
Eco-efficiency	-0.46 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-0.69 / -0.41
Global-Scale Funding/Participation	-0.08 / -0.49
Protecting International Commons	0.80 / 0.62

= Indicator value
= Reference (average value for peer group)

Malawi

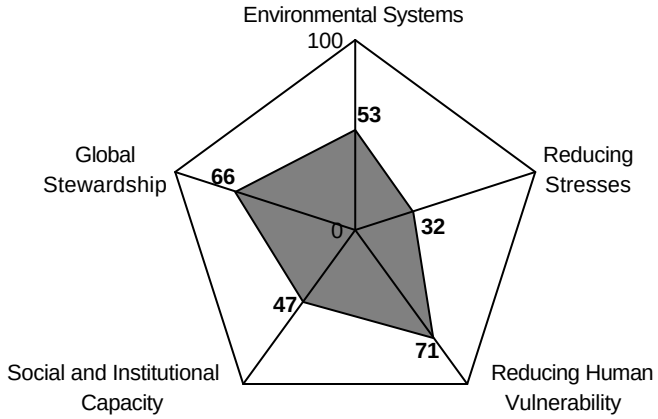
ESI:	41.3
Ranking:	92
GDP/Capita:	$523
Peer group ESI:	39.3
Variable coverage:	44 of 67
Missing variables imputed:	14





Malaysia

ESI:	49.7
Ranking:	52
GDP/Capita:	$8,137
Peer group ESI:	52.2
Variable coverage:	63 of 67
Missing variables imputed:	4

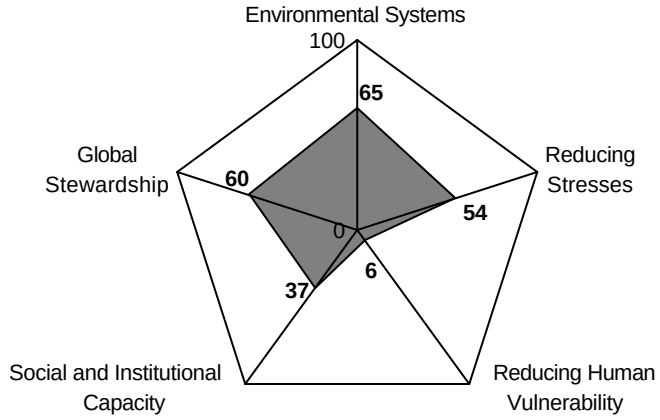


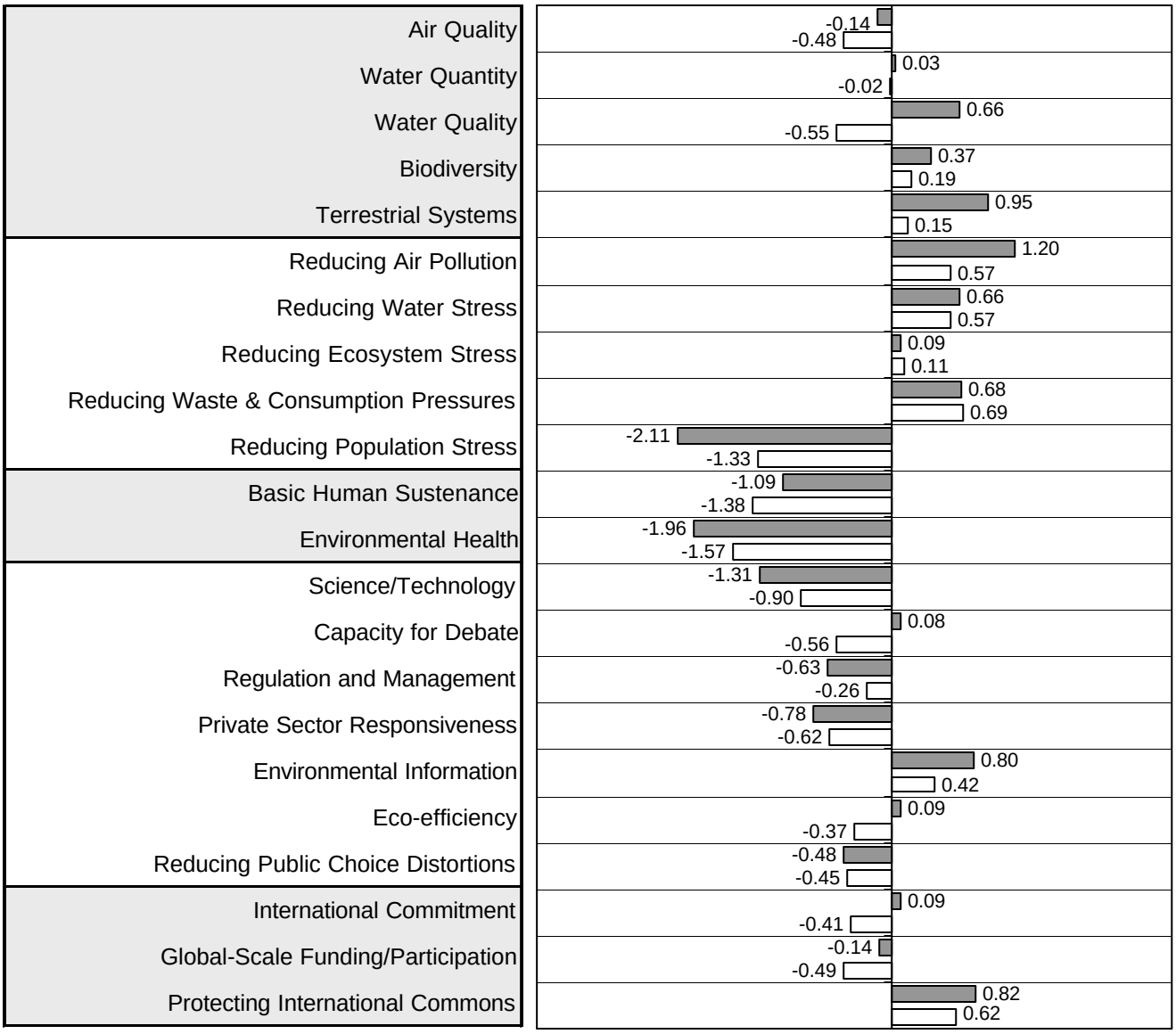
Air Quality	1.36
	0.18
Water Quantity	0.41
	0.04
Water Quality	-0.35
	0.25
Biodiversity	-0.62
	-0.12
Terrestrial Systems	-0.44
	-0.13
Reducing Air Pollution	0.02
	-0.28
Reducing Water Stress	-0.19
	-0.06
Reducing Ecosystem Stress	-0.58
	0.12
Reducing Waste & Consumption Pressures	-1.14
	-0.10
Reducing Population Stress	-0.46
	0.51
Basic Human Sustenance	0.59
	0.58
Environmental Health	0.50
	0.60
Science/Technology	-0.63
	0.08
Capacity for Debate	-0.70
	0.03
Regulation and Management	0.43
	-0.25
Private Sector Responsiveness	0.84
	0.13
Environmental Information	-0.17
	-0.39
Eco-efficiency	-0.18
	-0.02
Reducing Public Choice Distortions	-0.10
	0.00
International Commitment	0.24
	-0.02
Global-Scale Funding/Participation	1.11
	0.26
Protecting International Commons	-0.09
	-0.21

= Indicator value
= Reference (average value for peer group)

Mali

ESI:	46.2
Ranking:	71
GDP/Capita:	$681
Peer group ESI:	39.3
Variable coverage:	47 of 67
Missing variables imputed:	11

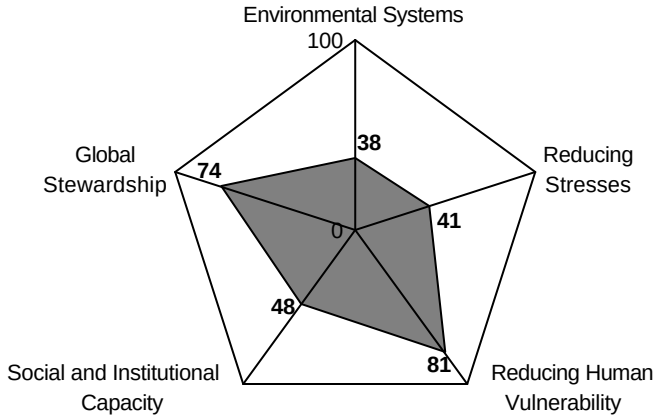




= Indicator value
= Reference (average value for peer group)

Mauritius

ESI:	51.2
Ranking:	46
GDP/Capita:	$8,312
Peer group ESI:	52.2
Variable coverage:	50 of 67
Missing variables imputed:	13

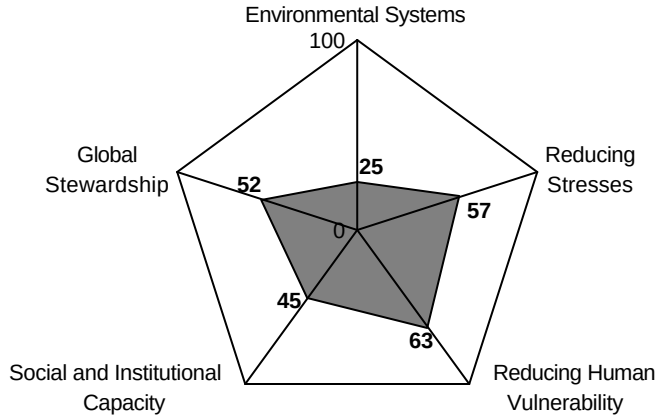


Air Quality	0.11 / 0.18
Water Quantity	-1.21 / 0.04
Water Quality	-0.77 / 0.25
Biodiversity	-0.29 / -0.12
Terrestrial Systems	0.67 / -0.13
Reducing Air Pollution	-0.45 / -0.28
Reducing Water Stress	-1.39 / -0.06
Reducing Ecosystem Stress	0.46 / 0.12
Reducing Waste & Consumption Pressures	-0.35 / -0.10
Reducing Population Stress	0.62 / 0.51
Basic Human Sustenance	0.92 / 0.58
Environmental Health	0.80 / 0.60
Science/Technology	-0.45 / 0.08
Capacity for Debate	1.32 / 0.03
Regulation and Management	-0.64 / -0.25
Private Sector Responsiveness	-0.64 / 0.13
Environmental Information	0.27 / -0.39
Eco-efficiency	0.15 / -0.02
Reducing Public Choice Distortions	-0.37 / 0.00
International Commitment	-0.03 / -0.02
Global-Scale Funding/Participation	1.56 / 0.26
Protecting International Commons	0.38 / -0.21

= Indicator value
= Reference (average value for peer group)

Mexico

ESI:	45.3
Ranking:	73
GDP/Capita:	$7,704
Peer group ESI:	52.2
Variable coverage:	63 of 67
Missing variables imputed:	3

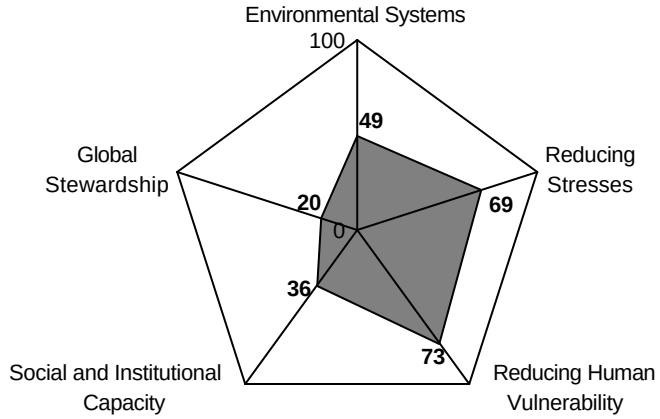


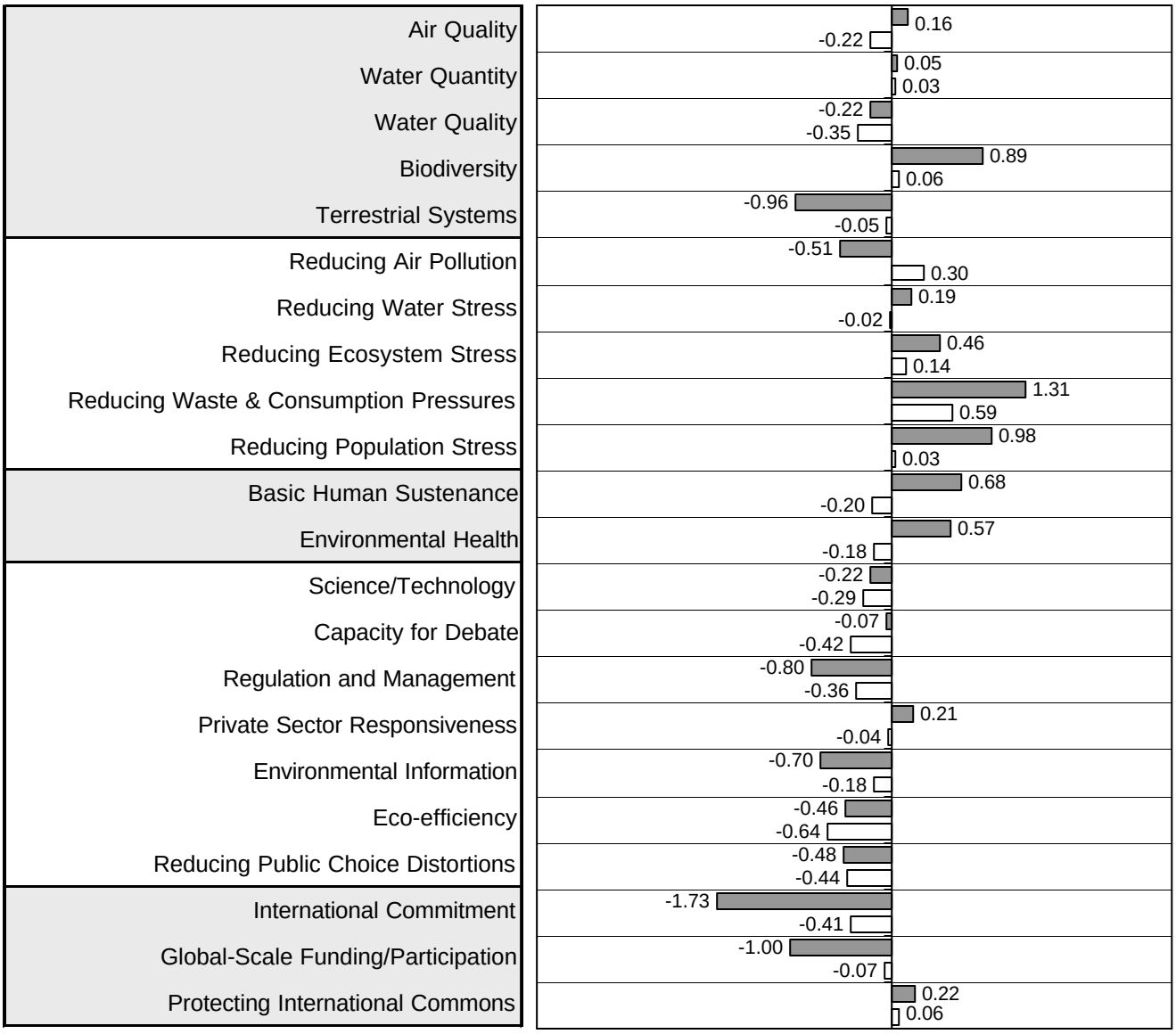
Air Quality	-2.58	0.18
Water Quantity	-0.18	0.04
Water Quality	-0.69	0.25
Biodiversity	-0.29	-0.12
Terrestrial Systems	0.36	-0.13
Reducing Air Pollution	0.24	-0.28
Reducing Water Stress	-0.10	-0.06
Reducing Ecosystem Stress	0.10	0.12
Reducing Waste & Consumption Pressures	0.49	-0.10
Reducing Population Stress	0.18	0.51
Basic Human Sustenance	0.51	0.58
Environmental Health	0.14	0.60
Science/Technology	-0.57	0.08
Capacity for Debate	-0.44	0.03
Regulation and Management	-0.45	-0.25
Private Sector Responsiveness	0.64	0.13
Environmental Information	0.22	-0.39
Eco-efficiency	-0.55	-0.02
Reducing Public Choice Distortions	0.20	0.00
International Commitment	0.16	-0.02
Global-Scale Funding/Participation	0.40	0.26
Protecting International Commons	-0.39	-0.21

= Indicator value
= Reference (average value for peer group)

Moldova

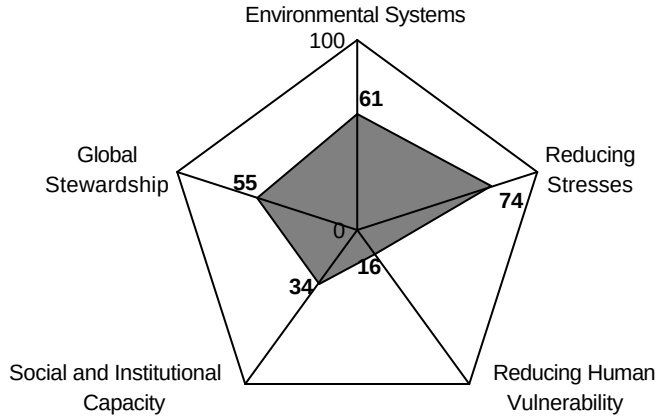
ESI:	47.4
Ranking:	59
GDP/Capita:	$1,947
Peer group ESI:	45.2
Variable coverage:	47 of 67
Missing variables imputed:	12





Mongolia

ESI:	50.3
Ranking:	50
GDP/Capita:	$1,541
Peer group ESI:	45.2
Variable coverage:	48 of 67
Missing variables imputed:	11

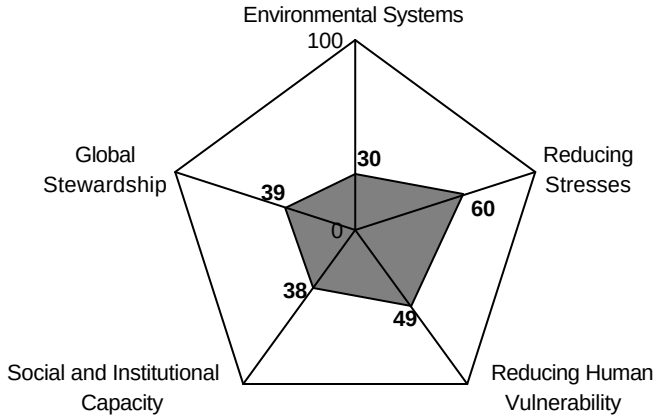


Air Quality	0.17 / -0.22
Water Quantity	0.62 / 0.03
Water Quality	-0.24 / -0.35
Biodiversity	0.17 / 0.06
Terrestrial Systems	0.71 / -0.05
Reducing Air Pollution	0.82 / 0.30
Reducing Water Stress	0.79 / -0.02
Reducing Ecosystem Stress	0.46 / 0.14
Reducing Waste & Consumption Pressures	1.05 / 0.59
Reducing Population Stress	0.06 / 0.03
Basic Human Sustenance	-1.19 / -0.20
Environmental Health	-0.84 / -0.18
Science/Technology	0.01 / -0.29
Capacity for Debate	0.07 / -0.42
Regulation and Management	-0.19 / -0.36
Private Sector Responsiveness	0.20 / -0.04
Environmental Information	-1.71 / -0.18
Eco-efficiency	-0.73 / -0.64
Reducing Public Choice Distortions	-0.48 / -0.44
International Commitment	-0.02 / -0.41
Global-Scale Funding/Participation	0.04 / -0.07
Protecting International Commons	0.40 / 0.06

= Indicator value
= Reference (average value for peer group)

Morocco

ESI:	41.9
Ranking:	89
GDP/Capita:	$3,305
Peer group ESI:	45.2
Variable coverage:	48 of 67
Missing variables imputed:	10

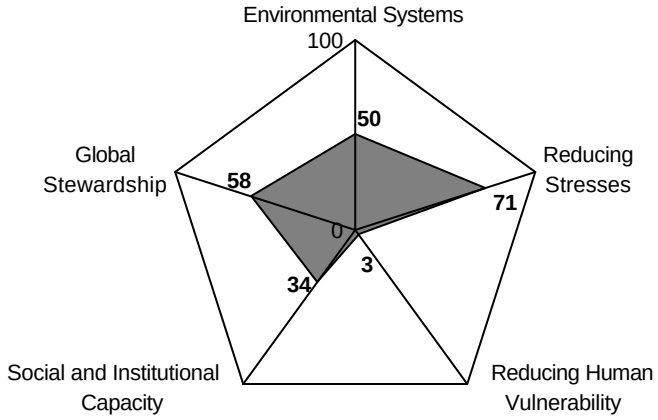


Air Quality	0.02	-0.22
Water Quantity	-1.21	0.03
Water Quality	-1.36	-0.35
Biodiversity	-0.57	0.06
Terrestrial Systems	0.43	-0.05
Reducing Air Pollution	0.79	0.30
Reducing Water Stress	-0.56	-0.02
Reducing Ecosystem Stress	0.35	0.14
Reducing Waste & Consumption Pressures	0.69	0.59
Reducing Population Stress	-0.01	0.03
Basic Human Sustenance	0.39	-0.20
Environmental Health	-0.44	-0.18
Science/Technology	-0.45	-0.29
Capacity for Debate	-0.62	-0.42
Regulation and Management	-0.84	-0.36
Private Sector Responsiveness	-0.63	-0.04
Environmental Information	0.32	-0.18
Eco-efficiency	0.45	-0.64
Reducing Public Choice Distortions	-0.39	-0.44
International Commitment	0.29	-0.41
Global-Scale Funding/Participation	-0.87	-0.07
Protecting International Commons	-0.25	0.06

= Indicator value
= Reference (average value for peer group)

Mozambique

ESI:	44.2
Ranking:	77
GDP/Capita:	$782
Peer group ESI:	39.3
Variable coverage:	44 of 67
Missing variables imputed:	14

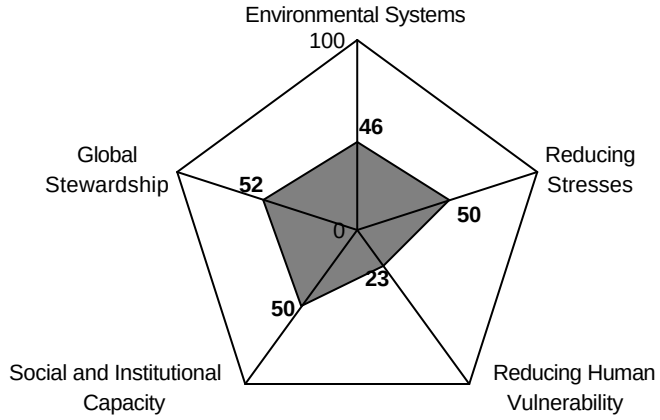


Air Quality	-0.74 / -0.48
Water Quantity	0.48 / -0.02
Water Quality	-0.64 / -0.55
Biodiversity	0.39 / 0.19
Terrestrial Systems	0.56 / 0.15
Reducing Air Pollution	1.11 / 0.57
Reducing Water Stress	0.93 / 0.57
Reducing Ecosystem Stress	0.20 / 0.11
Reducing Waste & Consumption Pressures	0.94 / 0.69
Reducing Population Stress	-0.39 / -1.33
Basic Human Sustenance	-1.80 / -1.38
Environmental Health	-1.96 / -1.57
Science/Technology	-1.46 / -0.90
Capacity for Debate	-0.37 / -0.56
Regulation and Management	-0.31 / -0.26
Private Sector Responsiveness	-0.62 / -0.62
Environmental Information	0.71 / 0.42
Eco-efficiency	-0.35 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-0.18 / -0.41
Global-Scale Funding/Participation	-0.10 / -0.49
Protecting International Commons	0.87 / 0.62

= Indicator value
= Reference (average value for peer group)

Nepal

ESI:	46.7
Ranking:	66
GDP/Capita:	$1,157
Peer group ESI:	39.3
Variable coverage:	45 of 67
Missing variables imputed:	14

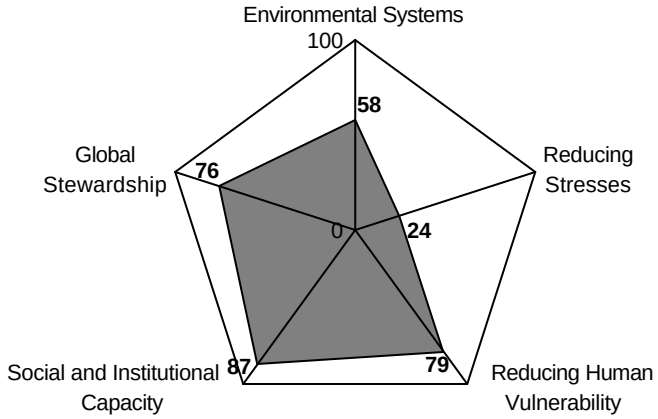


Air Quality	-0.03 / -0.48
Water Quantity	0.08 / -0.02
Water Quality	-0.28 / -0.55
Biodiversity	-0.38 / 0.19
Terrestrial Systems	0.11 / 0.15
Reducing Air Pollution	0.17 / 0.57
Reducing Water Stress	-0.08 / 0.57
Reducing Ecosystem Stress	0.03 / 0.11
Reducing Waste & Consumption Pressures	0.78 / 0.69
Reducing Population Stress	-0.86 / -1.33
Basic Human Sustenance	-0.45 / -1.38
Environmental Health	-1.00 / -1.57
Science/Technology	-0.92 / -0.90
Capacity for Debate	-0.19 / -0.56
Regulation and Management	0.65 / -0.26
Private Sector Responsiveness	0.46 / -0.62
Environmental Information	0.82 / 0.42
Eco-efficiency	-0.39 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	-0.46 / -0.41
Global-Scale Funding/Participation	-0.14 / -0.49
Protecting International Commons	0.72 / 0.62

= Indicator value
= Reference (average value for peer group)

Netherlands

ESI:	66.0
Ranking:	12
GDP/Capita:	$22,176
Peer group ESI:	65.2
Variable coverage:	66 of 67
Missing variables imputed:	1

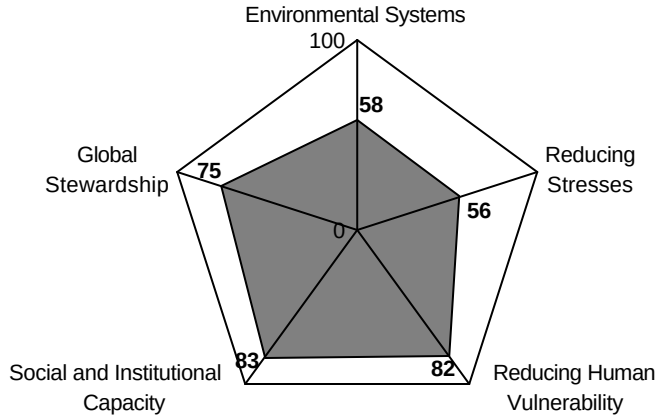


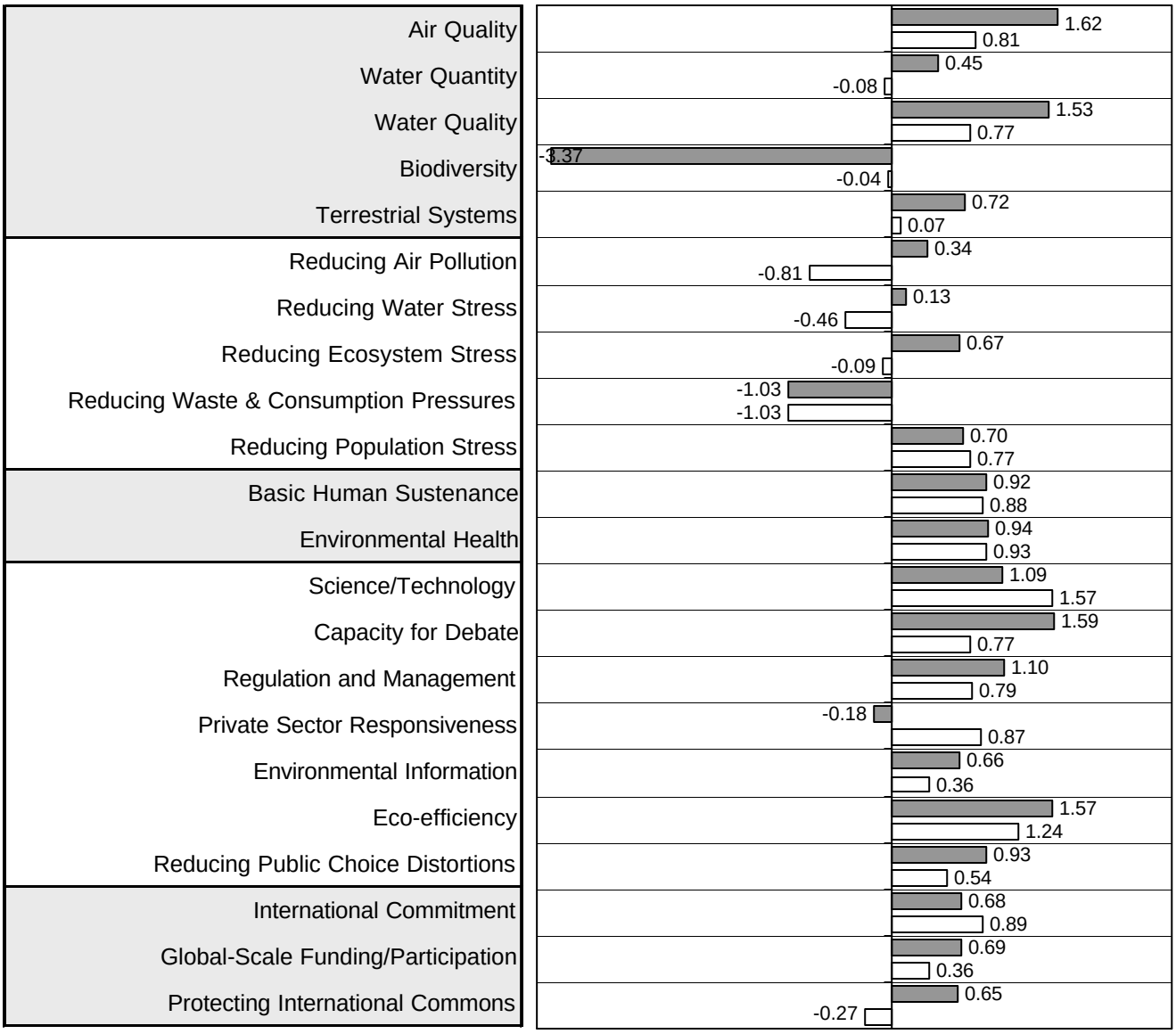
Air Quality	0.63	0.81
Water Quantity	0.04	-0.08
Water Quality	0.70	0.77
Biodiversity	0.26	-0.04
Terrestrial Systems	-0.62	0.07
Reducing Air Pollution	-2.92	-0.81
Reducing Water Stress	-0.84	-0.46
Reducing Ecosystem Stress	-0.76	-0.09
Reducing Waste & Consumption Pressures	0.07	-1.03
Reducing Population Stress	0.88	0.77
Basic Human Sustenance	0.68	0.88
Environmental Health	0.96	0.93
Science/Technology	1.63	1.57
Capacity for Debate	1.08	0.77
Regulation and Management	0.75	0.79
Private Sector Responsiveness	2.25	0.87
Environmental Information	0.02	0.36
Eco-efficiency	1.80	1.24
Reducing Public Choice Distortions	0.37	0.54
International Commitment	1.58	0.89
Global-Scale Funding/Participation	0.56	0.36
Protecting International Commons	-0.07	-0.27

= Indicator value
= Reference (average value for peer group)

New Zealand

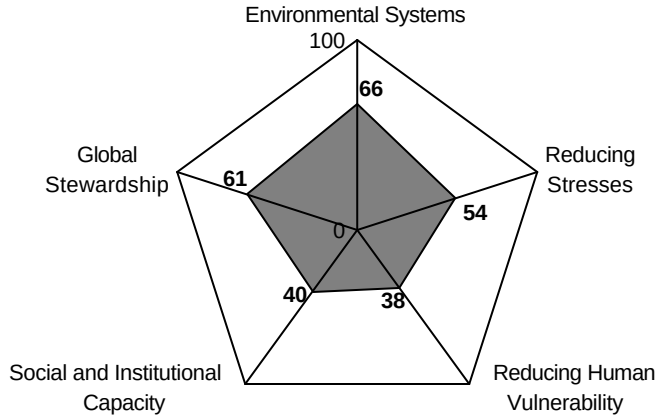
ESI:	71.3
Ranking:	6
GDP/Capita:	$17,288
Peer group ESI:	65.2
Variable coverage:	62 of 67
Missing variables imputed:	2

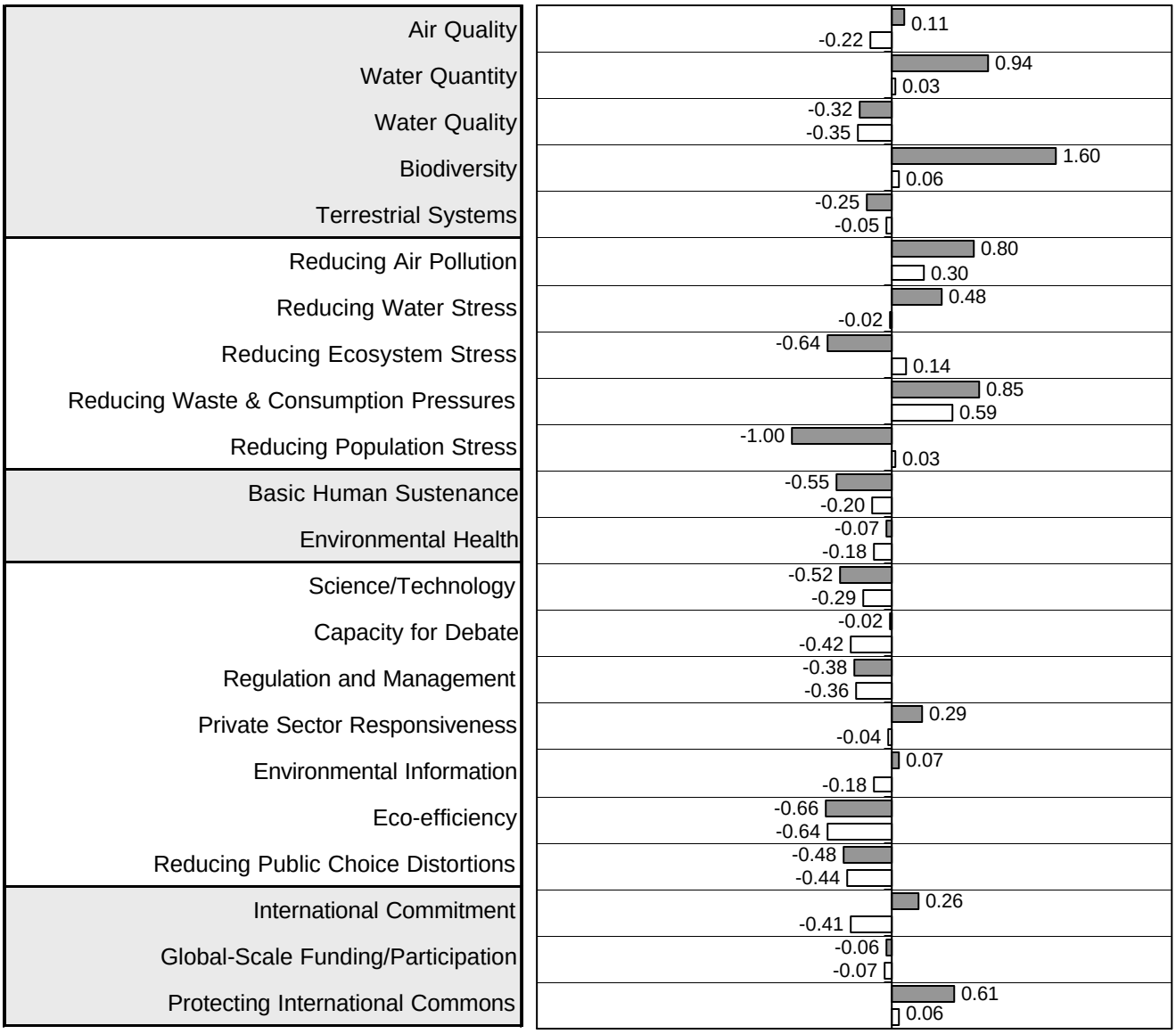




Nicaragua

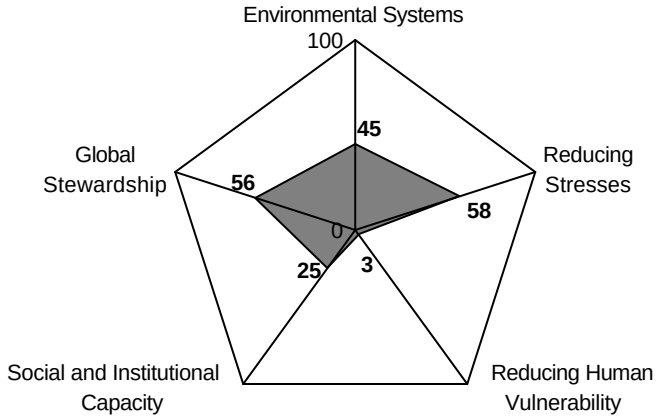
ESI:	51.9
Ranking:	43
GDP/Capita:	$2,142
Peer group ESI:	45.2
Variable coverage:	48 of 67
Missing variables imputed:	10

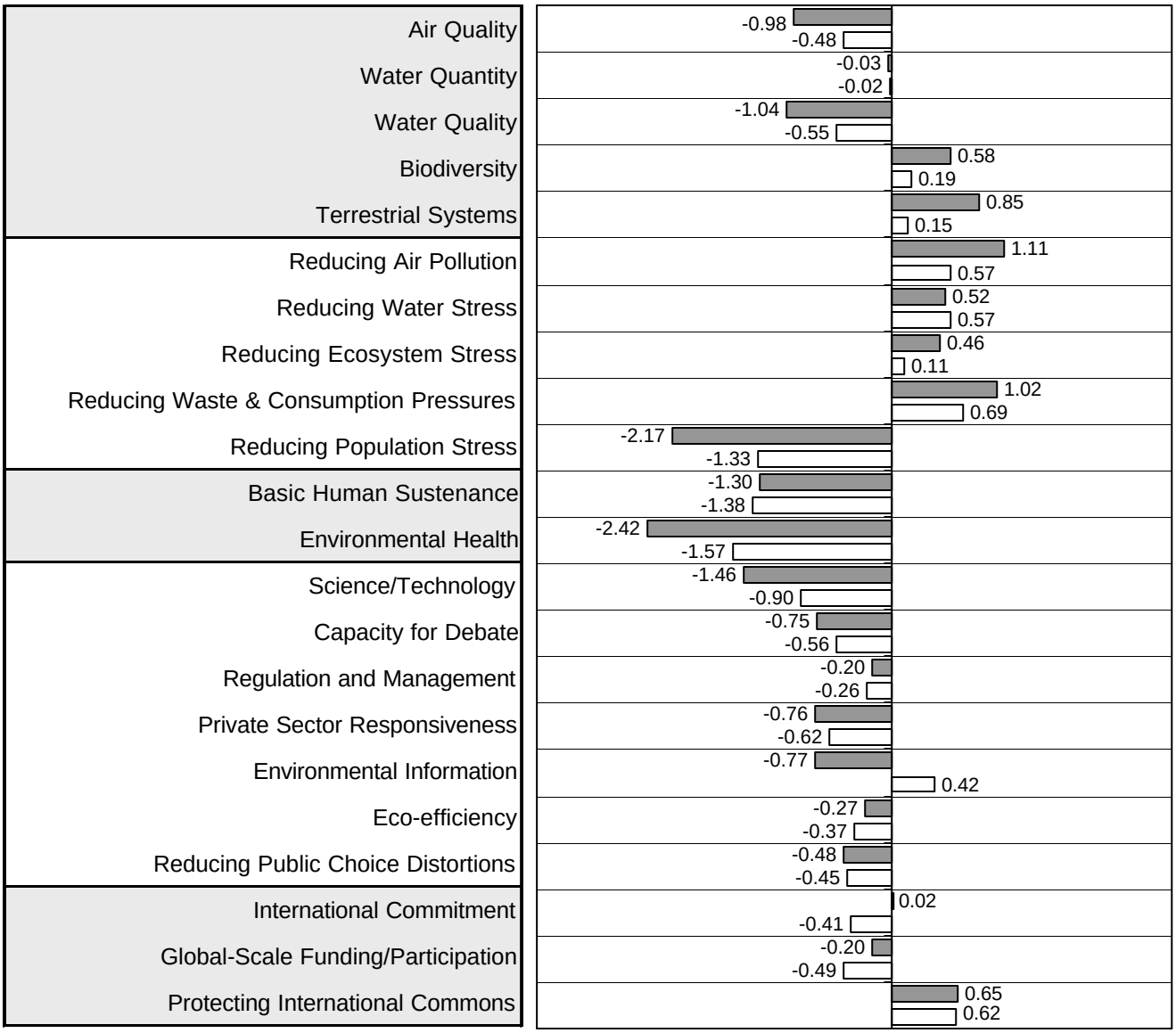




Niger

ESI:	36.5
Ranking:	111
GDP/Capita:	$739
Peer group ESI:	39.3
Variable coverage:	43 of 67
Missing variables imputed:	15

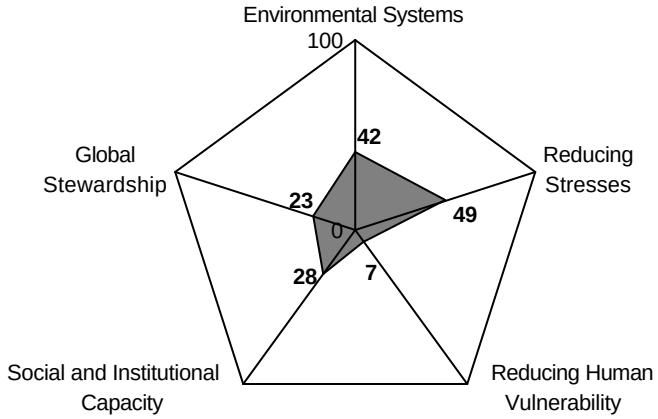


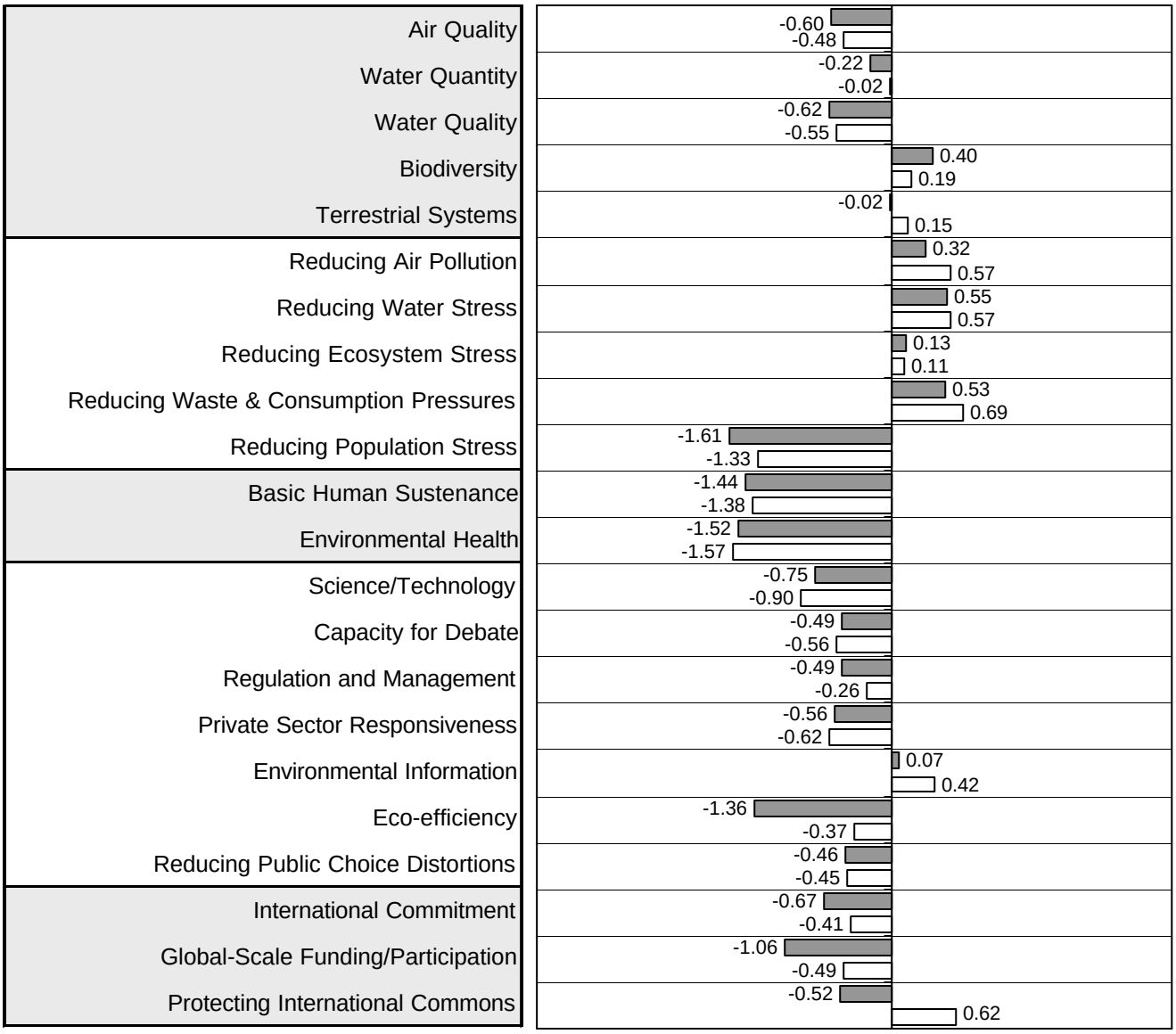


= Indicator value
= Reference (average value for peer group)

Nigeria

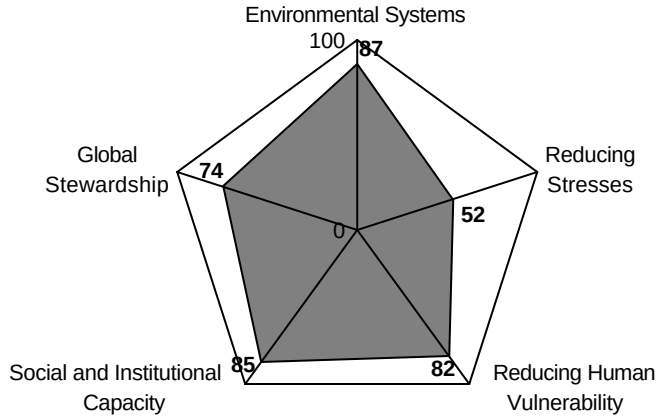
ESI:	31.8
Ranking:	117
GDP/Capita:	$795
Peer group ESI:	39.3
Variable coverage:	46 of 67
Missing variables imputed:	12

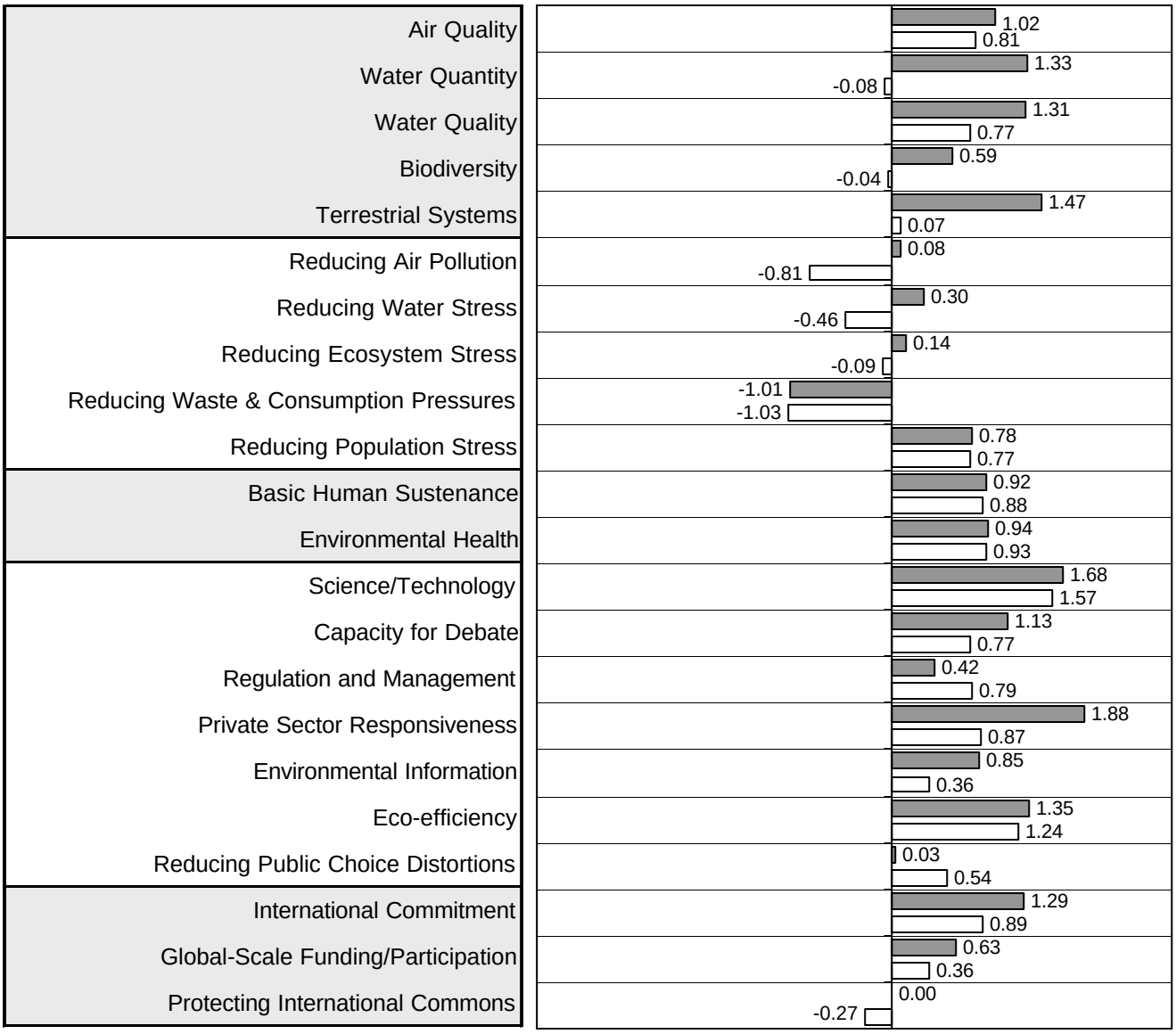




Norway

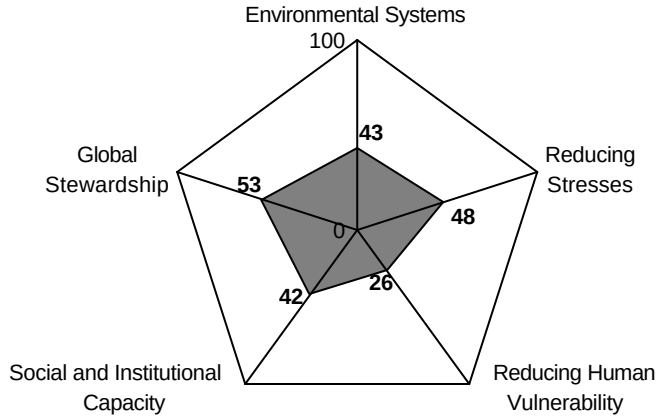
ESI:	78.2
Ranking:	2
GDP/Capita:	$26,342
Peer group ESI:	65.2
Variable coverage:	65 of 67
Missing variables imputed:	2

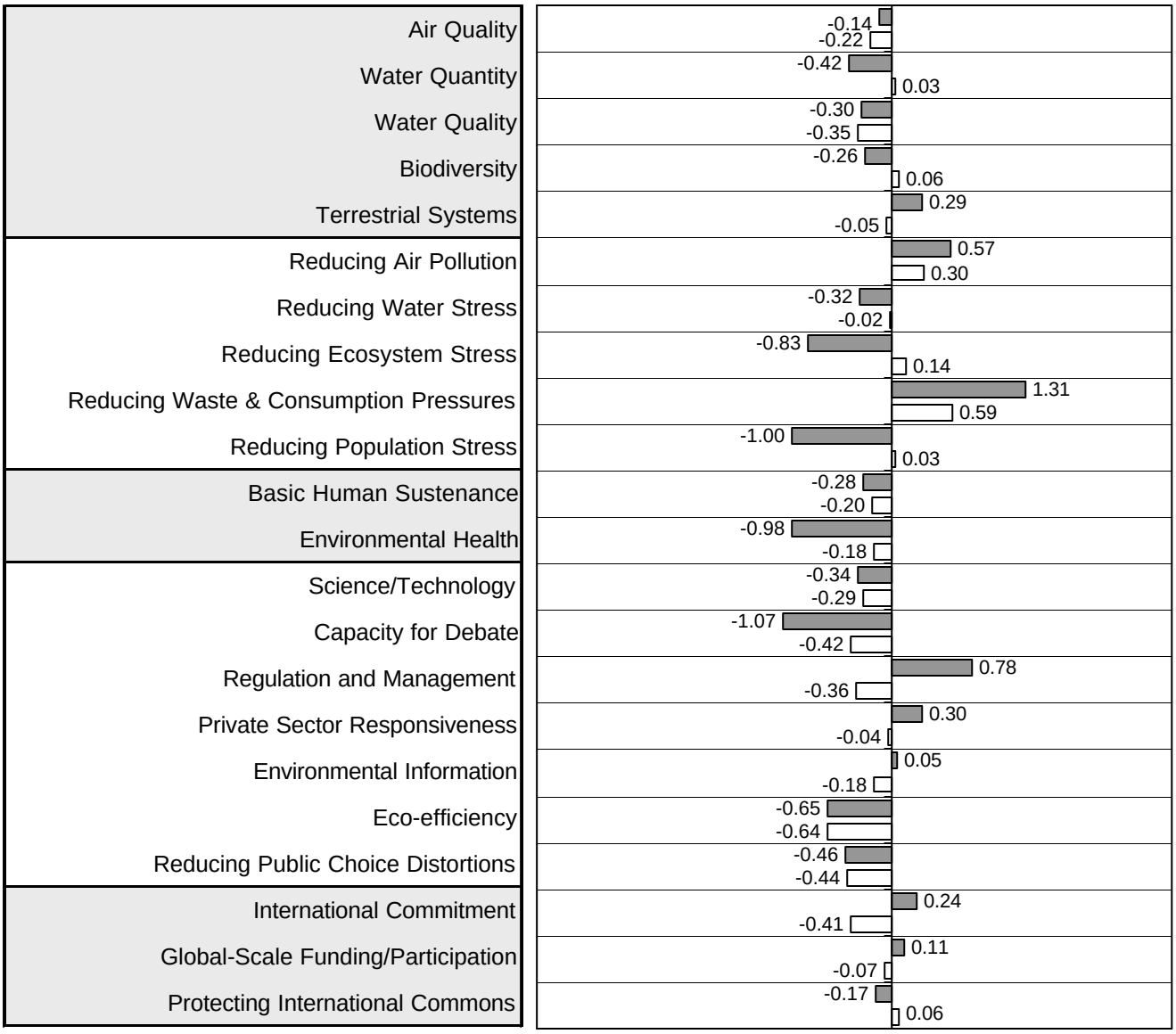




Pakistan

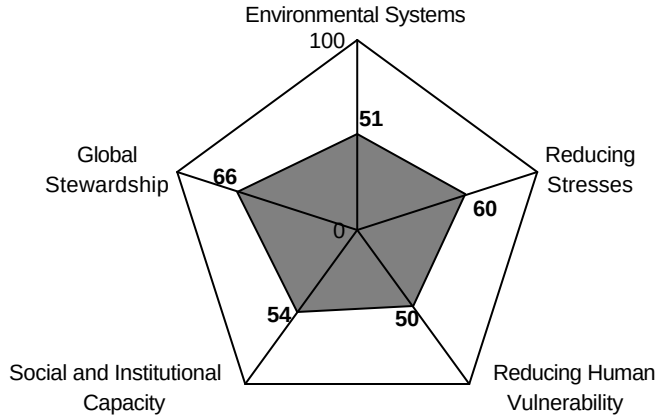
ESI:	43.6
Ranking:	85
GDP/Capita:	$1,715
Peer group ESI:	45.2
Variable coverage:	51 of 67
Missing variables imputed:	8

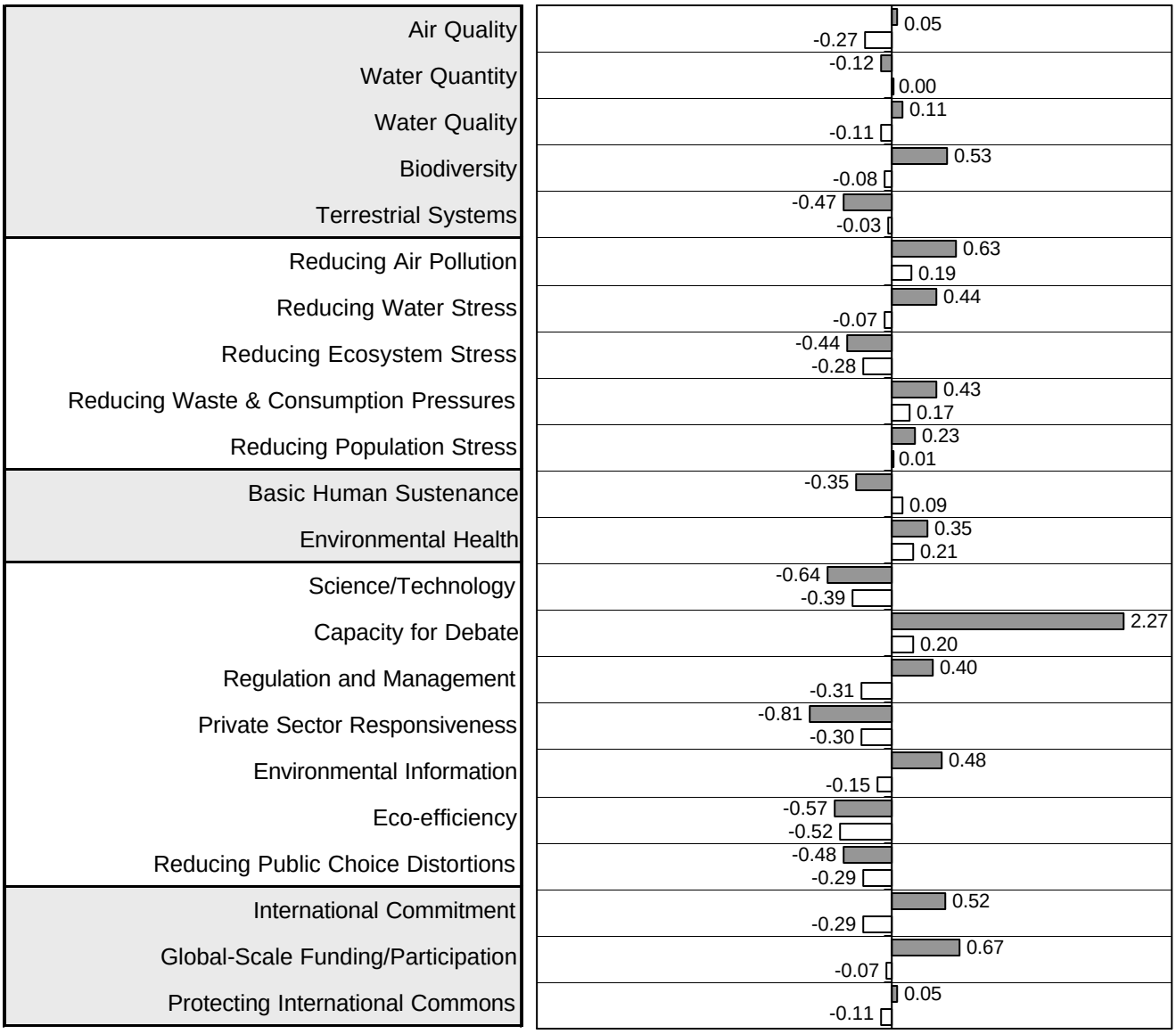




Panama

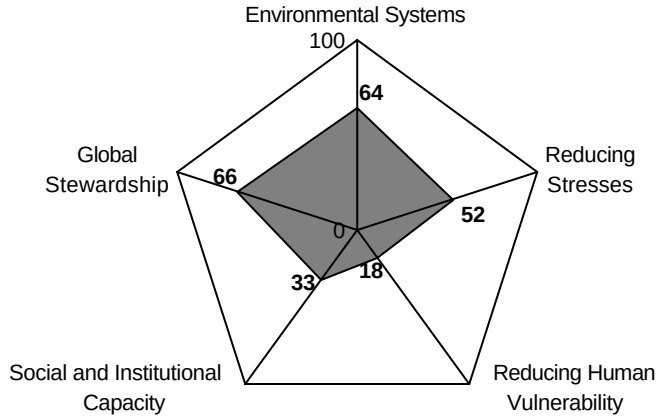
ESI:	55.9
Ranking:	34
GDP/Capita:	$5,249
Peer group ESI:	45.7
Variable coverage:	48 of 67
Missing variables imputed:	10





Papua New Guinea

ESI:	47.3
Ranking:	62
GDP/Capita:	$2,359
Peer group ESI:	45.2
Variable coverage:	44 of 67
Missing variables imputed:	14

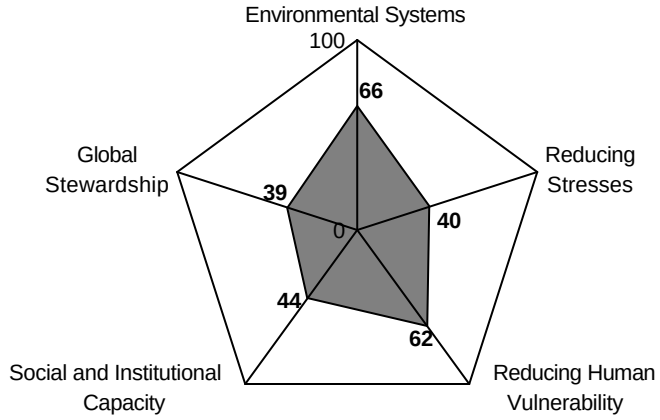


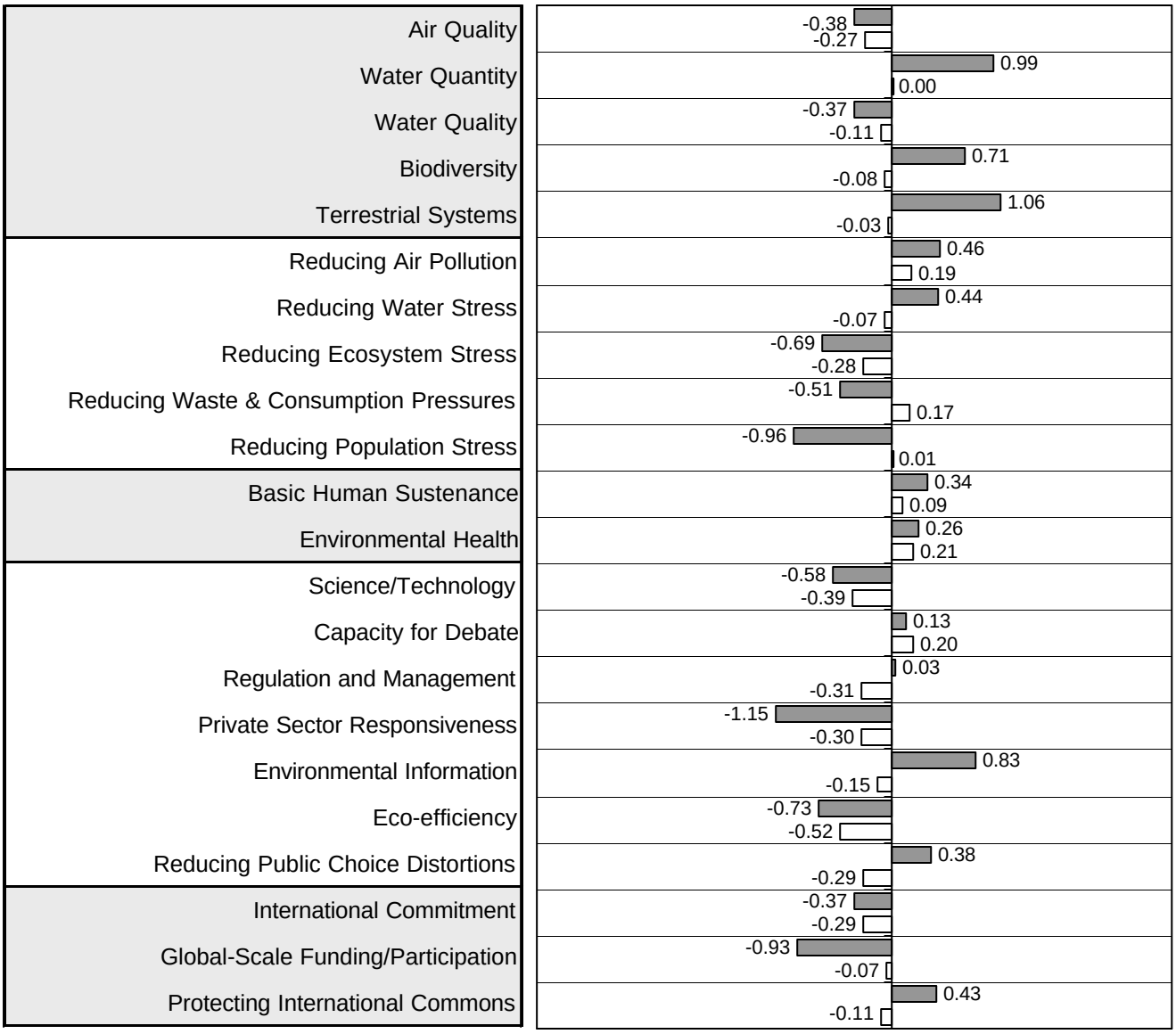
Air Quality	-0.42 / -0.22
Water Quantity	1.73 / 0.03
Water Quality	-0.35 / -0.35
Biodiversity	-0.79 / 0.06
Terrestrial Systems	1.67 / -0.05
Reducing Air Pollution	1.25 / 0.30
Reducing Water Stress	0.05 / -0.02
Reducing Ecosystem Stress	0.33 / 0.14
Reducing Waste & Consumption Pressures	-0.50 / 0.59
Reducing Population Stress	-0.85 / 0.03
Basic Human Sustenance	-1.03 / -0.20
Environmental Health	-0.80 / -0.18
Science/Technology	-0.64 / -0.29
Capacity for Debate	-0.06 / -0.42
Regulation and Management	-0.88 / -0.36
Private Sector Responsiveness	-0.76 / -0.04
Environmental Information	0.55 / -0.18
Eco-efficiency	-0.78 / -0.64
Reducing Public Choice Distortions	-0.48 / -0.44
International Commitment	-0.21 / -0.41
Global-Scale Funding/Participation	0.02 / -0.07
Protecting International Commons	1.43 / 0.06

= Indicator value
= Reference (average value for peer group)

Paraguay

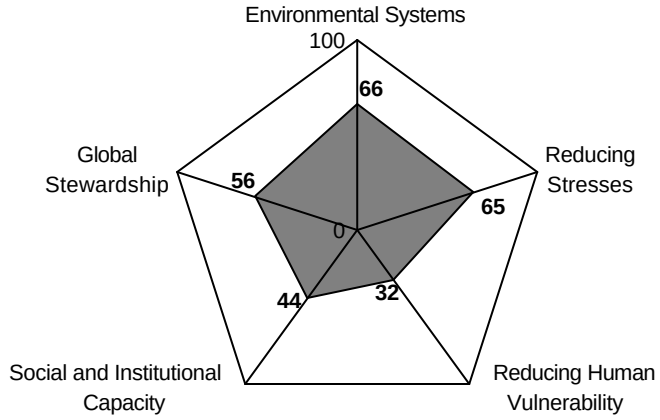
ESI:	48.9
Ranking:	54
GDP/Capita:	$4,288
Peer group ESI:	45.7
Variable coverage:	46 of 67
Missing variables imputed:	12

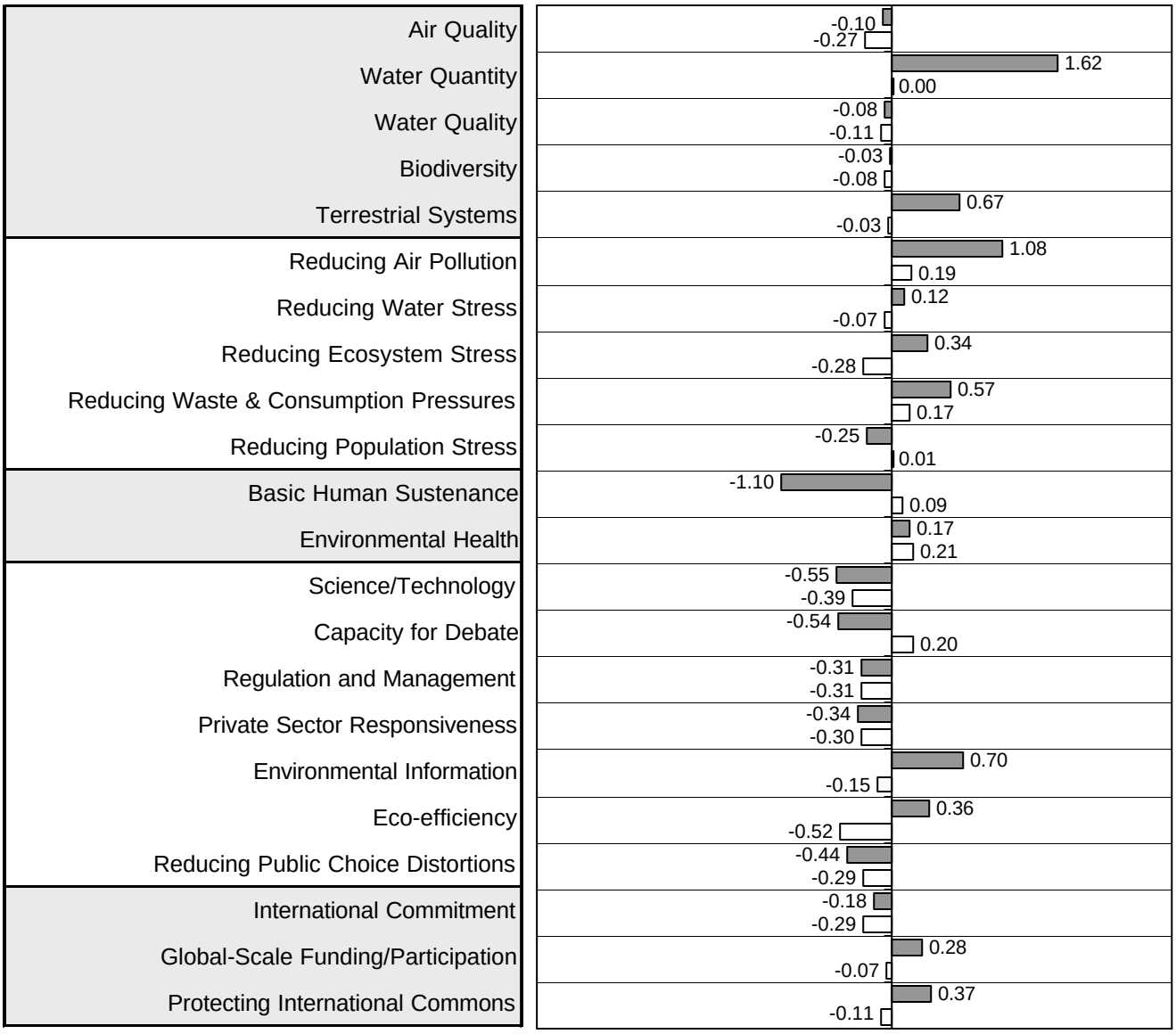




Peru

ESI:	54.3
Ranking:	38
GDP/Capita:	$4,282
Peer group ESI:	45.7
Variable coverage:	50 of 67
Missing variables imputed:	13

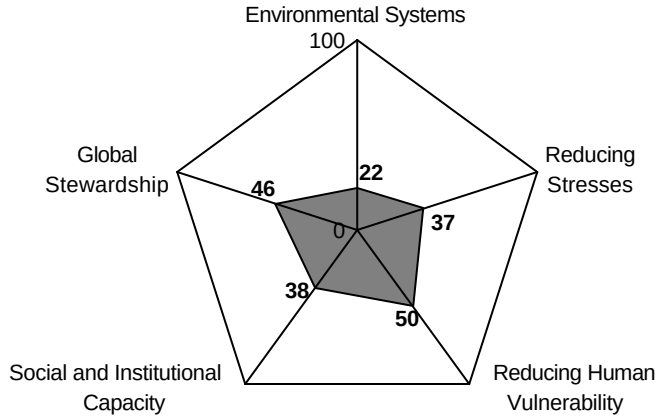




= Indicator value
= Reference (average value for peer group)

Philippines

ESI:	35.7
Ranking:	112
GDP/Capita:	$3,555
Peer group ESI:	45.7
Variable coverage:	61 of 67
Missing variables imputed:	4

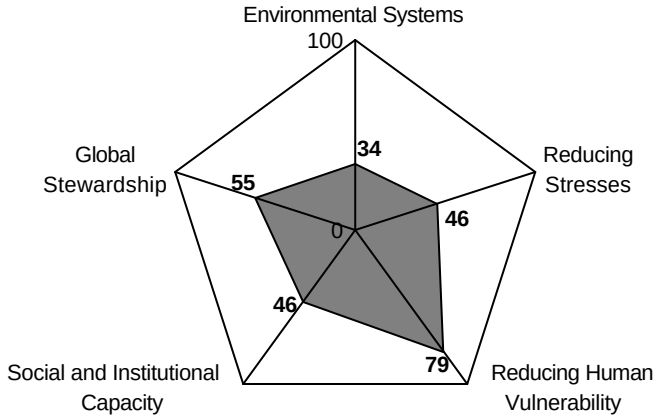


Air Quality	-0.28 / -0.27
Water Quantity	-0.97 / 0.00
Water Quality	0.91 / -0.11
Biodiversity	-2.58 / -0.08
Terrestrial Systems	-0.94 / -0.03
Reducing Air Pollution	-0.10 / 0.19
Reducing Water Stress	0.09 / -0.07
Reducing Ecosystem Stress	-1.19 / -0.28
Reducing Waste & Consumption Pressures	-0.18 / 0.17
Reducing Population Stress	-0.31 / 0.01
Basic Human Sustenance	-0.11 / 0.09
Environmental Health	0.09 / 0.21
Science/Technology	-0.60 / -0.39
Capacity for Debate	-0.21 / 0.20
Regulation and Management	-0.72 / -0.31
Private Sector Responsiveness	-0.05 / -0.30
Environmental Information	0.40 / -0.15
Eco-efficiency	-0.51 / -0.52
Reducing Public Choice Distortions	-0.49 / -0.29
International Commitment	-0.25 / -0.29
Global-Scale Funding/Participation	0.21 / -0.07
Protecting International Commons	-0.30 / -0.11

= Indicator value
= Reference (average value for peer group)

Poland

ESI:	47.6
Ranking:	58
GDP/Capita:	$7,619
Peer group ESI:	52.2
Variable coverage:	63 of 67
Missing variables imputed:	2

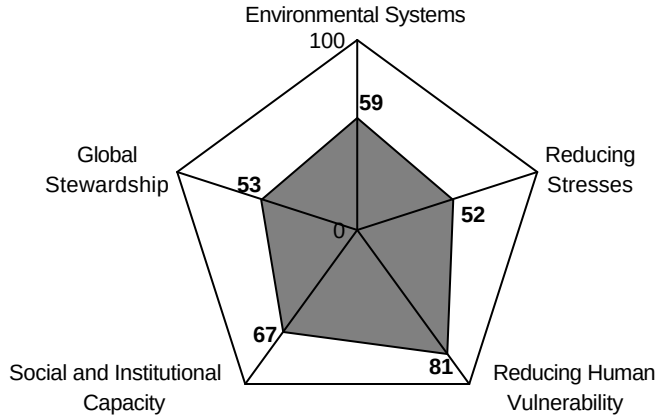


Air Quality	-0.32 / 0.18
Water Quantity	-0.53 / 0.04
Water Quality	0.37 / 0.25
Biodiversity	0.05 / -0.12
Terrestrial Systems	-1.60 / -0.13
Reducing Air Pollution	-0.76 / -0.28
Reducing Water Stress	0.05 / -0.06
Reducing Ecosystem Stress	-0.98 / 0.12
Reducing Waste & Consumption Pressures	0.12 / -0.10
Reducing Population Stress	1.01 / 0.51
Basic Human Sustenance	0.69 / 0.58
Environmental Health	0.92 / 0.60
Science/Technology	0.20 / 0.08
Capacity for Debate	0.18 / 0.03
Regulation and Management	-0.44 / -0.25
Private Sector Responsiveness	0.79 / 0.13
Environmental Information	-0.77 / -0.39
Eco-efficiency	-0.23 / -0.02
Reducing Public Choice Distortions	-0.46 / 0.00
International Commitment	0.27 / -0.02
Global-Scale Funding/Participation	0.49 / 0.26
Protecting International Commons	-0.36 / -0.21

= Indicator value
= Reference (average value for peer group)

Portugal

ESI:	61.4
Ranking:	20
GDP/Capita:	$14,701
Peer group ESI:	65.2
Variable coverage:	64 of 67
Missing variables imputed:	2

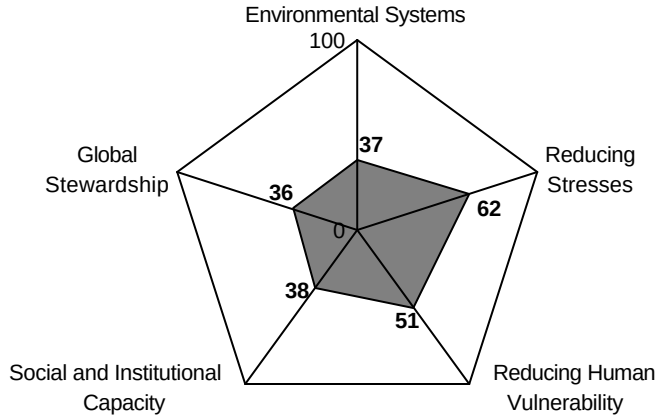


Air Quality	0.78 / 0.81
Water Quantity	0.06 / -0.08
Water Quality	1.09 / 0.77
Biodiversity	-0.45 / -0.04
Terrestrial Systems	-0.37 / 0.07
Reducing Air Pollution	-0.26 / -0.81
Reducing Water Stress	-0.25 / -0.46
Reducing Ecosystem Stress	0.68 / -0.09
Reducing Waste & Consumption Pressures	-0.88 / -1.03
Reducing Population Stress	0.99 / 0.77
Basic Human Sustenance	0.82 / 0.88
Environmental Health	0.93 / 0.93
Science/Technology	-0.03 / 1.57
Capacity for Debate	0.38 / 0.77
Regulation and Management	0.35 / 0.79
Private Sector Responsiveness	0.97 / 0.87
Environmental Information	0.56 / 0.36
Eco-efficiency	0.95 / 1.24
Reducing Public Choice Distortions	-0.18 / 0.54
International Commitment	0.44 / 0.89
Global-Scale Funding/Participation	0.25 / 0.36
Protecting International Commons	-0.48 / -0.27

= Indicator value
= Reference (average value for peer group)

Romania

ESI:	44.1
Ranking:	80
GDP/Capita:	$5,648
Peer group ESI:	45.7
Variable coverage:	53 of 67
Missing variables imputed:	7

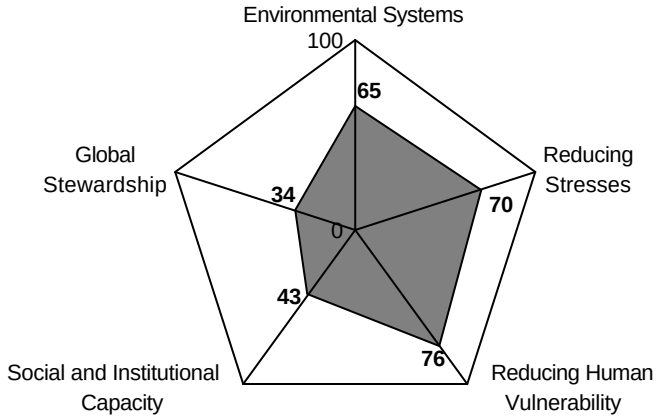


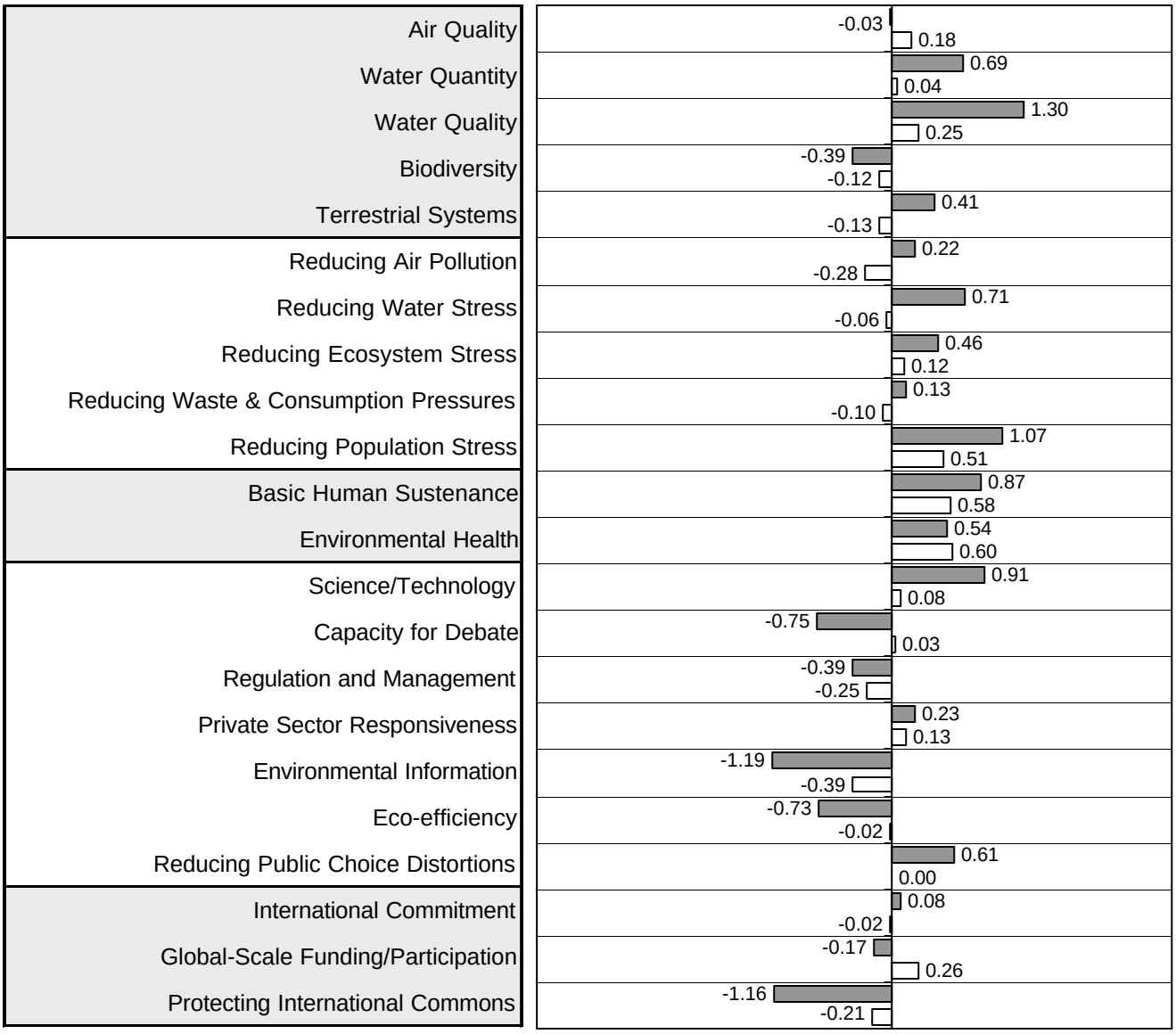
Air Quality	0.18	-0.27
Water Quantity	0.17	0.00
Water Quality	-0.13	-0.11
Biodiversity	-0.53	-0.08
Terrestrial Systems	-1.39	-0.03
Reducing Air Pollution	-0.17	0.19
Reducing Water Stress	0.31	-0.07
Reducing Ecosystem Stress	-0.08	-0.28
Reducing Waste & Consumption Pressures	0.45	0.17
Reducing Population Stress	1.03	0.01
Basic Human Sustenance	-0.48	0.09
Environmental Health	0.51	0.21
Science/Technology	0.25	-0.39
Capacity for Debate	-0.02	0.20
Regulation and Management	-0.57	-0.31
Private Sector Responsiveness	-0.23	-0.30
Environmental Information	-0.69	-0.15
Eco-efficiency	-0.35	-0.52
Reducing Public Choice Distortions	-0.47	-0.29
International Commitment	-0.43	-0.29
Global-Scale Funding/Participation	-0.14	-0.07
Protecting International Commons	-0.51	-0.11

= Indicator value
= Reference (average value for peer group)

Russian Federation

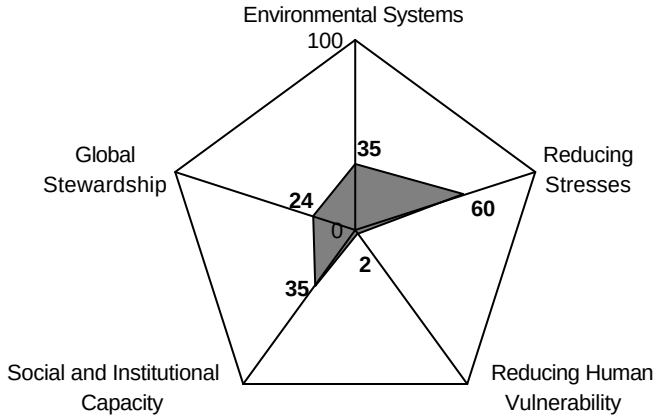
ESI:	56.2
Ranking:	33
GDP/Capita:	$6,460
Peer group ESI:	52.2
Variable coverage:	60 of 67
Missing variables imputed:	4





Rwanda

ESI:	33.5
Ranking:	115
GDP/Capita:	
Peer group ESI:	39.3
Variable coverage:	41 of 67
Missing variables imputed:	16

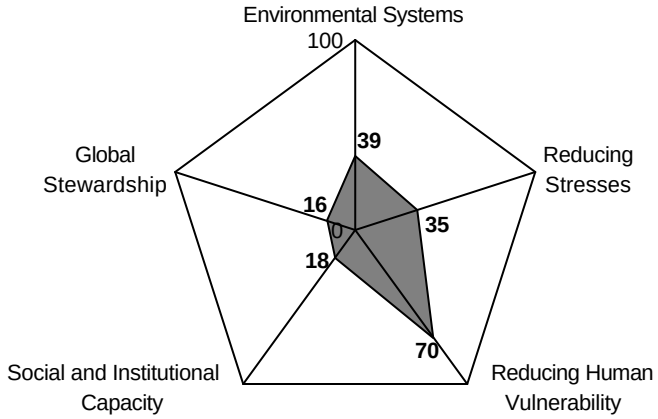


Air Quality	-0.49 / -0.48
Water Quantity	-0.29 / -0.02
Water Quality	-0.78 / -0.55
Biodiversity	0.76 / 0.19
Terrestrial Systems	-1.16 / 0.15
Reducing Air Pollution	-0.44 / 0.57
Reducing Water Stress	1.05 / 0.57
Reducing Ecosystem Stress	0.40 / 0.11
Reducing Waste & Consumption Pressures	0.98 / 0.69
Reducing Population Stress	-0.67 / -1.33
Basic Human Sustenance	-2.33 / -1.38
Environmental Health	-1.65 / -1.57
Science/Technology	-0.74 / -0.90
Capacity for Debate	-1.00 / -0.56
Regulation and Management	0.10 / -0.26
Private Sector Responsiveness	-0.90 / -0.62
Environmental Information	0.67 / 0.42
Eco-efficiency	-0.32 / -0.37
Reducing Public Choice Distortions	-0.43 / -0.45
International Commitment	-1.57 / -0.41
Global-Scale Funding/Participation	-1.17 / -0.49
Protecting International Commons	0.57 / 0.62

= Indicator value
= Reference (average value for peer group)

Saudi Arabia

ESI:	29.8
Ranking:	121
GDP/Capita:	$10,158
Peer group ESI:	52.2
Variable coverage:	42 of 67
Missing variables imputed:	16

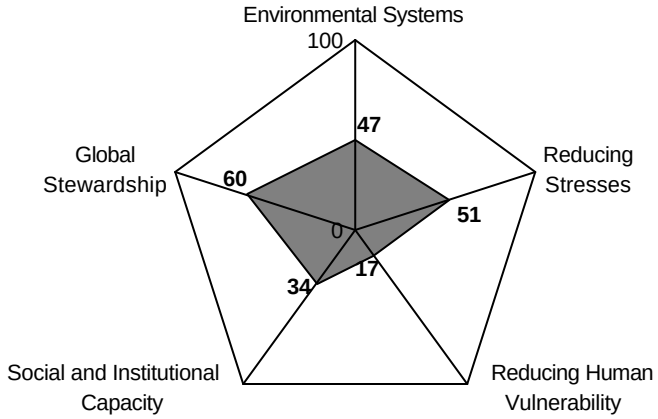


Air Quality	-0.20 / 0.18
Water Quantity	-1.23 / 0.04
Water Quality	-0.18 / 0.25
Biodiversity	-0.54 / -0.12
Terrestrial Systems	0.77 / -0.13
Reducing Air Pollution	0.32 / -0.28
Reducing Water Stress	-0.51 / -0.06
Reducing Ecosystem Stress	0.16 / 0.12
Reducing Waste & Consumption Pressures	-0.12 / -0.10
Reducing Population Stress	-1.77 / 0.51
Basic Human Sustenance	0.78 / 0.58
Environmental Health	0.29 / 0.60
Science/Technology	-0.32 / 0.08
Capacity for Debate	-1.34 / 0.03
Regulation and Management	-0.73 / -0.25
Private Sector Responsiveness	-0.98 / 0.13
Environmental Information	-1.48 / -0.39
Eco-efficiency	-1.10 / -0.02
Reducing Public Choice Distortions	-0.43 / 0.00
International Commitment	-0.81 / -0.02
Global-Scale Funding/Participation	-1.17 / 0.26
Protecting International Commons	-1.03 / -0.21

= Indicator value
= Reference (average value for peer group)

Senegal

ESI:	42.5
Ranking:	87
GDP/Capita:	$1,307
Peer group ESI:	39.3
Variable coverage:	48 of 67
Missing variables imputed:	10

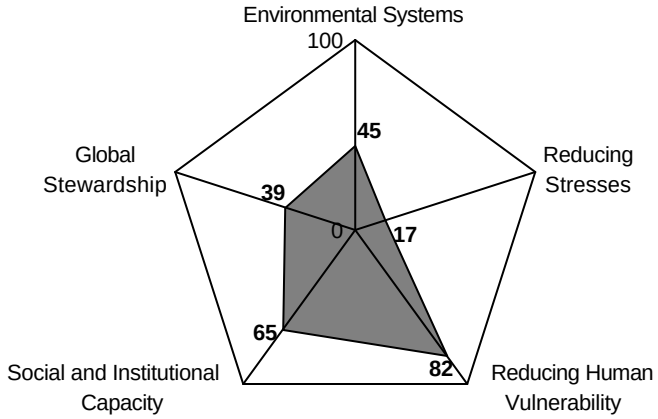


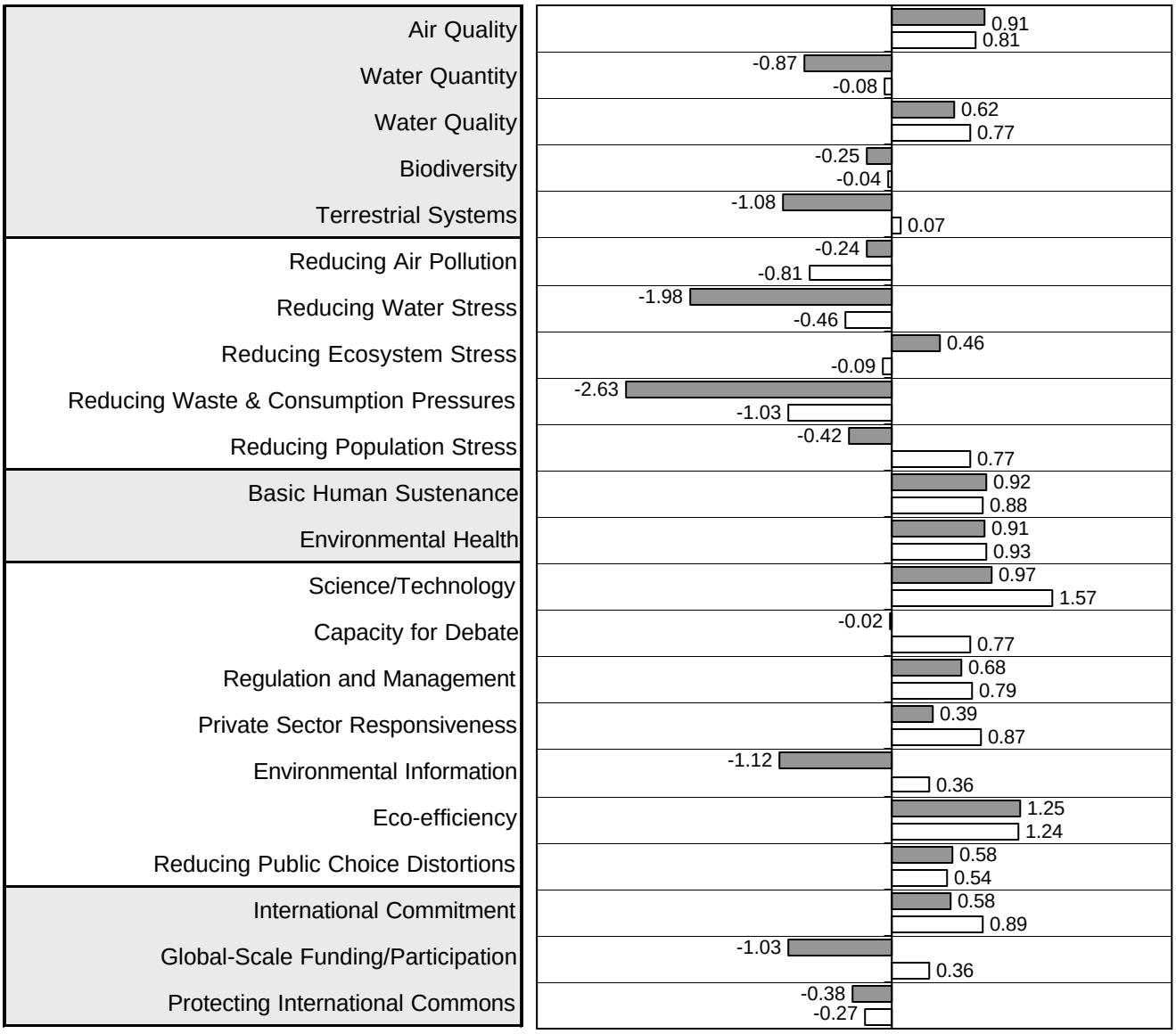
Air Quality	-0.56 / -0.48
Water Quantity	-0.17 / -0.02
Water Quality	-0.42 / -0.55
Biodiversity	0.61 / 0.19
Terrestrial Systems	0.18 / 0.15
Reducing Air Pollution	0.59 / 0.57
Reducing Water Stress	0.74 / 0.57
Reducing Ecosystem Stress	0.21 / 0.11
Reducing Waste & Consumption Pressures	0.15 / 0.69
Reducing Population Stress	-1.51 / -1.33
Basic Human Sustenance	-0.62 / -1.38
Environmental Health	-1.30 / -1.57
Science/Technology	-0.77 / -0.90
Capacity for Debate	-0.28 / -0.56
Regulation and Management	-0.12 / -0.26
Private Sector Responsiveness	-0.46 / -0.62
Environmental Information	-0.81 / 0.42
Eco-efficiency	0.11 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	0.53 / -0.41
Global-Scale Funding/Participation	-0.12 / -0.49
Protecting International Commons	0.35 / 0.62

= Indicator value
= Reference (average value for peer group)

Singapore

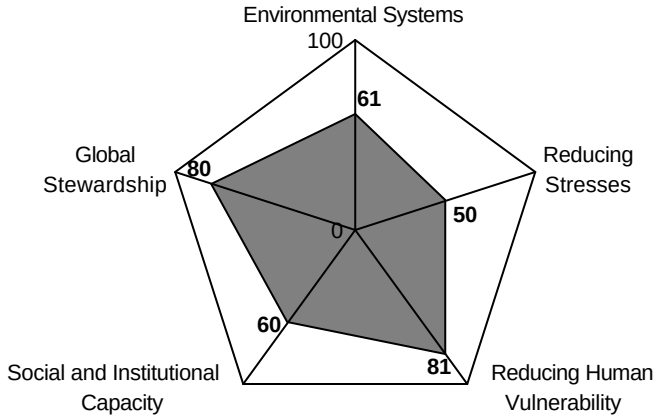
ESI:	46.8
Ranking:	65
GDP/Capita:	$24,210
Peer group ESI:	65.2
Variable coverage:	53 of 67
Missing variables imputed:	11





Slovak Republic

ESI:	63.2
Ranking:	18
GDP/Capita:	$9,699
Peer group ESI:	52.2
Variable coverage:	58 of 67
Missing variables imputed:	7

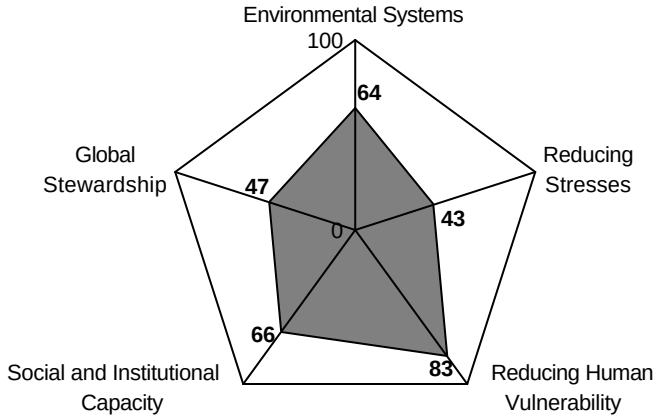


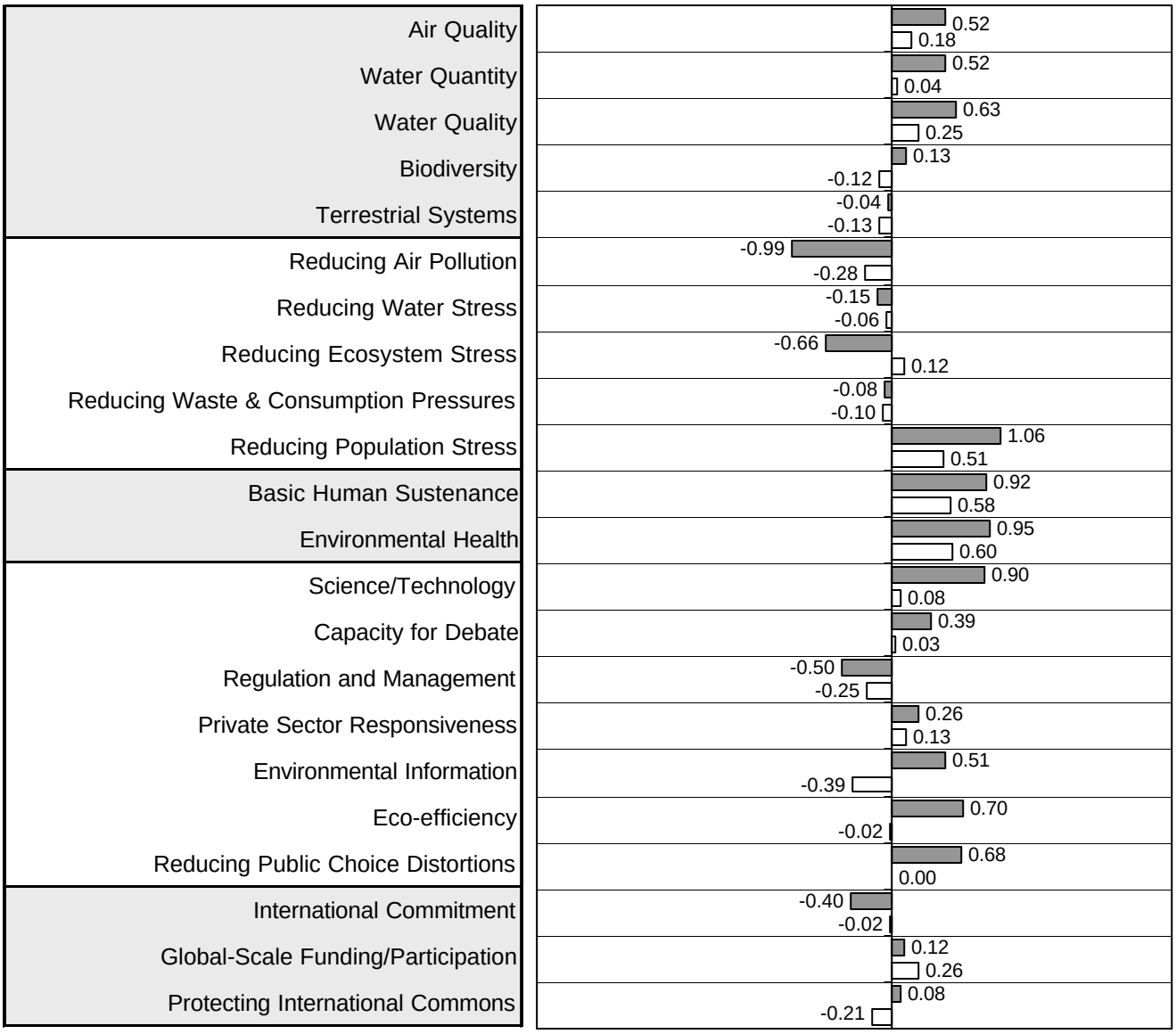
Air Quality	1.00 / 0.18
Water Quantity	0.33 / 0.04
Water Quality	0.10 / 0.25
Biodiversity	0.32 / -0.12
Terrestrial Systems	-0.37 / -0.13
Reducing Air Pollution	-1.19 / -0.28
Reducing Water Stress	0.03 / -0.06
Reducing Ecosystem Stress	-0.25 / 0.12
Reducing Waste & Consumption Pressures	0.34 / -0.10
Reducing Population Stress	1.02 / 0.51
Basic Human Sustenance	0.92 / 0.58
Environmental Health	0.87 / 0.60
Science/Technology	0.56 / 0.08
Capacity for Debate	0.42 / 0.03
Regulation and Management	0.89 / -0.25
Private Sector Responsiveness	1.04 / 0.13
Environmental Information	-0.97 / -0.39
Eco-efficiency	-0.40 / -0.02
Reducing Public Choice Distortions	0.25 / 0.00
International Commitment	0.30 / -0.02
Global-Scale Funding/Participation	1.97 / 0.26
Protecting International Commons	0.26 / -0.21

= Indicator value
= Reference (average value for peer group)

Slovenia

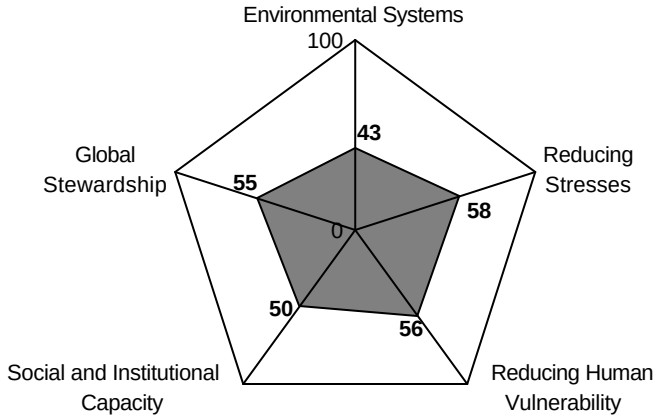
ESI:	59.9
Ranking:	24
GDP/Capita:	$14,293
Peer group ESI:	52.2
Variable coverage:	51 of 67
Missing variables imputed:	9

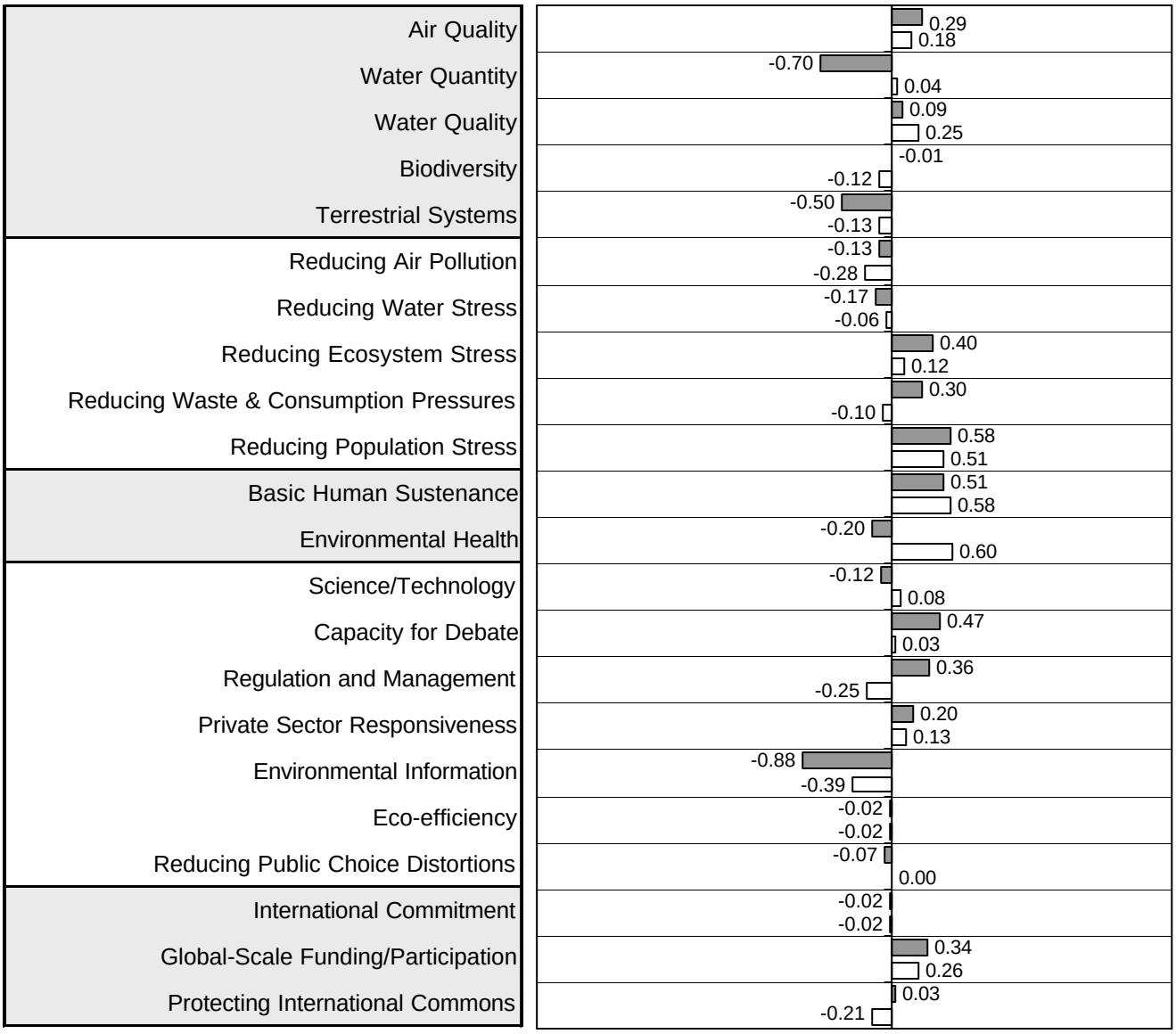




South Africa

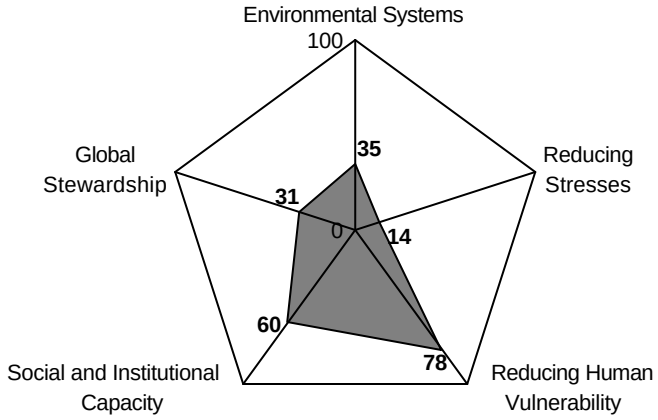
ESI:	51.3
Ranking:	45
GDP/Capita:	$8,488
Peer group ESI:	52.2
Variable coverage:	60 of 67
Missing variables imputed:	5





South Korea

ESI:	40.3
Ranking:	95
GDP/Capita:	$13,478
Peer group ESI:	52.2
Variable coverage:	64 of 67
Missing variables imputed:	2

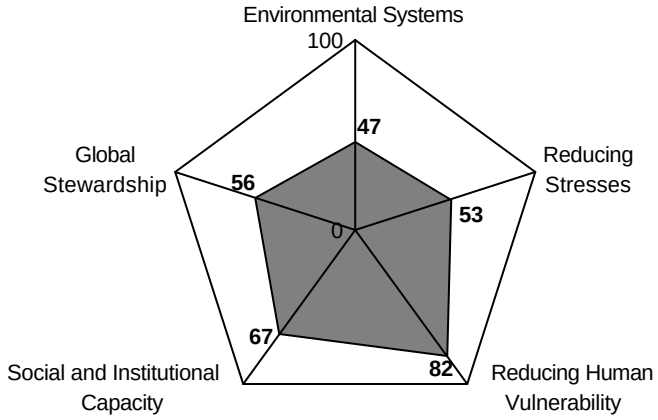


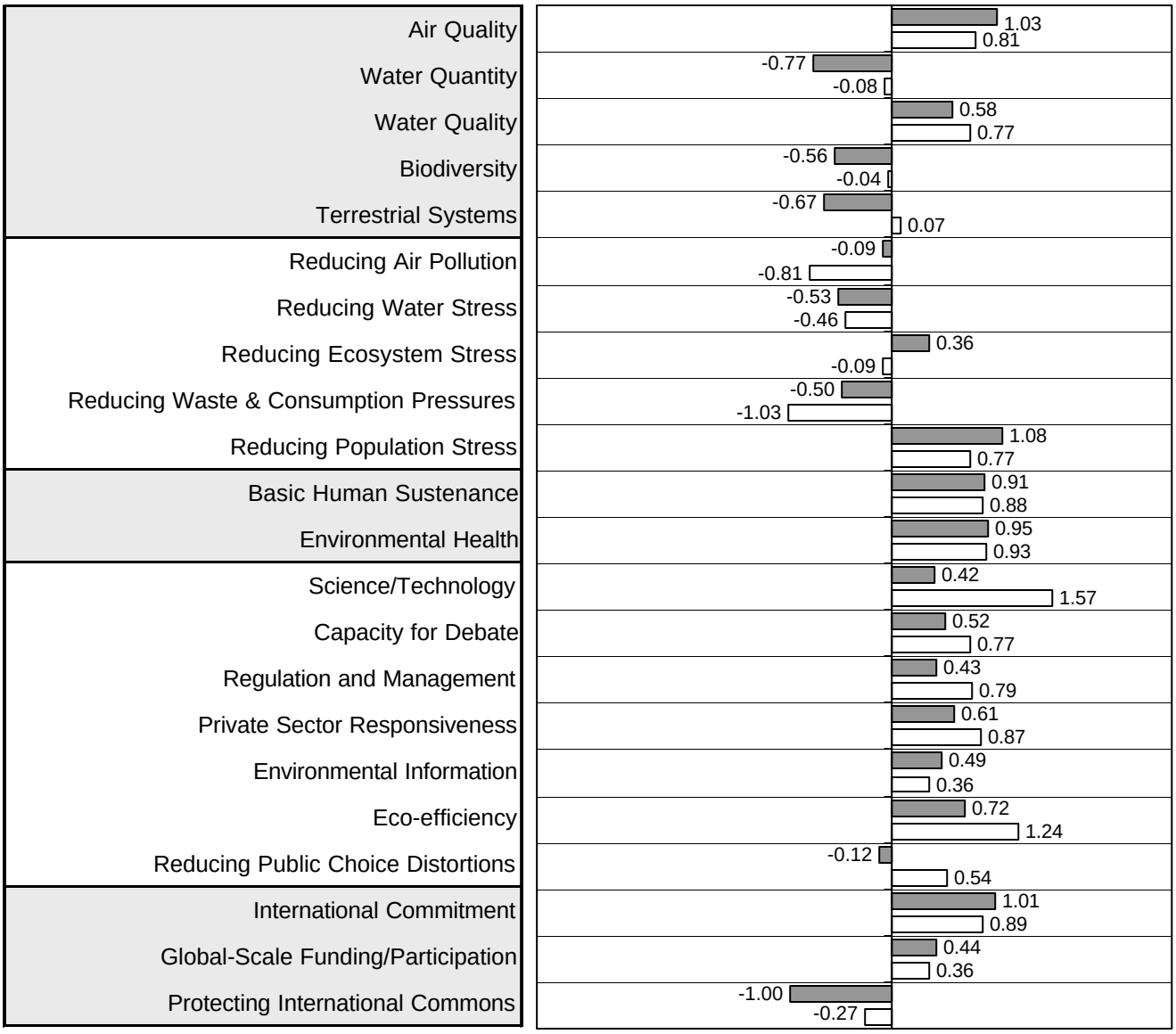
Air Quality	-0.19	0.18
Water Quantity	-0.75	0.04
Water Quality	1.27	0.25
Biodiversity	-1.91	-0.12
Terrestrial Systems	-0.33	-0.13
Reducing Air Pollution	-2.48	-0.28
Reducing Water Stress	-1.39	-0.06
Reducing Ecosystem Stress	-1.25	0.12
Reducing Waste & Consumption Pressures	-1.15	-0.10
Reducing Population Stress	0.92	0.51
Basic Human Sustenance	0.69	0.58
Environmental Health	0.88	0.60
Science/Technology	1.20	0.08
Capacity for Debate	-0.01	0.03
Regulation and Management	-0.28	-0.25
Private Sector Responsiveness	0.23	0.13
Environmental Information	-0.27	-0.39
Eco-efficiency	0.31	-0.02
Reducing Public Choice Distortions	0.62	0.00
International Commitment	0.56	-0.02
Global-Scale Funding/Participation	-1.17	0.26
Protecting International Commons	-0.90	-0.21

= Indicator value
= Reference (average value for peer group)

Spain

ESI:	59.5
Ranking:	25
GDP/Capita:	$16,212
Peer group ESI:	65.2
Variable coverage:	60 of 67
Missing variables imputed:	7

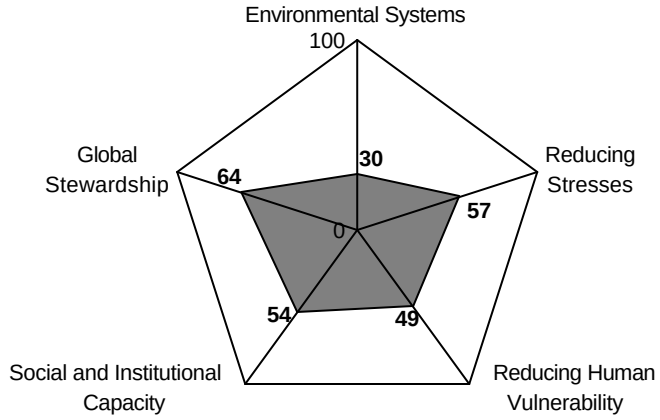




= Indicator value
= Reference (average value for peer group)

Sri Lanka

ESI:	49.8
Ranking:	51
GDP/Capita:	$2,979
Peer group ESI:	45.2
Variable coverage:	47 of 67
Missing variables imputed:	12

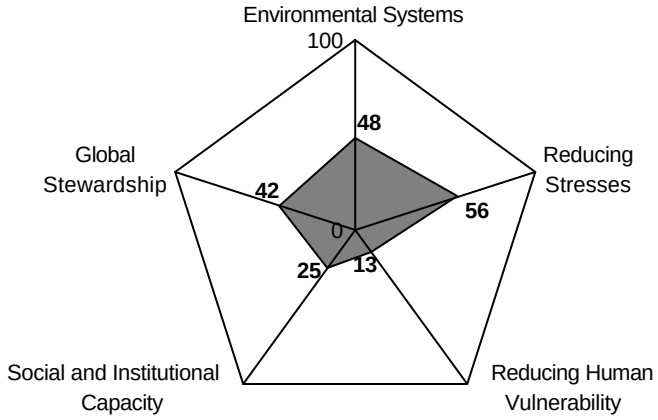


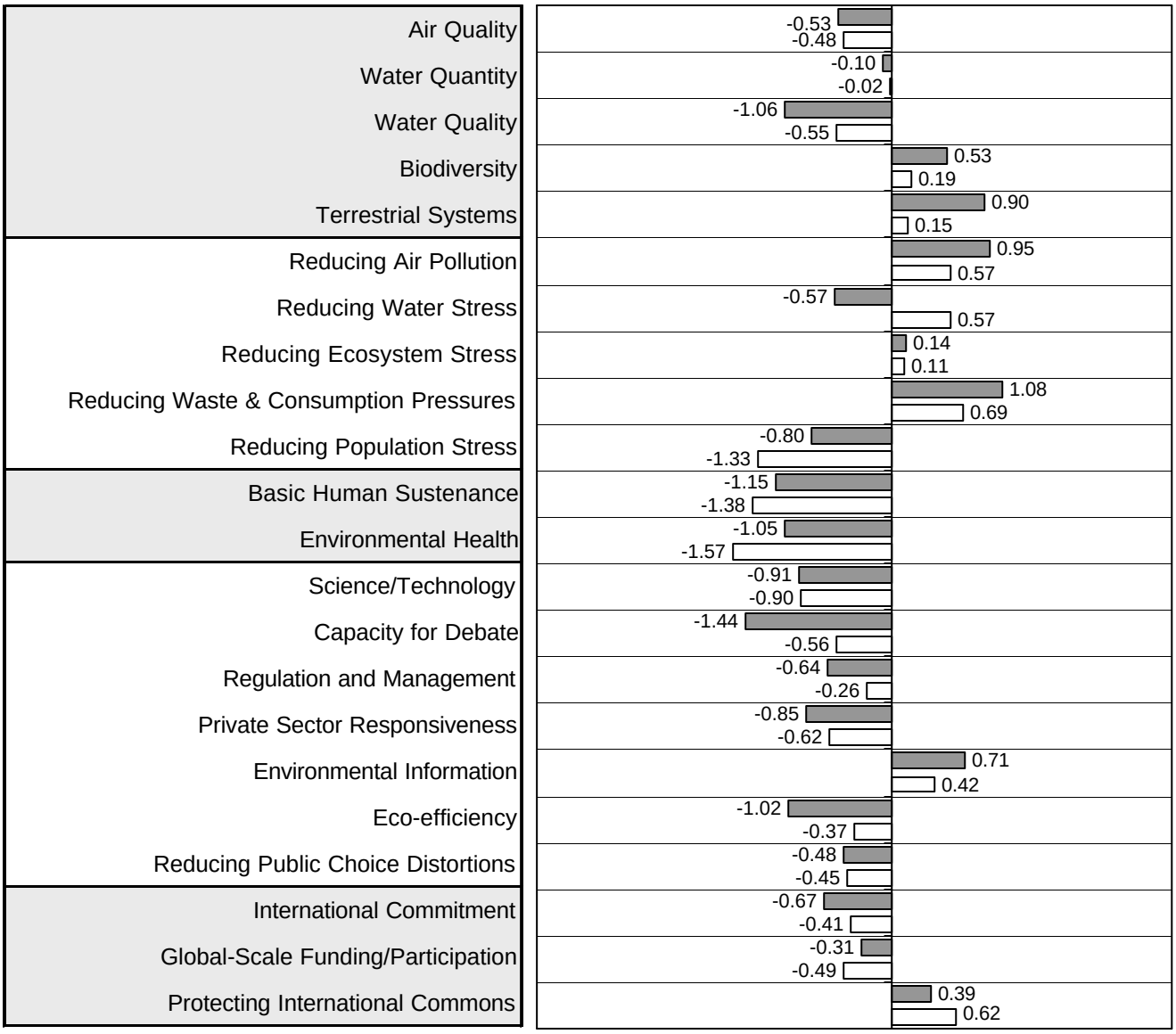
Air Quality	0.21 / -0.22
Water Quantity	-1.12 / 0.03
Water Quality	-0.16 / -0.35
Biodiversity	-0.40 / 0.06
Terrestrial Systems	-1.23 / -0.05
Reducing Air Pollution	0.23 / 0.30
Reducing Water Stress	-0.54 / -0.02
Reducing Ecosystem Stress	0.03 / 0.14
Reducing Waste & Consumption Pressures	0.64 / 0.59
Reducing Population Stress	0.51 / 0.03
Basic Human Sustenance	-0.35 / -0.20
Environmental Health	0.32 / -0.18
Science/Technology	-0.60 / -0.29
Capacity for Debate	-0.03 / -0.42
Regulation and Management	0.35 / -0.36
Private Sector Responsiveness	0.38 / -0.04
Environmental Information	0.60 / -0.18
Eco-efficiency	0.41 / -0.64
Reducing Public Choice Distortions	-0.42 / -0.44
International Commitment	0.42 / -0.41
Global-Scale Funding/Participation	0.12 / -0.07
Protecting International Commons	0.53 / 0.06

= Indicator value
= Reference (average value for peer group)

Sudan

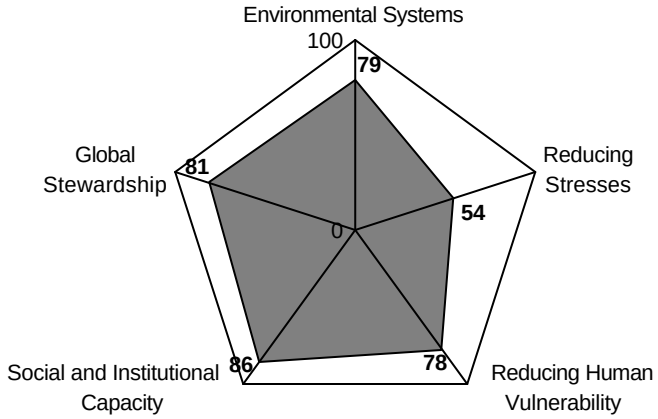
ESI:	37.7
Ranking:	107
GDP/Capita:	$1,394
Peer group ESI:	39.3
Variable coverage:	47 of 67
Missing variables imputed:	11

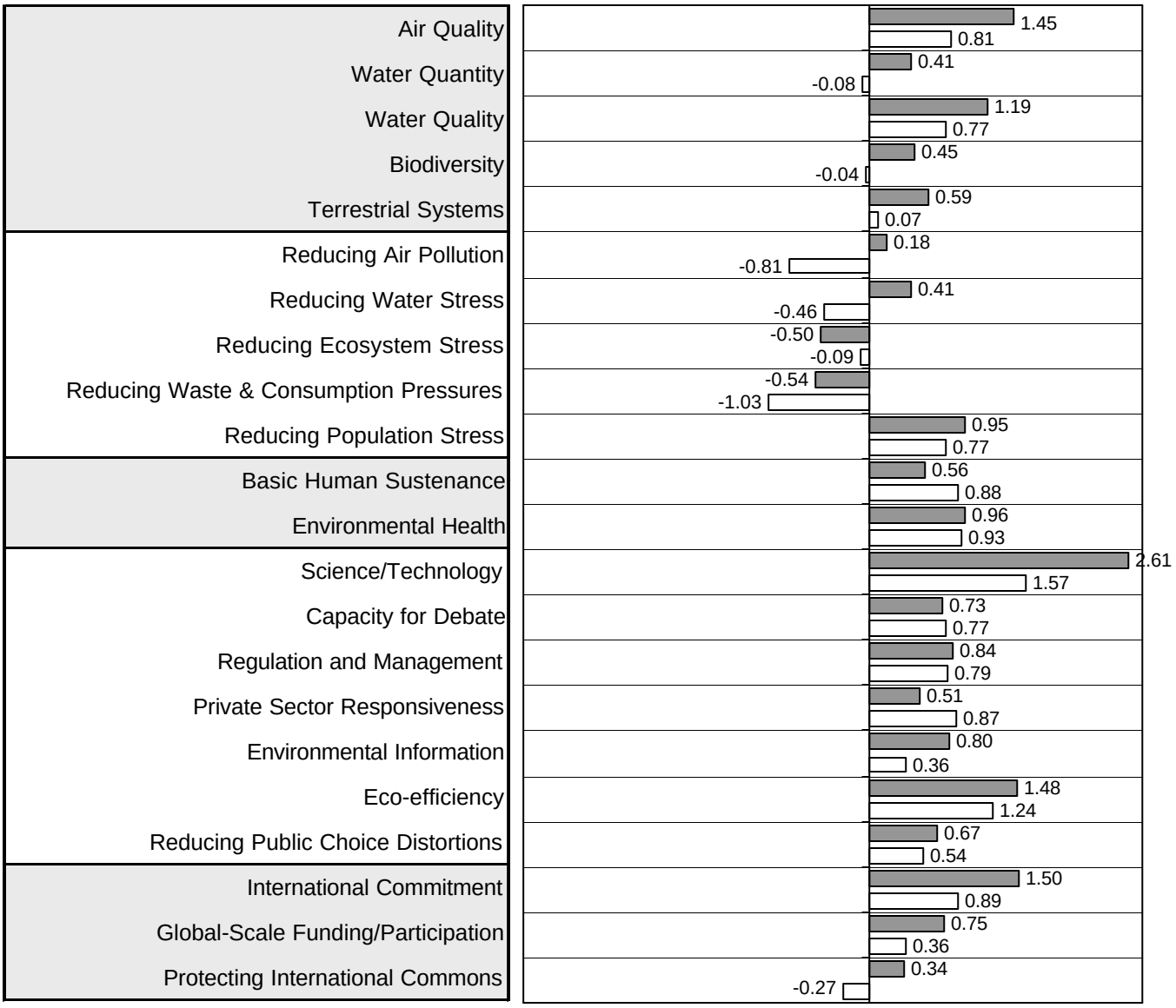




Sweden

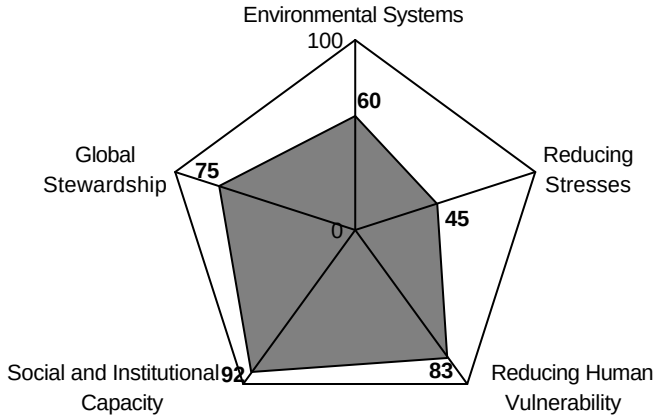
ESI:	77.1
Ranking:	4
GDP/Capita:	$20,659
Peer group ESI:	65.2
Variable coverage:	62 of 67
Missing variables imputed:	5

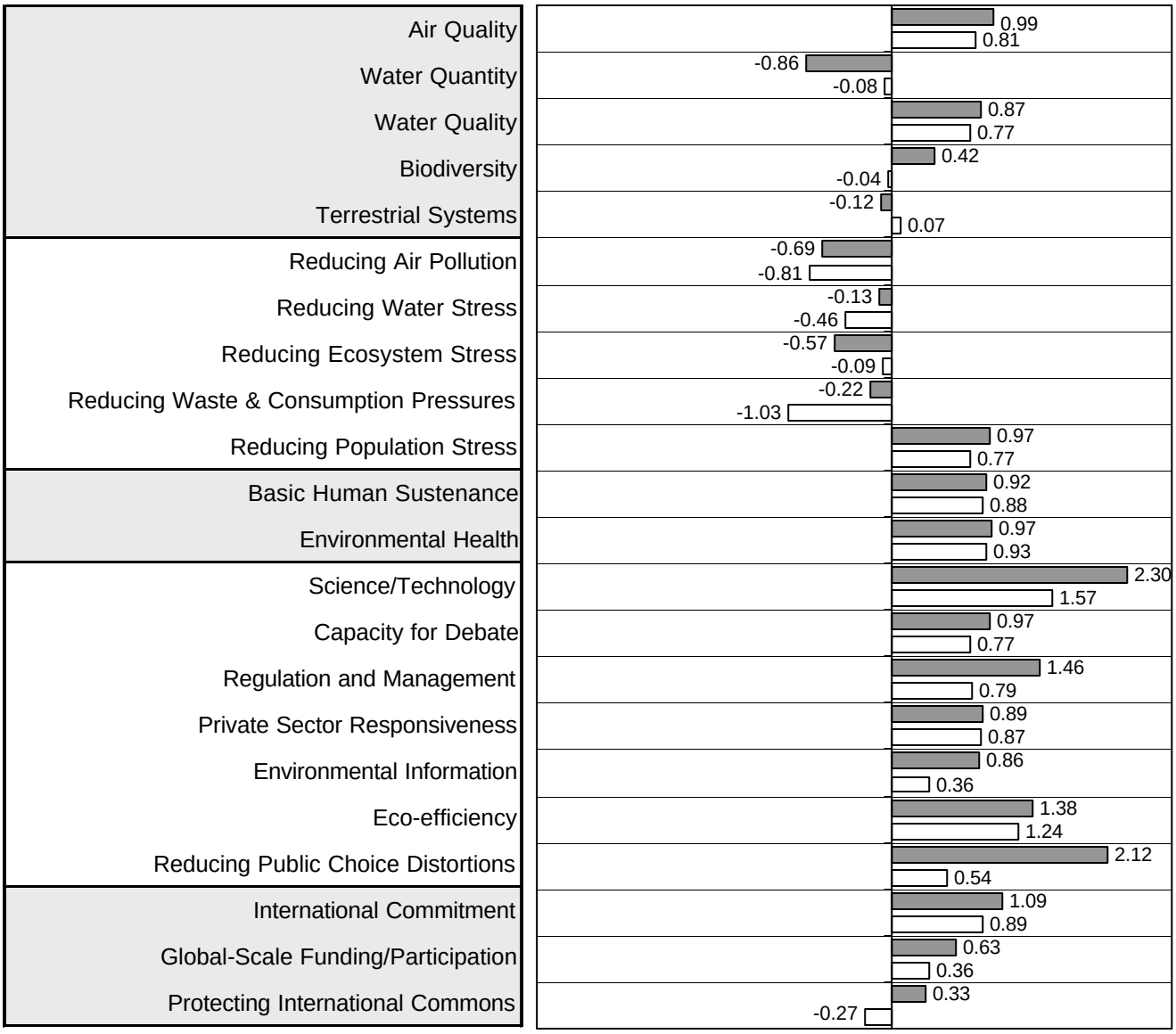




Switzerland

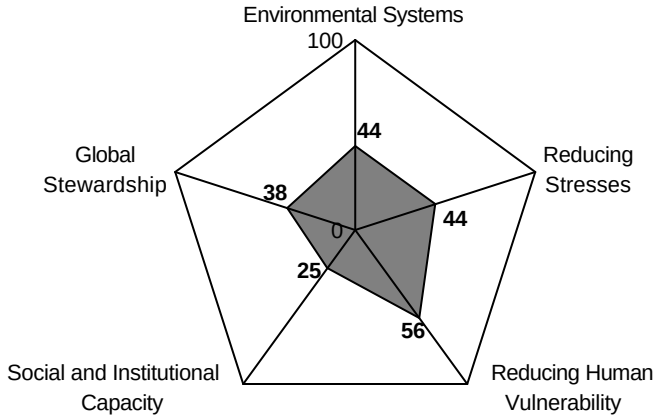
ESI:	74.6
Ranking:	5
GDP/Capita:	$25,512
Peer group ESI:	65.2
Variable coverage:	64 of 67
Missing variables imputed:	3

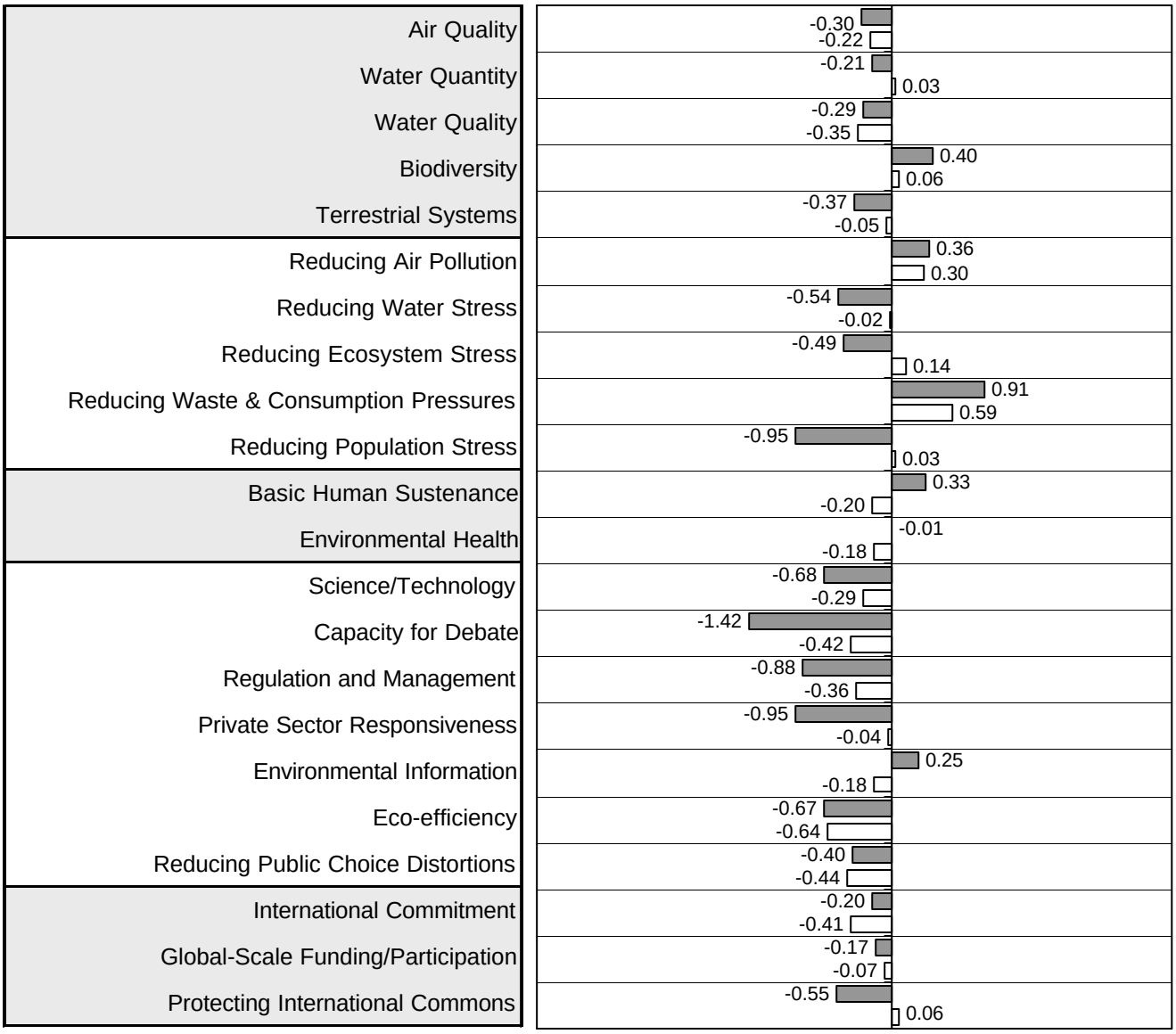




Syria

ESI:	37.9
Ranking:	106
GDP/Capita:	$2,892
Peer group ESI:	45.2
Variable coverage:	46 of 67
Missing variables imputed:	12

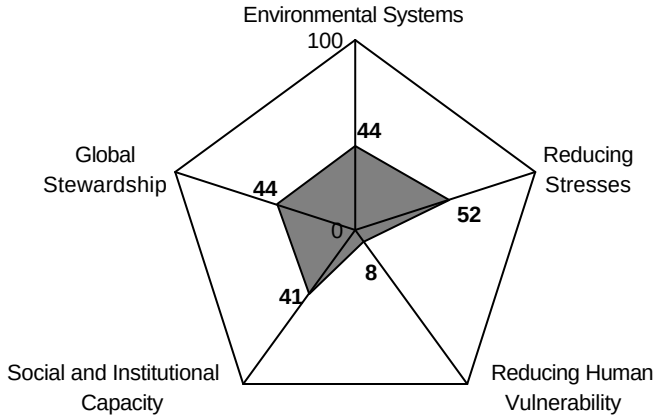




= Indicator value
= Reference (average value for peer group)

Tanzania

ESI:	40.3
Ranking:	94
GDP/Capita:	$480
Peer group ESI:	39.3
Variable coverage:	45 of 67
Missing variables imputed:	13

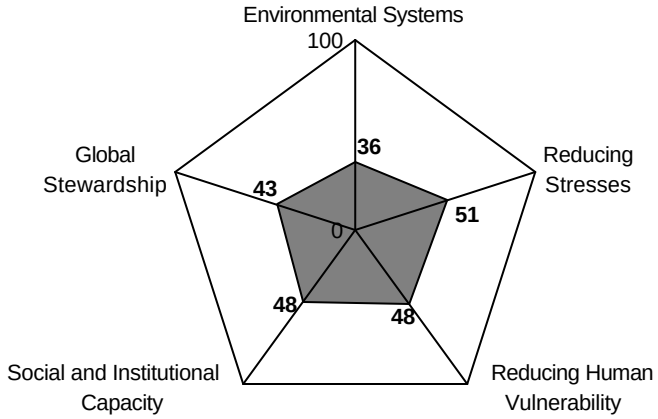


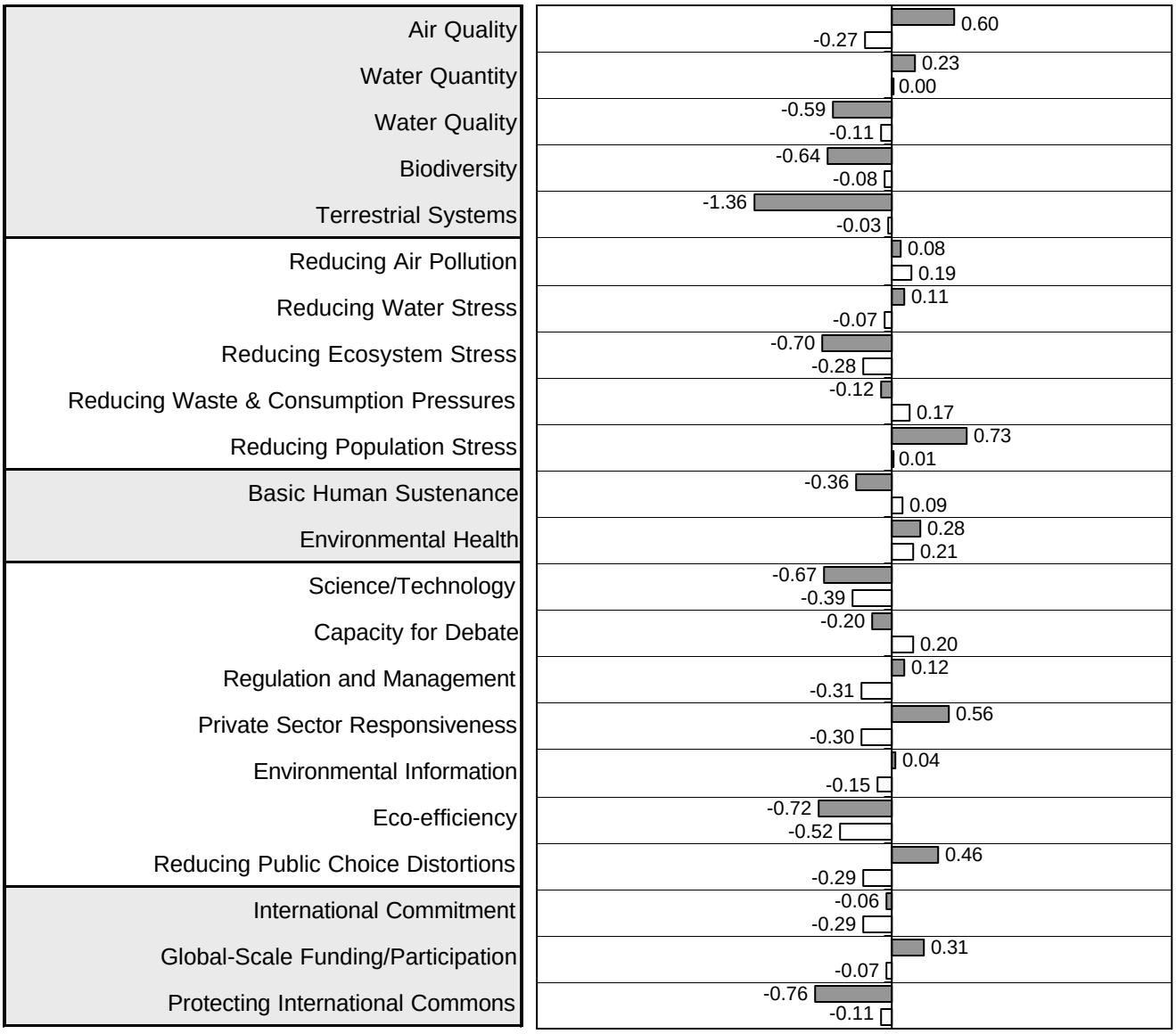
Air Quality	-0.63 / -0.48
Water Quantity	-0.05 / -0.02
Water Quality	-0.22 / -0.55
Biodiversity	0.01 / 0.19
Terrestrial Systems	0.16 / 0.15
Reducing Air Pollution	0.86 / 0.57
Reducing Water Stress	0.47 / 0.57
Reducing Ecosystem Stress	0.09 / 0.11
Reducing Waste & Consumption Pressures	0.37 / 0.69
Reducing Population Stress	-1.54 / -1.33
Basic Human Sustenance	-1.45 / -1.38
Environmental Health	-1.40 / -1.57
Science/Technology	-1.17 / -0.90
Capacity for Debate	-0.57 / -0.56
Regulation and Management	0.34 / -0.26
Private Sector Responsiveness	-0.04 / -0.62
Environmental Information	0.77 / 0.42
Eco-efficiency	-0.41 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	0.15 / -0.41
Global-Scale Funding/Participation	-1.15 / -0.49
Protecting International Commons	0.52 / 0.62

= Indicator value
= Reference (average value for peer group)

Thailand

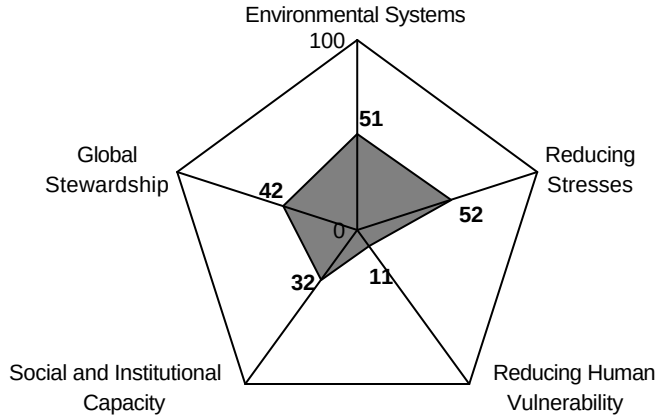
ESI:	45.2
Ranking:	74
GDP/Capita:	$5,456
Peer group ESI:	45.7
Variable coverage:	61 of 67
Missing variables imputed:	4





Togo

ESI:	39.1
Ranking:	101
GDP/Capita:	$1,372
Peer group ESI:	39.3
Variable coverage:	44 of 67
Missing variables imputed:	14

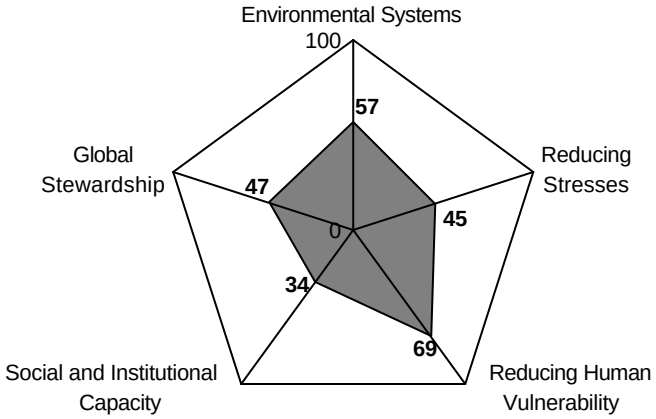


Air Quality	-0.45 / -0.48
Water Quantity	-0.15 / -0.02
Water Quality	-0.53 / -0.55
Biodiversity	1.16 / 0.19
Terrestrial Systems	0.04 / 0.15
Reducing Air Pollution	0.22 / 0.57
Reducing Water Stress	0.66 / 0.57
Reducing Ecosystem Stress	-0.12 / 0.11
Reducing Waste & Consumption Pressures	0.66 / 0.69
Reducing Population Stress	-1.19 / -1.33
Basic Human Sustenance	-1.29 / -1.38
Environmental Health	-1.21 / -1.57
Science/Technology	-0.52 / -0.90
Capacity for Debate	-0.73 / -0.56
Regulation and Management	-0.35 / -0.26
Private Sector Responsiveness	-0.65 / -0.62
Environmental Information	-0.09 / 0.42
Eco-efficiency	-0.43 / -0.37
Reducing Public Choice Distortions	-0.48 / -0.45
International Commitment	0.16 / -0.41
Global-Scale Funding/Participation	-1.17 / -0.49
Protecting International Commons	0.37 / 0.62

= Indicator value
= Reference (average value for peer group)

Trinidad and Tobago

ESI:	46.4
Ranking:	68
GDP/Capita:	$7,485
Peer group ESI:	52.2
Variable coverage:	44 of 67
Missing variables imputed:	14

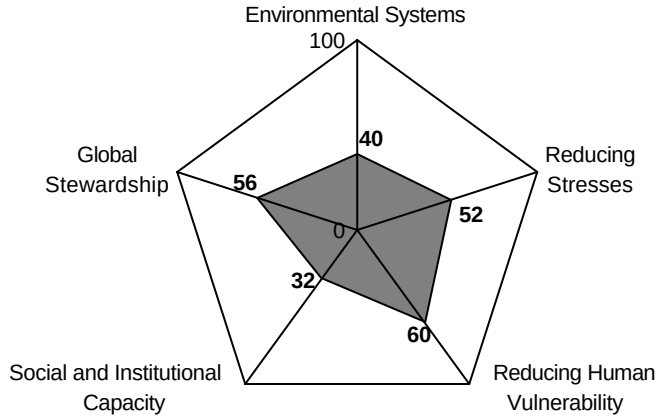


Air Quality	0.07 / 0.18
Water Quantity	-1.12 / 0.04
Water Quality	0.10 / 0.25
Biodiversity	1.53 / -0.12
Terrestrial Systems	0.26 / -0.13
Reducing Air Pollution	-0.81 / -0.28
Reducing Water Stress	-1.25 / -0.06
Reducing Ecosystem Stress	-0.16 / 0.12
Reducing Waste & Consumption Pressures	0.81 / -0.10
Reducing Population Stress	0.76 / 0.51
Basic Human Sustenance	0.27 / 0.58
Environmental Health	0.73 / 0.60
Science/Technology	0.05 / 0.08
Capacity for Debate	0.82 / 0.03
Regulation and Management	-0.68 / -0.25
Private Sector Responsiveness	-0.52 / 0.13
Environmental Information	-2.16 / -0.39
Eco-efficiency	-0.08 / -0.02
Reducing Public Choice Distortions	-0.33 / 0.00
International Commitment	0.28 / -0.02
Global-Scale Funding/Participation	-0.15 / 0.26
Protecting International Commons	-0.38 / -0.21

= Indicator value
= Reference (average value for peer group)

Tunisia

ESI:	43.7
Ranking:	83
GDP/Capita:	$5,404
Peer group ESI:	45.7
Variable coverage:	48 of 67
Missing variables imputed:	11

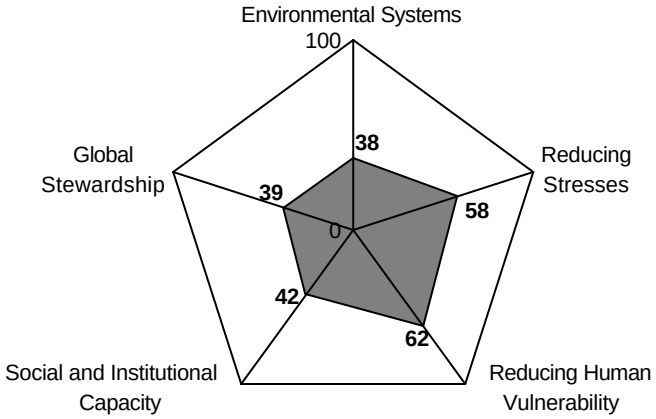


Air Quality	-0.03	-0.27
Water Quantity	-0.64	0.00
Water Quality	-0.54	-0.11
Biodiversity	-0.18	-0.08
Terrestrial Systems	0.12	-0.03
Reducing Air Pollution	0.48	0.19
Reducing Water Stress	-0.87	-0.07
Reducing Ecosystem Stress	0.26	-0.28
Reducing Waste & Consumption Pressures	0.29	0.17
Reducing Population Stress	0.10	0.01
Basic Human Sustenance	0.33	0.09
Environmental Health	0.15	0.21
Science/Technology	-0.59	-0.39
Capacity for Debate	-0.64	0.20
Regulation and Management	-0.86	-0.31
Private Sector Responsiveness	-0.30	-0.30
Environmental Information	-0.56	-0.15
Eco-efficiency	0.04	-0.52
Reducing Public Choice Distortions	-0.45	-0.29
International Commitment	0.80	-0.29
Global-Scale Funding/Participation	-0.13	-0.07
Protecting International Commons	-0.26	-0.11

= Indicator value
= Reference (average value for peer group)

Turkey

ESI:	46.3
Ranking:	70
GDP/Capita:	$6,422
Peer group ESI:	52.2
Variable coverage:	59 of 67
Missing variables imputed:	6

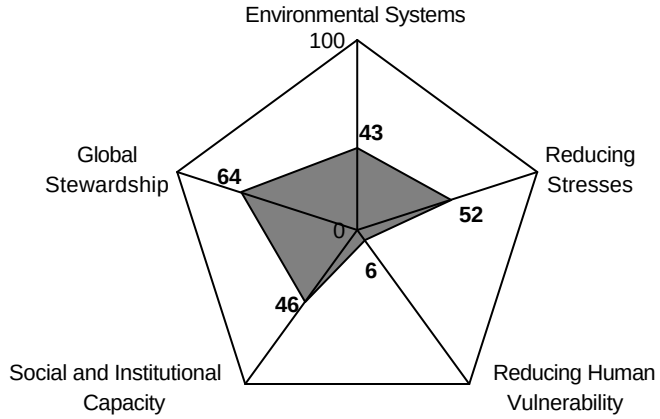


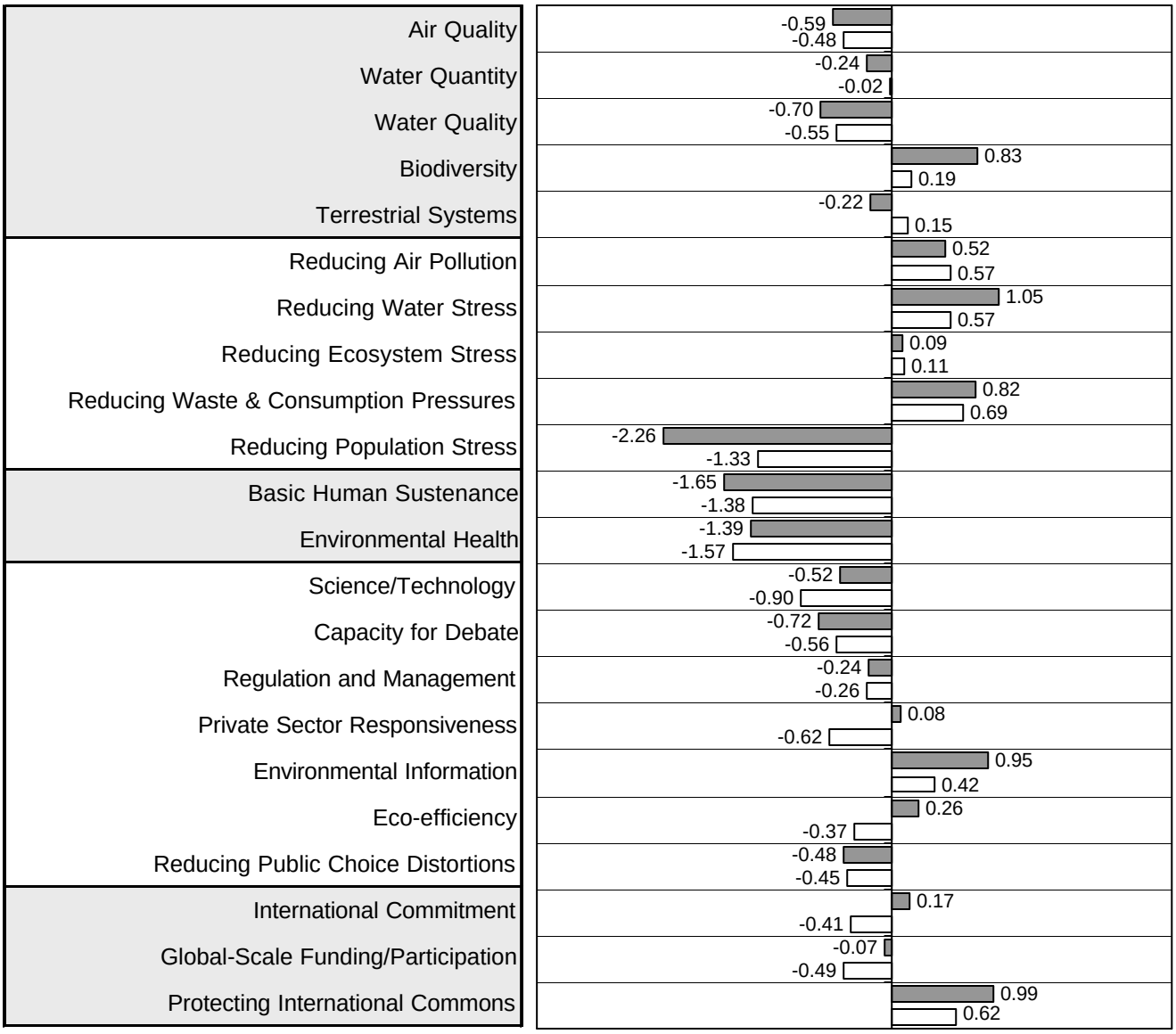
Air Quality	0.41 / 0.18
Water Quantity	-0.50 / 0.04
Water Quality	0.10 / 0.25
Biodiversity	-0.28 / -0.12
Terrestrial Systems	-1.25 / -0.13
Reducing Air Pollution	0.20 / -0.28
Reducing Water Stress	-0.04 / -0.06
Reducing Ecosystem Stress	0.46 / 0.12
Reducing Waste & Consumption Pressures	0.18 / -0.10
Reducing Population Stress	0.22 / 0.51
Basic Human Sustenance	0.42 / 0.58
Environmental Health	0.21 / 0.60
Science/Technology	-0.49 / 0.08
Capacity for Debate	-0.74 / 0.03
Regulation and Management	-0.51 / -0.25
Private Sector Responsiveness	-0.01 / 0.13
Environmental Information	0.50 / -0.39
Eco-efficiency	0.17 / -0.02
Reducing Public Choice Distortions	-0.28 / 0.00
International Commitment	-0.02 / -0.02
Global-Scale Funding/Participation	-0.03 / 0.26
Protecting International Commons	-0.76 / -0.21

= Indicator value
= Reference (average value for peer group)

Uganda

ESI:	44.0
Ranking:	81
GDP/Capita:	$1,074
Peer group ESI:	39.3
Variable coverage:	46 of 67
Missing variables imputed:	12

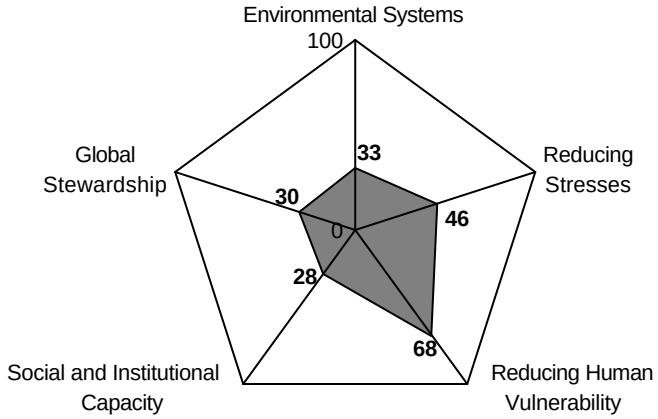


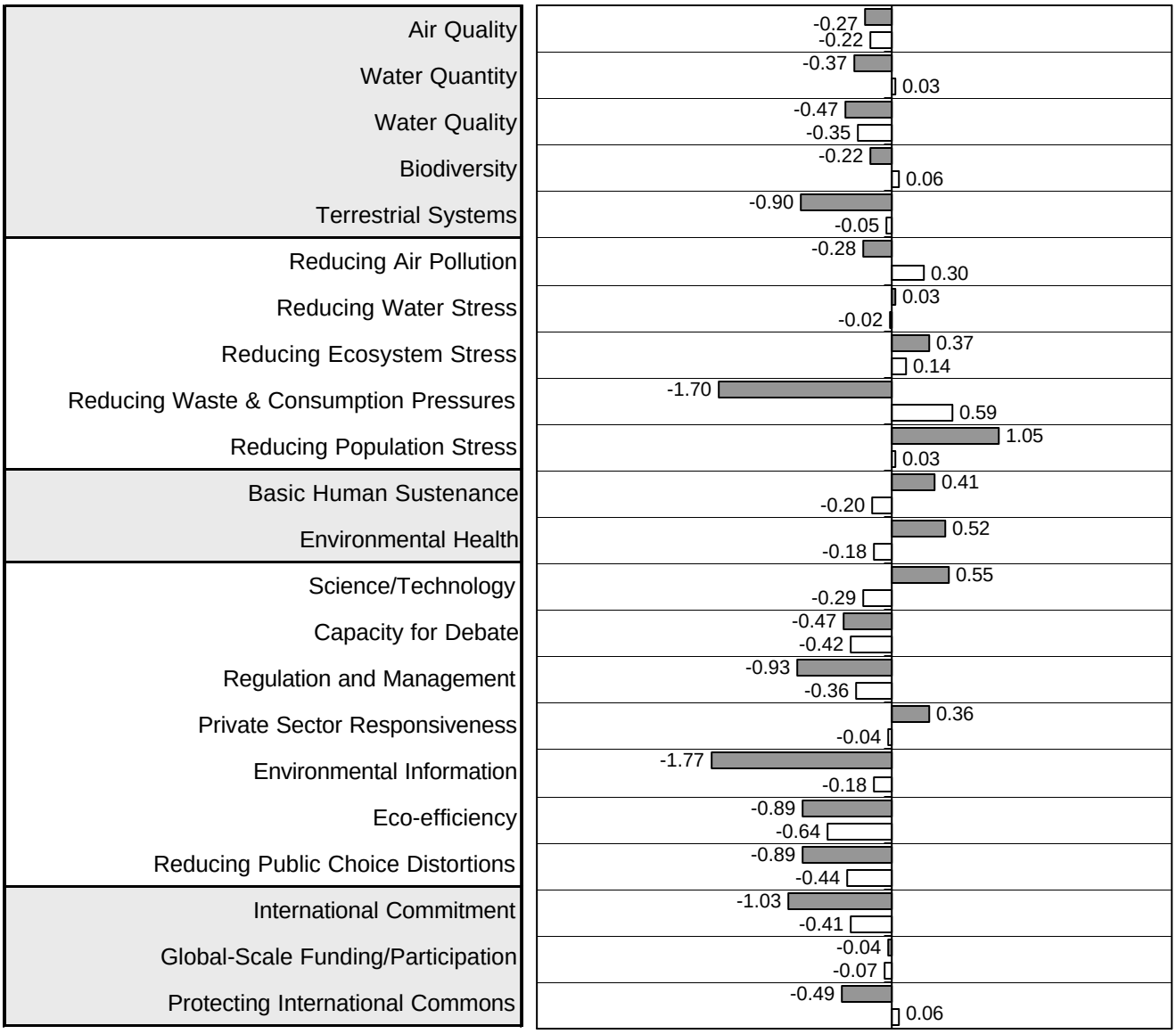


= Indicator value
= Reference (average value for peer group)

Ukraine

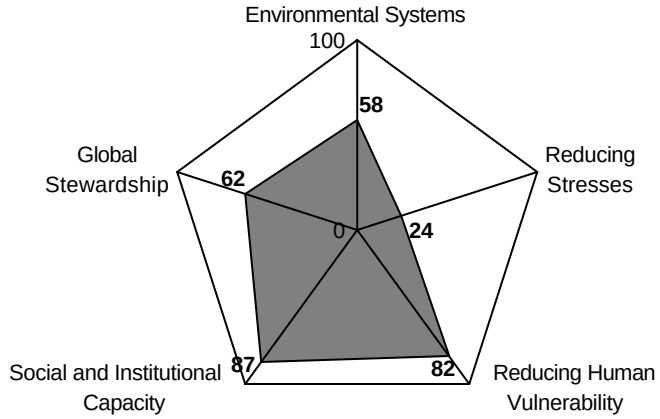
ESI:	36.8
Ranking:	110
GDP/Capita:	$3,194
Peer group ESI:	45.2
Variable coverage:	53 of 67
Missing variables imputed:	12





United Kingdom

ESI:	64.1
Ranking:	16
GDP/Capita:	$20,336
Peer group ESI:	65.2
Variable coverage:	65 of 67
Missing variables imputed:	2

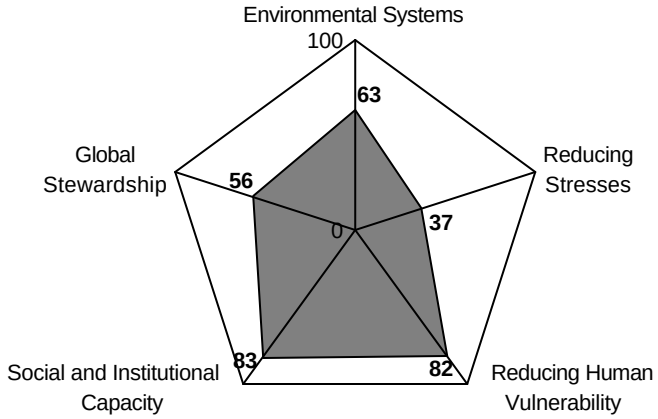


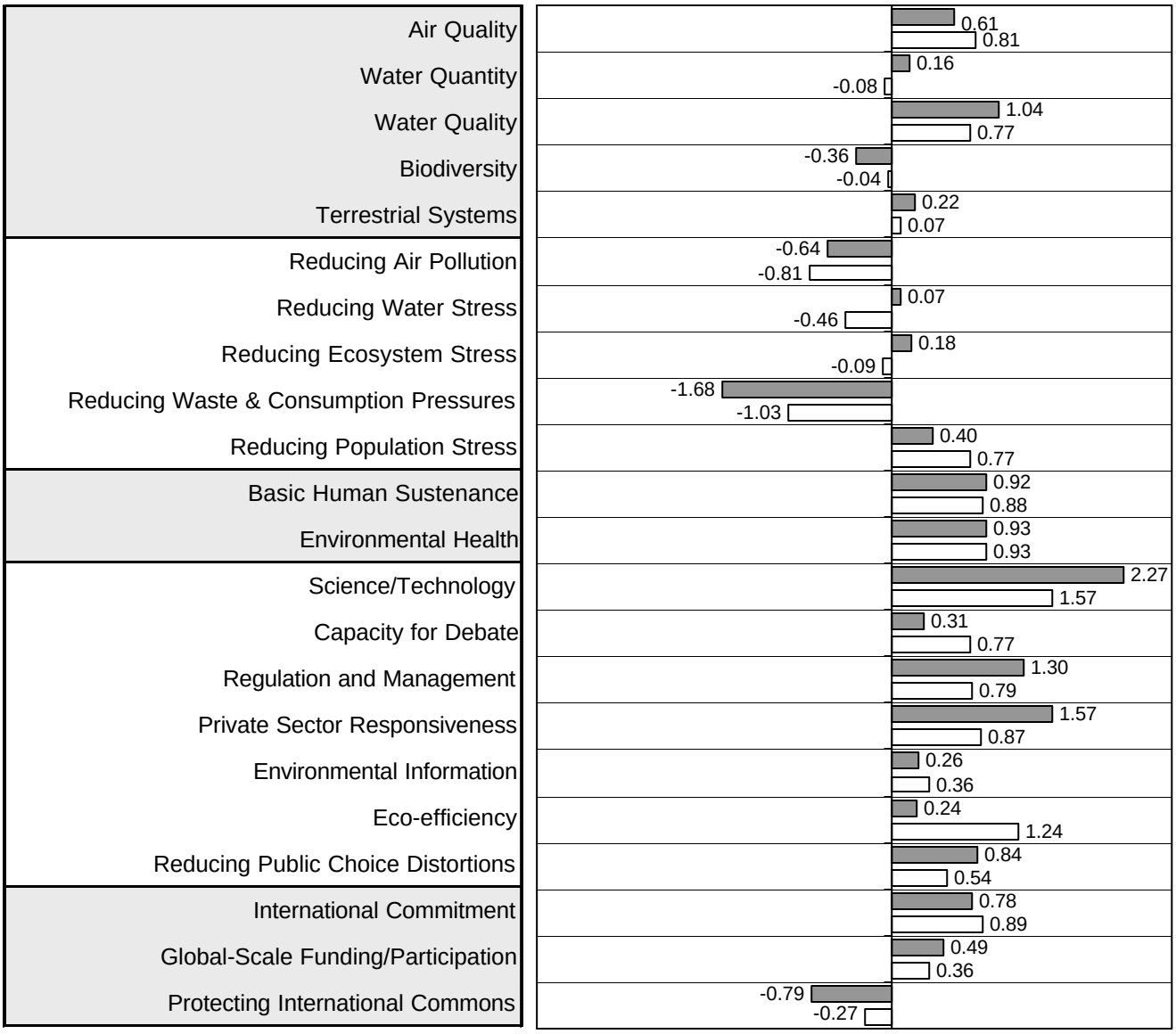
Air Quality	0.41 / 0.81
Water Quantity	-0.80 / -0.08
Water Quality	1.42 / 0.77
Biodiversity	0.58 / -0.04
Terrestrial Systems	-0.60 / 0.07
Reducing Air Pollution	-1.45 / -0.81
Reducing Water Stress	-0.38 / -0.46
Reducing Ecosystem Stress	-0.62 / -0.09
Reducing Waste & Consumption Pressures	-1.99 / -1.03
Reducing Population Stress	0.86 / 0.77
Basic Human Sustenance	0.92 / 0.88
Environmental Health	0.93 / 0.93
Science/Technology	1.62 / 1.57
Capacity for Debate	0.55 / 0.77
Regulation and Management	1.54 / 0.79
Private Sector Responsiveness	1.31 / 0.87
Environmental Information	0.10 / 0.36
Eco-efficiency	1.60 / 1.24
Reducing Public Choice Distortions	1.02 / 0.54
International Commitment	1.12 / 0.89
Global-Scale Funding/Participation	0.43 / 0.36
Protecting International Commons	-0.65 / -0.27

= Indicator value
= Reference (average value for peer group)

United States

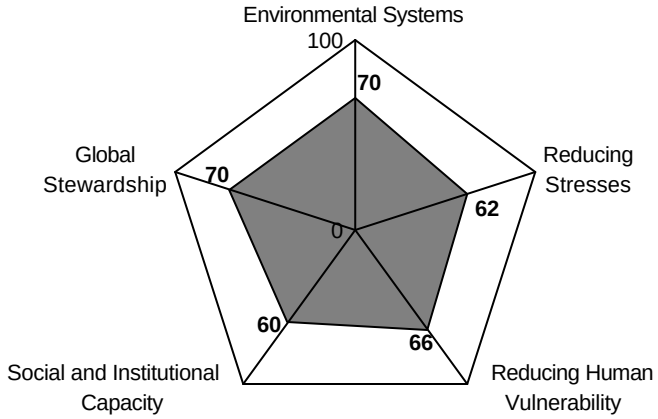
ESI:	66.1
Ranking:	11
GDP/Capita:	$29,605
Peer group ESI:	65.2
Variable coverage:	62 of 67
Missing variables imputed:	4





Uruguay

ESI:	64.6
Ranking:	14
GDP/Capita:	$8,623
Peer group ESI:	52.2
Variable coverage:	48 of 67
Missing variables imputed:	10

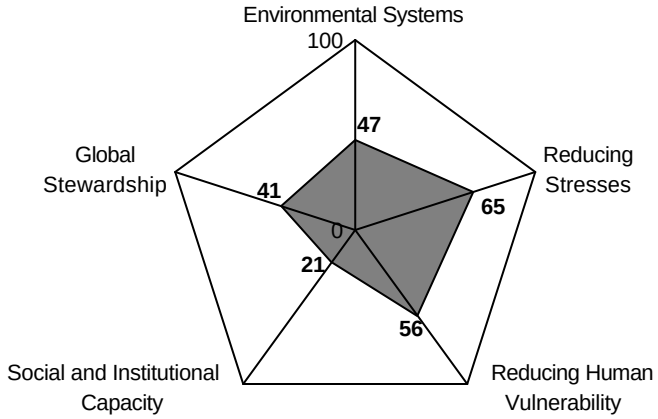


Air Quality	0.12	0.18
Water Quantity	1.38	0.04
Water Quality	0.39	0.25
Biodiversity	0.26	-0.12
Terrestrial Systems	0.42	-0.13
Reducing Air Pollution	0.60	-0.28
Reducing Water Stress	0.41	-0.06
Reducing Ecosystem Stress	0.45	0.12
Reducing Waste & Consumption Pressures	-0.44	-0.10
Reducing Population Stress	0.52	0.51
Basic Human Sustenance	0.09	0.58
Environmental Health	0.71	0.60
Science/Technology	-0.17	0.08
Capacity for Debate	1.13	0.03
Regulation and Management	-0.87	-0.25
Private Sector Responsiveness	-0.02	0.13
Environmental Information	0.83	-0.39
Eco-efficiency	0.82	-0.02
Reducing Public Choice Distortions	0.04	0.00
International Commitment	0.19	-0.02
Global-Scale Funding/Participation	1.27	0.26
Protecting International Commons	0.10	-0.21

= Indicator value
= Reference (average value for peer group)

Uzbekistan

ESI:	41.6
Ranking:	90
GDP/Capita:	$2,053
Peer group ESI:	45.2
Variable coverage:	43 of 67
Missing variables imputed:	16

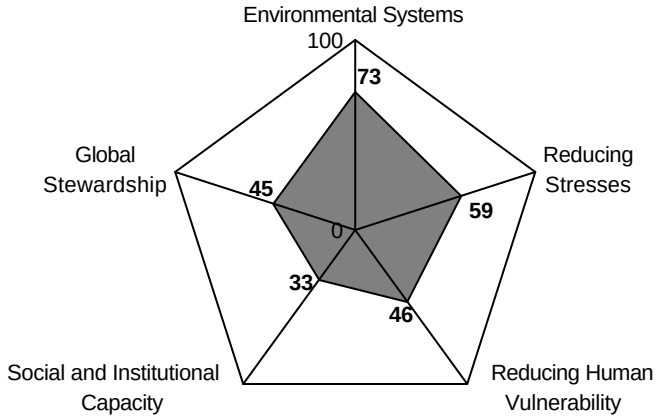


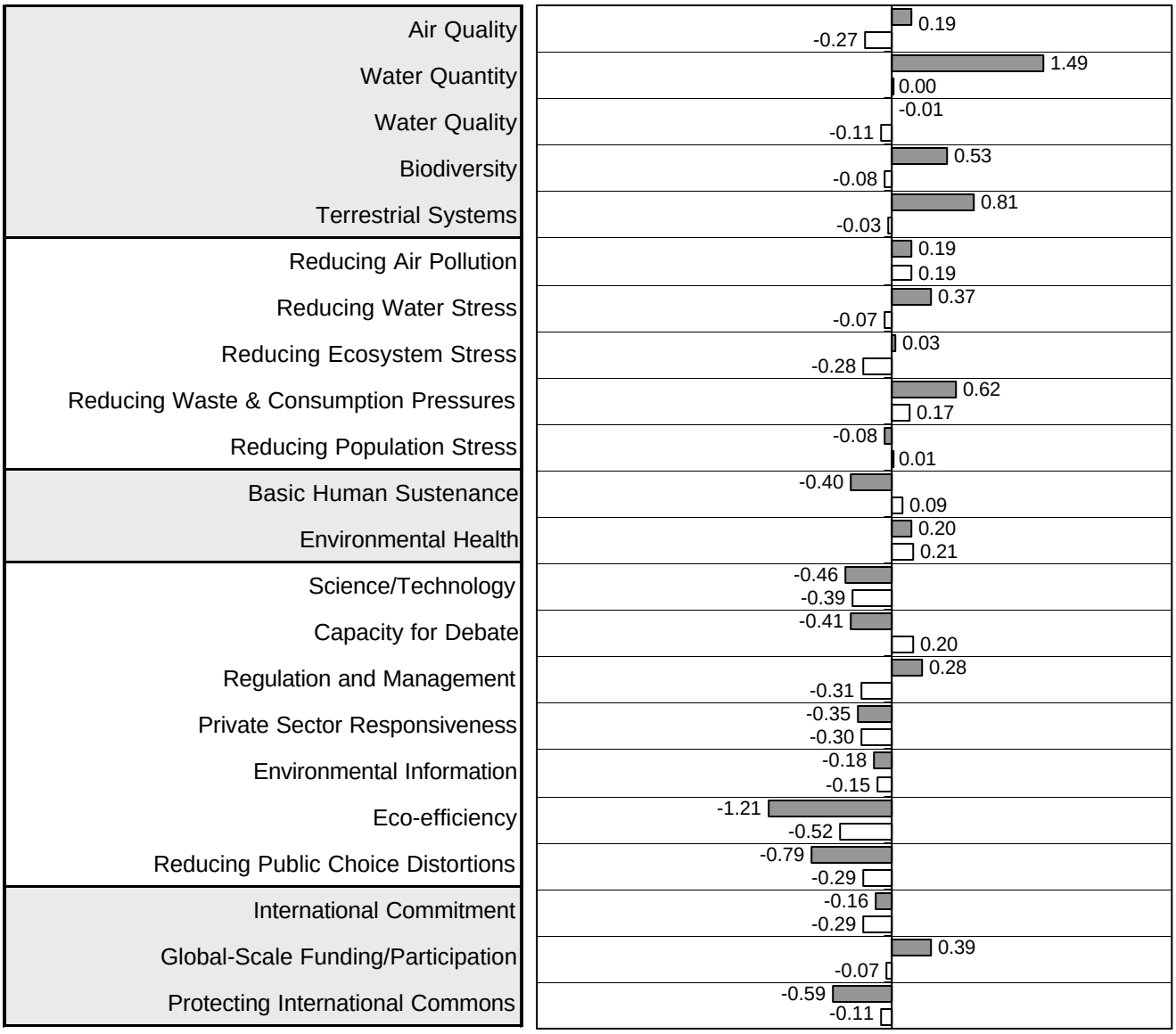
Air Quality	-0.38 / -0.22
Water Quantity	-0.15 / 0.03
Water Quality	-0.37 / -0.35
Biodiversity	0.35 / 0.06
Terrestrial Systems	0.16 / -0.05
Reducing Air Pollution	0.17 / 0.30
Reducing Water Stress	-0.57 / -0.02
Reducing Ecosystem Stress	1.33 / 0.14
Reducing Waste & Consumption Pressures	0.71 / 0.59
Reducing Population Stress	0.27 / 0.03
Basic Human Sustenance	0.20 / -0.20
Environmental Health	0.09 / -0.18
Science/Technology	0.64 / -0.29
Capacity for Debate	-1.30 / -0.42
Regulation and Management	-0.75 / -0.36
Private Sector Responsiveness	-0.87 / -0.04
Environmental Information	-1.64 / -0.18
Eco-efficiency	-1.36 / -0.64
Reducing Public Choice Distortions	-0.48 / -0.44
International Commitment	-0.50 / -0.41
Global-Scale Funding/Participation	0.04 / -0.07
Protecting International Commons	-0.24 / 0.06

= Indicator value
= Reference (average value for peer group)

Venezuela

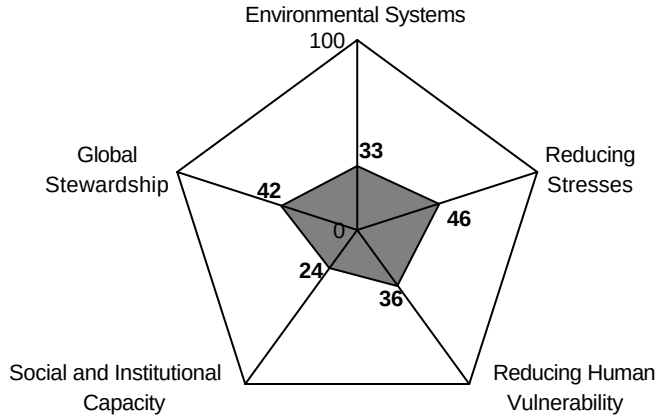
ESI:	50.8
Ranking:	47
GDP/Capita:	$5,808
Peer group ESI:	45.7
Variable coverage:	58 of 67
Missing variables imputed:	6

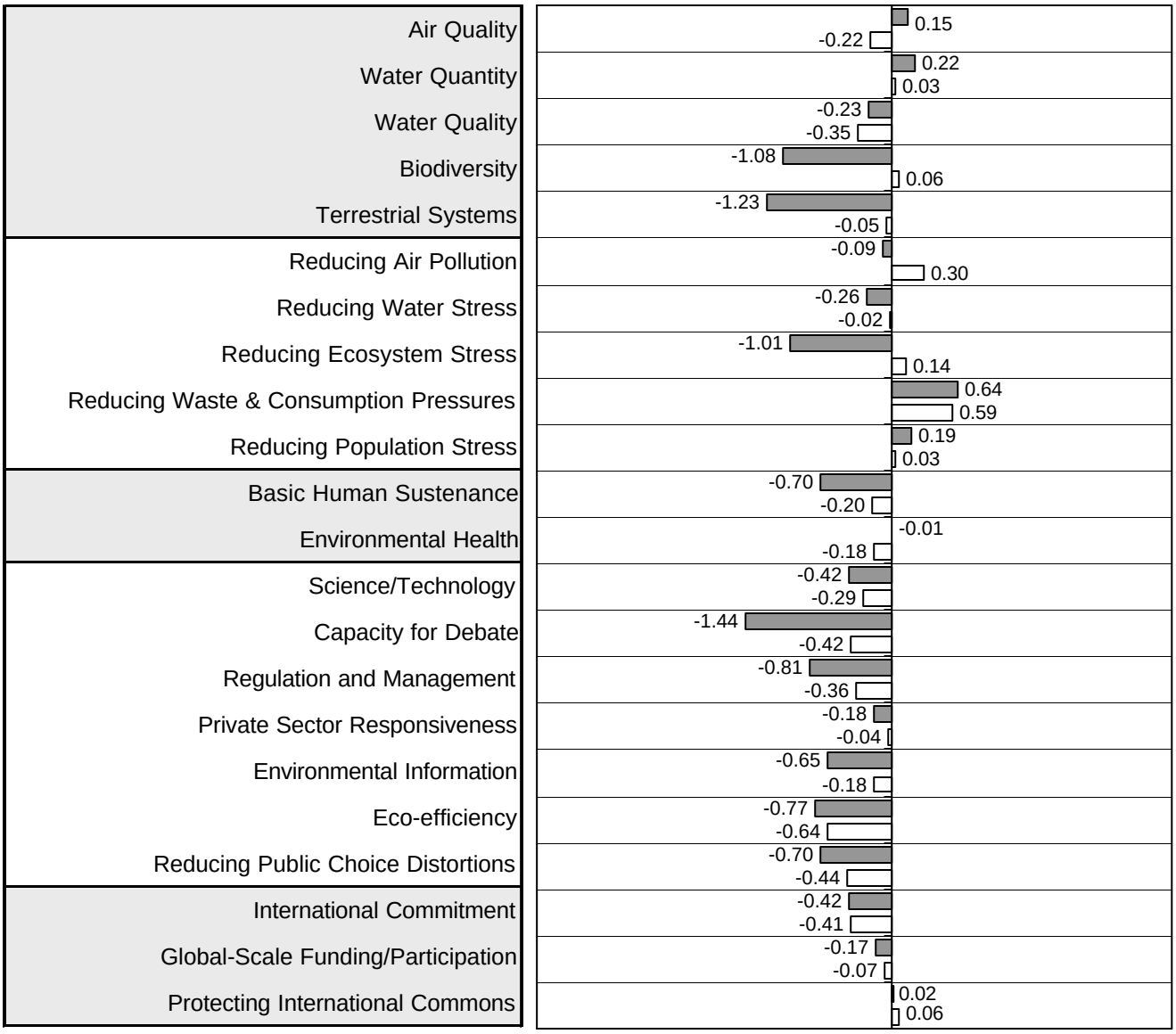




Vietnam

ESI:	34.2
Ranking:	114
GDP/Capita:	$1,689
Peer group ESI:	45.2
Variable coverage:	49 of 67
Missing variables imputed:	15

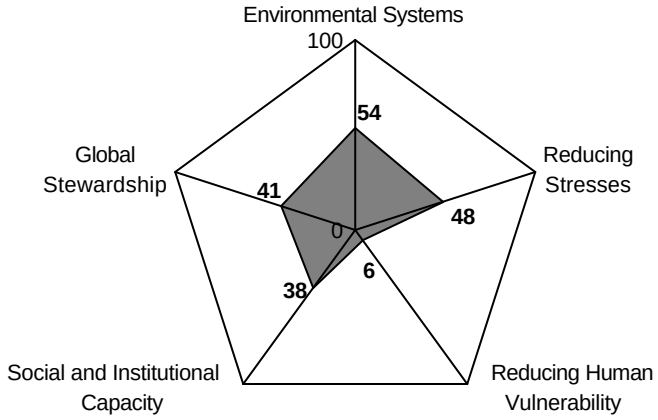


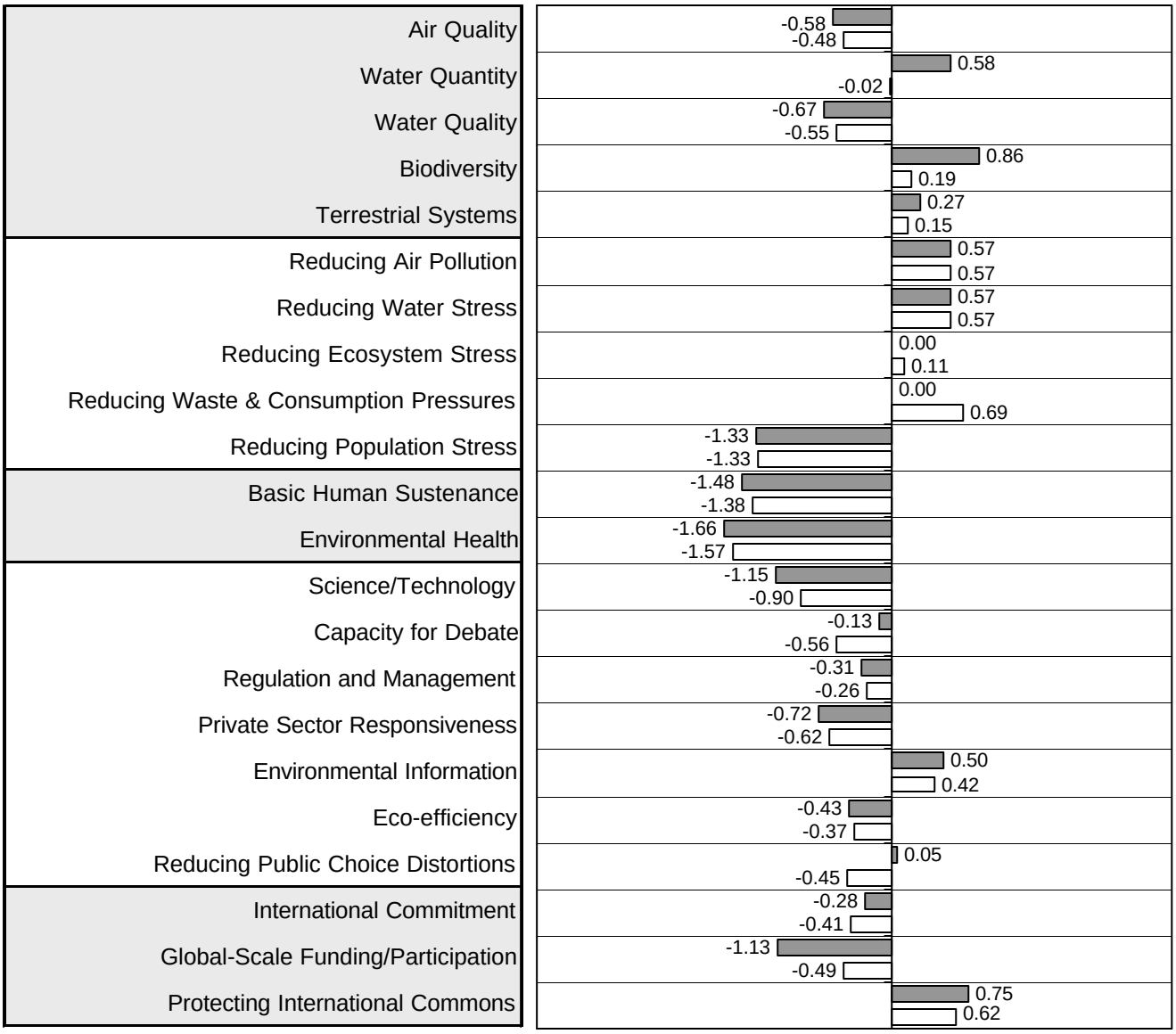


= Indicator value
= Reference (average value for peer group)

Zambia

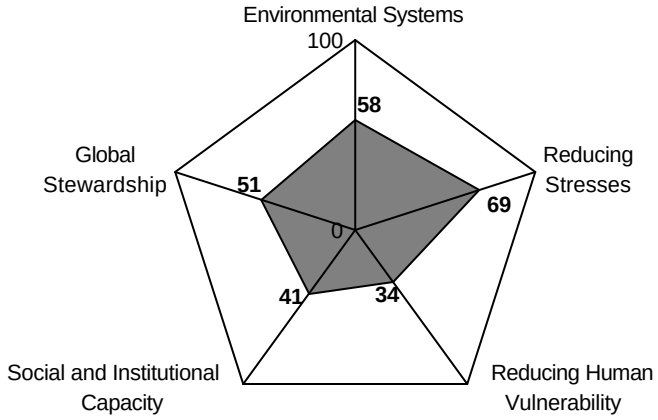
ESI:	39.8
Ranking:	97
GDP/Capita:	$719
Peer group ESI:	39.3
Variable coverage:	44 of 67
Missing variables imputed:	14





Zimbabwe

ESI:	52.0
Ranking:	42
GDP/Capita:	$2,669
Peer group ESI:	45.2
Variable coverage:	53 of 67
Missing variables imputed:	10



Air Quality	-0.29 / -0.22
Water Quantity	0.17 / 0.03
Water Quality	-0.08 / -0.35
Biodiversity	1.11 / 0.06
Terrestrial Systems	0.11 / -0.05
Reducing Air Pollution	0.75 / 0.30
Reducing Water Stress	0.40 / -0.02
Reducing Ecosystem Stress	0.25 / 0.14
Reducing Waste & Consumption Pressures	0.80 / 0.59
Reducing Population Stress	0.26 / 0.03
Basic Human Sustenance	-0.57 / -0.20
Environmental Health	-0.26 / -0.18
Science/Technology	-0.59 / -0.29
Capacity for Debate	0.32 / -0.42
Regulation and Management	0.12 / -0.36
Private Sector Responsiveness	-0.30 / -0.04
Environmental Information	0.13 / -0.18
Eco-efficiency	-0.92 / -0.64
Reducing Public Choice Distortions	-0.39 / -0.44
International Commitment	-0.19 / -0.41
Global-Scale Funding/Participation	-0.01 / -0.07
Protecting International Commons	0.30 / 0.06

= Indicator value
= Reference (average value for peer group)

2001 Environmental Sustainability Index

Annex 6: Variable Descriptions and Data

An Initiative of the
Global Leaders of Tomorrow Environment Task Force,
World Economic Forum

Annual Meeting 2001
Davos, Switzerland

In collaboration with:

Yale Center for Environmental Law and Policy (YCELP)
Yale University
Center for International Earth Science Information Network (CIESIN)
Columbia University

Annex 6. Variable Descriptions and Data

This section contains complete variable descriptions along with the original data used to produce the 2001 Environmental Sustainability Index. Each page contains the following information:

- The component and indicator in which the variable is located.
- The variable name.
- The variable code and number.
- The units for the data shown in the data table.
- The reference year (MRYA = Most Recent Year Available for the stated range).
- Data source.
- The logic for including the variable in the ESI.
- A details section summarizing the methodology used to create the variable.
- The median, minimum, and maximum data values for that variable.
- A data table containing the original data for the variable, sorted in alphabetical order by country.

Additional information on the methodology used to create several of the more innovative variables can be found in the section of the 2001 ESI Report entitled “Challenges in Measuring Environmental Sustainability”.

Environmental Systems — Air Quality

Variable Name: Urban SO2 Concentration

Variable Code: SO2 **Variable Number:** 1

Units: Thousand Metric Tons

Reference Year: MRYA 1990-1996

Source: World Bank, World Development Indicators 2000, and WHO, Air Management Information System-AMIS 2.0, 1998.

Logic: Indicator of Urban Air Quality.

Details: The values were originally collected at the city level. The number of cities with data provided by each country varied. Within each country the values have been normalized by city population for the year 1995, then summed to give the total concentration for the given country.

Median: 20.49 **Minimum:** 1 **Maximum:** 209

Albania	
Algeria	
Argentina	1.02
Armenia	
Australia	13.17
Austria	13.21
Azerbaijan	
Bangladesh	
Belarus	
Belgium	21.02
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	75.78
Bulgaria	52.45
Burkina Faso	
Burundi	
Cameroon	
Canada	12.87
Central African Republic	
Chile	29.00
China	97.07
Colombia	
Costa Rica	38.84
Croatia	31.00
Cuba	1.00
Czech Republic	27.34
Denmark	7.00
Dominican Republic	
Ecuador	21.52
Egypt	69.00
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	4.38
France	13.89
Gabon	
Germany	12.80
Ghana	

Greece	34.00
Guatemala	
Haiti	
Honduras	
Hungary	37.33
Iceland	5.00
India	27.55
Indonesia	
Iran	209.00
Ireland	18.89
Israel	
Italy	15.55
Jamaica	
Japan	24.33
Jordan	
Kazakhstan	
Kenya	
Korea, South	52.41
Kuwait	
Kyrgyz Republic	
Latvia	5.36
Lebanon	
Libya	
Lithuania	2.10
Macedonia	
Madagascar	
Malawi	
Malaysia	20.49
Mali	
Mauritius	
Mexico	74.00
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	10.00
New Zealand	3.49
Nicaragua	
Niger	
Nigeria	

Norway	5.47
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	33.00
Poland	54.72
Portugal	9.22
Romania	10.00
Russian Federation	97.55
Rwanda	
Saudi Arabia	
Senegal	
Singapore	20.00
Slovak Republic	22.66
Slovenia	
South Africa	22.37
Spain	11.00
Sri Lanka	
Sudan	
Sweden	5.23
Switzerland	11.34
Syria	
Tanzania	
Thailand	11.00
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	87.02
Uganda	
Ukraine	
United Kingdom	21.96
United States	15.43
Uruguay	
Uzbekistan	
Venezuela	33.00
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Air Quality

Variable Name: Urban NO2 Concentration

Variable Code: NO2 **Variable Number:** 2

Units: Thousand Metric Tons

Reference Year: MRYA 1990-1996

Source: World Bank, World Development Indicators 2000, and WHO, Air Management Information System-AMIS2.0,1998

Logic: Indicator of Urban Air Quality.

Details: The values were originally collected at the city level. The number of cities with data provided by each country varied. Within each country the values have been normalized by city population for the year 1995, then summed to give the total concentration for the given country.

Median: 45.11 **Minimum:** 0 **Maximum:** 130

Albania	
Algeria	
Argentina	56.79
Armenia	
Australia	16.47
Austria	39.75
Azerbaijan	
Bangladesh	
Belarus	42.60
Belgium	46.79
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	51.37
Bulgaria	111.14
Burkina Faso	
Burundi	
Cameroon	
Canada	41.24
Central African Republic	
Chile	81.00
China	71.72
Colombia	
Costa Rica	45.75
Croatia	
Cuba	5.00
Czech Republic	28.59
Denmark	54.00
Dominican Republic	
Ecuador	
Egypt	
El Salvador	70.50
Estonia	
Ethiopia	
Fiji	
Finland	30.69
France	56.61
Gabon	
Germany	40.07
Ghana	

Greece	64.00
Guatemala	69.33
Haiti	
Honduras	29.50
Hungary	45.11
Iceland	42.00
India	29.68
Indonesia	
Iran	
Ireland	
Israel	
Italy	124.38
Jamaica	
Japan	62.01
Jordan	
Kazakhstan	
Kenya	
Korea, Rep.	52.86
Kuwait	
Kyrgyz Republic	
Latvia	63.74
Lebanon	
Libya	
Lithuania	28.31
Macedonia	
Madagascar	
Malawi	
Malaysia	0.00
Mali	
Mauritius	
Mexico	130.00
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	58.00
New Zealand	19.51
Nicaragua	32.00
Niger	
Nigeria	

Norway	49.65
Pakistan	
Panama	42.00
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	58.14
Portugal	49.57
Romania	71.00
Russian Federation	3.44
Rwanda	
Saudi Arabia	
Senegal	
Singapore	30.00
Slovak Republic	25.62
Slovenia	
South Africa	44.03
Spain	32.36
Sri Lanka	
Sudan	
Sweden	29.68
Switzerland	42.20
Syria	
Tanzania	
Thailand	23.00
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	9.45
Uganda	
Ukraine	
United Kingdom	64.47
United States	60.57
Uruguay	
Uzbekistan	
Venezuela	57.00
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Air Quality

Variable Name: Urban Total Suspended Particulate Concentration

Variable Code: TSP **Variable Number:** 3

Units: Thousand Metric Tons

Reference Year: MRYA 1990-1996

Source: World Bank, World Development Indicators 2000, and WHO, Air Management Information System-AMIS 2.0, 1998.

Logic: Indicator of Urban Air Quality.

Details: The values were originally collected at the city level. The number of cities with data provided by each country varied. Within each country the values have been normalized by city population for the year 1995, then summed to give the total concentration for the given country.

Median: 72.68 **Minimum:** 9.00 **Maximum:** 320.00

Albania TSP	
Algeria	
Argentina	50.01
Armenia	
Australia	43.22
Austria	45.70
Azerbaijan	
Bangladesh	
Belarus	18.40
Belgium	77.91
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	106.20
Bulgaria	199.25
Burkina Faso	
Burundi	
Cameroon	
Canada	31.26
Central African Republic	
Chile	
China	310.82
Colombia	120.00
Costa Rica	244.48
Croatia	71.00
Cuba	
Czech Republic	58.39
Denmark	61.00
Dominican Republic	
Ecuador	125.73
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	49.90
France	14.16
Gabon	
Germany	43.27
Ghana	137.00

Greece	178.00
Guatemala	272.33
Haiti	
Honduras	320.00
Hungary	63.74
Iceland	24.00
India	277.45
Indonesia	271.00
Iran	248.00
Ireland	
Israel	
Italy	86.91
Jamaica	
Japan	43.63
Jordan	
Kazakhstan	
Kenya	69.00
Korea, South	83.79
Kuwait	
Kyrgyz Republic	
Latvia	100.00
Lebanon	
Libya	
Lithuania	114.27
Macedonia	
Madagascar	
Malawi	
Malaysia	91.58
Mali	
Mauritius	
Mexico	279.00
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	40.00
New Zealand	27.32
Nicaragua	
Niger	
Nigeria	

Norway	10.25
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	200.00
Poland	
Portugal	50.40
Romania	82.00
Russian Federation	100.00
Rwanda	
Saudi Arabia	
Senegal	
Singapore	
Slovak Republic	64.49
Slovenia	
South Africa	
Spain	72.68
Sri Lanka	
Sudan	
Sweden	9.00
Switzerland	30.66
Syria	
Tanzania	
Thailand	223.00
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	11.35
Uganda	
Ukraine	
United Kingdom	
United States	
Uruguay	
Uzbekistan	
Venezuela	53.00
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Water Quantity

Variable Name: Internal Renewable Water Resources Per Capita

Variable Code: WATCAP **Variable Number:** 4

Units: Thousands Cubic meters/person

Reference Year: 1961-1990 (avg.)

Source: Center for Environmental Systems Research, University of Kassel, WaterGAP 2.1B, 2001

Logic: The per capita volume of internal renewable water resources in a country is important for a variety of environmental services and to support the needs of the population.

Details: This variable measures internal renewable water (average annual surface runoff and groundwater recharge generated from endogenous precipitation, taking into account evaporation from lakes and wetlands) per capita. These data are derived from the WaterGap 2.1 gridded hydrological model developed by the Center for Environmental Systems Research, University of Kassel, Germany. A special run of the model was performed in order to derive country-level estimates of internal renewable water resources. A logarithmic transformation of this variable was used in calculating the ESI. More details can be found in the main report.

Albania	4.09
Algeria	0.39
Argentina	7.65
Armenia	1.12
Australia	27.81
Austria	6.37
Azerbaijan	0.79
Bangladesh	0.60
Belarus	2.79
Belgium	1.19
Benin	2.25
Bhutan	14.08
Bolivia	51.39
Botswana	-7.46
Brazil	37.25
Bulgaria	2.00
Burkina Faso	0.86
Burundi	0.65
Cameroon	17.30
Canada	84.51
Central African Republic	37.41
Chile	19.56
China	1.72
Colombia	45.56
Costa Rica	23.35
Croatia	6.01
Cuba	2.01
Czech Republic	1.45
Denmark	2.49
Dominican Republic	1.92
Ecuador	30.37
Egypt	-0.24
El Salvador	1.59
Estonia	7.40
Ethiopia	2.17
Fiji	26.05
Finland	18.01
France	3.26
Gabon	176.37
Germany	1.35
Ghana	1.87
Greece	2.96
Guatemala	14.03
Haiti	0.93
Honduras	13.09
Hungary	1.17
Iceland	294.34
India	1.56
Indonesia	10.96
Iran	0.63
Ireland	12.47
Israel	0.36
Italy	2.04
Jamaica	3.24
Japan	2.60
Jordan	0.07
Kazakhstan	3.63
Kenya	1.51
Korea, South	1.16
Kuwait	-0.20
Kyrgyz Republic	5.47
Latvia	6.31
Lebanon	0.66
Libya	0.60
Lithuania	5.10
Macedonia	2.55
Madagascar	22.55
Malawi	1.55
Malaysia	20.24
Mali	0.40
Mauritius	0.50
Mexico	3.47
Moldova	1.83
Mongolia	16.32
Morocco	0.42
Mozambique	5.81
Nepal	5.97
Netherlands	0.65
New Zealand	79.81
Nicaragua	29.15
Niger	-0.33
Nigeria	2.26
Norway	57.71
Pakistan	0.23
Panama	30.79
Papua New Guinea	154.61
Paraguay	10.77
Peru	47.55
Philippines	3.79
Poland	1.48
Portugal	3.25
Romania	1.45
Russian Federation	22.82
Rwanda	0.95
Saudi Arabia	0.22
Senegal	0.96
Singapore	
Slovak Republic	2.24
Slovenia	8.04
South Africa	1.25
Spain	2.33
Sri Lanka	1.62
Sudan	-0.53
Sweden	15.91
Switzerland	5.74
Syria	0.35
Tanzania	3.64
Thailand	3.50
Togo	2.71
Trinidad and Tobago	1.58
Tunisia	0.22
Turkey	2.59
Uganda	1.00
Ukraine	1.26
United Kingdom	3.10
United States	7.09
Uruguay	24.24
Uzbekistan	0.31
Venezuela	33.83
Vietnam	2.80
Zambia	10.01
Zimbabwe	3.40

Environmental Systems — Water Quantity

Variable Name: Water Inflow from Other Countries per Capita

Variable Code: WATINC **Variable Number:** 5

Units: Thousands Cubic meters/person

Reference Year: 1961-1990 (avg.)

Source: Center for Environmental Systems Research, University of Kassel, WaterGAP 2.1B, 2001

Logic: The sum of per capita internal water availability and the per capita volume of water flowing into a country provides a more complete assessment of a country's water resources, which are important for a variety of environmental services and to support the needs of the population.

Details: These data are derived from the WaterGap 2.1 gridded hydrological model developed by the Center for Environmental Systems Research, University of Kassel, Germany. A special run of the model was performed in order to derive country-level estimates of inflow from other countries. There are some problems, in that the size of the grid cells (0.5 x 0.5 degree) do not accurately capture small countries.A logarithmic transformation of this variable was used in calculating the ESI. More details can be found in the main report.

Median: 1.18 **Minimum:** 0 **Maximum:** 235.85

Albania	2.83
Algeria	0.04
Argentina	18.72
Armenia	0.56
Australia	0.00
Austria	4.75
Azerbaijan	2.25
Bangladesh	9.36
Belarus	2.02
Belgium	0.59
Benin	6.93
Bhutan	5.96
Bolivia	29.54
Botswana	23.74
Brazil	16.44
Bulgaria	21.88
Burkina Faso	0.10
Burundi	0.97
Cameroon	2.88
Canada	4.73
Central African Republic	21.29
Chile	1.13
China	0.12
Colombia	39.23
Costa Rica	2.25
Croatia	27.60
Cuba	0.00
Czech Republic	0.58
Denmark	0.00
Dominican Republic	0.13
Ecuador	1.22
Egypt	1.25
El Salvador	1.59
Estonia	5.38
Ethiopia	0.04
Fiji	0.00
Finland	2.35
France	0.79
Gabon	22.28
Germany	1.21
Ghana	1.02

Greece	1.24
Guatemala	1.40
Haiti	0.13
Honduras	5.66
Hungary	10.56
Iceland	0.00
India	0.39
Indonesia	0.32
Iran	0.42
Ireland	1.39
Israel	0.00
Italy	0.05
Jamaica	0.00
Japan	0.00
Jordan	0.17
Kazakhstan	4.30
Kenya	0.81
Korea, South	0.09
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	7.10
Lebanon	0.00
Libya	0.20
Lithuania	2.95
Macedonia	0.00
Madagascar	0.00
Malawi	0.41
Malaysia	0.50
Mali	5.93
Mauritius	0.00
Mexico	0.67
Moldova	3.66
Mongolia	2.45
Morocco	0.00
Mozambique	8.97
Nepal	1.18
Netherlands	5.50
New Zealand	0.00
Nicaragua	2.71
Niger	5.90
Nigeria	0.83

Norway	2.53
Pakistan	0.68
Panama	0.00
Papua New Guinea	0.93
Paraguay	99.41
Peru	19.17
Philippines	0.00
Poland	0.23
Portugal	2.33
Romania	7.74
Russian Federation	1.48
Rwanda	0.95
Saudi Arabia	0.00
Senegal	1.68
Singapore	
Slovak Republic	12.70
Slovenia	6.53
South Africa	0.11
Spain	0.05
Sri Lanka	0.00
Sudan	4.28
Sweden	0.91
Switzerland	0.00
Syria	1.83
Tanzania	1.20
Thailand	5.02
Togo	0.99
Trinidad and Tobago	0.00
Tunisia	0.22
Turkey	0.18
Uganda	1.16
Ukraine	0.56
United Kingdom	0.03
United States	1.36
Uruguay	235.85
Uzbekistan	2.54
Venezuela	27.47
Vietnam	6.07
Zambia	5.74
Zimbabwe	3.77

Environmental Systems — Water Quality

Variable Name: Dissolved Oxygen Concentration

Variable Code: GMS_DO **Variable Number:** 6

Units: Mg/Liter

Reference Year: 1994-96 or MRYA

Source: United Nations Environment Programme (UNEP), Global Environmental Monitoring System/Water Quality Monitoring System. http://www.cciw.ca/gems/

Logic: A measure of eutrophication, which has an important imapact on the health of aquatic resources and ecosystems. High levels correspond to low eutrophication.

Details: The country values represent averages of the station-level values for the three year time period 1994-96. The number of stations per country varies depending on country size, number of water bodies, and level of participation in the GEMS monitoring system.

Albania	
Algeria	
Argentina	10.00
Armenia	
Australia	
Austria	
Azerbaijan	
Bangladesh	
Belarus	
Belgium	5.62
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	7.27
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	10.85
Central African Republic	
Chile	
China	7.99
Colombia	5.55
Costa Rica	
Croatia	
Cuba	8.10
Czech Republic	
Denmark	
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	8.01
Finland	11.19
France	10.33
Gabon	
Germany	
Ghana	6.80

Greece	
Guatemala	
Haiti	
Honduras	
Hungary	10.82
Iceland	
India	6.38
Indonesia	3.31
Iran	10.57
Ireland	
Israel	
Italy	
Jamaica	
Japan	10.18
Jordan	
Kazakhstan	
Kenya	
Korea, South	10.32
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	5.68
Macedonia	
Madagascar	
Malawi	
Malaysia	4.54
Mali	8.46
Mauritius	
Mexico	6.10
Moldova	
Mongolia	
Morocco	6.25
Mozambique	
Nepal	
Netherlands	9.78
New Zealand	9.87
Nicaragua	
Niger	
Nigeria	

Norway	
Pakistan	7.11
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	8.24
Poland	9.86
Portugal	7.65
Romania	
Russian Federation	9.69
Rwanda	
Saudi Arabia	
Senegal	4.42
Singapore	
Slovak Republic	
Slovenia	
South Africa	
Spain	
Sri Lanka	
Sudan	7.84
Sweden	
Switzerland	
Syria	
Tanzania	6.87
Thailand	2.98
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	10.40
United States	9.26
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Water Quality

Variable Name: Phosphorus Concentration

Variable Code: GMS_PH **Variable Number:** 7

Units: Mg/Liter

Reference Year: 1994-96 or MRYA

Source: United Nations Environment Programme (UNEP), Global Environmental Monitoring System/Water Quality Monitoring System. http://www.cciw.ca/gems/

Logic: A measure of eutrophication, which affects aquatic resources health. High levels correspond to high eutrophication.

Details: The country values represent averages of the station-level values for the three year time period 1994-96. The number of stations per country varies depending on country size, number of water bodies, and level of participation in the GEMS monitoring system.

Median: 0.14 **Minimum:** 0.003 **Maximum:** 1.75

Albania	
Algeria	
Argentina	0.04
Armenia	
Australia	
Austria	
Azerbaijan	
Bangladesh	
Belarus	
Belgium	1.63
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	0.09
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	
Central African Republic	
Chile	
China	0.28
Colombia	
Costa Rica	
Croatia	
Cuba	0.01
Czech Republic	
Denmark	
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	0.01
France	0.17
Gabon	
Germany	0.32
Ghana	

Greece	
Guatemala	
Haiti	
Honduras	
Hungary	0.21
Iceland	
India	
Indonesia	0.56
Iran	
Ireland	
Israel	
Italy	
Jamaica	
Japan	0.06
Jordan	1.01
Kazakhstan	
Kenya	
Korea, South	
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	0.08
Macedonia	
Madagascar	
Malawi	
Malaysia	0.04
Mali	0.15
Mauritius	
Mexico	
Moldova	
Mongolia	
Morocco	0.26
Mozambique	
Nepal	
Netherlands	0.27
New Zealand	0.04
Nicaragua	
Niger	
Nigeria	

Norway	0.01
Pakistan	0.20
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	0.33
Portugal	0.13
Romania	
Russian Federation	
Rwanda	
Saudi Arabia	
Senegal	
Singapore	
Slovak Republic	
Slovenia	
South Africa	
Spain	
Sri Lanka	
Sudan	1.75
Sweden	
Switzerland	0.07
Syria	
Tanzania	
Thailand	0.31
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	0.09
United States	0.08
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Water Quality

Variable Name: Suspended Solids

Variable Code: GMS_SS **Variable Number:** 8

Units: Mg/Liter

Reference Year: 1994-96 or MRYA

Source: United Nations Environment Programme (UNEP), Global Environmental Monitoring System/Water Quality Monitoring System. http://www.cciw.ca/gems/

Logic: A measure of water quality and turbidity.

Details: The country values represent averages of the station-level values for the three year time period 1994-96. The number of stations per country varies depending on country size, number of water bodies, and level of participation in the GEMS monitoring system.

Median: 4.03 **Minimum:** 1.17 **Maximum:** 7.97

Albania	
Algeria	
Argentina	4.77
Armenia	
Australia	
Austria	
Azerbaijan	
Bangladesh	4.08
Belarus	
Belgium	3.53
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	4.08
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	2.84
Central African Republic	
Chile	5.10
China	7.97
Colombia	4.77
Costa Rica	
Croatia	
Cuba	
Czech Republic	
Denmark	
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	1.17
France	3.24
Gabon	
Germany	3.06
Ghana	4.55

Greece	
Guatemala	
Haiti	
Honduras	
Hungary	3.42
Iceland	
India	
Indonesia	5.37
Iran	
Ireland	
Israel	
Italy	
Jamaica	
Japan	3.27
Jordan	4.50
Kazakhstan	
Kenya	
Korea, South	1.69
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	5.70
Mali	4.55
Mauritius	
Mexico	5.17
Moldova	
Mongolia	
Morocco	4.40
Mozambique	
Nepal	
Netherlands	3.26
New Zealand	2.32
Nicaragua	
Niger	
Nigeria	

Norway	
Pakistan	6.76
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	3.62
Poland	3.24
Portugal	1.94
Romania	
Russian Federation	3.23
Rwanda	
Saudi Arabia	
Senegal	
Singapore	
Slovak Republic	
Slovenia	
South Africa	
Spain	
Sri Lanka	
Sudan	6.38
Sweden	
Switzerland	3.98
Syria	
Tanzania	
Thailand	5.60
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	2.26
United States	
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Water Quality

Variable Name: Electrical Conductivity

Variable Code: GMS_EC **Variable Number:** 9

Units: Usie/Centimeter

Reference Year: 1994-96 or MRYA

Source: United Nations Environment Programme (UNEP), Global Environmental Monitoring System/Water Quality Monitoring System. http://www.cciw.ca/gems/

Logic: A widely used bulk measure of metals concentration and salinity. High levels of conductivity correspond to high concentrations.

Details: The country values represent averages of the station-level values for the three year time period 1994-96. The number of stations per country varies depending on country size, number of water bodies, and level of participation in the GEMS monitoring system.

Albania	
Algeria	
Argentina	113.68
Armenia	
Australia	
Austria	
Azerbaijan	
Bangladesh	231.60
Belarus	
Belgium	2,626.19
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	145.65
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	237.44
Central African Republic	
Chile	667.94
China	522.77
Colombia	85.80
Costa Rica	
Croatia	
Cuba	515.00
Czech Republic	
Denmark	
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	50.49
France	299.38
Gabon	
Germany	1,566.07
Ghana	185.59

Greece	
Guatemala	
Haiti	
Honduras	
Hungary	579.26
Iceland	
India	4,520.19
Indonesia	167.13
Iran	419.64
Ireland	
Israel	
Italy	
Jamaica	
Japan	179.29
Jordan	1,014.42
Kazakhstan	
Kenya	504.00
Korea, South	141.33
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	598.75
Macedonia	
Madagascar	
Malawi	
Malaysia	508.01
Mali	120.77
Mauritius	
Mexico	1,239.62
Moldova	
Mongolia	
Morocco	3,300.63
Mozambique	
Nepal	
Netherlands	623.12
New Zealand	125.84
Nicaragua	
Niger	
Nigeria	

Norway	0.61
Pakistan	410.13
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	136.70
Poland	1,043.77
Portugal	191.13
Romania	
Russian Federation	0.00
Rwanda	
Saudi Arabia	
Senegal	380.80
Singapore	
Slovak Republic	
Slovenia	
South Africa	
Spain	
Sri Lanka	
Sudan	259.33
Sweden	77.56
Switzerland	301.06
Syria	
Tanzania	363.21
Thailand	348.33
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	368.06
United States	375.65
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Environmental Systems — Biodiversity

Variable Name: Percentage of Mammals Threatened

Variable Code: PRTMAM **Variable Number:** 10

Units: Percent of Mammals

Reference Year: 1996

Source: World Resources Institute, *World Resources 2000-2001*, Washington, DC: WRI, 2000. Original sources: World Conservation Monitoring Center, IUCN-The World Conservation Union, Food and Agriculture Organization of the United Nations and other sources.

Logic: The percent of mammals threatened gives an estimate of a country's success at preserving its biodiversity.

Details: Number of mammal species threatened divided by known mammal species in the country, expressed as a percentage. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 9.49 **Minimum:** 1.00 **Maximum:** 100

Albania	2.94
Algeria	16.30
Argentina	8.44
Armenia	4.76
Australia	22.31
Austria	8.43
Azerbaijan	11.11
Bangladesh	16.51
Belarus	5.41
Belgium	10.34
Benin	4.79
Bhutan	20.20
Bolivia	7.59
Botswana	3.05
Brazil	17.03
Bulgaria	16.05
Burkina Faso	4.08
Burundi	4.67
Cameroon	7.82
Canada	3.63
Central African Republic	5.26
Chile	17.58
China	18.75
Colombia	9.75
Costa Rica	6.83
Croatia	13.16
Cuba	29.03
Czech Republic	8.64
Denmark	6.98
Dominican Republic	20.00
Ecuador	9.27
Egypt	15.31
El Salvador	1.48
Estonia	6.15
Ethiopia	13.73
Fiji	100.00
Finland	6.67
France	13.98
Gabon	6.32
Germany	10.53
Ghana	5.86
Greece	13.68
Guatemala	3.20
Haiti	100.00
Honduras	4.05
Hungary	9.64
Iceland	9.09
India	23.73
Indonesia	28.01
Iran	14.29
Ireland	8.00
Israel	11.21
Italy	11.11
Jamaica	16.67
Japan	15.43
Jordan	9.86
Kazakhstan	8.43
Kenya	11.98
Korea, South	12.24
Kuwait	4.76
Kyrgyz Republic	7.23
Latvia	4.82
Lebanon	8.77
Libya	14.47
Lithuania	7.35
Macedonia	12.82
Madagascar	32.62
Malawi	3.59
Malaysia	14.00
Mali	9.49
Mauritius	
Mexico	13.03
Moldova	2.94
Mongolia	9.02
Morocco	17.14
Mozambique	7.26
Nepal	15.47
Netherlands	10.91
New Zealand	100.00
Nicaragua	2.00
Niger	8.40
Nigeria	9.49
Norway	7.41
Pakistan	8.61
Panama	7.80
Papua New Guinea	25.68
Paraguay	3.28
Peru	10.00
Philippines	31.01
Poland	11.90
Portugal	20.63
Romania	19.05
Russian Federation	11.52
Rwanda	5.96
Saudi Arabia	11.69
Senegal	6.77
Singapore	7.06
Slovak Republic	9.41
Slovenia	13.33
South Africa	12.94
Spain	23.17
Sri Lanka	15.91
Sudan	7.87
Sweden	8.33
Switzerland	8.00
Syria	6.35
Tanzania	10.44
Thailand	12.83
Togo	4.08
Trinidad and Tobago	1.00
Tunisia	14.10
Turkey	12.93
Uganda	5.33
Ukraine	13.89
United Kingdom	8.00
United States	8.10
Uruguay	6.17
Uzbekistan	7.22
Venezuela	7.43
Vietnam	17.84
Zambia	4.72
Zimbabwe	3.33

Environmental Systems — Biodiversity

Variable Name: Percentage of Breeding Birds Threatened

Variable Code: PRTBRD **Variable Number:** 11

Units: Percent of Breeding Birds

Reference Year: 1996

Source: World Resources Institute, *World Resources 2000-2001*, Washington, DC: WRI, 2000. Original sources: World Conservation Monitoring Center, IUCN-The World Conservation Union, Food and Agriculture Organization of the United Nations and other sources.

Logic: The percent of breeding birds threatened gives an estimate of a country's success at preserving its biodiversity.

Details: Number of bird species threatened divided by known bird species in the country, expressed as a percentage.

Median: 3.08 **Minimum:** 0.00 **Maximum:** 43.88

Albania	3.04
Algeria	4.17
Argentina	4.57
Armenia	2.07
Australia	6.93
Austria	2.35
Azerbaijan	3.23
Bangladesh	10.17
Belarus	1.81
Belgium	1.67
Benin	0.33
Bhutan	3.13
Bolivia	
Botswana	1.81
Brazil	6.87
Bulgaria	5.00
Burkina Faso	0.30
Burundi	1.33
Cameroon	2.03
Canada	1.17
Central African Republic	0.37
Chile	6.08
China	8.16
Colombia	3.76
Costa Rica	2.17
Croatia	1.79
Cuba	9.49
Czech Republic	3.02
Denmark	1.02
Dominican Republic	8.09
Ecuador	3.82
Egypt	7.19
El Salvador	0.00
Estonia	0.94
Ethiopia	3.19
Fiji	12.16
Finland	1.61
France	2.60
Gabon	0.86
Germany	2.09
Ghana	1.89

Greece	3.98
Guatemala	0.87
Haiti	14.67
Honduras	0.95
Hungary	4.88
Iceland	0.00
India	7.88
Indonesia	6.80
Iran	4.33
Ireland	0.70
Israel	4.44
Italy	2.99
Jamaica	6.19
Japan	13.20
Jordan	2.84
Kazakhstan	3.79
Kenya	2.83
Korea, South	16.96
Kuwait	15.00
Kyrgyz Republic	
Latvia	2.76
Lebanon	3.25
Libya	2.20
Lithuania	1.98
Macedonia	1.43
Madagascar	13.86
Malawi	1.73
Malaysia	6.69
Mali	1.51
Mauritius	
Mexico	4.66
Moldova	3.95
Mongolia	3.29
Morocco	5.24
Mozambique	2.81
Nepal	4.42
Netherlands	1.57
New Zealand	29.33
Nicaragua	0.62
Niger	0.67
Nigeria	1.32

Norway	1.23
Pakistan	6.67
Panama	1.37
Papua New Guinea	4.75
Paraguay	4.68
Peru	4.15
Philippines	43.88
Poland	2.64
Portugal	3.38
Romania	4.45
Russian Federation	6.05
Rwanda	1.17
Saudi Arabia	7.10
Senegal	1.56
Singapore	7.63
Slovak Republic	1.91
Slovenia	1.45
South Africa	2.68
Spain	3.60
Sri Lanka	4.40
Sudan	1.32
Sweden	1.61
Switzerland	2.07
Syria	3.43
Tanzania	3.63
Thailand	7.31
Togo	0.26
Trinidad and Tobago	1.15
Tunisia	3.47
Turkey	4.64
Uganda	1.20
Ukraine	3.80
United Kingdom	0.87
United States	7.69
Uruguay	4.64
Uzbekistan	
Venezuela	1.64
Vietnam	8.79
Zambia	1.65
Zimbabwe	1.69

Environmental Systems — Terrestrial Systems

Variable Name: Severity of Human Induced Soil Degradation

Variable Code: SOIL **Variable Number:** 12

Units: Index Ranging from 0 (Low Levels of Degradation) to 3.66 (High Levels)

Reference Year: 1990

Source: UNEP, Global Assessment of Human Induced Soil Degradation (GLASOD), database, 1990.

Logic: A measure of the degree of soil degradation within a country, which affects biological productivity and sedimentation of water bodies.

Details: The original data classify countries' territories into 4 classes of degradation. We calculated the fraction of each country's territory falling into each class, and then computed a single weighted composite, using the degradation class as the weight.

Median: 1.75 **Minimum:** 0.00 **Maximum:** 3.66

Albania	3.66
Algeria	1.06
Argentina	1.65
Armenia	
Australia	1.22
Austria	2.37
Azerbaijan	
Bangladesh	2.06
Belarus	
Belgium	2.57
Benin	1.74
Bhutan	1.42
Bolivia	1.19
Botswana	1.13
Brazil	1.62
Bulgaria	2.94
Burkina Faso	2.77
Burundi	3.21
Cameroon	1.73
Canada	0.52
Central African Republic	0.64
Chile	1.05
China	1.83
Colombia	1.43
Costa Rica	3.42
Croatia	
Cuba	1.79
Czech Republic	
Denmark	0.47
Dominican Republic	2.16
Ecuador	1.30
Egypt	0.58
El Salvador	2.39
Estonia	
Ethiopia	2.30
Fiji	0.00
Finland	1.26
France	1.47
Gabon	0.39
Germany	
Ghana	1.67

Greece	1.94
Guatemala	2.26
Haiti	3.10
Honduras	2.62
Hungary	2.51
Iceland	
India	1.92
Indonesia	1.90
Iran	2.52
Ireland	0.28
Israel	0.44
Italy	2.17
Jamaica	2.39
Japan	0.16
Jordan	2.43
Kazakhstan	
Kenya	1.84
Korea, South	2.23
Kuwait	1.86
Kyrgyz Republic	
Latvia	
Lebanon	1.48
Libya	1.28
Lithuania	
Macedonia	
Madagascar	2.80
Malawi	0.97
Malaysia	2.76
Mali	1.40
Mauritius	0.79
Mexico	1.76
Moldova	
Mongolia	1.75
Morocco	2.06
Mozambique	1.08
Nepal	1.51
Netherlands	1.40
New Zealand	1.51
Nicaragua	2.31
Niger	1.55
Nigeria	2.36

Norway	0.34
Pakistan	1.66
Panama	2.66
Papua New Guinea	0.22
Paraguay	0.94
Peru	1.67
Philippines	2.04
Poland	2.86
Portugal	1.91
Romania	3.07
Russian Federation	
Rwanda	3.35
Saudi Arabia	1.63
Senegal	2.12
Singapore	1.99
Slovak Republic	
Slovenia	
South Africa	2.54
Spain	2.09
Sri Lanka	2.51
Sudan	1.40
Sweden	1.57
Switzerland	1.73
Syria	2.70
Tanzania	1.63
Thailand	3.22
Togo	2.49
Trinidad and Tobago	1.59
Tunisia	2.27
Turkey	3.21
Uganda	2.27
Ukraine	
United Kingdom	1.48
United States	1.72
Uruguay	0.75
Uzbekistan	
Venezuela	1.32
Vietnam	3.20
Zambia	1.59
Zimbabwe	1.29

Environmental Systems — Terrestrial Systems

Variable Name: Land Area Impacted by Human Activities as a Percentage of Total Land Area

Variable Code: ANTHRO **Variable Number:** 13

Units: Percent of Land Area

Reference Year: 1992/93 (agriculture) and October 1994 to March 1995 (lit area)

Source: NOAA/NGDC World Stable Lights Images - October 1994 to March 1995. Derived from DMSP OLS Nighttime Imagery during the dark half of each lunar cycle. 30 Arc Second Grid and USGS EDCDAAC Version 2.0 Global Land Cover Characteristics Data Base (USGS legend)

Logic: Agricultural activities and the built environment have high impacts on the natural environment. The clearing of natural vegetation for anthropogenic activity has important ecological implications.

Details: This variable measures urbanized (as indicated by lights at night) and agricultural area as a percentage of a country's total area. A complete description of the methodology is included in the main report.

Median: 33.91 **Minimum:** 0.98 **Maximum:** 100

Albania	81.19
Algeria	2.23
Argentina	32.90
Armenia	57.09
Australia	7.07
Austria	46.41
Azerbaijan	67.35
Bangladesh	74.77
Belarus	95.81
Belgium	97.88
Benin	4.02
Bhutan	5.76
Bolivia	9.31
Botswana	20.46
Brazil	26.44
Bulgaria	74.55
Burkina Faso	14.52
Burundi	60.83
Cameroon	20.97
Canada	8.51
Central African Republic	12.82
Chile	10.27
China	30.06
Colombia	18.90
Costa Rica	33.47
Croatia	57.28
Cuba	46.56
Czech Republic	79.98
Denmark	91.28
Dominican Republic	29.98
Ecuador	27.35
Egypt	4.72
El Salvador	70.09
Estonia	71.89
Ethiopia	15.75
Fiji	5.66
Finland	14.61
France	82.83
Gabon	8.84
Germany	85.01
Ghana	23.37

Greece	65.65
Guatemala	35.70
Haiti	43.29
Honduras	37.39
Hungary	88.47
Iceland	2.81
India	69.56
Indonesia	29.56
Iran	13.78
Ireland	92.47
Israel	50.77
Italy	65.62
Jamaica	31.34
Japan	41.93
Jordan	7.84
Kazakhstan	29.26
Kenya	20.49
Korea, South	43.24
Kuwait	27.61
Kyrgyz Republic	27.89
Latvia	75.31
Lebanon	64.15
Libya	0.98
Lithuania	87.90
Macedonia	71.22
Madagascar	13.48
Malawi	29.09
Malaysia	28.70
Mali	2.90
Mauritius	
Mexico	21.94
Moldova	94.14
Mongolia	2.47
Morocco	6.63
Mozambique	37.80
Nepal	46.17
Netherlands	92.41
New Zealand	11.60
Nicaragua	35.54
Niger	1.46
Nigeria	20.62

Norway	14.82
Pakistan	30.03
Panama	34.32
Papua New Guinea	7.65
Paraguay	14.65
Peru	8.12
Philippines	85.03
Poland	91.20
Portugal	57.92
Romania	70.61
Russian Federation	16.02
Rwanda	47.42
Saudi Arabia	4.14
Senegal	18.20
Singapore	100.00
Slovak Republic	63.93
Slovenia	47.03
South Africa	40.69
Spain	68.37
Sri Lanka	83.54
Sudan	5.39
Sweden	16.52
Switzerland	51.01
Syria	27.03
Tanzania	38.79
Thailand	62.99
Togo	12.11
Trinidad and Tobago	34.82
Tunisia	15.82
Turkey	57.16
Uganda	35.26
Ukraine	89.43
United Kingdom	87.75
United States	31.86
Uruguay	58.18
Uzbekistan	28.46
Venezuela	14.25
Vietnam	56.63
Zambia	33.91
Zimbabwe	54.87

Reducing Stresses

Reducing Air Pollution

Variable Name: NOx Emissions per Populated Land Area

Variable Code: NOXKM **Variable Number:** 14

Units: Metric Tons/Populated Land Area

Reference Year: 1990

Source: RIVM, Emission Database for Global Atmospheric Research (EDGAR)-version 2.0, 1996

Logic: Indicator of air pollution: emissions contribute to declines in air quality.

Details: The gridded emissions data, originally available as 1by1 degree cells (approximately 100 km by 100 km at the equator, decreasing to approximately 100 km by 50 km at a latitude of 60 degrees), were summarized at the country level to give the total emissions for each country. Air pollution is generally greatest in densely populated areas. To take this into account, we used the Gridded Population of the World dataset available from CIESIN and calculated the total land area in each country inhabited with a population density of greater than 5 persons per sq. km. We then utilized this land area as the denominator for the emissions data. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 0.51 **Minimum:** 0.03 **Maximum:** 12.06

Albania	0.76
Algeria	0.22
Argentina	0.12
Armenia	3.43
Australia	2.09
Austria	2.13
Azerbaijan	1.38
Bangladesh	1.68
Belarus	0.79
Belgium	10.42
Benin	0.42
Bhutan	0.06
Bolivia	0.18
Botswana	1.98
Brazil	0.32
Bulgaria	1.11
Burkina Faso	0.15
Burundi	1.43
Cameroon	0.22
Canada	1.39
Central African Republic	0.49
Chile	0.19
China	0.49
Colombia	0.24
Costa Rica	0.23
Croatia	2.94
Cuba	0.32
Czech Republic	2.50
Denmark	7.19
Dominican Republic	0.26
Ecuador	0.35
Egypt	1.18
El Salvador	0.47
Estonia	0.74
Ethiopia	0.15
Fiji	0.09
Finland	0.86
France	1.77
Gabon	0.15
Germany	2.79
Ghana	0.38
Greece	1.39
Guatemala	0.33
Haiti	0.26
Honduras	0.19
Hungary	1.34
Iceland	2.00
India	0.51
Indonesia	0.43
Iran	0.14
Ireland	0.72
Israel	3.13
Italy	1.79
Jamaica	0.56
Japan	3.57
Jordan	0.74
Kazakhstan	0.23
Kenya	0.29
Korea, South	5.06
Kuwait	2.58
Kyrgyz Republic	0.47
Latvia	0.72
Lebanon	2.90
Libya	0.98
Lithuania	1.20
Macedonia	1.06
Madagascar	0.08
Malawi	0.55
Malaysia	0.54
Mali	0.12
Mauritius	0.86
Mexico	0.40
Moldova	2.72
Mongolia	0.23
Morocco	0.16
Mozambique	0.15
Nepal	0.23
Netherlands	12.06
New Zealand	0.31
Nicaragua	0.16
Niger	0.13
Nigeria	0.28
Norway	0.78
Pakistan	0.25
Panama	0.20
Papua New Guinea	0.03
Paraguay	0.46
Peru	0.07
Philippines	0.73
Poland	1.08
Portugal	1.11
Romania	0.97
Russian Federation	0.44
Rwanda	2.00
Saudi Arabia	0.18
Senegal	0.35
Singapore	
Slovak Republic	2.53
Slovenia	2.43
South Africa	0.63
Spain	0.75
Sri Lanka	0.32
Sudan	0.15
Sweden	0.63
Switzerland	3.44
Syria	0.43
Tanzania	0.23
Thailand	0.54
Togo	0.51
Trinidad and Tobago	2.24
Tunisia	0.26
Turkey	0.52
Uganda	0.36
Ukraine	1.17
United Kingdom	4.03
United States	1.79
Uruguay	0.25
Uzbekistan	0.69
Venezuela	0.44
Vietnam	0.46
Zambia	0.34
Zimbabwe	0.21

Reducing Stresses

Reducing Air Pollution

Variable Name: SO2 Emissions per Populated Land Area

Variable Code: SO2KM **Variable Number:** 15

Units: Metric Tons/Populated Land Area

Reference Year: 1990

Source: RIVM, Emission Database for Global Atmospheric Research (EDGAR)-version 2.0, 1996

Logic: Indicator of air pollution: emissions contribute to declines in air quality.

Details: The gridded emissions data, originally available as 1x1 degree cells (approximately 100 km by 100 km at the equator, decreasing to approximately 100 km by 50 km at a latitude of 60 degrees), were summarized at the country level to give the total emissions for each country. Air pollution is generally greatest in densely populated areas. To take this into account, we used the Gridded Population of the World dataset available from CIESIN and calculated the total land area in each country inhabited with a population density of greater than 5 persons per sq. km. We then utilized this land area as the denominator for the emissions data.

Median: 1.17 **Minimum:** 0.02 **Maximum:** 59.12

Albania	8.36
Algeria	0.19
Argentina	0.09
Armenia	11.17
Australia	3.85
Austria	5.90
Azerbaijan	3.90
Bangladesh	1.22
Belarus	2.15
Belgium	37.84
Benin	0.15
Bhutan	0.05
Bolivia	0.06
Botswana	1.29
Brazil	0.26
Bulgaria	10.83
Burkina Faso	0.05
Burundi	0.48
Cameroon	0.08
Canada	3.02
Central African Republic	0.17
Chile	3.67
China	2.15
Colombia	0.15
Costa Rica	0.21
Croatia	9.00
Cuba	1.30
Czech Republic	35.15
Denmark	12.86
Dominican Republic	0.51
Ecuador	0.24
Egypt	2.92
El Salvador	0.43
Estonia	2.39
Ethiopia	0.06
Fiji	0.15
Finland	2.62
France	3.81
Gabon	0.07
Germany	9.55
Ghana	0.13
Greece	8.21
Guatemala	0.22
Haiti	0.30
Honduras	0.14
Hungary	7.15
Iceland	1.54
India	0.70
Indonesia	0.68
Iran	0.35
Ireland	1.92
Israel	8.24
Italy	4.10
Jamaica	14.19
Japan	4.02
Jordan	1.65
Kazakhstan	1.17
Kenya	0.12
Korea, South	25.50
Kuwait	2.81
Kyrgyz Republic	2.16
Latvia	1.90
Lebanon	5.89
Libya	1.61
Lithuania	3.22
Macedonia	6.24
Madagascar	0.03
Malawi	0.19
Malaysia	0.87
Mali	0.04
Mauritius	2.08
Mexico	0.68
Moldova	7.70
Mongolia	0.63
Morocco	0.38
Mozambique	0.06
Nepal	0.19
Netherlands	59.12
New Zealand	0.41
Nicaragua	0.11
Niger	0.05
Nigeria	0.11
Norway	1.19
Pakistan	0.24
Panama	0.23
Papua New Guinea	0.02
Paraguay	0.20
Peru	0.17
Philippines	1.82
Poland	6.59
Portugal	3.50
Romania	4.08
Russian Federation	1.40
Rwanda	0.69
Saudi Arabia	0.25
Senegal	0.15
Singapore	
Slovak Republic	16.39
Slovenia	8.12
South Africa	1.26
Spain	1.82
Sri Lanka	0.14
Sudan	0.06
Sweden	1.30
Switzerland	2.59
Syria	0.86
Tanzania	0.08
Thailand	0.76
Togo	0.19
Trinidad and Tobago	0.76
Tunisia	0.94
Turkey	1.57
Uganda	0.13
Ukraine	3.39
United Kingdom	8.95
United States	2.48
Uruguay	0.19
Uzbekistan	2.43
Venezuela	0.27
Vietnam	0.77

Reducing Stresses

Reducing Air Pollution

Variable Name: VOCs emissions per populated land area

Variable Code: VOCKM **Variable Number:** 16

Units: Metric Tons/Populated Land Area

Reference Year: 1990

Source: RIVM, Emission Database for Global Atmospheric Research (EDGAR)-version 2.0, 1996

Logic: Indicator of air pollution: emissions contribute to declines in air quality.

Details: The gridded emissions data, originally available as 1x1 degree cells (approximately 100 km by 100 km at the equator, decreasing to approximately 100 km North-South side by 50 km East-West side at a latitude of 60 degrees), were summarized at the country level to give the total emissions for each country. Air pollution is generally greatest in densely populated areas. To take this into account, we used the Gridded Population of the World dataset available from CIESIN and calculated the total land area in each country inhabited with a population density of greater than 5 persons per sq. km. We then utilized this land area as the denominator for the emissions data. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 3.30 **Minimum:** 0.25 **Maximum:** 60.53

Albania	3.30
Algeria	2.45
Argentina	0.79
Armenia	8.36
Australia	6.33
Austria	6.88
Azerbaijan	4.46
Bangladesh	20.78
Belarus	2.25
Belgium	23.06
Benin	5.54
Bhutan	0.80
Bolivia	1.24
Botswana	10.39
Brazil	1.89
Bulgaria	3.92
Burkina Faso	1.23
Burundi	14.66
Cameroon	2.05
Canada	5.94
Central African Republic	3.55
Chile	1.10
China	2.49
Colombia	2.78
Costa Rica	1.49
Croatia	11.41
Cuba	1.23
Czech Republic	7.29
Denmark	25.10
Dominican Republic	2.13
Ecuador	4.05
Egypt	8.90
El Salvador	5.07
Estonia	1.54
Ethiopia	1.27
Fiji	0.83
Finland	1.71
France	5.27
Gabon	2.47
Germany	8.62
Ghana	2.99
Greece	5.59
Guatemala	4.02
Haiti	5.05
Honduras	1.83
Hungary	6.24
Iceland	6.39
India	4.87
Indonesia	4.73
Iran	1.56
Ireland	2.15
Israel	9.34
Italy	4.92
Jamaica	3.20
Japan	14.23
Jordan	2.48
Kazakhstan	0.86
Kenya	3.01
Korea, South	14.31
Kuwait	60.53
Kyrgyz Republic	1.65
Latvia	2.31
Lebanon	14.76
Libya	20.13
Lithuania	3.39
Macedonia	3.82
Madagascar	0.78
Malawi	4.78
Malaysia	5.47
Mali	0.81
Mauritius	8.27
Mexico	2.78
Moldova	6.47
Mongolia	0.88
Morocco	0.77
Mozambique	1.24
Nepal	4.04
Netherlands	31.63
New Zealand	1.32
Nicaragua	1.24
Niger	1.05
Nigeria	5.15
Norway	2.24
Pakistan	2.50
Panama	1.35
Papua New Guinea	0.25
Paraguay	3.39
Peru	0.77
Philippines	7.22
Poland	2.38
Portugal	2.99
Romania	3.35
Russian Federation	2.52
Rwanda	21.06
Saudi Arabia	5.79
Senegal	2.10
Singapore	
Slovak Republic	7.17
Slovenia	9.38
South Africa	1.81
Spain	2.40
Sri Lanka	4.05
Sudan	1.47
Sweden	1.71
Switzerland	9.25
Syria	3.16
Tanzania	2.08
Thailand	3.60
Togo	4.33
Trinidad and Tobago	18.11
Tunisia	1.72
Turkey	2.21
Uganda	3.38
Ukraine	3.30
United Kingdom	13.50
United States	3.53
Uruguay	1.42
Uzbekistan	1.84
Venezuela	4.98
Vietnam	4.73

Reducing Stresses

Reducing Air Pollution

Variable Name: Coal Consumption per Populated Land Area

Variable Code: COALKM **Variable Number:** 17

Units: Billion Btu/Populated Land Area

Reference Year: 1998

Source: US Energy Information Agency, available at http://www.eia.doe.gov/emeu/international/contents.html

Logic: Coal fired power plants emit higher levels of SO2 and other air pollutants than natural gas or oil fired plants, and the energy produced is more carbon-intensive.

Details: Air pollution is generally greatest in densely populated areas. To take this into account, we used the Gridded Population of the World dataset available from CIESIN and calculated the total land area in each country inhabited with a population density of greater than 5 persons per sq. km. We then utilized this land area as the denominator for the coal consumption data. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 0.28 **Minimum:** 0.01 **Maximum:** 15.43

Albania	0.01
Algeria	0.06
Argentina	0.02
Armenia	
Australia	7.20
Austria	1.55
Azerbaijan	
Bangladesh	
Belarus	0.07
Belgium	10.70
Benin	
Bhutan	0.01
Bolivia	
Botswana	0.49
Brazil	0.14
Bulgaria	2.95
Burkina Faso	
Burundi	
Cameroon	
Canada	2.32
Central African Republic	
Chile	0.43
China	3.86
Colombia	0.22
Costa Rica	0.01
Croatia	0.23
Cuba	0.02
Czech Republic	12.04
Denmark	3.16
Dominican Republic	0.08
Ecuador	
Egypt	0.37
El Salvador	
Estonia	0.29
Ethiopia	
Fiji	0.03
Finland	0.82
France	1.06
Gabon	
Germany	8.76
Ghana	

Greece	2.57
Guatemala	
Haiti	
Honduras	
Hungary	1.84
Iceland	1.55
India	2.31
Indonesia	0.27
Iran	0.03
Ireland	1.11
Israel	13.31
Italy	1.55
Jamaica	0.18
Japan	7.82
Jordan	
Kazakhstan	0.67
Kenya	0.01
Korea, South	15.43
Kuwait	
Kyrgyz Republic	0.11
Latvia	0.12
Lebanon	0.56
Libya	
Lithuania	0.07
Macedonia	2.32
Madagascar	
Malawi	0.02
Malaysia	0.19
Mali	
Mauritius	1.10
Mexico	0.18
Moldova	0.25
Mongolia	0.60
Morocco	0.28
Mozambique	
Nepal	0.02
Netherlands	10.67
New Zealand	0.56
Nicaragua	
Niger	0.01
Nigeria	

Norway	0.38
Pakistan	0.12
Panama	0.03
Papua New Guinea	
Paraguay	0.01
Peru	0.02
Philippines	0.38
Poland	7.51
Portugal	1.22
Romania	1.22
Russian Federation	1.07
Rwanda	
Saudi Arabia	
Senegal	
Singapore	0.06
Slovak Republic	3.96
Slovenia	3.57
South Africa	5.50
Spain	1.33
Sri Lanka	
Sudan	
Sweden	0.34
Switzerland	0.05
Syria	
Tanzania	
Thailand	0.57
Togo	
Trinidad and Tobago	
Tunisia	0.03
Turkey	1.00
Uganda	
Ukraine	3.22
United Kingdom	5.81
United States	4.89
Uruguay	
Uzbekistan	0.09
Venezuela	
Vietnam	0.51
Zambia	0.01
Zimbabwe	0.38

Reducing Stresses

Reducing Air Pollution

Variable Name: Vehicles Per Populated Land Area

Variable Code: CARSKM **Variable Number:** 18

Units: Vehicles/Populated Land Area

Reference Year: MRYA 1996-1998

Source: World Bank, World Development Indicators 2000

Logic: Proxy for environmental impacts associated with production, use and disposal of motor vehicles and the transportation infrastructure that supports them.

Details: Air pollution is generally greatest in densely populated areas. To take this into account, we used the Gridded Population of the World dataset available from CIESIN and calculated the total land area in each country inhabited with a population density of greater than 5 persons per sq. km. We then utilized this land area as the denominator for the vehicles data. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 5.26 **Minimum:** 0.01 **Maximum:** 1041.12.

Albania	4.57
Algeria	4.11
Argentina	4.54
Armenia	0.19
Australia	48.23
Austria	50.97
Azerbaijan	4.17
Bangladesh	0.94
Belarus	5.60
Belgium	149.66
Benin	0.42
Bhutan	0.08
Bolivia	0.89
Botswana	1.54
Brazil	3.94
Bulgaria	19.11
Burkina Faso	0.22
Burundi	
Cameroon	0.43
Canada	33.63
Central African Republic	0.01
Chile	5.21
China	1.74
Colombia	2.66
Costa Rica	9.53
Croatia	
Cuba	3.26
Czech Republic	53.52
Denmark	51.16
Dominican Republic	7.55
Ecuador	3.60
Egypt	16.98
El Salvador	17.49
Estonia	12.74
Ethiopia	0.10
Fiji	3.15
Finland	15.19
France	56.34
Gabon	0.34
Germany	
Ghana	0.61

Greece	26.89
Guatemala	2.12
Haiti	2.07
Honduras	2.39
Hungary	29.48
Iceland	106.51
India	2.21
Indonesia	2.90
Iran	1.42
Ireland	16.66
Israel	76.64
Italy	115.24
Jamaica	11.15
Japan	187.46
Jordan	7.78
Kazakhstan	1.07
Kenya	1.34
Korea, South	104.45
Kuwait	44.91
Kyrgyz Republic	0.77
Latvia	9.40
Lebanon	
Libya	30.23
Lithuania	16.80
Macedonia	12.21
Madagascar	0.16
Malawi	0.51
Malaysia	10.99
Mali	0.11
Mauritius	70.72
Mexico	10.42
Moldova	8.65
Mongolia	0.90
Morocco	4.11
Mozambique	0.02
Nepal	
Netherlands	193.80
New Zealand	27.08
Nicaragua	1.33
Niger	0.19
Nigeria	2.99

Norway	19.13
Pakistan	1.46
Panama	5.04
Papua New Guinea	0.27
Paraguay	0.78
Peru	1.39
Philippines	7.43
Poland	34.69
Portugal	37.68
Romania	13.17
Russian Federation	5.71
Rwanda	0.79
Saudi Arabia	3.89
Senegal	0.64
Singapore	1,041.12
Slovak Republic	28.27
Slovenia	43.63
South Africa	7.72
Spain	37.06
Sri Lanka	9.70
Sudan	0.21
Sweden	18.44
Switzerland	94.59
Syria	2.23
Tanzania	0.16
Thailand	12.04
Togo	2.14
Trinidad and Tobago	26.85
Tunisia	6.03
Turkey	6.70
Uganda	0.42
Ukraine	8.24
United Kingdom	106.38
United States	47.02
Uruguay	4.29
Uzbekistan	
Venezuela	5.26
Vietnam	
Zambia	0.53
Zimbabwe	0.98

Reducing Stresses

Reducing Water Stress

Variable Name: Fertilizer Consumption per Hectare of Arable Land

Variable Code: FERTHA **Variable Number:** 19

Units: Hundreds Grams/Hectare of Arable Land

Reference Year: 1997

Source: World Bank, World Development Indicators 2000

Logic: Excessive use of fertilizers from agricultural activities has a negative impact on soil and water, altering chemistry and levels of nutrients and leading to eutrophication problems.

Details: A logarithmic transformation of this variable was used in calculating the ESI.

Median: 788.92 **Minimum:** 1.19 **Maximum:** 32133.33

Albania	88.39
Algeria	128.90
Argentina	332.88
Armenia	161.94
Australia	427.42
Austria	1,664.28
Azerbaijan	135.77
Bangladesh	1,354.75
Belarus	1,190.28
Belgium	4,166.67
Benin	256.33
Bhutan	7.14
Bolivia	67.52
Botswana	109.33
Brazil	1,030.17
Bulgaria	439.80
Burkina Faso	125.60
Burundi	59.74
Cameroon	56.21
Canada	604.35
Central African Republic	1.55
Chile	2,194.75
China	2,898.88
Colombia	2,885.95
Costa Rica	9,017.91
Croatia	1,776.23
Cuba	552.81
Czech Republic	1,015.19
Denmark	1,882.45
Dominican Republic	955.88
Ecuador	1,064.80
Egypt	3,565.63
El Salvador	1,633.63
Estonia	237.59
Ethiopia	133.79
Fiji	960.00
Finland	1,453.43
France	2,770.83
Gabon	6.15
Germany	2,414.54
Ghana	74.95

Greece	1,792.42
Guatemala	1,571.22
Haiti	173.21
Honduras	781.71
Hungary	891.32
Iceland	32,133.33
India	999.99
Indonesia	1,372.83
Iran	649.25
Ireland	5,026.06
Israel	3,410.26
Italy	2,222.62
Jamaica	1,258.62
Japan	3,856.96
Jordan	890.00
Kazakhstan	42.17
Kenya	333.25
Korea, South	5,257.54
Kuwait	2,000.00
Kyrgyz Republic	229.63
Latvia	216.67
Lebanon	3,344.72
Libya	340.50
Lithuania	466.06
Macedonia	766.83
Madagascar	36.97
Malawi	358.36
Malaysia	6,593.41
Mali	103.78
Mauritius	3,645.60
Mexico	636.11
Moldova	678.25
Mongolia	15.16
Morocco	347.35
Mozambique	22.03
Nepal	375.78
Netherlands	5,566.67
New Zealand	4,443.73
Nicaragua	201.25
Niger	19.02
Nigeria	48.76

Norway	2,308.20
Pakistan	1,264.30
Panama	672.00
Papua New Guinea	2,166.67
Paraguay	154.55
Peru	470.81
Philippines	1,582.79
Poland	1,140.54
Portugal	1,110.08
Romania	338.71
Russian Federation	132.51
Rwanda	4.71
Saudi Arabia	883.24
Senegal	102.69
Singapore	20,630.00
Slovak Republic	796.14
Slovenia	3,202.25
South Africa	507.75
Spain	1,437.19
Sri Lanka	2,428.87
Sudan	46.35
Sweden	1,104.17
Switzerland	2,509.52
Syria	772.07
Tanzania	174.10
Thailand	865.55
Togo	67.15
Trinidad and Tobago	1,413.33
Tunisia	329.31
Turkey	686.90
Uganda	1.19
Ukraine	268.32
United Kingdom	3,299.37
United States	1,141.83
Uruguay	1,022.22
Uzbekistan	1,229.05
Venezuela	1,121.21
Vietnam	2,773.29
Zambia	111.13
Zimbabwe	587.66

Reducing Stresses

Reducing Water Stress

Variable Name: Pesticide Use per Hectare of Crop Land

Variable Code: PESTHA **Variable Number:** 20

Units: Kg/Hectare of Cropland

Reference Year: 1996

Source: World Resource Institute, *World Resources 2000-2001*, Washington, DC: WRI, 2000.

Logic: Excessive use of pesticides in agricultural activities has a negative impact on soil, water, humans and wildlife.

Details:

Median: 1217.5 **Minimum:** 1 **Maximum:** 19288.

Albania	435.00
Algeria	835.00
Argentina	1,266.00
Armenia	
Australia	2,535.00
Austria	2,710.00
Azerbaijan	
Bangladesh	176.00
Belarus	
Belgium	
Benin	
Bhutan	670.00
Bolivia	1,514.00
Botswana	40.00
Brazil	836.00
Bulgaria	966.00
Burkina Faso	1.00
Burundi	268.00
Cameroon	253.00
Canada	644.00
Central African Republic	12.00
Chile	3,240.00
China	
Colombia	6,134.00
Costa Rica	18,726.00
Croatia	3,060.00
Cuba	
Czech Republic	1,169.00
Denmark	2,200.00
Dominican Republic	
Ecuador	1,696.00
Egypt	1,293.00
El Salvador	2,642.00
Estonia	105.00
Ethiopia	34.00
Fiji	2,333.00
Finland	410.00
France	
Gabon	
Germany	2,085.00
Ghana	2,333.00

Greece	
Guatemala	574.00
Haiti	23.00
Honduras	6,521.00
Hungary	2,863.00
Iceland	
India	436.00
Indonesia	88.00
Iran	1,881.00
Ireland	
Israel	
Italy	19,288.00
Jamaica	
Japan	
Jordan	1,495.00
Kazakhstan	
Kenya	
Korea, South	13,829.00
Kuwait	
Kyrgyz Republic	1,860.00
Latvia	208.00
Lebanon	
Libya	
Lithuania	312.00
Macedonia	7,718.00
Madagascar	28.00
Malawi	
Malaysia	5,982.00
Mali	136.00
Mauritius	
Mexico	
Moldova	1,434.00
Mongolia	
Morocco	
Mozambique	
Nepal	21.00
Netherlands	11,842.00
New Zealand	2,215.00
Nicaragua	357.00
Niger	
Nigeria	

Norway	941.00
Pakistan	365.00
Panama	
Papua New Guinea	1,750.00
Paraguay	1,542.00
Peru	
Philippines	
Poland	490.00
Portugal	2,584.00
Romania	1,617.00
Russian Federation	407.00
Rwanda	260.00
Saudi Arabia	
Senegal	183.00
Singapore	
Slovak Republic	4,148.00
Slovenia	6,389.00
South Africa	57.00
Spain	
Sri Lanka	6,271.00
Sudan	106.00
Sweden	509.00
Switzerland	4,576.00
Syria	
Tanzania	
Thailand	1,116.00
Togo	95.00
Trinidad and Tobago	11,827.00
Tunisia	
Turkey	1,145.00
Uganda	17.00
Ukraine	2,001.00
United Kingdom	4,745.00
United States	1,599.00
Uruguay	1,316.00
Uzbekistan	
Venezuela	1,403.00
Vietnam	
Zambia	317.00
Zimbabwe	531.00

Reducing Stresses

Reducing Water Stress

Variable Name: Industrial Organic Pollutants per available freshwater

Variable Code: BODWAT **Variable Number:** 21

Units: Kg of Biochemical Oxygen Demand (BOD) Emissions/Cubic Km of Water

Reference Year: 1996

Source: World Bank, World Development Indicators 2000 and Center for Environmental Systems Research, University of Kassel, WaterGap 2.1, 2000

Logic: Emissions of organic pollutants from industrial activities cause water quality degradation. Given these considerations, BOD emissions have been normalized per amount of freshwater availability.

Details: These are modeled emissions data from the World Bank, measuring organic pollutants in terms of Biochemical Oxygen Demand (BOD).

Median: 892.38 **Minimum:** 30.72 **Maximum:** 18083.68

Albania	233.77
Algeria	8,580.76
Argentina	
Armenia	2,143.00
Australia	
Austria	876.85
Azerbaijan	
Bangladesh	
Belarus	
Belgium	
Benin	
Bhutan	
Bolivia	
Botswana	243.67
Brazil	
Bulgaria	422.52
Burkina Faso	
Burundi	
Cameroon	48.84
Canada	116.28
Central African Republic	
Chile	252.08
China	3,248.13
Colombia	36.68
Costa Rica	336.47
Croatia	322.67
Cuba	
Czech Republic	
Denmark	5,674.21
Dominican Republic	
Ecuador	91.96
Egypt	
El Salvador	910.26
Estonia	
Ethiopia	160.24
Fiji	
Finland	608.04
France	2,469.97
Gabon	
Germany	
Ghana	

Greece	1,273.13
Guatemala	
Haiti	
Honduras	
Hungary	1,118.41
Iceland	
India	892.38
Indonesia	324.63
Iran	
Ireland	666.54
Israel	18,083.68
Italy	
Jamaica	2,188.43
Japan	4,504.89
Jordan	15,225.22
Kazakhstan	
Kenya	
Korea, South	5,965.52
Kuwait	
Kyrgyz Republic	
Latvia	759.91
Lebanon	
Libya	
Lithuania	
Macedonia	4,697.95
Madagascar	
Malawi	
Malaysia	391.01
Mali	
Mauritius	17,424.19
Mexico	
Moldova	
Mongolia	
Morocco	7,691.03
Mozambique	30.72
Nepal	175.83
Netherlands	1,349.91
New Zealand	
Nicaragua	
Niger	
Nigeria	

Norway	188.19
Pakistan	
Panama	138.97
Papua New Guinea	
Paraguay	
Peru	
Philippines	691.06
Poland	5,669.83
Portugal	2,462.13
Romania	
Russian Federation	475.66
Rwanda	
Saudi Arabia	
Senegal	601.34
Singapore	
Slovak Republic	
Slovenia	1,216.60
South Africa	3,719.32
Spain	3,566.38
Sri Lanka	
Sudan	
Sweden	604.04
Switzerland	3,018.35
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	
Tunisia	11,451.51
Turkey	1,011.98
Uganda	
Ukraine	5,800.97
United Kingdom	3,571.12
United States	1,122.61
Uruguay	32.54
Uzbekistan	
Venezuela	68.63
Vietnam	
Zambia	
Zimbabwe	415.29

Reducing Stresses — Reducing Water Stress

Variable Name: Percentage of Country's Territory Under Severe Water Availability Stress

Variable Code: WATSTR **Variable Number:** 22

Units: Percent of Land Area

Reference Year: 1961-1990 (avg.)

Source: Center for Environmental Systems Research, University of Kassel, WaterGAP 2.1B, 2001

Logic: The regional distribution of water availability relative to population and consumption needs is more important than its overall water availability. This variable captures the percent of the territory that is under water stress, which will affect the availability of water for environmental services and human well-being.

Details: These data are derived from the WaterGap 2.1 gridded hydrological model developed by the Center for Environmental Systems Research, University of Kassel, Germany. The modelers identified grid cells in which water consumption exceeds 40 percent of the water available in that particular grid cell. These were then converted to land area equivalents, and the percentage of the territory under severe water stress was calculated.

Median: 4.5 **Minimum:** 0 **Maximum:** 100

Albania	19.50
Algeria	71.00
Argentina	23.30
Armenia	84.60
Australia	8.00
Austria	0.00
Azerbaijan	95.40
Bangladesh	22.10
Belarus	0.00
Belgium	93.90
Benin	0.00
Bhutan	0.00
Bolivia	14.00
Botswana	14.20
Brazil	0.30
Bulgaria	45.90
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	0.90
Central African Republic	0.00
Chile	41.10
China	44.70
Colombia	1.00
Costa Rica	0.00
Croatia	0.00
Cuba	24.60
Czech Republic	0.00
Denmark	7.70
Dominican Republic	4.50
Ecuador	1.20
Egypt	88.10
El Salvador	0.00
Estonia	0.30
Ethiopia	24.70
Fiji	0.00
Finland	2.10
France	19.40
Gabon	0.00
Germany	1.10
Ghana	0.00
Greece	58.00
Guatemala	0.00
Haiti	0.00
Honduras	0.00
Hungary	0.00
Iceland	0.00
India	80.20
Indonesia	1.40
Iran	87.50
Ireland	0.00
Israel	100.00
Italy	26.30
Jamaica	0.00
Japan	9.50
Jordan	82.60
Kazakhstan	60.40
Kenya	1.10
Korea, South	49.80
Kuwait	97.70
Kyrgyz Republic	93.00
Latvia	0.00
Lebanon	82.10
Libya	83.70
Lithuania	0.40
Macedonia	91.60
Madagascar	1.70
Malawi	0.00
Malaysia	1.60
Mali	2.70
Mauritius	0.00
Mexico	43.80
Moldova	6.30
Mongolia	8.10
Morocco	81.50
Mozambique	13.60
Nepal	98.10
Netherlands	36.00
New Zealand	0.00
Nicaragua	0.30
Niger	40.50
Nigeria	17.80
Norway	0.40
Pakistan	76.30
Panama	0.00
Papua New Guinea	0.00
Paraguay	0.00
Peru	23.60
Philippines	10.40
Poland	0.00
Portugal	54.70
Romania	1.70
Russian Federation	3.80
Rwanda	0.00
Saudi Arabia	88.30
Senegal	5.00
Singapore	
Slovak Republic	0.00
Slovenia	0.00
South Africa	68.50
Spain	72.30
Sri Lanka	39.50
Sudan	31.10
Sweden	0.60
Switzerland	0.00
Syria	99.60
Tanzania	0.00
Thailand	0.60
Togo	0.00
Trinidad and Tobago	100.00
Tunisia	89.00
Turkey	61.70
Uganda	0.00
Ukraine	17.00
United Kingdom	21.00
United States	31.30
Uruguay	0.00
Uzbekistan	87.10
Venezuela	2.40
Vietnam	2.80
Zambia	0.00
Zimbabwe	16.20

Reducing Stresses

Reducing Ecosystem Stresses

Variable Name: Percentage Change in Forest Cover 1990-1995

Variable Code: FOREST **Variable Number:** 23

Units: Percent Change

Reference Year: 1995

Source: Forest Resources Assessment Programme 2000, Working Paper 1, Rome 1998, Forest Department FAO. Originally published in the *State of the World's Forests 1997* (FAO, 1997).

Logic: When forests are lost or severely degraded, their capacity to function as regulators for the enviornment is also lost, increasing flood and erosion hazards, reducing soil fertility, and contributing to the loss of plant and animal life. As a result, the sustainable provision of goods and services from forests is jeopardized (Forest Resources Assessment).

Details: Values for Croatia, Czech Republic, Estonia, Hungary and Latvia disagreed with national reports so values were replaced with those from World Resources 2000-2001, FG1. The 1995 figures are the most current global data set on forest cover and forest cover change available according to the FAO. A logarithmic transformation of this variable was used in calculating the ESI.

Median: -0.02 **Minimum:** -0.33 **Maximum:** 0.14

Albania	
Algeria	-0.06
Argentina	-0.01
Armenia	0.14
Australia	
Austria	
Azerbaijan	
Bangladesh	-0.04
Belarus	0.05
Belgium	
Benin	-0.06
Bhutan	-0.02
Bolivia	-0.06
Botswana	-0.02
Brazil	-0.02
Bulgaria	
Burkina Faso	-0.04
Burundi	-0.02
Cameroon	-0.03
Canada	
Central African Republic	-0.02
Chile	-0.02
China	
Colombia	-0.02
Costa Rica	-0.14
Croatia	
Cuba	-0.06
Czech Republic	0.04
Denmark	
Dominican Republic	-0.08
Ecuador	-0.08
Egypt	
El Salvador	-0.15
Estonia	0.02
Ethiopia	-0.02
Fiji	-0.02
Finland	
France	0.06
Gabon	-0.02
Germany	
Ghana	-0.06

Greece	0.12
Guatemala	-0.10
Haiti	-0.16
Honduras	-0.11
Hungary	0.07
Iceland	
India	
Indonesia	-0.05
Iran	-0.08
Ireland	0.14
Israel	
Italy	
Jamaica	-0.31
Japan	
Jordan	-0.12
Kazakhstan	0.10
Kenya	-0.01
Korea, South	-0.01
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	-0.33
Libya	
Lithuania	0.03
Macedonia	
Madagascar	-0.04
Malawi	-0.08
Malaysia	-0.11
Mali	-0.05
Mauritius	
Mexico	-0.04
Moldova	
Mongolia	
Morocco	-0.02
Mozambique	-0.03
Nepal	-0.05
Netherlands	
New Zealand	0.03
Nicaragua	-0.12
Niger	
Nigeria	-0.04

Norway	0.02
Pakistan	-0.14
Panama	-0.10
Papua New Guinea	-0.02
Paraguay	-0.12
Peru	-0.02
Philippines	-0.16
Poland	0.01
Portugal	0.04
Romania	
Russian Federation	
Rwanda	-0.01
Saudi Arabia	-0.04
Senegal	-0.03
Singapore	
Slovak Republic	0.01
Slovenia	
South Africa	-0.01
Spain	
Sri Lanka	-0.05
Sudan	-0.04
Sweden	
Switzerland	
Syria	-0.11
Tanzania	-0.05
Thailand	-0.12
Togo	-0.07
Trinidad and Tobago	-0.07
Tunisia	-0.03
Turkey	
Uganda	-0.05
Ukraine	
United Kingdom	0.03
United States	0.01
Uruguay	
Uzbekistan	0.14
Venezuela	-0.05
Vietnam	-0.07
Zambia	-0.04
Zimbabwe	-0.03

Reducing Stresses — Reducing Ecosystem Stresses

Variable Name: Percentage of Country's territory with Acidification Exceedance

Variable Code: AC_EXC **Variable Number:** 24

Units: Percent Land Area

Reference Year: 1990

Source: Stockholm Environment Institute at York, Acidification in developing countries: ecosystem sensitivity and the critical loads approach at the global scale, 2000

Logic: Exceedance of critical SO2 loading represents an indicator for ecosystems under stress due to acidification from anthropogenic sulphur deposition. Since it takes into account both the deposition and the ability of the ecosystem to respond to stress, it is a good indicator of the ecosystems' "sustainability".

Details: From a map of acidification exceedance, the areas at risk were summed within each country and then the percentage of a country at risk of exceedance was calculated. See the main report for more details on how the acidification exceedance map was produced.

Median: 0 **Minimum:** 0 **Maximum:** 97.48

Albania	2.54
Algeria	0.00
Argentina	0.00
Armenia	0.00
Australia	0.00
Austria	50.81
Azerbaijan	0.00
Bangladesh	0.00
Belarus	4.91
Belgium	75.83
Benin	0.00
Bhutan	0.00
Bolivia	0.00
Botswana	0.00
Brazil	0.00
Bulgaria	14.10
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	5.39
Central African Republic	0.00
Chile	0.00
China	15.66
Colombia	0.00
Costa Rica	0.00
Croatia	4.69
Cuba	0.00
Czech Republic	89.22
Denmark	54.88
Dominican Republic	0.00
Ecuador	0.00
Egypt	0.00
El Salvador	0.00
Estonia	0.00
Ethiopia	0.00
Fiji	0.00
Finland	1.19
France	18.84
Gabon	0.00
Germany	51.88
Ghana	0.00

Greece	2.77
Guatemala	0.00
Haiti	0.00
Honduras	0.00
Hungary	4.93
Iceland	0.00
India	0.00
Indonesia	8.15
Iran	0.00
Ireland	54.16
Israel	0.00
Italy	17.94
Jamaica	0.00
Japan	10.99
Jordan	0.00
Kazakhstan	0.00
Kenya	0.00
Korea, South	58.90
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	1.95
Lebanon	0.00
Libya	0.00
Lithuania	0.00
Macedonia	97.48
Madagascar	0.00
Malawi	0.00
Malaysia	0.00
Mali	0.00
Mauritius	0.00
Mexico	0.68
Moldova	0.00
Mongolia	0.00
Morocco	0.00
Mozambique	0.00
Nepal	0.00
Netherlands	43.81
New Zealand	0.00
Nicaragua	0.00
Niger	0.00
Nigeria	0.00

Norway	15.96
Pakistan	0.00
Panama	0.00
Papua New Guinea	0.00
Paraguay	0.00
Peru	0.00
Philippines	0.00
Poland	53.45
Portugal	3.24
Romania	19.27
Russian Federation	0.33
Rwanda	0.00
Saudi Arabia	0.00
Senegal	0.00
Singapore	0.00
Slovak Republic	27.23
Slovenia	40.11
South Africa	0.00
Spain	3.65
Sri Lanka	0.00
Sudan	0.00
Sweden	34.37
Switzerland	36.90
Syria	0.00
Tanzania	0.00
Thailand	0.27
Togo	0.00
Trinidad and Tobago	0.00
Tunisia	0.00
Turkey	0.02
Uganda	0.00
Ukraine	4.27
United Kingdom	45.75
United States	13.74
Uruguay	0.00
Uzbekistan	0.00
Venezuela	0.00
Vietnam	32.17
Zambia	5.13
Zimbabwe	0.00

Reducing Stresses — Reducing Waste and Consumption Pressures

Variable Name: Consumption Pressure per capita

Variable Code: PRESS **Variable Number:** 25

Units: Consumption as a Proportion of Global Average

Reference Year: 1996

Source: World Wide Fund for Nature, *Living Planet Report*. Gland, Switzerland: WWF, 1999.

Logic: Higher level of consumption pressure produce higher levels of environmental stress, both in terms of resource depletion and waste disposal.

Details: The Consumption Pressure Index was calculated using the same methodology used by WWF for the 1998 Living Planet report, but using only grain-equivalent, fish, wood-equivalent and cement consumption per person. For each commodity, a country's per capita average was divided by the the global per person average, giving a relative score. The relative scores for all the 4 components were then averaged to give the consumption pressure per person for that country.

Median: 0.89 **Minimum:** 0.30 **Maximum:** 5.70

Albania	0.56
Algeria	0.65
Argentina	0.86
Armenia	0.39
Australia	1.53
Austria	1.80
Azerbaijan	0.30
Bangladesh	0.46
Belarus	1.19
Belgium	
Benin	0.92
Bhutan	0.90
Bolivia	0.49
Botswana	1.02
Brazil	1.16
Bulgaria	0.75
Burkina Faso	0.65
Burundi	0.59
Cameroon	0.85
Canada	1.80
Central African Republic	0.64
Chile	1.26
China	1.11
Colombia	0.65
Costa Rica	1.24
Croatia	0.89
Cuba	0.57
Czech Republic	1.22
Denmark	1.90
Dominican Republic	0.64
Ecuador	0.97
Egypt	0.73
El Salvador	0.74
Estonia	1.55
Ethiopia	0.55
Fiji	
Finland	2.14
France	1.57
Gabon	1.22
Germany	1.45
Ghana	1.18

Greece	1.41
Guatemala	0.87
Haiti	0.58
Honduras	0.82
Hungary	1.00
Iceland	
India	0.44
Indonesia	0.99
Iran	0.62
Ireland	1.59
Israel	1.87
Italy	1.62
Jamaica	0.88
Japan	2.49
Jordan	0.82
Kazakhstan	0.77
Kenya	0.91
Korea, South	2.62
Kuwait	2.47
Kyrgyz Republic	0.40
Latvia	2.04
Lebanon	1.79
Libya	1.12
Lithuania	1.46
Macedonia	0.78
Madagascar	0.57
Malawi	0.69
Malaysia	2.69
Mali	0.72
Mauritius	1.30
Mexico	0.74
Moldova	0.32
Mongolia	0.50
Morocco	0.71
Mozambique	0.57
Nepal	0.65
Netherlands	1.22
New Zealand	1.69
Nicaragua	0.62
Niger	0.52
Nigeria	0.80

Norway	2.47
Pakistan	0.35
Panama	0.86
Papua New Guinea	1.39
Paraguay	1.39
Peru	0.78
Philippines	1.21
Poland	1.17
Portugal	2.33
Romania	0.78
Russian Federation	1.03
Rwanda	0.54
Saudi Arabia	1.17
Senegal	1.02
Singapore	5.70
Slovak Republic	0.86
Slovenia	1.40
South Africa	0.91
Spain	1.83
Sri Lanka	0.74
Sudan	0.48
Sweden	1.87
Switzerland	1.55
Syria	0.58
Tanzania	0.89
Thailand	1.45
Togo	0.72
Trinidad and Tobago	0.64
Tunisia	0.97
Turkey	1.12
Uganda	0.63
Ukraine	0.66
United Kingdom	1.17
United States	2.10
Uruguay	1.36
Uzbekistan	0.49
Venezuela	0.75
Vietnam	0.74
Zambia	1.10
Zimbabwe	0.65

Reducing Stresses — Reducing Waste and Consumption Pressures

Variable Name: Radioactive Waste

Variable Code: NUKE **Variable Number:** 26

Units: Standardized Scale (Z score)

Reference Year: 1996

Source: International Atomic Energy Agency, Waste Management Database, 1997

Logic: Radioactive waste, as a source of ionizing radiation, has long been recognized as a potential hazard to human health. Many practices in the fields of research, medicine, industry and generation of electricity generate waste that requires management to ensure the protection of human health and the environment now and in the future, without imposing undue burdens on future generations (The Principle of Radioactive Waste Management, IAEA, 1997).

Details: Two variables were initially available for Radioactive Waste: Accumulated Quantity (cubic meters) as generated and Accumulated Quantity (cubic meters) after treatment. We calculated the Z scores for the two variables, in order to make them comparable, and took the one available for each country. For the three countries (Australia, Canada and Czech Republic) which had both variables, we took the higher.

Median: -0.33 **Minimum:** -0.36 **Maximum:** 4.36

Albania	-0.33
Algeria	
Argentina	-0.35
Armenia	
Australia	-0.34
Austria	
Azerbaijan	
Bangladesh	
Belarus	-0.32
Belgium	-0.31
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	-0.34
Bulgaria	-0.20
Burkina Faso	
Burundi	
Cameroon	
Canada	0.66
Central African Republic	
Chile	-0.36
China	
Colombia	
Costa Rica	
Croatia	
Cuba	-0.33
Czech Republic	-0.28
Denmark	-0.35
Dominican Republic	
Ecuador	
Egypt	-0.33
El Salvador	
Estonia	-0.36
Ethiopia	
Fiji	
Finland	-0.34
France	2.18
Gabon	
Germany	0.19

Ghana	
Greece	
Guatemala	-0.33
Haiti	
Honduras	
Hungary	-0.34
Iceland	
India	-0.06
Indonesia	-0.36
Iran	-0.33
Ireland	
Israel	
Italy	-0.19
Jamaica	
Japan	
Jordan	
Kazakhstan	
Kenya	
Korea, South	-0.30
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	-0.10
Macedonia	
Madagascar	
Malawi	
Malaysia	-0.33
Mali	
Mauritius	
Mexico	-0.33
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	-0.32
New Zealand	
Nicaragua	

Niger	
Nigeria	
Norway	-0.35
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	-0.35
Portugal	-0.36
Romania	-0.31
Russian Federation	
Rwanda	
Saudi Arabia	
Senegal	
Singapore	
Slovak Republic	-0.24
Slovenia	-0.35
South Africa	-0.23
Spain	-0.26
Sri Lanka	
Sudan	
Sweden	-0.23
Switzerland	-0.32
Syria	
Tanzania	
Thailand	-0.36
Togo	
Trinidad and Tobago	
Tunisia	-0.33
Turkey	-0.36
Uganda	
Ukraine	4.36
United Kingdom	3.98
United States	1.67
Uruguay	
Uzbekistan	-0.33
Venezuela	
Vietnam	

Reducing Stresses — Reducing Population Pressure

Variable Name: Total Fertility Rate

Variable Code: TFR **Variable Number:** 27

Units: Average Number of Births Per Woman

Reference Year: 2000

Source: Population Reference Bureau, *2000 World Population Data Sheet*, Washington, DC: PRB, 2000.

Logic: Fertility affects population growth and thus resource and consumption pressure. High levels of fertility are environmentally unsustainable.

Details:

Median: 2.74 **Minimum:** 1.11 **Maximum:** 7.5

Albania	2.16
Algeria	3.81
Argentina	2.62
Armenia	1.30
Australia	1.70
Austria	1.32
Azerbaijan	1.87
Bangladesh	3.27
Belarus	1.28
Belgium	1.56
Benin	6.32
Bhutan	5.60
Bolivia	4.20
Botswana	4.10
Brazil	2.44
Bulgaria	1.11
Burkina Faso	6.80
Burundi	6.48
Cameroon	5.20
Canada	1.48
Central African Republic	5.07
Chile	2.44
China	1.80
Colombia	3.00
Costa Rica	3.20
Croatia	1.45
Cuba	1.55
Czech Republic	1.14
Denmark	1.72
Dominican Republic	3.10
Ecuador	3.30
Egypt	3.30
El Salvador	3.58
Estonia	1.21
Ethiopia	6.70
Fiji	3.30
Finland	1.72
France	1.77
Gabon	5.40
Germany	1.32
Ghana	4.48

Greece	1.29
Guatemala	5.00
Haiti	4.72
Honduras	4.41
Hungary	1.30
Iceland	2.05
India	3.34
Indonesia	2.78
Iran	2.92
Ireland	1.93
Israel	2.92
Italy	1.19
Jamaica	2.58
Japan	1.35
Jordan	4.40
Kazakhstan	1.70
Kenya	4.70
Korea, South	1.48
Kuwait	3.19
Kyrgyz Republic	2.83
Latvia	1.16
Lebanon	2.35
Libya	4.10
Lithuania	1.35
Macedonia	1.93
Madagascar	5.97
Malawi	5.90
Malaysia	3.20
Mali	6.70
Mauritius	2.03
Mexico	2.65
Moldova	1.51
Mongolia	2.69
Morocco	3.10
Mozambique	5.62
Nepal	4.60
Netherlands	1.59
New Zealand	1.97
Nicaragua	4.40
Niger	7.50
Nigeria	5.99

Norway	1.81
Pakistan	5.60
Panama	2.60
Papua New Guinea	4.84
Paraguay	4.30
Peru	3.40
Philippines	3.69
Poland	1.39
Portugal	1.46
Romania	1.32
Russian Federation	1.18
Rwanda	6.50
Saudi Arabia	6.37
Senegal	5.70
Singapore	1.48
Slovak Republic	1.38
Slovenia	1.23
South Africa	2.90
Spain	1.15
Sri Lanka	2.06
Sudan	4.57
Sweden	1.49
Switzerland	1.46
Syria	4.70
Tanzania	5.63
Thailand	1.90
Togo	6.12
Trinidad and Tobago	1.68
Tunisia	2.84
Turkey	2.46
Uganda	6.86
Ukraine	1.28
United Kingdom	1.70
United States	2.07
Uruguay	2.26
Uzbekistan	2.85
Venezuela	2.90
Vietnam	2.50
Zambia	6.08
Zimbabwe	4.00

Reducing Stresses — Reducing Population Pressure

Variable Name: Percentage Change in Projected Population Between 2000 and 2050

Variable Code: GR2050 **Variable Number:** 28

Units: Percent Change in Population

Reference Year: 2000

Source: Population Reference Bureau, *2000 World Population Data Sheet*, Washington, DC: PRB, 2000.

Logic: The projected change in population between 2000 and 2050 provides an indication of the trajectory of population change, which has an impact on a country's per capita natural resource availability and environmental conditions.

Details: A lower threshold of 0 was applied in calculating the ESI. All countries with growth rates of 0 or below received the same score.

Median: 47.17 **Minimum:** -34.96 **Maximum:** 260.7

Albania	51.71
Algeria	83.44
Argentina	47.17
Armenia	-0.50
Australia	29.72
Austria	-5.10
Azerbaijan	48.69
Bangladesh	64.53
Belarus	-14.73
Belgium	-2.40
Benin	182.32
Bhutan	132.04
Bolivia	87.24
Botswana	-25.95
Brazil	43.57
Bulgaria	-34.96
Burkina Faso	187.15
Burundi	165.73
Cameroon	124.76
Canada	30.81
Central African Republic	81.30
Chile	46.05
China	8.26
Colombia	83.20
Costa Rica	95.63
Croatia	-14.89
Cuba	-4.89
Czech Republic	-9.43
Denmark	15.05
Dominican Republic	76.75
Ecuador	67.56
Egypt	71.37
El Salvador	117.01
Estonia	-27.36
Ethiopia	193.05
Fiji	61.53
Finland	-7.67
France	9.68
Gabon	118.76
Germany	-10.76
Ghana	63.58
Greece	-8.93
Guatemala	154.03
Haiti	84.52
Honduras	79.46
Hungary	-19.80
Iceland	19.22
India	62.45
Indonesia	46.96
Iran	52.70
Ireland	19.34
Israel	51.60
Italy	-27.46
Jamaica	47.18
Japan	-20.79
Jordan	135.49
Kazakhstan	-12.60
Kenya	27.42
Korea, South	8.19
Kuwait	101.10
Kyrgyz Republic	24.53
Latvia	-27.69
Lebanon	54.62
Libya	109.31
Lithuania	-15.77
Macedonia	3.69
Madagascar	215.97
Malawi	41.82
Malaysia	107.27
Mali	179.09
Mauritius	23.30
Mexico	52.63
Moldova	-0.75
Mongolia	65.21
Morocco	60.25
Mozambique	20.07
Nepal	106.10
Netherlands	8.22
New Zealand	17.05
Nicaragua	128.62
Niger	182.42
Nigeria	146.14
Norway	13.02
Pakistan	89.20
Panama	49.21
Papua New Guinea	97.83
Paraguay	128.25
Peru	76.51
Philippines	73.80
Poland	-12.26
Portugal	-18.23
Romania	-20.56
Russian Federation	-12.07
Rwanda	23.20
Saudi Arabia	152.05
Senegal	144.01
Singapore	159.21
Slovak Republic	-12.89
Slovenia	-16.57
South Africa	-25.06
Spain	-22.04
Sri Lanka	35.09
Sudan	100.66
Sweden	3.86
Switzerland	3.00
Syria	113.89
Tanzania	150.04
Thailand	15.83
Togo	93.68
Trinidad and Tobago	19.15
Tunisia	56.29
Turkey	54.13
Uganda	260.70
Ukraine	-22.54
United Kingdom	7.38
United States	46.48
Uruguay	27.71
Uzbekistan	36.64
Venezuela	74.40
Vietnam	57.13
Zambia	111.74
Zimbabwe	-18.21

Reducing Human Vulnerability — Basic Human Sustenance

Variable Name: Daily Per Capita Calorie Supply as a Percentage of Total Requirements

Variable Code: CALOR **Variable Number:** 29

Units: Percent of Total Calorie Requirements

Reference Year: MRYA 1988-90

Source: World Resource Institute, World Development Indicators 1998-1999

Logic: This indicator represents a measure of the population vulnerability to malnutrition, famine or diseases, in addition to showing the incapacity of an economy to supply an adequate amount of food and to manage food resources.

Details: An upper treshold of 120 was applied in calculating the ESI. Countries with values higher than 120 were assigned a value of 120, based on considerations in the background paper: Bender, W. H., "An end use analysis of global food requirements", Food Policy, vol.19, n.4, August 1994.

Median: 112.5 **Minimum:** 73 **Maximum:** 157

Albania	107.00
Algeria	123.00
Argentina	131.00
Armenia	
Australia	124.00
Austria	133.00
Azerbaijan	
Bangladesh	88.00
Belarus	
Belgium	149.00
Benin	104.00
Bhutan	128.00
Bolivia	84.00
Botswana	97.00
Brazil	114.00
Bulgaria	148.00
Burkina Faso	94.00
Burundi	84.00
Cameroon	95.00
Canada	122.00
Central African Republic	82.00
Chile	102.00
China	112.00
Colombia	106.00
Costa Rica	121.00
Croatia	
Cuba	135.00
Czech Republic	
Denmark	135.00
Dominican Republic	102.00
Ecuador	105.00
Egypt	132.00
El Salvador	102.00
Estonia	
Ethiopia	73.00
Fiji	
Finland	113.00
France	143.00
Gabon	104.00
Germany	
Ghana	93.00

Greece	151.00
Guatemala	103.00
Haiti	89.00
Honduras	98.00
Hungary	137.00
Iceland	
India	101.00
Indonesia	121.00
Iran	125.00
Ireland	157.00
Israel	125.00
Italy	139.00
Jamaica	114.00
Japan	125.00
Jordan	110.00
Kazakhstan	
Kenya	89.00
Korea, South	120.00
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	127.00
Libya	140.00
Lithuania	
Macedonia	
Madagascar	95.00
Malawi	88.00
Malaysia	120.00
Mali	96.00
Mauritius	128.00
Mexico	131.00
Moldova	
Mongolia	97.00
Morocco	125.00
Mozambique	77.00
Nepal	100.00
Netherlands	114.00
New Zealand	131.00
Nicaragua	99.00
Niger	95.00
Nigeria	93.00

Norway	120.00
Pakistan	99.00
Panama	98.00
Papua New Guinea	114.00
Paraguay	116.00
Peru	87.00
Philippines	104.00
Poland	131.00
Portugal	136.00
Romania	116.00
Russian Federation	
Rwanda	82.00
Saudi Arabia	121.00
Senegal	98.00
Singapore	136.00
Slovak Republic	
Slovenia	
South Africa	128.00
Spain	141.00
Sri Lanka	101.00
Sudan	87.00
Sweden	111.00
Switzerland	130.00
Syria	126.00
Tanzania	95.00
Thailand	103.00
Togo	99.00
Trinidad and Tobago	114.00
Tunisia	131.00
Turkey	127.00
Uganda	93.00
Ukraine	
United Kingdom	130.00
United States	138.00
Uruguay	101.00
Uzbekistan	
Venezuela	99.00
Vietnam	
Zambia	87.00
Zimbabwe	94.00

Reducing Human Vulnerability — Basic Human Sustenance

Variable Name: Percentage of Population with Access to Improved Drinking Water Supply

Variable Code: WATSUP **Variable Number:** 30

Units: Percent of Population

Reference Year: 2000

Source: World Health Organization and the United Nations Children's Fund, *Global Water Supply and Sanitation Assessment 2000*, New York: WHO and UNICEF, 2000.

Logic: The percentage of population with access to improved sources of drinking water supply is directly related to the capacity of a country to provide a healthy environment, reducing the risks associated with water-related diseases and exposure to pollutants.

Details:

Median: 83.5 **Minimum:** 24 **Maximum:** 100

Albania	
Algeria	94.00
Argentina	79.00
Armenia	
Australia	100.00
Austria	100.00
Azerbaijan	
Bangladesh	97.00
Belarus	100.00
Belgium	
Benin	63.00
Bhutan	62.00
Bolivia	79.00
Botswana	95.00
Brazil	87.00
Bulgaria	100.00
Burkina Faso	53.00
Burundi	65.00
Cameroon	62.00
Canada	100.00
Central African Republic	60.00
Chile	94.00
China	75.00
Colombia	91.00
Costa Rica	98.00
Croatia	
Cuba	95.00
Czech Republic	
Denmark	100.00
Dominican Republic	79.00
Ecuador	71.00
Egypt	95.00
El Salvador	74.00
Estonia	
Ethiopia	24.00
Fiji	47.00
Finland	100.00
France	
Gabon	70.00
Germany	
Ghana	64.00

Greece	
Guatemala	92.00
Haiti	46.00
Honduras	90.00
Hungary	99.00
Iceland	
India	88.00
Indonesia	76.00
Iran	95.00
Ireland	
Israel	
Italy	
Jamaica	71.00
Japan	
Jordan	96.00
Kazakhstan	91.00
Kenya	49.00
Korea, South	92.00
Kuwait	
Kyrgyz Republic	77.00
Latvia	
Lebanon	100.00
Libya	72.00
Lithuania	
Macedonia	
Madagascar	47.00
Malawi	57.00
Malaysia	
Mali	65.00
Mauritius	100.00
Mexico	86.00
Moldova	100.00
Mongolia	60.00
Morocco	82.00
Mozambique	60.00
Nepal	81.00
Netherlands	100.00
New Zealand	
Nicaragua	79.00
Niger	59.00
Nigeria	57.00

Norway	100.00
Pakistan	88.00
Panama	87.00
Papua New Guinea	42.00
Paraguay	
Peru	77.00
Philippines	87.00
Poland	
Portugal	
Romania	58.00
Russian Federation	99.00
Rwanda	41.00
Saudi Arabia	95.00
Senegal	78.00
Singapore	100.00
Slovak Republic	100.00
Slovenia	100.00
South Africa	86.00
Spain	
Sri Lanka	83.00
Sudan	75.00
Sweden	100.00
Switzerland	100.00
Syria	80.00
Tanzania	54.00
Thailand	80.00
Togo	54.00
Trinidad and Tobago	86.00
Tunisia	80.00
Turkey	83.00
Uganda	50.00
Ukraine	
United Kingdom	100.00
United States	100.00
Uruguay	98.00
Uzbekistan	85.00
Venezuela	84.00
Vietnam	56.00
Zambia	64.00
Zimbabwe	85.00

Reducing Human Vulnerability — Environmental Health

Variable Name: Child Death Rate from Respiratory Diseases

Variable Code: DISRES **Variable Number:** 31

Units: Deaths/100,000 population

Reference Year: MRYA 1990-1998

Source: World Health Organisation. *1997-1999 World Health Statistics Annual*, Geneva: WHO, 2000, available at http://www.who.int/whosis/mort/download.htm

Logic: Indicator of the degree to which children are impacted by poor air quality.

Details: The final number is based on an aggregation of deaths recorded for WHO codes B31, B320, and B321, by sex and by age. These were then combined with UN Population Division population data broken down by age group to produce rates. See the main report for more details on the methodology.

Median: 3.53 **Minimum:** 0.24 **Maximum:** 179.57

Albania	40.92
Algeria	
Argentina	10.34
Armenia	
Australia	1.37
Austria	0.28
Azerbaijan	
Bangladesh	
Belarus	
Belgium	0.94
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	
Bulgaria	19.52
Burkina Faso	
Burundi	
Cameroon	
Canada	0.62
Central African Republic	
Chile	11.86
China	
Colombia	12.73
Costa Rica	6.35
Croatia	2.77
Cuba	5.11
Czech Republic	2.35
Denmark	
Dominican Republic	
Ecuador	32.80
Egypt	120.86
El Salvador	17.69
Estonia	5.12
Ethiopia	
Fiji	
Finland	0.41
France	0.78
Gabon	
Germany	0.51
Ghana	

Greece	1.63
Guatemala	
Haiti	
Honduras	
Hungary	4.04
Iceland	3.07
India	
Indonesia	
Iran	
Ireland	1.43
Israel	1.45
Italy	0.70
Jamaica	
Japan	1.52
Jordan	
Kazakhstan	46.00
Kenya	
Korea, South	2.55
Kuwait	3.53
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	3.11
Macedonia	
Madagascar	
Malawi	
Malaysia	
Mali	
Mauritius	4.70
Mexico	27.97
Moldova	33.59
Mongolia	179.57
Morocco	
Mozambique	
Nepal	
Netherlands	0.88
New Zealand	1.75
Nicaragua	26.20
Niger	
Nigeria	

Norway	0.24
Pakistan	
Panama	
Papua New Guinea	
Paraguay	20.03
Peru	
Philippines	46.49
Poland	2.67
Portugal	1.87
Romania	48.44
Russian Federation	
Rwanda	
Saudi Arabia	
Senegal	
Singapore	3.14
Slovak Republic	10.63
Slovenia	1.39
South Africa	19.57
Spain	0.64
Sri Lanka	
Sudan	
Sweden	1.03
Switzerland	
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	6.38
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	1.78
United States	
Uruguay	11.00
Uzbekistan	
Venezuela	19.07
Vietnam	
Zambia	
Zimbabwe	44.52

Reducing Human Vulnerability — Environmental Health

Variable Name: Death Rate from Intestinal Infectious Diseases

Variable Code: DISINT **Variable Number:** 32

Units: Deaths/100,000 population

Reference Year: MRYA 1990-1999

Source: World Health Organisation. *1997-1999 World Health Statistics Annual*, Geneva: WHO, 2000, available at http://www.who.int/whosis/mort/download.htm

Logic: Indicator of the degree to which the population is affected by poor sanitation and water quality, which are related to environmental conditions.

Details: The final number is based on an aggregation of deaths recorded for WHO code B01 for all age groups by sex. These were then combined with UN Population Division population data for the country in that particular year. The death rates were standardized to a common age structure. See the main report for more details on the methodology.

Median: 0.97 **Minimum:** 0.00 **Maximum:** 36.17

Albania	0.33
Algeria	
Argentina	1.95
Armenia	3.15
Australia	0.62
Austria	0.13
Azerbaijan	5.05
Bangladesh	
Belarus	0.43
Belgium	0.84
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	
Bulgaria	0.56
Burkina Faso	
Burundi	
Cameroon	
Canada	0.30
Central African Republic	
Chile	3.21
China	
Colombia	6.42
Costa Rica	9.28
Croatia	0.38
Cuba	9.51
Czech Republic	0.43
Denmark	
Dominican Republic	
Ecuador	14.28
Egypt	19.65
El Salvador	36.17
Estonia	0.31
Ethiopia	
Fiji	
Finland	0.97
France	0.97
Gabon	
Germany	0.34
Ghana	

Greece	0.00
Guatemala	
Haiti	
Honduras	
Hungary	0.25
Iceland	1.11
India	
Indonesia	
Iran	
Ireland	0.57
Israel	0.45
Italy	0.12
Jamaica	
Japan	0.88
Jordan	
Kazakhstan	3.24
Kenya	
Korea, South	2.62
Kuwait	0.26
Kyrgyz Republic	8.28
Latvia	0.23
Lebanon	
Libya	
Lithuania	0.34
Macedonia	
Madagascar	
Malawi	
Malaysia	
Mali	
Mauritius	2.15
Mexico	18.48
Moldova	1.04
Mongolia	2.06
Morocco	
Mozambique	
Nepal	
Netherlands	0.28
New Zealand	0.51
Nicaragua	24.07
Niger	
Nigeria	

Norway	1.33
Pakistan	
Panama	
Papua New Guinea	
Paraguay	16.00
Peru	
Philippines	13.78
Poland	0.11
Portugal	0.17
Romania	1.08
Russian Federation	0.90
Rwanda	
Saudi Arabia	
Senegal	
Singapore	1.24
Slovak Republic	0.24
Slovenia	0.29
South Africa	24.99
Spain	0.56
Sri Lanka	
Sudan	
Sweden	0.39
Switzerland	
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	4.97
Tunisia	
Turkey	
Uganda	
Ukraine	0.54
United Kingdom	0.75
United States	
Uruguay	4.30
Uzbekistan	9.58
Venezuela	20.16
Vietnam	
Zambia	
Zimbabwe	19.43

Reducing Human Vulnerability **Environmental Health**

Variable Name: Under-5 Mortality Rate

Variable Code: U5MORT **Variable Number:** 33

Units: Deaths Per 1,000 Live Births

Reference Year: 1998

Source: The United Nations Chidren's Fund (UNICEF), *The State of the World's Children 2000*, New York: UNICEF, 2000.

Logic: Under-5 mortality rate is a measure of the vulnerability of the most vulnerable population group.

Details: Deaths between birth and age five, divided by 1,000 live births.

Median: 35 **Minimum:** 4 **Maximum:** 300

Albania	151.00
Algeria	255.00
Argentina	72.00
Armenia	48.00
Australia	24.00
Austria	43.00
Azerbaijan	74.00
Bangladesh	247.00
Belarus	47.00
Belgium	35.00
Benin	300.00
Bhutan	300.00
Bolivia	255.00
Botswana	48.00
Brazil	42.00
Bulgaria	17.00
Burkina Faso	165.00
Burundi	176.00
Cameroon	153.00
Canada	6.00
Central African Republic	173.00
Chile	12.00
China	47.00
Colombia	30.00
Costa Rica	16.00
Croatia	9.00
Cuba	8.00
Czech Republic	6.00
Denmark	5.00
Dominican Republic	51.00
Ecuador	39.00
Egypt	69.00
El Salvador	34.00
Estonia	22.00
Ethiopia	173.00
Fiji	23.00
Finland	5.00
France	5.00
Gabon	144.00
Germany	5.00
Ghana	105.00

Greece	7.00
Guatemala	52.00
Haiti	130.00
Honduras	44.00
Hungary	11.00
Iceland	5.00
India	105.00
Indonesia	56.00
Iran	33.00
Ireland	7.00
Israel	6.00
Italy	6.00
Jamaica	11.00
Japan	4.00
Jordan	36.00
Kazakhstan	43.00
Kenya	117.00
Korea, South	5.00
Kuwait	13.00
Kyrgyz Republic	66.00
Latvia	22.00
Lebanon	35.00
Libya	24.00
Lithuania	23.00
Macedonia	27.00
Madagascar	157.00
Malawi	213.00
Malaysia	10.00
Mali	237.00
Mauritius	23.00
Mexico	34.00
Moldova	35.00
Mongolia	150.00
Morocco	70.00
Mozambique	206.00
Nepal	100.00
Netherlands	5.00
New Zealand	6.00
Nicaragua	48.00
Niger	280.00
Nigeria	187.00

Norway	4.00
Pakistan	136.00
Panama	20.00
Papua New Guinea	112.00
Paraguay	33.00
Peru	54.00
Philippines	44.00
Poland	11.00
Portugal	9.00
Romania	24.00
Russian Federation	25.00
Rwanda	170.00
Saudi Arabia	26.00
Senegal	121.00
Singapore	5.00
Slovak Republic	10.00
Slovenia	5.00
South Africa	83.00
Spain	6.00
Sri Lanka	19.00
Sudan	115.00
Sweden	4.00
Switzerland	5.00
Syria	32.00
Tanzania	142.00
Thailand	37.00
Togo	144.00
Trinidad and Tobago	18.00
Tunisia	32.00
Turkey	42.00
Uganda	134.00
Ukraine	22.00
United Kingdom	6.00
United States	8.00
Uruguay	19.00
Uzbekistan	58.00
Venezuela	25.00
Vietnam	42.00
Zambia	202.00
Zimbabwe	89.00

Social and Institutional Capacity — Science/Technology

Variable Name: Research & Development Scientists and Engineers per Million Population

Variable Code: RDPERS **Variable Number:** 34

Units: Scientists & Engineers/Million Population

Reference Year: MRYA 1980-1997

Source: United Nations Educational, Scientific and Cultural Organization (UNESCO), *Statistical Yearbook 1999*, Paris: UNESCO, 1999.

Logic: The greater the proportion of a country's population that is dedicated to research and development in a variety of scientific fields, the more capacity it has to respond effectively to environmental threats.

Details:

Median: 663.5 **Minimum:** 3 **Maximum:** 4909

Albania	
Algeria	
Argentina	660.00
Armenia	1,485.00
Australia	3,357.00
Austria	1,627.00
Azerbaijan	2,791.00
Bangladesh	52.00
Belarus	2,248.00
Belgium	2,272.00
Benin	176.00
Bhutan	
Bolivia	172.00
Botswana	
Brazil	168.00
Bulgaria	1,747.00
Burkina Faso	17.00
Burundi	33.00
Cameroon	
Canada	2,719.00
Central African Republic	56.00
Chile	455.00
China	454.00
Colombia	37.00
Costa Rica	532.00
Croatia	1,916.00
Cuba	1,612.00
Czech Republic	1,222.00
Denmark	3,259.00
Dominican Republic	
Ecuador	146.00
Egypt	459.00
El Salvador	20.00
Estonia	2,017.00
Ethiopia	
Fiji	
Finland	2,799.00
France	2,659.00
Gabon	234.00
Germany	2,831.00
Ghana	

Greece	773.00
Guatemala	104.00
Haiti	
Honduras	
Hungary	1,099.00
Iceland	4,131.00
India	149.00
Indonesia	182.00
Iran	560.00
Ireland	2,319.00
Israel	4,828.00
Italy	1,318.00
Jamaica	8.00
Japan	4,909.00
Jordan	94.00
Kazakhstan	
Kenya	
Korea, South	2,193.00
Kuwait	230.00
Kyrgyz Republic	584.00
Latvia	1,049.00
Lebanon	
Libya	362.00
Lithuania	2,028.00
Macedonia	1,335.00
Madagascar	12.00
Malawi	
Malaysia	93.00
Mali	
Mauritius	361.00
Mexico	214.00
Moldova	330.00
Mongolia	910.00
Morocco	
Mozambique	
Nepal	
Netherlands	2,219.00
New Zealand	1,663.00
Nicaragua	204.00
Niger	
Nigeria	15.00

Norway	3,664.00
Pakistan	72.00
Panama	252.00
Papua New Guinea	
Paraguay	
Peru	233.00
Philippines	157.00
Poland	1,358.00
Portugal	1,182.00
Romania	1,387.00
Russian Federation	3,587.00
Rwanda	35.00
Saudi Arabia	
Senegal	3.00
Singapore	2,318.00
Slovak Republic	1,866.00
Slovenia	2,251.00
South Africa	1,031.00
Spain	1,305.00
Sri Lanka	191.00
Sudan	
Sweden	3,826.00
Switzerland	3,006.00
Syria	30.00
Tanzania	
Thailand	103.00
Togo	98.00
Trinidad and Tobago	
Tunisia	125.00
Turkey	291.00
Uganda	21.00
Ukraine	2,171.00
United Kingdom	2,448.00
United States	3,676.00
Uruguay	667.00
Uzbekistan	1,763.00
Venezuela	209.00
Vietnam	334.00
Zambia	
Zimbabwe	

Social and Institutional Capacity — Science/Technology

Variable Name: Expenditure for Research & Development as a Percentage of GNP

Variable Code: RDEXP **Variable Number:** 35

Units: Percent of Gross National Product

Reference Year: MRYA 1980-1997

Source: United Nations Educational, Scientific and Cultural Organization (UNESCO), *Statistical Yearbook 1999*, Paris: UNESCO, 1999.

Logic: The greater the proportion of a country's annual GNP that is dedicated to research and development in a variety of scientific fields, the more capacity it has to respond effectively to environmental threats.

Details:

Median: 0.64 **Minimum:** 0.01 **Maximum:** 3.76

Albania	
Algeria	
Argentina	0.38
Armenia	
Australia	1.80
Austria	1.53
Azerbaijan	0.21
Bangladesh	0.03
Belarus	1.07
Belgium	1.60
Benin	0.70
Bhutan	
Bolivia	1.67
Botswana	
Brazil	0.81
Bulgaria	0.57
Burkina Faso	0.19
Burundi	0.31
Cameroon	
Canada	1.66
Central African Republic	0.25
Chile	0.68
China	0.66
Colombia	0.12
Costa Rica	0.21
Croatia	1.03
Cuba	0.84
Czech Republic	1.20
Denmark	1.95
Dominican Republic	
Ecuador	0.02
Egypt	0.22
El Salvador	2.20
Estonia	0.57
Ethiopia	
Fiji	
Finland	2.76
France	2.25
Gabon	0.01
Germany	2.41
Ghana	

Greece	0.47
Guatemala	0.16
Haiti	
Honduras	
Hungary	0.68
Iceland	1.55
India	0.73
Indonesia	0.07
Iran	0.48
Ireland	1.61
Israel	2.35
Italy	2.21
Jamaica	0.04
Japan	2.80
Jordan	0.26
Kazakhstan	0.32
Kenya	
Korea, South	2.82
Kuwait	0.16
Kyrgyz Republic	0.20
Latvia	0.43
Lebanon	
Libya	0.22
Lithuania	0.70
Macedonia	0.31
Madagascar	0.18
Malawi	
Malaysia	0.24
Mali	
Mauritius	0.32
Mexico	0.33
Moldova	0.90
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	2.08
New Zealand	1.04
Nicaragua	
Niger	
Nigeria	0.09

Norway	1.58
Pakistan	0.92
Panama	0.01
Papua New Guinea	
Paraguay	
Peru	0.25
Philippines	0.22
Poland	0.77
Portugal	0.62
Romania	0.72
Russian Federation	0.88
Rwanda	0.04
Saudi Arabia	
Senegal	0.01
Singapore	1.13
Slovak Republic	1.05
Slovenia	1.46
South Africa	0.70
Spain	0.90
Sri Lanka	0.19
Sudan	
Sweden	3.76
Switzerland	2.60
Syria	0.20
Tanzania	
Thailand	0.13
Togo	0.48
Trinidad and Tobago	
Tunisia	0.30
Turkey	0.45
Uganda	0.57
Ukraine	
United Kingdom	1.95
United States	2.63
Uruguay	
Uzbekistan	
Venezuela	0.49
Vietnam	
Zambia	
Zimbabwe	

Social and Institutional Capacity — Science/Technology

Variable Name: Scientific and technical articles per million population

Variable Code: ARTPOP **Variable Number:** 36

Units: Articles/Million Population

Reference Year: 1995

Source: National Science Board, *Science and Engineering Indicators - 1998*. Arlington, VA: National Science Foundation (NSF), 1998.

Logic: The rate at which a country's scientific estabilishment publishes articles in the natural and earth sciences is correlated with its capacity to respond to environmental problems.

Details:

Median: 109.36 **Minimum:** 1.84 **Maximum:** 395.6

Albania	
Algeria	
Argentina	26.92
Armenia	
Australia	281.29
Austria	150.49
Azerbaijan	
Bangladesh	
Belarus	
Belgium	183.98
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	10.24
Bulgaria	72.59
Burkina Faso	
Burundi	
Cameroon	
Canada	314.58
Central African Republic	
Chile	21.96
China	4.29
Colombia	
Costa Rica	
Croatia	66.77
Cuba	
Czech Republic	110.41
Denmark	271.01
Dominican Republic	
Ecuador	
Egypt	14.32
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	242.96
France	224.70
Gabon	
Germany	212.94
Ghana	

Greece	97.15
Guatemala	
Haiti	
Honduras	
Hungary	95.83
Iceland	197.47
India	6.27
Indonesia	
Iran	
Ireland	106.95
Israel	395.60
Italy	124.19
Jamaica	
Japan	174.76
Jordan	
Kazakhstan	
Kenya	2.87
Korea, South	53.15
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	
Mali	
Mauritius	
Mexico	10.02
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	254.10
New Zealand	271.56
Nicaragua	
Niger	
Nigeria	1.84

Norway	218.44
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	82.70
Portugal	50.73
Romania	
Russian Federation	93.62
Rwanda	
Saudi Arabia	
Senegal	
Singapore	178.88
Slovak Republic	108.32
Slovenia	124.12
South Africa	26.95
Spain	131.80
Sri Lanka	
Sudan	
Sweden	318.18
Switzerland	390.88
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	11.82
Uganda	
Ukraine	44.70
United Kingdom	250.36
United States	
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Social and Institutional Capacity

Capacity for Debate

Variable Name: IUCN Member Organizations per Million Population

Variable Code: IUCN **Variable Number:** 37

Units: Organizations/Million Population

Reference Year: 2000

Source: Membership List, IUCN-The World Conservation Union, 1 August 2000 (updated with new data on 10-Nov-00)

Logic: IUCN is the oldest international environmental membership organization, currently with over 900 members (governmental and NGO) worldwide, often including the most significant environmental NGOs in each country.

Details:

Median: 0.42 **Minimum:** 0.01 **Maximum:** 7.85

Albania	
Algeria	0.12
Argentina	0.68
Armenia	
Australia	2.19
Austria	0.78
Azerbaijan	
Bangladesh	0.13
Belarus	
Belgium	0.70
Benin	
Bhutan	
Bolivia	1.22
Botswana	6.27
Brazil	0.10
Bulgaria	0.23
Burkina Faso	0.33
Burundi	
Cameroon	0.09
Canada	1.08
Central African Republic	
Chile	0.23
China	0.01
Colombia	0.34
Costa Rica	2.62
Croatia	0.66
Cuba	
Czech Republic	0.49
Denmark	1.36
Dominican Republic	0.42
Ecuador	1.46
Egypt	0.05
El Salvador	1.37
Estonia	1.27
Ethiopia	0.02
Fiji	2.75
Finland	1.00
France	0.56
Gabon	
Germany	0.21
Ghana	0.20
Greece	0.59
Guatemala	1.26
Haiti	
Honduras	1.02
Hungary	0.39
Iceland	7.85
India	0.02
Indonesia	0.01
Iran	0.02
Ireland	0.86
Israel	0.86
Italy	0.33
Jamaica	1.27
Japan	0.17
Jordan	2.38
Kazakhstan	0.24
Kenya	0.30
Korea, South	0.14
Kuwait	1.40
Kyrgyz Republic	0.23
Latvia	0.37
Lebanon	2.74
Libya	0.23
Lithuania	0.54
Macedonia	0.52
Madagascar	0.09
Malawi	0.32
Malaysia	0.34
Mali	0.68
Mauritius	1.89
Mexico	0.11
Moldova	0.46
Mongolia	0.45
Morocco	0.25
Mozambique	0.21
Nepal	0.48
Netherlands	1.34
New Zealand	2.08
Nicaragua	0.52
Niger	0.26
Nigeria	0.03
Norway	1.41
Pakistan	0.18
Panama	3.34
Papua New Guinea	0.26
Paraguay	0.95
Peru	0.37
Philippines	0.05
Poland	0.21
Portugal	0.30
Romania	0.13
Russian Federation	0.05
Rwanda	
Saudi Arabia	0.19
Senegal	0.55
Singapore	1.33
Slovak Republic	0.57
Slovenia	0.52
South Africa	0.65
Spain	0.71
Sri Lanka	0.70
Sudan	0.04
Sweden	0.82
Switzerland	1.17
Syria	0.08
Tanzania	0.12
Thailand	0.05
Togo	0.28
Trinidad and Tobago	
Tunisia	0.61
Turkey	0.07
Uganda	0.30
Ukraine	0.06
United Kingdom	0.76
United States	0.21
Uruguay	1.61
Uzbekistan	0.05
Venezuela	0.36
Vietnam	0.04
Zambia	0.97
Zimbabwe	2.03

Social and Institutional Capacity — Capacity for Debate

Variable Name: Civil and Political Liberties

Variable Code: CIVLIB **Variable Number:** 38

Units: Index Ranging from 1 (High Levels of Liberties) to 7 (Low Levels)

Reference Year: 2000

Source: Freedom House, *Freedom in the World 1999-2000*, New York: Freedom House, 2000, http://www.freedomhouse.org/research/freeworld/2000/table5.htm

Logic: In countries that guarantee freedom of expression, rights to organize, rule of law, economic rights, and multi-party elections, there is more likely to be a vigorous public debate about values and issues relevant to environmental quality, and legal safeguards that encourage innovation.

Details:

Median: 3 **Minimum:** 1 **Maximum:** 7

Albania	4.50
Algeria	5.50
Argentina	2.50
Armenia	4.00
Australia	1.00
Austria	1.00
Azerbaijan	5.00
Bangladesh	3.50
Belarus	6.00
Belgium	1.50
Benin	2.50
Bhutan	6.50
Bolivia	2.00
Botswana	2.00
Brazil	3.50
Bulgaria	2.50
Burkina Faso	4.00
Burundi	6.00
Cameroon	6.50
Canada	1.00
Central African Republic	3.50
Chile	2.00
China	6.50
Colombia	4.00
Costa Rica	1.50
Croatia	4.00
Cuba	7.00
Czech Republic	1.50
Denmark	1.00
Dominican Republic	2.50
Ecuador	2.50
Egypt	5.50
El Salvador	2.50
Estonia	1.50
Ethiopia	5.00
Fiji	2.50
Finland	1.00
France	1.50
Gabon	4.50
Germany	1.50
Ghana	3.00
Greece	2.00
Guatemala	3.50
Haiti	5.00
Honduras	3.00
Hungary	1.50
Iceland	1.00
India	2.50
Indonesia	4.00
Iran	6.00
Ireland	1.00
Israel	1.50
Italy	1.50
Jamaica	2.00
Japan	1.50
Jordan	4.00
Kazakhstan	5.50
Kenya	5.50
Korea, South	2.00
Kuwait	4.50
Kyrgyz Republic	5.00
Latvia	1.50
Lebanon	5.50
Libya	7.00
Lithuania	1.50
Macedonia	3.00
Madagascar	3.00
Malawi	3.00
Malaysia	5.00
Mali	3.00
Mauritius	1.50
Mexico	3.50
Moldova	3.00
Mongolia	2.50
Morocco	4.50
Mozambique	3.50
Nepal	3.50
Netherlands	1.00
New Zealand	1.00
Nicaragua	3.00
Niger	5.00
Nigeria	3.50
Norway	1.00
Pakistan	6.00
Panama	1.50
Papua New Guinea	2.50
Paraguay	3.50
Peru	4.50
Philippines	2.50
Poland	1.50
Portugal	1.00
Romania	2.00
Russian Federation	4.50
Rwanda	6.50
Saudi Arabia	7.00
Senegal	4.00
Singapore	5.00
Slovak Republic	1.50
Slovenia	1.50
South Africa	1.50
Spain	1.50
Sri Lanka	3.50
Sudan	7.00
Sweden	1.00
Switzerland	1.00
Syria	7.00
Tanzania	4.00
Thailand	2.50
Togo	5.00
Trinidad and Tobago	1.50
Tunisia	5.50
Turkey	4.50
Uganda	5.00
Ukraine	3.50
United Kingdom	1.50
United States	1.00
Uruguay	1.50
Uzbekistan	6.50
Venezuela	4.00
Vietnam	7.00
Zambia	4.50
Zimbabwe	5.50

Social and Institutional Capacity — Regulation and Management

Variable Name: Stringency and Consistency of Environmental Regulations

Variable Code: WEFSTR **Variable Number:** 39

Units: Survey Responses Ranging from 1 (Strongly Disagree) to 7 (Strongly Agree)

Reference Year: 2000

Source: Michael E. Porter et al, *The Global Competitiveness Report 2000*, Oxford: Oxford University Press, 2000.

Logic: Stronger regulations prompt more effective action, other things equal.

Details: Average of responses to the following survey questions: "Air pollution regulations are among the world's most stringent"; "Water pollution regulations are among the world's most stringent"; "Environmental regulations are enforced consistently and fairly"; and "Environmental regulations are typically enacted ahead of most other countries."

Median: 3.86 **Minimum:** 2.35 **Maximum:** 6.45

Albania	
Algeria	
Argentina	2.90
Armenia	
Australia	5.53
Austria	6.30
Azerbaijan	
Bangladesh	
Belarus	
Belgium	5.20
Benin	
Bhutan	
Bolivia	2.40
Botswana	
Brazil	3.83
Bulgaria	3.20
Burkina Faso	
Burundi	
Cameroon	
Canada	5.50
Central African Republic	
Chile	3.85
China	2.85
Colombia	3.23
Costa Rica	3.90
Croatia	
Cuba	
Czech Republic	4.35
Denmark	6.38
Dominican Republic	
Ecuador	3.00
Egypt	3.35
El Salvador	2.35
Estonia	
Ethiopia	
Fiji	
Finland	6.38
France	5.30
Gabon	
Germany	6.45
Ghana	

Greece	3.65
Guatemala	
Haiti	
Honduras	
Hungary	3.88
Iceland	4.63
India	2.78
Indonesia	2.63
Iran	
Ireland	4.55
Israel	4.13
Italy	4.48
Jamaica	
Japan	5.60
Jordan	3.65
Kazakhstan	
Kenya	
Korea, South	4.15
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	3.83
Mali	
Mauritius	3.10
Mexico	3.53
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	6.08
New Zealand	5.35
Nicaragua	
Niger	
Nigeria	

Norway	5.65
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	2.80
Philippines	2.55
Poland	3.48
Portugal	4.13
Romania	
Russian Federation	3.40
Rwanda	
Saudi Arabia	
Senegal	
Singapore	5.85
Slovak Republic	3.93
Slovenia	
South Africa	3.75
Spain	4.40
Sri Lanka	
Sudan	
Sweden	6.10
Switzerland	6.13
Syria	
Tanzania	
Thailand	2.98
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	3.63
Uganda	
Ukraine	2.98
United Kingdom	5.40
United States	5.88
Uruguay	
Uzbekistan	
Venezuela	2.88
Vietnam	2.63
Zambia	
Zimbabwe	2.70

Social and Institutional Capacity — Regulation and Management

Variable Name: Degree to which Environmental Regulations Promote Innovation

Variable Code: WEFINN **Variable Number:** 40

Units: Survey Responses Ranging from 1 (Strongly Disagree) to 7 (Strongly Agree)

Reference Year: 2000

Source: Michael E. Porter et al, *The Global Competitiveness Report 2000*, Oxford: Oxford University Press, 2000.

Logic: Where regulations and management strategies prompt effective innovation, better results follow.

Details: Average of responses to the following survey questions: "Environmental regulations are flexible and offer many points for achieving compliance"; and "Environmental regulations are transparent and stable".

Median: 4.03 **Minimum:** 2.75 **Maximum:** 5.7

Albania	
Algeria	
Argentina	3.60
Armenia	
Australia	4.80
Austria	4.75
Azerbaijan	
Bangladesh	
Belarus	
Belgium	4.45
Benin	
Bhutan	
Bolivia	3.35
Botswana	
Brazil	3.95
Bulgaria	3.60
Burkina Faso	
Burundi	
Cameroon	
Canada	4.90
Central African Republic	
Chile	3.60
China	3.90
Colombia	3.80
Costa Rica	3.90
Croatia	
Cuba	
Czech Republic	4.05
Denmark	5.10
Dominican Republic	
Ecuador	2.75
Egypt	4.00
El Salvador	2.85
Estonia	
Ethiopia	
Fiji	
Finland	5.70
France	4.30
Gabon	
Germany	4.60
Ghana	

Greece	4.00
Guatemala	
Haiti	
Honduras	
Hungary	3.95
Iceland	4.70
India	3.70
Indonesia	3.60
Iran	
Ireland	4.75
Israel	4.15
Italy	3.85
Jamaica	
Japan	4.85
Jordan	4.25
Kazakhstan	
Kenya	
Korea, South	4.00
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	4.25
Mali	
Mauritius	3.70
Mexico	3.85
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	5.00
New Zealand	4.80
Nicaragua	
Niger	
Nigeria	

Norway	5.00
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	3.70
Philippines	3.65
Poland	3.70
Portugal	4.15
Romania	
Russian Federation	4.00
Rwanda	
Saudi Arabia	
Senegal	
Singapore	5.55
Slovak Republic	4.10
Slovenia	
South Africa	4.25
Spain	4.25
Sri Lanka	
Sudan	
Sweden	5.00
Switzerland	5.15
Syria	
Tanzania	
Thailand	3.60
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	4.15
Uganda	
Ukraine	3.40
United Kingdom	4.90
United States	4.65
Uruguay	
Uzbekistan	
Venezuela	3.50
Vietnam	3.35
Zambia	
Zimbabwe	3.75

Social and Institutional Capacity — Regulation and Management

Variable Name: Percentage of Land Area Under Protected Status

Variable Code: PRAREA **Variable Number:** 41

Units: Percent Land Area

Reference Year: 1997

Source: World Resources Institute, *World Resources 2000-01,* Washington, DC: World Resources Institute, 2000.

Logic: The percentage of land area dedicated to protected areas represents a proxy for the investment by the country in biodiversity conservation.

Details:

Median: 6.47 **Minimum:** 0.00 **Maximum:** 43.08

Albania	2.76
Algeria	2.47
Argentina	1.70
Armenia	7.59
Australia	6.99
Austria	28.33
Azerbaijan	5.49
Bangladesh	0.75
Belarus	4.16
Belgium	2.59
Benin	7.03
Bhutan	21.23
Bolivia	14.39
Botswana	18.52
Brazil	4.20
Bulgaria	4.44
Burkina Faso	10.44
Burundi	5.61
Cameroon	4.51
Canada	9.99
Central African Republic	8.20
Chile	18.88
China	6.44
Colombia	9.01
Costa Rica	13.75
Croatia	6.70
Cuba	17.37
Czech Republic	15.83
Denmark	32.24
Dominican Republic	31.48
Ecuador	43.08
Egypt	0.80
El Salvador	0.25
Estonia	12.00
Ethiopia	5.52
Fiji	1.03
Finland	5.99
France	11.66
Gabon	2.81
Germany	26.95
Ghana	4.85

Greece	2.24
Guatemala	16.83
Haiti	0.35
Honduras	9.94
Hungary	6.81
Iceland	9.70
India	4.80
Indonesia	9.66
Iran	5.12
Ireland	0.86
Israel	14.92
Italy	7.30
Jamaica	0.14
Japan	6.77
Jordan	3.35
Kazakhstan	2.75
Kenya	6.16
Korea, South	6.91
Kuwait	1.52
Kyrgyz Republic	3.59
Latvia	12.48
Lebanon	0.34
Libya	0.10
Lithuania	9.96
Macedonia	7.08
Madagascar	1.92
Malawi	11.25
Malaysia	4.51
Mali	3.71
Mauritius	6.01
Mexico	2.39
Moldova	1.18
Mongolia	10.30
Morocco	0.71
Mozambique	6.09
Nepal	7.77
Netherlands	6.71
New Zealand	23.59
Nicaragua	7.44
Niger	7.65
Nigeria	3.32

Norway	6.76
Pakistan	4.83
Panama	19.09
Papua New Guinea	0.02
Paraguay	3.53
Peru	2.70
Philippines	4.87
Poland	9.56
Portugal	6.50
Romania	4.66
Russian Federation	3.06
Rwanda	14.68
Saudi Arabia	2.31
Senegal	11.32
Singapore	4.43
Slovak Republic	21.76
Slovenia	5.70
South Africa	5.39
Spain	8.44
Sri Lanka	13.28
Sudan	3.64
Sweden	9.01
Switzerland	18.03
Syria	0.00
Tanzania	15.64
Thailand	13.09
Togo	7.87
Trinidad and Tobago	3.04
Tunisia	0.29
Turkey	1.39
Uganda	9.57
Ukraine	1.55
United Kingdom	20.46
United States	13.39
Uruguay	0.26
Uzbekistan	2.05
Venezuela	36.25
Vietnam	3.05
Zambia	8.56
Zimbabwe	7.93

Social and Institutional Capacity — Regulation and Management

Variable Name: Number of Sectoral EIA Guidelines

Variable Code: EIA **Variable Number:** 42

Units: Number of Guidelines

Reference Year: 1998

Source: IIED, WRI and IUCN. *A Directory of Impact Assessment Guidelines (Second Edition), London: International Institute for Environment and Development (IIED), 1998.*

Logic: Environmental Impact Assessment represents an important tool for promoting sound environmental management.

Details:

Median: 0 **Minimum:** 0 **Maximum:** 13

Albania	0.00
Algeria	0.00
Argentina	6.00
Armenia	0.00
Australia	1.00
Austria	1.00
Azerbaijan	0.00
Bangladesh	3.00
Belarus	0.00
Belgium	9.00
Benin	0.00
Bhutan	0.00
Bolivia	7.00
Botswana	0.00
Brazil	2.00
Bulgaria	0.00
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	9.00
Central African Republic	0.00
Chile	9.00
China	1.00
Colombia	2.00
Costa Rica	8.00
Croatia	0.00
Cuba	0.00
Czech Republic	1.00
Denmark	1.00
Dominican Republic	0.00
Ecuador	1.00
Egypt	11.00
El Salvador	0.00
Estonia	0.00
Ethiopia	0.00
Fiji	0.00
Finland	5.00
France	7.00
Gabon	0.00
Germany	3.00
Ghana	1.00
Greece	1.00
Guatemala	0.00
Haiti	0.00
Honduras	0.00
Hungary	0.00
Iceland	0.00
India	9.00
Indonesia	5.00
Iran	0.00
Ireland	2.00
Israel	0.00
Italy	4.00
Jamaica	0.00
Japan	0.00
Jordan	0.00
Kazakhstan	0.00
Kenya	1.00
Korea, South	0.00
Kuwait	2.00
Kyrgyz Republic	0.00
Latvia	0.00
Lebanon	0.00
Libya	0.00
Lithuania	0.00
Macedonia	0.00
Madagascar	0.00
Malawi	2.00
Malaysia	13.00
Mali	0.00
Mauritius	0.00
Mexico	2.00
Moldova	0.00
Mongolia	0.00
Morocco	0.00
Mozambique	1.00
Nepal	6.00
Netherlands	3.00
New Zealand	3.00
Nicaragua	0.00
Niger	1.00
Nigeria	1.00
Norway	0.00
Pakistan	8.00
Panama	0.00
Papua New Guinea	0.00
Paraguay	4.00
Peru	6.00
Philippines	1.00
Poland	0.00
Portugal	7.00
Romania	0.00
Russian Federation	2.00
Rwanda	0.00
Saudi Arabia	0.00
Senegal	0.00
Singapore	1.00
Slovak Republic	8.00
Slovenia	0.00
South Africa	8.00
Spain	6.00
Sri Lanka	2.00
Sudan	0.00
Sweden	3.00
Switzerland	6.00
Syria	0.00
Tanzania	1.00
Thailand	7.00
Togo	0.00
Trinidad and Tobago	0.00
Tunisia	0.00
Turkey	0.00
Uganda	0.00
Ukraine	0.00
United Kingdom	9.00
United States	9.00
Uruguay	0.00
Uzbekistan	0.00
Venezuela	2.00
Vietnam	2.00
Zambia	0.00
Zimbabwe	9.00

Social and Institutional Capacity — Private Sector Responsiveness

Variable Name: ISO 14001 Certified Companies per Million Dollars GDP

Variable Code: ISO14 **Variable Number:** 43

Units: Number of ISO 14001 Certified Companies/Million US Dollars GDP

Reference Year: 2000

Source: ISO14001/EMAS registered companies, ISO World, International Standards Organisation, available at http://www.ecology.or.jp/isoworld/english/analy14k.htm, visited November 2000.

Logic: ISO 14001 specifies standards for corporate environmental management. The commitment to ISO 14001 certification serves as a proxy for the degree to which industries are instituting management practices that reduce waste and resource consumption.

Details:

Median: 0.05 **Minimum:** 0.03 **Maximum:** 30.8

Albania	0.00
Algeria	0.00
Argentina	2.58
Armenia	0.00
Australia	13.45
Austria	0.00
Azerbaijan	0.00
Bangladesh	0.00
Belarus	0.00
Belgium	0.00
Benin	0.00
Bhutan	0.00
Bolivia	0.00
Botswana	0.00
Brazil	2.75
Bulgaria	0.00
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	4.21
Central African Republic	0.00
Chile	0.78
China	0.94
Colombia	0.95
Costa Rica	8.22
Croatia	2.62
Cuba	0.00
Czech Republic	7.85
Denmark	0.00
Dominican Republic	0.31
Ecuador	0.32
Egypt	4.09
El Salvador	0.00
Estonia	3.31
Ethiopia	0.00
Fiji	3.25
Finland	0.00
France	0.00
Gabon	0.00
Germany	0.00
Ghana	0.00
Greece	0.00
Guatemala	0.33
Haiti	0.00
Honduras	1.69
Hungary	14.43
Iceland	0.00
India	1.56
Indonesia	1.59
Iran	0.45
Ireland	0.00
Israel	4.47
Italy	0.00
Jamaica	0.00
Japan	14.77
Jordan	5.17
Kazakhstan	0.00
Kenya	0.00
Korea, South	8.01
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	0.65
Lebanon	4.52
Libya	0.00
Lithuania	0.42
Macedonia	0.00
Madagascar	0.00
Malawi	0.00
Malaysia	12.95
Mali	0.00
Mauritius	3.42
Mexico	2.31
Moldova	0.00
Mongolia	0.00
Morocco	0.63
Mozambique	0.00
Nepal	0.00
Netherlands	0.00
New Zealand	10.33
Nicaragua	0.00
Niger	0.00
Nigeria	0.14
Norway	0.00
Pakistan	0.10
Panama	0.00
Papua New Guinea	0.00
Paraguay	0.55
Peru	1.08
Philippines	2.46
Poland	1.89
Portugal	0.00
Romania	0.08
Russian Federation	0.03
Rwanda	0.00
Saudi Arabia	0.31
Senegal	0.00
Singapore	27.25
Slovak Republic	7.06
Slovenia	8.39
South Africa	3.39
Spain	0.00
Sri Lanka	0.39
Sudan	0.00
Sweden	0.00
Switzerland	30.80
Syria	0.56
Tanzania	0.00
Thailand	9.40
Togo	0.00
Trinidad and Tobago	1.10
Tunisia	0.23
Turkey	1.80
Uganda	0.00
Ukraine	0.06
United Kingdom	0.00
United States	1.22
Uruguay	3.73
Uzbekistan	0.00
Venezuela	0.62
Vietnam	0.80
Zambia	3.84
Zimbabwe	1.14

Social and Institutional Capacity — Private Sector Responsiveness

Variable Name: Dow Jones Sustainability Group Index

Variable Code: DJSGI **Variable Number:** 44

Units: Percentage

Reference Year: 2000

Source: "Assessment of the Country Allocation of the Dow Jones Sustainability Group Index", SAM Sustainability Group, 2001.

Logic: The Dow Jones Sustainability Group Index tracks a group of companies that have been rated as the top 10% in terms of sustainability. Firms that are already in the Dow Jones Global Index are eligible to enter the Sustainability Group Index. Countries in which a higher percentage of eligible firms meet the requirements have a private sector that is contributing more vigorously to environmental sustainability.

Details: For each country, the number of companies in the Sustainability Index was divided by the number of companies in the Global Index.

Median: 10.73 **Minimum:** 0.00 **Maximum:** 46.34

Albania	
Algeria	
Argentina	
Armenia	
Australia	25.00
Austria	33.33
Azerbaijan	
Bangladesh	
Belarus	
Belgium	22.22
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	11.76
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	17.20
Central African Republic	
Chile	10.00
China	
Colombia	
Costa Rica	
Croatia	
Cuba	
Czech Republic	
Denmark	28.57
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	33.33
France	8.57
Gabon	
Germany	46.34
Ghana	

Greece	10.34
Guatemala	
Haiti	
Honduras	
Hungary	
Iceland	
India	
Indonesia	0.00
Iran	
Ireland	11.11
Israel	
Italy	9.52
Jamaica	
Japan	7.10
Jordan	
Kazakhstan	
Kenya	
Korea, South	10.00
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	
Mali	
Mauritius	
Mexico	20.59
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	
New Zealand	25.00
Nicaragua	
Niger	
Nigeria	

Norway	
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	7.69
Poland	
Portugal	
Romania	
Russian Federation	
Rwanda	
Saudi Arabia	
Senegal	
Singapore	6.98
Slovak Republic	
Slovenia	
South Africa	2.86
Spain	17.39
Sri Lanka	
Sudan	
Sweden	40.74
Switzerland	42.31
Syria	
Tanzania	
Thailand	20.00
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	19.08
United States	7.56
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Social and Institutional Capacity

Private Sector Responsiveness

Variable Name: Average Innovest EcoValue '21 Rating of Firms

Variable Code: ECOVAL **Variable Number:** 45

Units: Scale ranging from -3 (low) to 3 (high)

Reference Year: 2001

Source: Innovest Strategic Value Advisors

Logic: The Innnovest EcoValue '21 rating measures environmental performance at the firm level.

Details: Within each country, EcoValue levels were weighted by market capitalization share and then averaged to get a value for the individual country, based on the location of company headquarters.

Median: 0.83 **Minimum:** -3 **Maximum:** 2.34

Albania	
Algeria	
Argentina	
Armenia	
Australia	-3.00
Austria	
Azerbaijan	
Bangladesh	
Belarus	
Belgium	-0.82
Benin	
Bhutan	
Bolivia	
Botswana	
Brazil	
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	1.36
Central African Republic	
Chile	
China	
Colombia	
Costa Rica	
Croatia	
Cuba	
Czech Republic	
Denmark	2.15
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	
Ethiopia	
Fiji	
Finland	1.95
France	-0.48
Gabon	
Germany	0.59
Ghana	

Greece	
Guatemala	
Haiti	
Honduras	
Hungary	
Iceland	
India	
Indonesia	
Iran	
Ireland	2.00
Israel	
Italy	-2.01
Jamaica	
Japan	1.69
Jordan	
Kazakhstan	
Kenya	
Korea, South	
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	-3.00
Mali	
Mauritius	
Mexico	-3.00
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	1.30
New Zealand	
Nicaragua	
Niger	
Nigeria	

Norway	2.00
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	
Poland	
Portugal	
Romania	
Russian Federation	
Rwanda	
Saudi Arabia	
Senegal	
Singapore	-2.97
Slovak Republic	
Slovenia	
South Africa	
Spain	-0.96
Sri Lanka	
Sudan	
Sweden	2.34
Switzerland	1.40
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	
Uganda	
Ukraine	
United Kingdom	1.07
United States	0.33
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	
Zambia	
Zimbabwe	

Social and Institutional Capacity — Private Sector Responsiveness

Variable Name: World Business Council on Sustainable Development Members (per million dollars GDP)

Variable Code: WBCSD **Variable Number:** 46

Units: Members per Million Dollars GDP

Reference Year: 2001

Source: World Business Council on Sustainable Development, "List of Members," http://www.wbcsd.org/memlist2.htm, visited 6 January 2001.

Logic: The WBCSD is a prominent private-sector organization promoting the principles of sustainable development and encouraging high standards of environmental management within firms.

Details:

Median: 0.00 **Minimum:** 0.00 **Maximum:** 1148.45

Albania	0.00
Algeria	208.68
Argentina	0.00
Armenia	0.00
Australia	133.62
Austria	0.00
Azerbaijan	0.00
Bangladesh	0.00
Belarus	0.00
Belgium	0.00
Benin	0.00
Bhutan	0.00
Bolivia	0.00
Botswana	0.00
Brazil	452.85
Bulgaria	0.00
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	254.43
Central African Republic	0.00
Chile	113.81
China	322.03
Colombia	0.00
Costa Rica	167.04
Croatia	148.17
Cuba	0.00
Czech Republic	161.79
Denmark	123.88
Dominican Republic	0.00
Ecuador	0.00
Egypt	0.00
El Salvador	0.00
Estonia	0.00
Ethiopia	0.00
Fiji	0.00
Finland	191.87
France	283.35
Gabon	0.00
Germany	360.86
Ghana	0.00
Greece	0.00
Guatemala	0.00
Haiti	0.00
Honduras	0.00
Hungary	0.00
Iceland	0.00
India	0.00
Indonesia	0.00
Iran	0.00
Ireland	0.00
Israel	0.00
Italy	145.74
Jamaica	0.00
Japan	859.94
Jordan	0.00
Kazakhstan	0.00
Kenya	0.00
Korea, South	222.59
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	0.00
Lebanon	0.00
Libya	0.00
Lithuania	0.00
Macedonia	0.00
Madagascar	0.00
Malawi	0.00
Malaysia	0.00
Mali	0.00
Mauritius	0.00
Mexico	389.41
Moldova	0.00
Mongolia	0.00
Morocco	0.00
Mozambique	0.00
Nepal	0.00
Netherlands	270.56
New Zealand	57.84
Nicaragua	0.00
Niger	0.00
Nigeria	0.00
Norway	0.00
Pakistan	0.00
Panama	0.00
Papua New Guinea	0.00
Paraguay	233.23
Peru	0.00
Philippines	0.00
Poland	0.00
Portugal	204.06
Romania	0.00
Russian Federation	619.20
Rwanda	0.00
Saudi Arabia	0.00
Senegal	0.00
Singapore	0.00
Slovak Republic	0.00
Slovenia	0.00
South Africa	117.82
Spain	0.00
Sri Lanka	0.00
Sudan	0.00
Sweden	0.00
Switzerland	470.36
Syria	0.00
Tanzania	0.00
Thailand	183.30
Togo	0.00
Trinidad and Tobago	0.00
Tunisia	0.00
Turkey	0.00
Uganda	0.00
Ukraine	0.00
United Kingdom	688.42
United States	1,148.45
Uruguay	0.00
Uzbekistan	0.00
Venezuela	0.00
Vietnam	0.00
Zambia	0.00
Zimbabwe	0.00

Social and Institutional Capacity — Private Sector Responsiveness

Variable Name: Levels of Environmental Competitiveness

Variable Code: WEFCOM **Variable Number:** 47

Units: Survey Responses Ranging from 1 (Strongly Disagree) to 7 (Strongly Agree)

Reference Year: 2000

Source: Michael E. Porter et al, *The Global Competitiveness Report 2000*, Oxford: Oxford University Press, 2000.

Logic: In countries where compliance with environmental standards is seen as beneficial to the economic interests of firms, the prospects for environmental sustainability are enhanced.

Details: Response to the statement "Complying with environmental standards has a positive influence on long-term competitiveness by prompting companies to improve products and processes."

Median: 4.35 **Minimum:** 3.20 **Maximum:** 5.90

Albania	
Algeria	
Argentina	4.10
Armenia	
Australia	5.30
Austria	5.40
Azerbaijan	
Bangladesh	
Belarus	
Belgium	5.20
Benin	
Bhutan	
Bolivia	3.50
Botswana	
Brazil	4.60
Bulgaria	3.60
Burkina Faso	
Burundi	
Cameroon	
Canada	5.10
Central African Republic	
Chile	4.20
China	4.30
Colombia	3.90
Costa Rica	4.50
Croatia	
Cuba	
Czech Republic	4.70
Denmark	5.70
Dominican Republic	
Ecuador	4.20
Egypt	4.30
El Salvador	3.30
Estonia	
Ethiopia	
Fiji	
Finland	5.80
France	4.90
Gabon	
Germany	5.50
Ghana	
Greece	4.00
Guatemala	
Haiti	
Honduras	
Hungary	4.10
Iceland	5.10
India	3.90
Indonesia	3.60
Iran	
Ireland	4.70
Israel	4.40
Italy	4.30
Jamaica	
Japan	5.40
Jordan	4.20
Kazakhstan	
Kenya	
Korea, South	4.60
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	4.20
Mali	
Mauritius	3.70
Mexico	4.40
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	5.60
New Zealand	5.00
Nicaragua	
Niger	
Nigeria	
Norway	5.40
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	4.00
Philippines	3.70
Poland	3.80
Portugal	4.50
Romania	
Russian Federation	3.50
Rwanda	
Saudi Arabia	
Senegal	
Singapore	5.90
Slovak Republic	4.30
Slovenia	
South Africa	4.40
Spain	5.00
Sri Lanka	
Sudan	
Sweden	5.40
Switzerland	5.60
Syria	
Tanzania	
Thailand	3.50
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	4.20
Uganda	
Ukraine	3.20
United Kingdom	5.00
United States	5.00
Uruguay	
Uzbekistan	
Venezuela	3.60
Vietnam	3.50
Zambia	
Zimbabwe	4.10

Social and Institutional Capacity — Environmental Information

Variable Name: Availability of Sustainable Development Information at the National Level

Variable Code: SDINFO **Variable Number:** 48

Units: Index Ranging from 1 (Low Levels of SD Information) to 4 (High Levels)

Reference Year: 1997

Source: United Nations Department of Economic and Social Affairs web site, http://www.un.org/esa/agenda21/natlinfo/agenda21/issue/inst.htm#info, visited December 1999.

Logic: Agenda 21 represents a major effort to frame the sustainable development agenda, and therefore the quality of information related to Agenda 21 chapters has a direct bearing on decision-makers' abilities to pursue sustainability.

Details: In their reports to Rio+5 in 1997, countries rated themselves on the availability of information pertaining to chapters of Agenda 21 (from 1 for low levels of information, to 4 for high levels). We averaged the scores for seven key chapters, included Chapter 9 on protection of the atmosphere, Chapter 14 on sustainable agriculture and rural development, Chapter 15 on conservation of biological diversity, Chapter 18 on freshwater resources, Chapter 19 on toxic chemicals, Chapter 21 on solid wastes, and Chapter 40 on information for decision-making.

Median: 2.57 **Minimum:** 1.50 **Maximum:** 4.00

Albania	3.00
Algeria	2.29
Argentina	
Armenia	
Australia	
Austria	3.57
Azerbaijan	
Bangladesh	1.50
Belarus	
Belgium	
Benin	2.50
Bhutan	
Bolivia	2.00
Botswana	
Brazil	2.00
Bulgaria	
Burkina Faso	
Burundi	
Cameroon	
Canada	2.50
Central African Republic	
Chile	
China	
Colombia	2.00
Costa Rica	2.86
Croatia	
Cuba	2.83
Czech Republic	
Denmark	3.00
Dominican Republic	
Ecuador	2.57
Egypt	2.71
El Salvador	
Estonia	2.57
Ethiopia	
Fiji	2.17
Finland	3.14
France	2.83
Gabon	
Germany	3.14

Ghana	
Greece	2.29
Guatemala	
Haiti	1.57
Honduras	
Hungary	2.43
Iceland	3.00
India	
Indonesia	
Iran	
Ireland	3.43
Israel	3.29
Italy	
Jamaica	
Japan	2.86
Jordan	
Kazakhstan	
Kenya	
Korea, South	
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	2.29
Libya	
Lithuania	3.00
Macedonia	2.71
Madagascar	
Malawi	2.00
Malaysia	2.43
Mali	
Mauritius	2.14
Mexico	2.14
Moldova	
Mongolia	2.57
Morocco	
Mozambique	
Nepal	3.43
Netherlands	3.57
New Zealand	1.86
Nicaragua	3.29

Niger	
Nigeria	
Norway	3.14
Pakistan	
Panama	2.00
Papua New Guinea	
Paraguay	1.71
Peru	
Philippines	1.83
Poland	2.17
Portugal	2.71
Romania	
Russian Federation	2.14
Rwanda	
Saudi Arabia	
Senegal	
Singapore	
Slovak Republic	3.50
Slovenia	2.86
South Africa	2.00
Spain	3.57
Sri Lanka	
Sudan	
Sweden	
Switzerland	3.00
Syria	2.00
Tanzania	
Thailand	2.71
Togo	
Trinidad and Tobago	
Tunisia	2.14
Turkey	2.29
Uganda	2.00
Ukraine	3.00
United Kingdom	
United States	4.00
Uruguay	
Uzbekistan	2.00
Venezuela	
Vietnam	3.29

Social and Institutional Capacity

Environmental Information

Variable Name: Environmental Strategies and Action Plans

Variable Code: PLANS **Variable Number:** 49

Units: Number of Strategies and Action Plans

Reference Year: 1992-1996

Source: Sustainable Development Information Service, World Resources Institute, May 1996, http://www.wri.org/wdces/, site visited October 2000.

Logic: Environmental Strategies, Action Plans and Assessments provide valuable information for sustainable development decision making.

Details: Countries received one credit for each strategy, action plan or assessment produced from 1992-96 in the following categories: climate change, environmental synopsis, environmental profiles, environmental strategies, forestry, OECD, state of the environment, and other.

Median: 2 **Minimum:** 0 **Maximum:** 7

Albania	2.00
Algeria	0.00
Argentina	3.00
Armenia	0.00
Australia	3.00
Austria	3.00
Azerbaijan	1.00
Bangladesh	1.00
Belarus	0.00
Belgium	0.00
Benin	3.00
Bhutan	1.00
Bolivia	4.00
Botswana	1.00
Brazil	1.00
Bulgaria	0.00
Burkina Faso	2.00
Burundi	2.00
Cameroon	1.00
Canada	2.00
Central African Republic	2.00
Chile	3.00
China	6.00
Colombia	5.00
Costa Rica	0.00
Croatia	1.00
Cuba	1.00
Czech Republic	4.00
Denmark	2.00
Dominican Republic	1.00
Ecuador	5.00
Egypt	4.00
El Salvador	3.00
Estonia	3.00
Ethiopia	3.00
Fiji	4.00
Finland	4.00
France	4.00
Gabon	2.00
Germany	2.00
Ghana	2.00
Greece	0.00
Guatemala	2.00
Haiti	0.00
Honduras	1.00
Hungary	3.00
Iceland	2.00
India	5.00
Indonesia	7.00
Iran	1.00
Ireland	2.00
Israel	2.00
Italy	3.00
Jamaica	4.00
Japan	2.00
Jordan	0.00
Kazakhstan	1.00
Kenya	3.00
Korea, South	0.00
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	3.00
Lebanon	0.00
Libya	0.00
Lithuania	1.00
Macedonia	1.00
Madagascar	0.00
Malawi	2.00
Malaysia	4.00
Mali	1.00
Mauritius	1.00
Mexico	4.00
Moldova	4.00
Mongolia	3.00
Morocco	0.00
Mozambique	3.00
Nepal	2.00
Netherlands	6.00
New Zealand	1.00
Nicaragua	1.00
Niger	3.00
Nigeria	2.00
Norway	6.00
Pakistan	4.00
Panama	0.00
Papua New Guinea	1.00
Paraguay	0.00
Peru	2.00
Philippines	2.00
Poland	4.00
Portugal	3.00
Romania	0.00
Russian Federation	2.00
Rwanda	2.00
Saudi Arabia	0.00
Senegal	2.00
Singapore	3.00
Slovak Republic	2.00
Slovenia	1.00
South Africa	3.00
Spain	0.00
Sri Lanka	5.00
Sudan	0.00
Sweden	1.00
Switzerland	2.00
Syria	0.00
Tanzania	5.00
Thailand	2.00
Togo	2.00
Trinidad and Tobago	1.00
Tunisia	2.00
Turkey	1.00
Uganda	5.00
Ukraine	2.00
United Kingdom	4.00
United States	4.00
Uruguay	2.00
Uzbekistan	1.00
Venezuela	0.00
Vietnam	0.00
Zambia	2.00
Zimbabwe	3.00

Social and Institutional Capacity — Environmental Information

Variable Name: Number of ESI Variables Missing from a Subset of All Variables

Variable Code: ESIMIS **Variable Number:** 50

Units: Percentage

Reference Year: 2001

Source: 2001 Environmental Sustainability Index data set

Logic: The more ESI variables a country is missing, the poorer the availability of environmental information in general.

Details: We counted the number of missing variables from the set of variables for which it could reasonably be expected that any country could have coverage if it wanted to: GMS_EC, GMS_PH, GMS_SS, NO2, PRTBRD, PRTMAM, SO2, TSP, GMS_DO, BODWAT, CARSKM, COALKM, FOREST, FERTHA, GR2050, NOXKM, NUKE, PESTHA, PRESS, SO2KM, TFR, VOCKM, DISINT, DISRES, U5MORT, CALOR, WATSUP, CIVLIB, ENEFF, ARTPOP, EIA, GASPR, ISO14, IUCN, PLANS, PRAREA, RDEXP, RDPERS, RENEWP, SDINFO, CFC, CO2_EM, CO2HIS, SO2EXP, CITES, EIONUM, FOOT, FSC, GEF, MONFUN, VIENNA.

Median: 12 **Minimum:** 0 **Maximum:** 18

Albania	14.00
Algeria	14.00
Argentina	3.00
Armenia	17.00
Australia	7.00
Austria	6.00
Azerbaijan	17.00
Bangladesh	11.00
Belarus	12.00
Belgium	8.00
Benin	17.00
Bhutan	17.00
Bolivia	15.00
Botswana	15.00
Brazil	4.00
Bulgaria	5.00
Burkina Faso	15.00
Burundi	17.00
Cameroon	15.00
Canada	1.00
Central African Republic	17.00
Chile	5.00
China	5.00
Colombia	6.00
Costa Rica	7.00
Croatia	11.00
Cuba	8.00
Czech Republic	8.00
Denmark	7.00
Dominican Republic	17.00
Ecuador	9.00
Egypt	8.00
El Salvador	10.00
Estonia	11.00
Ethiopia	16.00
Fiji	17.00
Finland	1.00
France	4.00
Gabon	17.00
Germany	6.00
Ghana	12.00
Greece	8.00
Guatemala	12.00
Haiti	18.00
Honduras	14.00
Hungary	0.00
Iceland	12.00
India	5.00
Indonesia	6.00
Iran	9.00
Ireland	10.00
Israel	11.00
Italy	8.00
Jamaica	14.00
Japan	3.00
Jordan	11.00
Kazakhstan	16.00
Kenya	14.00
Korea, South	2.00
Kuwait	17.00
Kyrgyz Republic	16.00
Latvia	10.00
Lebanon	17.00
Libya	16.00
Lithuania	5.00
Macedonia	13.00
Madagascar	14.00
Malawi	16.00
Malaysia	4.00
Mali	13.00
Mauritius	14.00
Mexico	4.00
Moldova	12.00
Mongolia	12.00
Morocco	12.00
Mozambique	16.00
Nepal	14.00
Netherlands	1.00
New Zealand	4.00
Nicaragua	12.00
Niger	17.00
Nigeria	14.00
Norway	2.00
Pakistan	9.00
Panama	12.00
Papua New Guinea	16.00
Paraguay	14.00
Peru	15.00
Philippines	5.00
Poland	2.00
Portugal	2.00
Romania	7.00
Russian Federation	4.00
Rwanda	18.00
Saudi Arabia	18.00
Senegal	12.00
Singapore	12.00
Slovak Republic	6.00
Slovenia	8.00
South Africa	6.00
Spain	7.00
Sri Lanka	13.00
Sudan	13.00
Sweden	5.00
Switzerland	3.00
Syria	14.00
Tanzania	15.00
Thailand	5.00
Togo	16.00
Trinidad and Tobago	16.00
Tunisia	12.00
Turkey	6.00
Uganda	14.00
Ukraine	11.00
United Kingdom	2.00
United States	5.00
Uruguay	12.00
Uzbekistan	16.00
Venezuela	8.00
Vietnam	16.00
Zambia	16.00
Zimbabwe	12.00

Social and Institutional Capacity — Eco-efficiency

Variable Name: Energy Efficiency (total energy consumption per unit GDP)

Variable Code: ENEFF **Variable Number:** 51

Units: Billion Btu/Million Dollars GDP

Reference Year: 1998

Source: US Energy Information Agency, http://www.eia.doe.gov/emeu/international/contents.html, site visited September 2000.

Logic: The more eco-efficient an economy is, the higher its resource productivity and the less energy it needs to produce goods and services.

Details:

Median: 15.37 **Minimum:** 2.76 **Maximum:** 101.19

Albania	
Algeria	18.64
Argentina	12.22
Armenia	19.26
Australia	11.46
Austria	7.09
Azerbaijan	101.19
Bangladesh	13.15
Belarus	39.21
Belgium	11.83
Benin	
Bhutan	15.29
Bolivia	18.41
Botswana	9.33
Brazil	14.01
Bulgaria	60.71
Burkina Faso	2.76
Burundi	6.93
Cameroon	6.74
Canada	17.54
Central African Republic	
Chile	16.63
China	39.10
Colombia	23.98
Costa Rica	16.13
Croatia	
Cuba	39.37
Czech Republic	56.22
Denmark	4.84
Dominican Republic	18.68
Ecuador	27.57
Egypt	31.03
El Salvador	13.75
Estonia	16.09
Ethiopia	3.93
Fiji	13.10
Finland	8.37
France	7.39
Gabon	11.04
Germany	7.28
Ghana	13.20

Greece	12.95
Guatemala	11.52
Haiti	8.78
Honduras	8.97
Hungary	32.29
Iceland	14.49
India	28.13
Indonesia	22.96
Iran	26.89
Ireland	6.85
Israel	9.96
Italy	6.66
Jamaica	35.58
Japan	6.55
Jordan	34.52
Kazakhstan	76.93
Kenya	15.41
Korea, South	17.91
Kuwait	30.81
Kyrgyz Republic	66.03
Latvia	25.01
Lebanon	41.21
Libya	23.64
Lithuania	54.92
Macedonia	67.74
Madagascar	6.69
Malawi	9.36
Malaysia	22.88
Mali	4.15
Mauritius	9.11
Mexico	17.72
Moldova	47.38
Mongolia	44.24
Morocco	12.82
Mozambique	12.59
Nepal	7.38
Netherlands	11.01
New Zealand	15.09
Nicaragua	36.46
Niger	6.40
Nigeria	23.66

Norway	12.17
Pakistan	30.70
Panama	18.70
Papua New Guinea	10.57
Paraguay	15.32
Peru	10.81
Philippines	19.74
Poland	45.05
Portugal	11.77
Romania	58.39
Russian Federation	74.19
Rwanda	6.13
Saudi Arabia	35.11
Senegal	7.87
Singapore	20.41
Slovak Republic	63.95
Slovenia	11.26
South Africa	37.92
Spain	8.73
Sri Lanka	13.70
Sudan	5.36
Sweden	9.14
Switzerland	5.19
Syria	22.36
Tanzania	8.53
Thailand	19.29
Togo	8.51
Trinidad and Tobago	76.60
Tunisia	16.63
Turkey	13.85
Uganda	3.40
Ukraine	96.53
United Kingdom	8.59
United States	13.41
Uruguay	12.86
Uzbekistan	88.73
Venezuela	44.11
Vietnam	64.57
Zambia	28.31
Zimbabwe	22.34

Social and Institutional Capacity — Eco-efficiency

Variable Name: Renewable Energy Production as a Percentage of Total Energy Consumption

Variable Code: RENEWP **Variable Number:** 52

Units: Renewable Energy Production as a Percent of Total Energy Consumption

Reference Year: 1998

Source: US Energy Information Agency, http://www.eia.doe.gov/emeu/international/contents.html, site visited September 2000.

Logic: The higher the proportion of hydroelectric and renewable energy sources, the lower the reliance on more environmentally damaging sources such as fossil fuel energy.

Details: Hydroelectric, biomass, geothermal, solar and wind electric power production is calculated as a percentage of total energy consumption. Some countries exceed 100 percent because they are net exporters of renewable energy. A logarithmic transformation of this variable was used in calculating the ESI.

Albania	64.39
Algeria	0.04
Argentina	13.75
Armenia	17.38
Australia	4.57
Austria	29.81
Azerbaijan	3.18
Bangladesh	1.72
Belarus	0.02
Belgium	0.55
Benin	0.00
Bhutan	265.37
Bolivia	12.34
Botswana	0.00
Brazil	38.38
Bulgaria	3.31
Burkina Faso	7.46
Burundi	18.93
Cameroon	38.32
Canada	29.29
Central African Republic	17.66
Chile	17.42
China	6.22
Colombia	25.71
Costa Rica	48.04
Croatia	14.51
Cuba	3.95
Czech Republic	1.49
Denmark	4.81
Dominican Republic	12.20
Ecuador	19.53
Egypt	6.89
El Salvador	23.93
Estonia	0.02
Ethiopia	35.10
Fiji	26.11
Finland	19.11
France	6.50
Gabon	12.79
Germany	2.04
Ghana	55.36
Greece	3.16
Guatemala	19.36
Haiti	15.12
Honduras	26.53
Hungary	0.15
Iceland	64.83
India	6.41
Indonesia	3.22
Iran	1.68
Ireland	2.32
Israel	0.05
Italy	6.80
Jamaica	3.20
Japan	5.72
Jordan	0.15
Kazakhstan	3.30
Kenya	28.99
Korea, South	0.64
Kuwait	0.00
Kyrgyz Republic	50.45
Latvia	20.05
Lebanon	4.13
Libya	0.00
Lithuania	2.08
Macedonia	8.32
Madagascar	23.33
Malawi	43.57
Malaysia	1.80
Mali	19.46
Mauritius	2.91
Mexico	6.18
Moldova	2.59
Mongolia	0.00
Morocco	5.52
Mozambique	34.23
Nepal	31.67
Netherlands	1.11
New Zealand	37.24
Nicaragua	27.29
Niger	0.00
Nigeria	6.11
Norway	64.03
Pakistan	12.88
Panama	24.26
Papua New Guinea	12.55
Paraguay	533.89
Peru	27.21
Philippines	18.90
Poland	1.41
Portugal	15.19
Romania	9.84
Russian Federation	6.02
Rwanda	13.16
Saudi Arabia	0.00
Senegal	0.00
Singapore	0.00
Slovak Republic	5.03
Slovenia	11.66
South Africa	0.37
Spain	7.62
Sri Lanka	23.92
Sudan	14.92
Sweden	35.06
Switzerland	29.37
Syria	12.59
Tanzania	27.81
Thailand	3.15
Togo	0.50
Trinidad and Tobago	0.08
Tunisia	0.14
Turkey	15.18
Uganda	38.22
Ukraine	1.92
United Kingdom	1.20
United States	4.51
Uruguay	63.55
Uzbekistan	3.64
Venezuela	20.74
Vietnam	25.36
Zambia	83.66
Zimbabwe	6.89

Social and Institutional Capacity — Reducing Public Choice Distortions

Variable Name: Price of Premium Gasoline

Variable Code: GASPR **Variable Number:** 53

Units: US Dollars/Liter

Reference Year: 1998 (last quarter)

Source: Gesellschaft fuer Technische Zusammenarbeit (GTZ), *Fuel Prices and Taxation*, Frankfurt: GTZ, May 1999.

Logic: Unsubsidized gasoline prices are an indicator that appropriate price signals are being sent and that environmental externalities have been internalized. Artificially low prices encourage wasteful consumption and thus air pollution and greenhouse gas emissions.

Details:

Median: 0.53 **Minimum:** 0.08 **Maximum:** 1.21

Albania	0.86
Algeria	0.31
Argentina	0.94
Armenia	0.49
Australia	0.46
Austria	1.04
Azerbaijan	0.46
Bangladesh	0.47
Belarus	0.34
Belgium	1.12
Benin	0.39
Bhutan	0.59
Bolivia	0.53
Botswana	0.31
Brazil	0.80
Bulgaria	0.66
Burkina Faso	0.68
Burundi	0.72
Cameroon	0.64
Canada	0.41
Central African Republic	0.81
Chile	0.49
China	0.28
Colombia	0.24
Costa Rica	0.41
Croatia	0.67
Cuba	0.50
Czech Republic	0.72
Denmark	1.05
Dominican Republic	0.40
Ecuador	0.38
Egypt	0.29
El Salvador	0.54
Estonia	0.45
Ethiopia	0.36
Fiji	0.50
Finland	1.17
France	1.11
Gabon	0.63
Germany	0.96
Ghana	0.32
Greece	0.65
Guatemala	0.41
Haiti	0.59
Honduras	0.50
Hungary	0.72
Iceland	1.12
India	0.56
Indonesia	0.16
Iran	0.08
Ireland	1.02
Israel	0.86
Italy	1.19
Jamaica	0.37
Japan	1.02
Jordan	0.42
Kazakhstan	0.30
Kenya	0.70
Korea, South	0.93
Kuwait	0.17
Kyrgyz Republic	0.47
Latvia	0.55
Lebanon	0.35
Libya	0.22
Lithuania	0.51
Macedonia	0.70
Madagascar	0.47
Malawi	0.51
Malaysia	0.28
Mali	0.77
Mauritius	
Mexico	0.36
Moldova	0.45
Mongolia	0.23
Morocco	0.79
Mozambique	0.55
Nepal	0.59
Netherlands	1.14
New Zealand	0.64
Nicaragua	0.47
Niger	0.76
Nigeria	0.13
Norway	1.21
Pakistan	0.46
Panama	0.41
Papua New Guinea	0.41
Paraguay	0.47
Peru	0.55
Philippines	0.34
Poland	0.54
Portugal	1.02
Romania	0.53
Russian Federation	0.28
Rwanda	0.72
Saudi Arabia	0.16
Senegal	0.71
Singapore	0.72
Slovak Republic	0.61
Slovenia	0.66
South Africa	0.43
Spain	0.84
Sri Lanka	0.84
Sudan	0.33
Sweden	1.09
Switzerland	0.86
Syria	0.45
Tanzania	0.63
Thailand	0.30
Togo	0.42
Trinidad and Tobago	0.39
Tunisia	0.60
Turkey	0.78
Uganda	0.86
Ukraine	0.49
United Kingdom	1.11
United States	0.32
Uruguay	0.90
Uzbekistan	0.11
Venezuela	0.14
Vietnam	0.35
Zambia	0.53
Zimbabwe	0.26

Social and Institutional Capacity — Reducing Public Choice Distortions

Variable Name: Subsidies for Energy or Materials Usage

Variable Code: WEFSUB **Variable Number:** 54

Units: Survey Responses Ranging from 1 (Strongly Disagree) to 7 (Strongly Agree)

Reference Year: 2000

Source: Michael E. Porter et al, *The Global Competitveness Report 2000*, Oxford: Oxford University Press, 2000.

Logic: Subsidies encourage wasteful consumption of energy and materials.

Details: Response to the statement "No government subsidies for energy or materials usage are present."

Median: 4.45 **Minimum:** 2.60 **Maximum:** 6.20

Albania	
Algeria	
Argentina	5.10
Armenia	
Australia	5.20
Austria	5.10
Azerbaijan	
Bangladesh	
Belarus	
Belgium	4.90
Benin	
Bhutan	
Bolivia	5.40
Botswana	
Brazil	4.60
Bulgaria	3.50
Burkina Faso	
Burundi	
Cameroon	
Canada	4.80
Central African Republic	
Chile	5.10
China	4.00
Colombia	4.40
Costa Rica	4.20
Croatia	
Cuba	
Czech Republic	4.40
Denmark	5.10
Dominican Republic	
Ecuador	2.60
Egypt	4.00
El Salvador	3.90
Estonia	
Ethiopia	
Fiji	
Finland	6.20
France	5.00
Gabon	
Germany	4.60
Ghana	

Greece	4.20
Guatemala	
Haiti	
Honduras	
Hungary	4.40
Iceland	5.10
India	3.00
Indonesia	2.90
Iran	
Ireland	5.20
Israel	5.10
Italy	4.40
Jamaica	
Japan	4.60
Jordan	4.40
Kazakhstan	
Kenya	
Korea, South	4.10
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	4.40
Mali	
Mauritius	4.50
Mexico	4.10
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	5.30
New Zealand	6.10
Nicaragua	
Niger	
Nigeria	

Norway	4.50
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	5.50
Philippines	4.20
Poland	3.70
Portugal	4.40
Romania	
Russian Federation	4.20
Rwanda	
Saudi Arabia	
Senegal	
Singapore	5.30
Slovak Republic	3.50
Slovenia	
South Africa	4.60
Spain	4.40
Sri Lanka	
Sudan	
Sweden	4.70
Switzerland	5.10
Syria	
Tanzania	
Thailand	3.80
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	4.60
Uganda	
Ukraine	3.50
United Kingdom	5.20
United States	4.60
Uruguay	
Uzbekistan	
Venezuela	3.60
Vietnam	3.70
Zambia	
Zimbabwe	3.60

Social and Institutional Capacity — Reducing Public Choice Distortions

Variable Name: Reducing Corruption

Variable Code: GRAFT **Variable Number:** 55

Units: Standardized Scale in which high values represent low levels of corruption.

Reference Year: 2000

Source: Dataset from "Aggregating Governance Indicators" and "Governance Matters", Kaufmann D., Kraay A. and Zoido-Lobaton P., May 2000, World Bank.

Logic: Corruption contributes to lax enforcement of environmental regulations and an ability on the part of producers and consumers to evade responsibility for the environmental harms they cause.

Details:

Median: -0.28 **Minimum:** -1.57 **Maximum:** 2.13

Albania	-0.99
Algeria	-0.88
Argentina	-0.27
Armenia	-0.80
Australia	1.60
Austria	1.46
Azerbaijan	-1.00
Bangladesh	-0.29
Belarus	-0.65
Belgium	0.67
Benin	-0.78
Bhutan	
Bolivia	-0.44
Botswana	0.54
Brazil	0.06
Bulgaria	-0.56
Burkina Faso	-0.37
Burundi	
Cameroon	-1.10
Canada	2.06
Central African Republic	
Chile	1.03
China	-0.29
Colombia	-0.49
Costa Rica	0.58
Croatia	-0.46
Cuba	0.27
Czech Republic	0.38
Denmark	2.13
Dominican Republic	-0.77
Ecuador	-0.82
Egypt	-0.27
El Salvador	-0.35
Estonia	0.59
Ethiopia	-0.44
Fiji	0.81
Finland	2.08
France	1.28
Gabon	-1.02
Germany	1.62
Ghana	-0.30
Greece	0.82
Guatemala	-0.82
Haiti	-0.53
Honduras	-0.94
Hungary	0.61
Iceland	1.83
India	-0.31
Indonesia	-0.80
Iran	-0.85
Ireland	1.57
Israel	1.28
Italy	0.80
Jamaica	-0.12
Japan	0.72
Jordan	0.14
Kazakhstan	-0.87
Kenya	-0.65
Korea, South	0.16
Kuwait	0.62
Kyrgyz Republic	-0.76
Latvia	-0.26
Lebanon	-0.40
Libya	-0.88
Lithuania	0.03
Macedonia	-0.52
Madagascar	-0.47
Malawi	-0.19
Malaysia	0.63
Mali	-0.48
Mauritius	0.34
Mexico	-0.28
Moldova	-0.39
Mongolia	-0.15
Morocco	0.13
Mozambique	-0.53
Nepal	
Netherlands	2.03
New Zealand	2.07
Nicaragua	-0.84
Niger	-1.57
Nigeria	-0.95
Norway	1.69
Pakistan	-0.77
Panama	-0.46
Papua New Guinea	-0.85
Paraguay	-0.96
Peru	-0.20
Philippines	-0.23
Poland	0.49
Portugal	1.22
Romania	-0.46
Russian Federation	-0.62
Rwanda	
Saudi Arabia	-0.58
Senegal	-0.24
Singapore	1.95
Slovak Republic	0.03
Slovenia	1.02
South Africa	0.30
Spain	1.21
Sri Lanka	-0.12
Sudan	-1.02
Sweden	2.09
Switzerland	2.07
Syria	-0.79
Tanzania	-0.92
Thailand	-0.16
Togo	-0.24
Trinidad and Tobago	0.51
Tunisia	0.02
Turkey	-0.35
Uganda	-0.47
Ukraine	-0.89
United Kingdom	1.71
United States	1.41
Uruguay	0.43
Uzbekistan	-0.96
Venezuela	-0.72
Vietnam	-0.33
Zambia	-0.61
Zimbabwe	-0.32

Global Stewardship — International Commitment

Variable Name: Number of Memberships in Environmental Intergovernmental Organizations

Variable Code: EIONUM **Variable Number:** 56

Units: Number of Memberships

Reference Year: 1998

Source: Organizational Memberships from Yearbook of International Organizations. Digital data set provided by Center for International Development and Conflict Management, University of Maryland.

Logic: Countries contribute to global environmental governance by participating in intergovernmental environmental organizations.

Details: 100 intergovernmental organizations were coded as "environmental" by CIESIN. (List available upon request)

Median: 12 **Minimum:** 2 **Maximum:** 35

Albania	6.00
Algeria	14.00
Argentina	15.00
Armenia	4.00
Australia	19.00
Austria	20.00
Azerbaijan	5.00
Bangladesh	7.00
Belarus	5.00
Belgium	26.00
Benin	10.00
Bhutan	2.00
Bolivia	15.00
Botswana	6.00
Brazil	20.00
Bulgaria	11.00
Burkina Faso	9.00
Burundi	5.00
Cameroon	18.00
Canada	18.00
Central African Republic	7.00
Chile	10.00
China	12.00
Colombia	16.00
Costa Rica	12.00
Croatia	9.00
Cuba	13.00
Czech Republic	12.00
Denmark	26.00
Dominican Republic	10.00
Ecuador	17.00
Egypt	21.00
El Salvador	10.00
Estonia	8.00
Ethiopia	9.00
Fiji	8.00
Finland	25.00
France	35.00
Gabon	13.00
Germany	34.00
Ghana	13.00
Greece	23.00
Guatemala	13.00
Haiti	8.00
Honduras	9.00
Hungary	15.00
Iceland	
India	23.00
Indonesia	15.00
Iran	11.00
Ireland	19.00
Israel	12.00
Italy	26.00
Jamaica	10.00
Japan	24.00
Jordan	11.00
Kazakhstan	5.00
Kenya	17.00
Korea, South	16.00
Kuwait	10.00
Kyrgyz Republic	3.00
Latvia	8.00
Lebanon	10.00
Libya	10.00
Lithuania	8.00
Macedonia	6.00
Madagascar	9.00
Malawi	12.00
Malaysia	16.00
Mali	12.00
Mauritius	10.00
Mexico	15.00
Moldova	5.00
Mongolia	5.00
Morocco	18.00
Mozambique	6.00
Nepal	6.00
Netherlands	30.00
New Zealand	12.00
Nicaragua	12.00
Niger	10.00
Nigeria	17.00
Norway	26.00
Pakistan	14.00
Panama	14.00
Papua New Guinea	11.00
Paraguay	9.00
Peru	15.00
Philippines	14.00
Poland	16.00
Portugal	21.00
Romania	13.00
Russian Federation	22.00
Rwanda	5.00
Saudi Arabia	8.00
Senegal	14.00
Singapore	8.00
Slovak Republic	12.00
Slovenia	11.00
South Africa	13.00
Spain	27.00
Sri Lanka	14.00
Sudan	15.00
Sweden	27.00
Switzerland	24.00
Syria	15.00
Tanzania	16.00
Thailand	16.00
Togo	13.00
Trinidad and Tobago	12.00
Tunisia	16.00
Turkey	14.00
Uganda	13.00
Ukraine	8.00
United Kingdom	28.00
United States	23.00
Uruguay	11.00
Uzbekistan	5.00
Venezuela	16.00
Vietnam	8.00
Zambia	10.00
Zimbabwe	11.00

Global Stewardship — International Commitment

Variable Name: Percentage of CITES Reporting Requirements Met

Variable Code: CITES **Variable Number:** 57

Units: Percent of Requirements Met

Reference Year: 2000

Source: Convention on International Trade in Endangered Species of Wild Fauna and Flora, Report on National Reports Required Under Article VIII, Paragraph 7(a), of the Convention, Eleventh Meeting of the Conference of the Parties, Gigiri, Kenya, April 2000, available at http://www.unep-wcmc.org/CITES/eng/cop/11/docs/19.pdf, site visited November 2000.

Logic: Preparing and submitting national reports is a fundamental responsibility under CITES. The degree to which a country fulfills this responsibility is an indication of how seriously it takes its commitment to protection of endangered species.

Details:

Median: 75 **Minimum:** 0 **Maximum:** 100

Albania	0.00
Algeria	60.00
Argentina	88.90
Armenia	0.00
Australia	100.00
Austria	100.00
Azerbaijan	0.00
Bangladesh	70.60
Belarus	50.00
Belgium	100.00
Benin	26.70
Bhutan	0.00
Bolivia	60.00
Botswana	90.50
Brazil	54.20
Bulgaria	62.50
Burkina Faso	55.60
Burundi	27.30
Cameroon	72.20
Canada	95.80
Central African Republic	47.40
Chile	75.00
China	100.00
Colombia	83.30
Costa Rica	83.30
Croatia	0.00
Cuba	88.90
Czech Republic	100.00
Denmark	95.50
Dominican Republic	100.00
Ecuador	70.80
Egypt	19.00
El Salvador	33.30
Estonia	85.70
Ethiopia	90.00
Fiji	0.00
Finland	82.60
France	100.00
Gabon	70.00
Germany	100.00
Ghana	87.00
Greece	100.00
Guatemala	89.50
Haiti	0.00
Honduras	21.40
Hungary	85.70
Iceland	0.00
India	100.00
Indonesia	95.00
Iran	69.60
Ireland	0.00
Israel	52.60
Italy	100.00
Jamaica	50.00
Japan	89.50
Jordan	35.00
Kazakhstan	0.00
Kenya	65.00
Korea, South	100.00
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	100.00
Lebanon	0.00
Libya	0.00
Lithuania	0.00
Macedonia	0.00
Madagascar	87.50
Malawi	77.80
Malaysia	85.70
Mali	100.00
Mauritius	87.50
Mexico	87.50
Moldova	0.00
Mongolia	100.00
Morocco	60.90
Mozambique	77.80
Nepal	75.00
Netherlands	100.00
New Zealand	100.00
Nicaragua	90.90
Niger	50.00
Nigeria	45.80
Norway	87.00
Pakistan	78.30
Panama	81.00
Papua New Guinea	73.90
Paraguay	68.20
Peru	75.00
Philippines	83.30
Poland	88.90
Portugal	72.20
Romania	40.00
Russian Federation	78.30
Rwanda	16.70
Saudi Arabia	0.00
Senegal	81.80
Singapore	100.00
Slovak Republic	100.00
Slovenia	0.00
South Africa	95.80
Spain	100.00
Sri Lanka	70.00
Sudan	56.30
Sweden	100.00
Switzerland	100.00
Syria	0.00
Tanzania	84.20
Thailand	68.80
Togo	75.00
Trinidad and Tobago	66.70
Tunisia	100.00
Turkey	66.70
Uganda	50.00
Ukraine	0.00
United Kingdom	100.00
United States	87.50
Uruguay	62.50
Uzbekistan	50.00
Venezuela	76.20
Vietnam	40.00
Zambia	72.20
Zimbabwe	88.90

Global Stewardship — International Commitment

Variable Name: Levels of Participation in the Vienna Convention/ Montreal Protocol

Variable Code: VIENNA **Variable Number:** 58

Units: Index Ranging from 0 (no participation) to 3 (high levels of participation)

Reference Year: 2000

Source: United Nations Environment Program, The Ozone Secretariat, http://www.unep.org/ozone/ratif.htm, site visited November 2000.

Logic: The number of protocols and amendments that a country has acceded to or ratified under the Vienna Convention is an indication of its commitment to fight ozone depletion.

Details: The index assigned values as follows. Countries received a score of zero if they were not signatory to the Vienna Convention. They received a score of 1 if they had ratified the Montreal Protocol only. They received a score of 2 if they ratified the above plus the London Amendment. They received a score of 2.5 if they ratified the above plus the Copenhagen Amendment. They received a score of 3 if they ratified the above plus the Montreal Amendment.

Median: 2.50 **Minimum:** 0 **Maximum:** 3

Albania	1.00
Algeria	2.50
Argentina	2.50
Armenia	1.00
Australia	3.00
Austria	3.00
Azerbaijan	3.00
Bangladesh	2.00
Belarus	2.00
Belgium	2.50
Benin	2.50
Bhutan	0.00
Bolivia	3.00
Botswana	2.50
Brazil	2.50
Bulgaria	3.00
Burkina Faso	2.50
Burundi	1.00
Cameroon	2.50
Canada	3.00
Central African Republic	1.00
Chile	3.00
China	2.00
Colombia	2.50
Costa Rica	2.50
Croatia	3.00
Cuba	2.50
Czech Republic	3.00
Denmark	2.50
Dominican Republic	1.00
Ecuador	2.50
Egypt	3.00
El Salvador	1.00
Estonia	2.50
Ethiopia	1.00
Fiji	2.50
Finland	2.50
France	2.50
Gabon	1.00
Germany	3.00
Ghana	2.00
Greece	2.50
Guatemala	1.00
Haiti	2.00
Honduras	1.00
Hungary	3.00
Iceland	3.00
India	2.00
Indonesia	2.50
Iran	2.50
Ireland	2.50
Israel	2.50
Italy	2.50
Jamaica	2.50
Japan	2.50
Jordan	3.00
Kazakhstan	1.00
Kenya	2.50
Korea, South	3.00
Kuwait	2.50
Kyrgyz Republic	1.00
Latvia	2.50
Lebanon	3.00
Libya	1.00
Lithuania	2.50
Macedonia	3.00
Madagascar	1.00
Malawi	2.50
Malaysia	2.50
Mali	2.00
Mauritius	2.50
Mexico	2.50
Moldova	1.00
Mongolia	2.50
Morocco	2.50
Mozambique	2.50
Nepal	2.00
Netherlands	3.00
New Zealand	3.00
Nicaragua	2.50
Niger	3.00
Nigeria	1.00
Norway	3.00
Pakistan	2.50
Panama	3.00
Papua New Guinea	2.00
Paraguay	2.00
Peru	2.50
Philippines	2.00
Poland	3.00
Portugal	2.50
Romania	2.00
Russian Federation	2.00
Rwanda	0.00
Saudi Arabia	2.50
Senegal	3.00
Singapore	3.00
Slovak Republic	3.00
Slovenia	3.00
South Africa	2.00
Spain	3.00
Sri Lanka	3.00
Sudan	1.00
Sweden	3.00
Switzerland	2.50
Syria	3.00
Tanzania	2.00
Thailand	2.50
Togo	2.50
Trinidad and Tobago	3.00
Tunisia	3.00
Turkey	2.50
Uganda	3.00
Ukraine	2.00
United Kingdom	2.50
United States	2.50
Uruguay	3.00
Uzbekistan	2.50
Venezuela	2.50
Vietnam	2.50
Zambia	2.00
Zimbabwe	2.50

Global Stewardship — International Commitment

Variable Name: Compliance with Environmental Agreements

Variable Code: WEFAGR **Variable Number:** 59

Units: Survey Responses Ranging from 1 (Strongly Disagree) to 7 (Strongly Agree)

Reference Year: 2000

Source: Michael E. Porter et al, *The Global Competitiveness Report 2000*, Oxford: Oxford University Press, 2000.

Logic: Where compliance is a high priority, other things equal, global obligations are more effectively honored.

Details: Response to the statement: "Compliance with international environmental agreements is a high priority."

Median: 4.40 **Minimum:** 3 **Maximum:** 6.70

Albania	
Algeria	
Argentina	3.40
Armenia	
Australia	5.20
Austria	6.30
Azerbaijan	
Bangladesh	
Belarus	
Belgium	5.00
Benin	
Bhutan	
Bolivia	3.10
Botswana	
Brazil	4.20
Bulgaria	4.20
Burkina Faso	
Burundi	
Cameroon	
Canada	5.60
Central African Republic	
Chile	4.30
China	4.80
Colombia	4.50
Costa Rica	4.60
Croatia	
Cuba	
Czech Republic	4.90
Denmark	6.70
Dominican Republic	
Ecuador	3.40
Egypt	4.10
El Salvador	3.00
Estonia	
Ethiopia	
Fiji	
Finland	6.40
France	5.50
Gabon	
Germany	6.10
Ghana	

Greece	4.30
Guatemala	
Haiti	
Honduras	
Hungary	4.60
Iceland	4.60
India	3.80
Indonesia	3.60
Iran	
Ireland	4.90
Israel	4.40
Italy	4.60
Jamaica	
Japan	5.60
Jordan	4.20
Kazakhstan	
Kenya	
Korea, South	4.40
Kuwait	
Kyrgyz Republic	
Latvia	
Lebanon	
Libya	
Lithuania	
Macedonia	
Madagascar	
Malawi	
Malaysia	4.30
Mali	
Mauritius	4.10
Mexico	4.10
Moldova	
Mongolia	
Morocco	
Mozambique	
Nepal	
Netherlands	6.30
New Zealand	5.50
Nicaragua	
Niger	
Nigeria	

Norway	6.10
Pakistan	
Panama	
Papua New Guinea	
Paraguay	
Peru	3.10
Philippines	3.50
Poland	3.60
Portugal	4.70
Romania	
Russian Federation	3.70
Rwanda	
Saudi Arabia	
Senegal	
Singapore	5.70
Slovak Republic	4.00
Slovenia	
South Africa	4.20
Spain	4.50
Sri Lanka	
Sudan	
Sweden	6.40
Switzerland	6.00
Syria	
Tanzania	
Thailand	3.60
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	4.10
Uganda	
Ukraine	3.70
United Kingdom	5.50
United States	5.30
Uruguay	
Uzbekistan	
Venezuela	3.00
Vietnam	4.20
Zambia	
Zimbabwe	3.30

Global Stewardship — Global Scale Funding/Participation

Variable Name: Montreal Protocol Multilateral Fund participation

Variable Code: MONFUN **Variable Number:** 60

Units: Standardized Scale (Z score)

Reference Year: 2000

Source: Report of the Twelfth Meeting of the Sub-Committee on Monitoring, Evaluation and Finance UNEP/OzL.Pro/ExCom /32/3, and MontrealProtocol Unit (MPU), SEED/UNDP.

Logic: Managing global environmental problems requires active participation, both from donors and from funding recipients who implement projects. The Montreal Protocol Multilateral Fund is a major organized effort to finance reductions in production and consumption of ozone-depleting substances.

Details: This score combines payments (contributions to the Montreal Protocol Multilateral Fund and bilateral payments credited under the terms of the Fund) and receipts by countries from the Fund to implement CFC abatement projects. To make payments and receipts comparable, the two were first standardized, and countries were assigned the higher of the two possible Z scores. Payments were normalized by share of United Nations budget, and receipts were normalized by share of total Fund payments. Covers payments and receipts during 1991-1999.

Median: 0.10 **Minimum:** -0.30 **Maximum:** 10.61

Albania	-0.30
Algeria	-0.30
Argentina	1.41
Armenia	-0.30
Australia	1.54
Austria	1.26
Azerbaijan	5.97
Bangladesh	-0.27
Belarus	-0.30
Belgium	1.42
Benin	-0.30
Bhutan	-0.30
Bolivia	-0.07
Botswana	-0.20
Brazil	0.54
Bulgaria	10.61
Burkina Faso	-0.30
Burundi	-0.14
Cameroon	-0.30
Canada	1.75
Central African Republic	0.03
Chile	-0.28
China	0.03
Colombia	1.44
Costa Rica	2.51
Croatia	-0.30
Cuba	0.09
Czech Republic	4.93
Denmark	1.51
Dominican Republic	1.25
Ecuador	-0.21
Egypt	1.37
El Salvador	0.74
Estonia	-0.01
Ethiopia	-0.30
Fiji	-0.30
Finland	1.64
France	0.86
Gabon	1.62
Germany	0.97
Ghana	0.21

Greece	1.62
Guatemala	0.47
Haiti	-0.30
Honduras	-0.30
Hungary	2.15
Iceland	1.40
India	-0.19
Indonesia	-0.10
Iran	-0.26
Ireland	1.29
Israel	0.87
Italy	0.51
Jamaica	2.07
Japan	0.86
Jordan	-0.25
Kazakhstan	-0.30
Kenya	-0.21
Korea, South	-0.30
Kuwait	
Kyrgyz Republic	-0.30
Latvia	-0.08
Lebanon	0.63
Libya	-0.30
Lithuania	7.58
Macedonia	-0.30
Madagascar	-0.30
Malawi	-0.07
Malaysia	6.42
Mali	-0.30
Mauritius	4.03
Mexico	1.08
Moldova	0.19
Mongolia	-0.30
Morocco	0.57
Mozambique	-0.24
Nepal	-0.30
Netherlands	1.20
New Zealand	1.67
Nicaragua	-0.30
Niger	-0.29
Nigeria	0.03

Norway	1.35
Pakistan	-0.29
Panama	1.74
Papua New Guinea	-0.30
Paraguay	0.40
Peru	0.80
Philippines	0.46
Poland	1.30
Portugal	0.55
Romania	-0.30
Russian Federation	-0.30
Rwanda	-0.30
Saudi Arabia	-0.30
Senegal	-0.30
Singapore	0.10
Slovak Republic	5.10
Slovenia	-0.16
South Africa	1.09
Spain	1.23
Sri Lanka	0.30
Sudan	-0.30
Sweden	1.69
Switzerland	1.44
Syria	0.16
Tanzania	-0.24
Thailand	1.10
Togo	-0.30
Trinidad and Tobago	2.68
Tunisia	-0.30
Turkey	-0.30
Uganda	-0.28
Ukraine	0.26
United Kingdom	0.90
United States	1.21
Uruguay	3.32
Uzbekistan	0.58
Venezuela	1.57
Vietnam	-0.21
Zambia	-0.18
Zimbabwe	-0.29

Global Stewardship — Global Scale Funding/Participation Cooperation

Variable Name: Global Environmental Facility Participation

Variable Code: GEF **Variable Number:** 61

Units: Standardized Scale (Z score)

Reference Year: 2000

Source: "GEF Projects – Allocations and Disbursements" www.gefweb.org/Allocations_Disbursements.pdf and "GEF Council December 8-10, 1999, Agenda Item 10, DRAFT ANNUAL REPORT 1999 VOLUME II: FINANCIAL STATEMENT" www.gefweb.org/COUNCIL/GEF_C14/gef_c14_8.pdf

Logic: Managing global environmental problems requires active participation, from both donors and recipients. The GEF represents the most significant global-scale effort to support world-wide environmental protection efforts.

Details: This score combines payments and receipts. To make payments and receipts comparable, the two were first standardized, and countries were assigned the higher of the two possible Z scores. Payments were normalized by share of United Nations budget, and receipts were normalized by share of total GEF payments. Covers payments and receipts during through the entire Phase I period and through October 30, 2000 of Phase 2.

Median: -0.05 **Minimum:** -0.17 **Maximum:** 6.01

Albania	-0.17
Algeria	-0.12
Argentina	-0.11
Armenia	-0.08
Australia	0.26
Austria	0.30
Azerbaijan	0.21
Bangladesh	6.01
Belarus	0.13
Belgium	0.47
Benin	0.07
Bhutan	2.80
Bolivia	0.19
Botswana	-0.17
Brazil	-0.11
Bulgaria	0.33
Burkina Faso	-0.15
Burundi	-0.17
Cameroon	-0.05
Canada	0.53
Central African Republic	-0.06
Chile	-0.14
China	-0.05
Colombia	-0.17
Costa Rica	1.47
Croatia	-0.17
Cuba	-0.08
Czech Republic	0.98
Denmark	0.95
Dominican Republic	-0.02
Ecuador	0.17
Egypt	0.72
El Salvador	-0.12
Estonia	-0.17
Ethiopia	-0.17
Fiji	-0.17
Finland	0.71
France	0.31
Gabon	-0.17
Germany	0.37
Ghana	0.02

Greece	0.14
Guatemala	-0.05
Haiti	-0.17
Honduras	-0.03
Hungary	0.09
Iceland	-0.17
India	0.45
Indonesia	-0.17
Iran	-0.17
Ireland	0.06
Israel	-0.17
Italy	0.29
Jamaica	0.52
Japan	0.27
Jordan	0.81
Kazakhstan	-0.17
Kenya	-0.16
Korea, South	-0.17
Kuwait	-0.17
Kyrgyz Republic	-0.17
Latvia	0.12
Lebanon	0.13
Libya	-0.17
Lithuania	1.05
Macedonia	-0.17
Madagascar	-0.02
Malawi	-0.17
Malaysia	-0.17
Mali	-0.10
Mauritius	1.40
Mexico	-0.01
Moldova	-0.17
Mongolia	0.56
Morocco	-0.17
Mozambique	-0.08
Nepal	-0.11
Netherlands	0.79
New Zealand	0.39
Nicaragua	0.02
Niger	-0.15
Nigeria	-0.17

Norway	0.96
Pakistan	1.92
Panama	0.15
Papua New Guinea	0.46
Paraguay	-0.17
Peru	-0.04
Philippines	0.07
Poland	0.03
Portugal	0.12
Romania	-0.11
Russian Federation	-0.13
Rwanda	-0.17
Saudi Arabia	-0.17
Senegal	-0.08
Singapore	-0.17
Slovak Republic	3.36
Slovenia	1.13
South Africa	-0.10
Spain	-0.02
Sri Lanka	-0.03
Sudan	-0.17
Sweden	1.02
Switzerland	0.64
Syria	-0.17
Tanzania	-0.17
Thailand	-0.12
Togo	-0.17
Trinidad and Tobago	-0.17
Tunisia	-0.10
Turkey	0.11
Uganda	-0.02
Ukraine	-0.15
United Kingdom	0.41
United States	0.19
Uruguay	0.62
Uzbekistan	-0.16
Venezuela	-0.16
Vietnam	-0.14
Zambia	-0.17
Zimbabwe	0.19

Global Stewardship **Global Scale Funding/Participation**

Variable Name: FSC Accredited Forest Area as a Percentage of Total Forest Area

Variable Code: FSC **Variable Number:** 62

Units: FSC Forest Area as Percent of Total Forest Area

Reference Year: 2000

Source: Forest Stewardship Council, personal communication.

Logic: This variable measures the extent to which a country seeks sustainable forestry practices.

Details: A logarithmic transformation of this variable was used in calculating the ESI.

Median: 0 **Minimum:** 0 **Maximum:** 36

Albania	0.00
Algeria	0.00
Argentina	0.00
Armenia	0.00
Australia	0.00
Austria	0.00
Azerbaijan	0.00
Bangladesh	0.00
Belarus	0.00
Belgium	0.30
Benin	0.00
Bhutan	0.00
Bolivia	1.30
Botswana	0.00
Brazil	0.10
Bulgaria	0.00
Burkina Faso	0.00
Burundi	0.00
Cameroon	0.00
Canada	0.08
Central African Republic	0.00
Chile	0.00
China	0.00
Colombia	0.00
Costa Rica	3.00
Croatia	1.58
Cuba	0.00
Czech Republic	4.00
Denmark	0.00
Dominican Republic	0.00
Ecuador	0.00
Egypt	0.00
El Salvador	0.00
Estonia	0.00
Ethiopia	0.00
Fiji	0.00
Finland	0.00
France	0.01
Gabon	0.00
Germany	0.80
Ghana	0.00

Greece	0.00
Guatemala	3.00
Haiti	0.00
Honduras	0.50
Hungary	0.00
Iceland	0.00
India	0.00
Indonesia	0.10
Iran	0.00
Ireland	0.00
Israel	0.00
Italy	0.10
Jamaica	0.00
Japan	0.00
Jordan	0.00
Kazakhstan	0.00
Kenya	0.00
Korea, South	0.00
Kuwait	0.00
Kyrgyz Republic	0.00
Latvia	0.00
Lebanon	0.00
Libya	0.00
Lithuania	0.00
Macedonia	0.00
Madagascar	0.00
Malawi	0.00
Malaysia	0.40
Mali	0.00
Mauritius	0.00
Mexico	0.30
Moldova	0.00
Mongolia	0.00
Morocco	0.00
Mozambique	0.00
Nepal	0.00
Netherlands	20.00
New Zealand	0.03
Nicaragua	0.00
Niger	0.00
Nigeria	0.00

Norway	0.00
Pakistan	0.00
Panama	0.00
Papua New Guinea	0.01
Paraguay	0.00
Peru	0.00
Philippines	0.00
Poland	30.00
Portugal	0.00
Romania	0.00
Russian Federation	0.00
Rwanda	0.00
Saudi Arabia	0.00
Senegal	0.00
Singapore	0.00
Slovak Republic	0.00
Slovenia	0.00
South Africa	9.00
Spain	0.00
Sri Lanka	0.11
Sudan	0.00
Sweden	33.00
Switzerland	4.00
Syria	0.00
Tanzania	0.00
Thailand	0.00
Togo	0.00
Trinidad and Tobago	0.00
Tunisia	0.00
Turkey	0.00
Uganda	0.00
Ukraine	0.38
United Kingdom	36.00
United States	0.80
Uruguay	0.00
Uzbekistan	0.00
Venezuela	0.00
Vietnam	0.00
Zambia	0.00
Zimbabwe	0.80

Global Stewardship — Protecting the Global Commons

Variable Name: Ecological Footprint "Deficit"

Variable Code: FOOT **Variable Number:** 63

Units: Area Units (hectares of biologically productive space with world-average productivity)/person

Reference Year: 1996

Source: World Wide Fund for Nature (WWF), *Living Planet Report 2000*, Gland, Switzerland: WWF, 2000.

Logic: The ecological footprint is a measure of a country's impact on global environmental resources. A negative number (deficit) indicates that a country requires more land area than it actually has in order to support its economy, and a positive number means that it has a surplus of biologically productive land.

Details: The amount by which the ecological footprint of the country's population exceeds the biological capacity of the space available to that population.

Median: -0.53 **Minimum:** -12.21 **Maximum:** 31.72

Albania	-0.48
Algeria	-1.21
Argentina	1.31
Armenia	-0.47
Australia	0.93
Austria	-1.30
Azerbaijan	-1.54
Bangladesh	-0.52
Belarus	-1.80
Belgium	
Benin	0.58
Bhutan	1.82
Bolivia	11.96
Botswana	0.24
Brazil	8.96
Bulgaria	-1.80
Burkina Faso	-0.11
Burundi	-0.25
Cameroon	3.35
Canada	3.50
Central African Republic	13.38
Chile	-1.38
China	-0.96
Colombia	3.76
Costa Rica	-0.60
Croatia	-0.17
Cuba	-0.98
Czech Republic	-3.37
Denmark	-4.19
Dominican Republic	-0.34
Ecuador	1.74
Egypt	-1.06
El Salvador	-0.87
Estonia	-3.10
Ethiopia	-0.18
Fiji	
Finland	1.32
France	
Gabon	31.72
Germany	-3.01
Ghana	0.08
Greece	-3.83
Guatemala	0.36
Haiti	-0.48
Honduras	0.83
Hungary	-1.94
Iceland	
India	-0.32
Indonesia	1.70
Iran	-1.71
Ireland	-2.72
Israel	-4.64
Italy	-3.59
Jamaica	-1.95
Japan	-5.08
Jordan	-1.50
Kazakhstan	-2.40
Kenya	-0.59
Korea, South	-4.86
Kuwait	-9.67
Kyrgyz Republic	-0.37
Latvia	0.33
Lebanon	-2.50
Libya	-3.78
Lithuania	-1.04
Macedonia	-2.05
Madagascar	2.00
Malawi	-0.10
Malaysia	0.29
Mali	0.41
Mauritius	-0.23
Mexico	-1.04
Moldova	-0.77
Mongolia	1.37
Morocco	-0.57
Mozambique	0.35
Nepal	-0.07
Netherlands	-3.35
New Zealand	6.26
Nicaragua	2.96
Niger	-0.56
Nigeria	-0.43
Norway	0.01
Pakistan	-0.40
Panama	1.82
Papua New Guinea	30.20
Paraguay	2.68
Peru	7.90
Philippines	-0.54
Poland	-3.05
Portugal	-2.76
Romania	-1.10
Russian Federation	-1.26
Rwanda	-0.48
Saudi Arabia	-5.74
Senegal	-0.11
Singapore	-12.21
Slovak Republic	-1.92
Slovenia	-2.77
South Africa	-2.65
Spain	-2.98
Sri Lanka	-0.43
Sudan	0.62
Sweden	0.48
Switzerland	-4.33
Syria	-1.46
Tanzania	0.33
Thailand	-1.35
Togo	0.00
Trinidad and Tobago	-1.66
Tunisia	-1.05
Turkey	-1.24
Uganda	0.13
Ukraine	-2.49
United Kingdom	-4.46
United States	-6.66
Uruguay	0.22
Uzbekistan	-1.70
Venezuela	3.01
Vietnam	-0.30
Zambia	3.03
Zimbabwe	-0.77

Global Stewardship — Protecting the Global Commons

Variable Name: CO2 Emissions (total times per capita)

Variable Code: CO2_EM **Variable Number:** 64

Units: Metric Tons

Reference Year: 1997

Source: Carbon Dioxide Information Analysis Center, available at http://cdiac.esd.ornl.gov/

Logic: Carbon dioxide is the most significant greenhouse gas. This variable combines total and per capita emissions, reflecting two ways to measure global responsibility.

Details: The indicator was obtained by multiplying the Total CO2 emissions from fossil-fuels (thousand metric tons of C) with the Per capita CO2 emissions (metric tons of carbon). A logarithmic transformation of this variable was used in calculating the ESI.

Median: 5780.36 **Minimum:** 0.61 **Maximum:** 8163271.04

Albania	60.48
Algeria	22,856.24
Argentina	39,510.45
Armenia	159.18
Australia	406,642.56
Austria	33,776.28
Azerbaijan	9,910.02
Bangladesh	334.15
Belarus	27,146.34
Belgium	78,193.06
Benin	8.12
Bhutan	5.35
Bolivia	1,121.76
Botswana	540.44
Brazil	37,759.68
Bulgaria	21,523.20
Burkina Faso	5.30
Burundi	0.61
Cameroon	32.35
Canada	591,793.80
Central African Republic	1.32
Chile	17,313.56
China	685,326.00
Colombia	8,533.46
Costa Rica	487.80
Croatia	6,020.40
Cuba	4,249.48
Czech Republic	108,858.75
Denmark	45,063.40
Dominican Republic	1,624.05
Ecuador	2,552.54
Egypt	13,721.34
El Salvador	372.25
Estonia	18,337.56
Ethiopia	5.17
Fiji	53.56
Finland	45,614.86
France	147,676.02
Gabon	727.20
Germany	629,798.28
Ghana	66.36
Greece	45,816.16
Guatemala	419.40
Haiti	18.95
Honduras	214.51
Hungary	24,763.44
Iceland	1,195.48
India	81,170.71
Indonesia	20,832.96
Iran	95,873.70
Ireland	27,025.92
Israel	41,445.46
Italy	215,966.62
Jamaica	3,396.48
Japan	793,571.64
Jordan	2,413.53
Kazakhstan	68,280.84
Kenya	108.78
Korea, South	297,587.55
Kuwait	107,585.64
Kyrgyz Republic	674.88
Latvia	2,001.60
Lebanon	5,891.00
Libya	24,935.34
Lithuania	4,389.43
Macedonia	4,287.99
Madagascar	3.28
Malawi	3.96
Malaysia	60,707.00
Mali	1.31
Mauritius	190.65
Mexico	105,961.84
Moldova	1,842.75
Mongolia	1,745.49
Morocco	2,784.64
Mozambique	6.06
Nepal	11.06
Netherlands	125,244.48
New Zealand	19,191.92
Nicaragua	149.58
Niger	9.06
Nigeria	4,935.70
Norway	77,574.00
Pakistan	4,605.84
Panama	1,608.53
Papua New Guinea	100.35
Paraguay	208.20
Peru	2,635.05
Philippines	5,669.72
Poland	235,670.11
Portugal	18,525.14
Romania	38,207.00
Russian Federation	1,035,132.40
Rwanda	2.70
Saudi Arabia	270,857.68
Senegal	85.50
Singapore	139,998.51
Slovak Republic	18,786.02
Slovenia	8,464.54
South Africa	192,966.36
Spain	111,861.12
Sri Lanka	230.56
Sudan	39.52
Sweden	18,899.70
Switzerland	16,875.04
Syria	11,319.57
Tanzania	13.46
Thailand	54,142.40
Togo	10.95
Trinidad and Tobago	28,116.55
Tunisia	2,225.09
Turkey	45,935.70
Uganda	2.92
Ukraine	197,841.19
United Kingdom	342,451.36
United States	8,163,271.04
Uruguay	661.05
Uzbekistan	33,523.20
Venezuela	115,074.00
Vietnam	1,739.25
Zambia	53.60
Zimbabwe	2,185.92

Global Stewardship

Protecting the Global Commons

Variable Name: Historic Cumulative CO2 Emissions

Variable Code: CO2HIS **Variable Number:** 65

Units: Metric Tons

Reference Year: 1997

Source: Carbon Dioxide Information Analysis Center, available at http://cdiac.esd.ornl.gov/

Logic: Given the long atmospheric lifetime of CO2, historic emissions represent an important factor in climate change.

Details: Historic carbon-dioxide emissions data were utilized, applying an annual decay rate of .9926, which is consistent with the estimate that 80 percent of any given carbon-dioxide emission remains in the atomsphere after 30 years. A logarithmic transformation of this variable was used in calculating the ESI.

Median: 16688.55 **Minimum:** 120.56 **Maximum:** 2961127.75

Albania	1,008.45
Algeria	60,924.54
Argentina	77,116.71
Armenia	1,546.22
Australia	173,397.53
Austria	33,683.03
Azerbaijan	17,231.66
Bangladesh	13,184.42
Belarus	34,313.61
Belgium	58,960.83
Benin	541.73
Bhutan	231.83
Bolivia	6,761.45
Botswana	1,751.77
Brazil	165,229.50
Bulgaria	28,401.88
Burkina Faso	527.05
Burundi	120.56
Cameroon	1,348.58
Canada	267,360.26
Central African Republic	129.53
Chile	30,130.43
China	1,962,527.17
Colombia	39,137.02
Costa Rica	2,864.11
Croatia	10,645.19
Cuba	16,621.52
Czech Republic	68,734.85
Denmark	34,223.47
Dominican Republic	7,501.50
Ecuador	13,506.01
Egypt	63,080.36
El Salvador	3,002.19
Estonia	10,458.04
Ethiopia	1,207.16
Fiji	438.15
Finland	31,674.15
France	196,669.68
Gabon	1,681.15
Germany	471,169.60
Ghana	2,583.21

Greece	47,768.68
Guatemala	4,206.87
Haiti	662.88
Honduras	2,464.83
Hungary	32,957.78
Iceland	1,191.47
India	573,969.71
Indonesia	142,539.06
Iran	168,386.62
Ireland	19,876.32
Israel	32,291.61
Italy	229,549.39
Jamaica	5,819.15
Japan	657,751.13
Jordan	8,442.42
Kazakhstan	72,319.25
Kenya	4,011.08
Korea, South	243,100.00
Kuwait	28,706.76
Kyrgyz Republic	3,610.49
Latvia	4,790.81
Lebanon	9,368.47
Libya	25,310.18
Lithuania	8,261.24
Macedonia	6,233.58
Madagascar	668.92
Malawi	432.39
Malaysia	75,572.63
Mali	265.02
Mauritius	937.48
Mexico	204,256.06
Moldova	5,992.58
Mongolia	4,309.27
Morocco	19,383.48
Mozambique	627.58
Nepal	1,154.62
Netherlands	91,134.14
New Zealand	16,755.58
Nicaragua	1,710.41
Niger	608.94
Nigeria	75,148.68

Norway	55,844.63
Pakistan	53,568.92
Panama	3,568.59
Papua New Guinea	1,321.14
Paraguay	2,160.88
Peru	15,100.14
Philippines	41,303.25
Poland	196,634.79
Portugal	28,783.64
Romania	63,170.06
Russian Federation	809,347.32
Rwanda	270.40
Saudi Arabia	81,328.47
Senegal	1,892.38
Singapore	42,257.25
Slovak Republic	21,389.96
Slovenia	8,266.72
South Africa	168,507.98
Spain	136,735.34
Sri Lanka	4,259.69
Sudan	2,072.70
Sweden	28,337.90
Switzerland	22,946.15
Syria	28,867.57
Tanzania	1,552.85
Thailand	120,899.06
Togo	524.13
Trinidad and Tobago	13,470.81
Tunisia	10,333.83
Turkey	114,672.43
Uganda	604.62
Ukraine	208,956.66
United Kingdom	297,179.93
United States	2,961,127.75
Uruguay	3,115.83
Uzbekistan	57,024.21
Venezuela	108,769.35
Vietnam	25,247.68
Zambia	1,420.11
Zimbabwe	10,267.46

Global Stewardship — Protecting the Global Commons

Variable Name: CFC Consumption (total times per capita)

Variable Code: CFC **Variable Number:** 66

Units: Ozone Depletion Potential (ODP) tons (Metric Tons x ODP)

Reference Year: MRYA 1996-98

Source: UNEP, Production and Consumption of Ozone Depleting Substances, 1986-1998, October 1999.

Logic: Emissions of CFCs contribute to the breakdown of the Earth's protective ozone layer and to global climate change. This variable combines total and per capita emission, reflecting the long atmospheric lifetime of CFCs.

Details: The indicator was obtained by multiplying the Total CFCs emissions (metric tons times ozone depletion potential) with the Per capita CFCs emissions (obtained by dividing the total CFCs emissions by the population in 1997). A logarithmic transformation of this variable was used in calculating the ESI.

Median: 3096.17 **Minimum:** 0 **Maximum:** 2096731.55

Albania	
Algeria	81,627.89
Argentina	31,916.38
Armenia	
Australia	0.22
Austria	
Azerbaijan	5,286.64
Bangladesh	5,643.89
Belarus	6,331.14
Belgium	
Benin	34.82
Bhutan	
Bolivia	272.19
Botswana	31.81
Brazil	588,838.63
Bulgaria	0.00
Burkina Faso	124.44
Burundi	643.81
Cameroon	4,855.01
Canada	58.29
Central African Republic	0.00
Chile	37,241.22
China	2,096,731.55
Colombia	37,414.36
Costa Rica	11,103.16
Croatia	1,649.37
Cuba	39,953.99
Czech Republic	11.75
Denmark	
Dominican Republic	11,944.58
Ecuador	6,197.71
Egypt	36,637.74
El Salvador	6,433.23
Estonia	3,385.93
Ethiopia	24.80
Fiji	249.25
Finland	
France	
Gabon	126.65
Germany	
Ghana	134.00

Greece	
Guatemala	2,225.37
Haiti	
Honduras	1,638.72
Hungary	0.10
Iceland	0.00
India	46,502.34
Indonesia	88,310.73
Iran	480,228.61
Ireland	
Israel	0.00
Italy	
Jamaica	15,736.64
Japan	101.31
Jordan	119,897.02
Kazakhstan	
Kenya	2,214.78
Korea, South	1,858,868.33
Kuwait	135,805.16
Kyrgyz Republic	
Latvia	214.94
Lebanon	71,790.14
Libya	80,339.88
Lithuania	2,919.55
Macedonia	1,997.95
Madagascar	739.80
Malawi	322.74
Malaysia	259,617.88
Mali	1,180.63
Mauritius	1,342.64
Mexico	128,672.29
Moldova	365.59
Mongolia	157.67
Morocco	29,193.18
Mozambique	26.24
Nepal	37.69
Netherlands	
New Zealand	0.00
Nicaragua	292.60
Niger	356.53
Nigeria	218,257.67

Norway	58.24
Pakistan	11,091.52
Panama	43,976.07
Papua New Guinea	288.08
Paraguay	2,509.55
Peru	4,388.27
Philippines	105,641.32
Poland	2,451.70
Portugal	
Romania	15,021.65
Russian Federation	817,386.43
Rwanda	
Saudi Arabia	142,831.18
Senegal	1,867.71
Singapore	84.33
Slovak Republic	0.19
Slovenia	0.00
South Africa	619.83
Spain	
Sri Lanka	3,420.18
Sudan	3,378.16
Sweden	
Switzerland	231.85
Syria	279,497.02
Tanzania	1,125.00
Thailand	239,571.46
Togo	
Trinidad and Tobago	19,060.25
Tunisia	67,931.19
Turkey	236,217.77
Uganda	6.05
Ukraine	23,739.77
United Kingdom	
United States	23,385.16
Uruguay	11,525.63
Uzbekistan	121.02
Venezuela	602,347.63
Vietnam	3,272.79
Zambia	97.96
Zimbabwe	16,872.89

Global Stewardship — Protecting the Global Commons

Variable Name: S02 Exports

Variable Code: SO2EXP **Variable Number:** 67

Units: 100 Metric Tons

Reference Year: 1997 (Asia) and 1998 (Europe)

Source: International Institute for Applied Systems Analysis, RAINS-ASIA and Co-operative Programme for monitoring and evaluation of the long range transmission of air pollutants in Europe (EMEP).

Logic: The transport of sulphur emissions across national boundaries contributes to poor air quality and acid rain in receiving countries.

Details:

Median: 538 **Minimum:** 4.12 **Maximum:** 12300

Albania	307.00
Algeria	
Argentina	
Armenia	12.00
Australia	
Austria	175.00
Azerbaijan	
Bangladesh	238.00
Belarus	628.00
Belgium	832.00
Benin	
Bhutan	4.12
Bolivia	
Botswana	
Brazil	
Bulgaria	4,974.00
Burkina Faso	
Burundi	
Cameroon	
Canada	
Central African Republic	
Chile	
China	12,300.00
Colombia	
Costa Rica	
Croatia	367.00
Cuba	
Czech Republic	1,762.00
Denmark	326.00
Dominican Republic	
Ecuador	
Egypt	
El Salvador	
Estonia	496.00
Ethiopia	
Fiji	
Finland	245.00
France	2,537.00
Gabon	
Germany	4,448.00
Ghana	

Greece	2,029.00
Guatemala	
Haiti	
Honduras	
Hungary	2,348.00
Iceland	110.00
India	3,400.00
Indonesia	1,320.00
Iran	
Ireland	565.00
Israel	
Italy	3,876.00
Jamaica	
Japan	1,420.00
Jordan	
Kazakhstan	
Kenya	
Korea, South	438.00
Kuwait	
Kyrgyz Republic	
Latvia	155.00
Lebanon	
Libya	
Lithuania	363.00
Macedonia	71.00
Madagascar	
Malawi	
Malaysia	401.00
Mali	
Mauritius	
Mexico	
Moldova	143.00
Mongolia	69.00
Morocco	
Mozambique	
Nepal	188.00
Netherlands	425.00
New Zealand	
Nicaragua	
Niger	
Nigeria	

Norway	98.00
Pakistan	420.00
Panama	
Papua New Guinea	
Paraguay	
Peru	
Philippines	723.00
Poland	5,849.00
Portugal	1,349.00
Romania	2,768.00
Russian Federation	4,148.00
Rwanda	
Saudi Arabia	
Senegal	
Singapore	642.00
Slovak Republic	746.00
Slovenia	538.00
South Africa	
Spain	5,201.00
Sri Lanka	81.50
Sudan	
Sweden	144.00
Switzerland	94.00
Syria	
Tanzania	
Thailand	
Togo	
Trinidad and Tobago	
Tunisia	
Turkey	3,465.00
Uganda	
Ukraine	3,560.00
United Kingdom	5,591.00
United States	
Uruguay	
Uzbekistan	
Venezuela	
Vietnam	201.00
Zambia	
Zimbabwe	