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Pilot 2006 Environmental Performance Index

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Yale University

Center for International Earth Science Information Network (CIESIN)
Columbia University

In collaboration with

World Economic Forum
Geneva, Switzerland

Joint Research Centre of the European Commission
Ispra, Italy

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The Pilot 2006 Environmental Performance Index Report is available online at www.yale.edu/epi

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Disclaimers

This *Pilot 2006 Environmental Performance Index* (EPI) tracks national environmental results on a quantitative basis, measuring proximity to an established set of policy targets using the best data available. Data constraints and limitations in methodology make this a work in progress. Further refinements will be undertaken in the coming year as the EPI project moves beyond its pilot phase. Comments, suggestions, feedback, and referrals to better data sources are welcome at www.yale.edu/epi.

The word "country" is used loosely in this report to refer to both countries and other administrative or economic entities. Similarly, the maps presented are for illustrative purposes and do not imply any preference in cases where territory is under dispute.

Acknowledgements

The Pilot 2006 Environmental Performance Index (EPI) incorporates the results of extensive consultations and cooperation with subject-area specialists, statisticians, indicator experts, and policymakers across the world. Recognizing that environmental performance is intrinsically multi-dimensional and that its measurement requires an in-depth understanding of each dimension as well as the interrelationships between dimensions and the application of sophisticated statistical techniques to each, we have drawn on the wisdom and insights of a network of experts including: Neric Acosta, SoEun Ahn, Michelle Bell, Marianne Camerer, David Campbell, Ben Cashore, Aaron Cohen, Arthur Dahl, Winston Dang, Vinay Dharmadhikari, John Dixon, Simeon Djankov, Ellen Douglas, Darlene Dube, Jay Emerson, David Ervin, Majid Ezzati, Rafael Flor, Bakhodir Ganiev, Stanley Jay Glidden, Andres Gomez, Luis Gomez-Echeverri, Lloyd Irland, Claes Johansson, Daniel Kammen, Bruno Kestemont, R. Andreas Kraemer, Christian Layke, Brian Leaderer, Denise Mauzerall, Charles McNeill, Sascha Müller-Kraenner, John O'Connor, Chad Oliver, Kiran Pandey, Bradley Parks, Thomas Parris, G. P. Patil, Vincent Pérez, László Pintér, Nigel Purvis, Robert Repetto, H. Phillip Ross, David Runnalls, Michaela Saisana, Andrea Saltelli, Kim Samuel-Johnson, Eric Sanderson, Guido Schmidt-Traub, David Skelly, Kirk Smith, Moo-Jo Son, David Stanners, Kazushige Tanaka, Dan Tunstall, Charles Vörösmarty, Yu Ling Yang, Erica Zell, and Robert Zomer.

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In constructing the Pilot 2006 EPI, we have built upon the work of a range of data providers, including our own prior data development work for the 2005 Environmental Sustainability Index. The data are drawn primarily from international, academic, and research institutions with subject-area expertise, long-term practice in delivering operational data products, and the capacity to produce policy-relevant interdisciplinary information tools. Moving environmental decisionmaking toward more rigorous, quantitative foundations depends on their experience and commitment to the collection of high quality information. We are indebted to all the data collection agencies listed in the data appendix (Appendix H) who provide the fundamental groundwork for all indicator work.

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Data Sources

Timothy M. Boucher; Center for Environmental Research and Conservation at Columbia University (CERC); Carbon Dioxide Information Analysis Center (CDIAC); Center for International Earth Science Information Network (CIESIN); Energy Information Administration (EIA); Environmental Vulnerability Index (EVI); Food and Agriculture Organization of the United Nations (FAO); Jonathan M. Hoekstra; Denise Mauzerall's research team at Princeton and the MOZART model; John O'Connor; Organisation for Economic Co-operation and Development (OECD); Taylor H. Ricketts; Carter Roberts; South Pacific Applied Geosciences Commission (SOPAC); United Nations Population Division; University of British Columbia (UBC); University of New Hampshire (UNH) Water Systems Analysis Group; United States Department of Agriculture-Economic Research Service (USDA-ERS); Wildlife Conservation Society; World Bank; World Health Organization (WHO); World Health Organization & United Nations Children's Fund Joint Monitoring Program; World Trade Organization (WTO).

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Executive Summary

Quantitative performance measurement has proven enormously valuable in fields such as economics, health care management, and education, where policies are driven by indicators such as the unemployment rate, infant mortality, and standardized test scores. While lagging behind these other domains, policymakers in the environmental field have also begun to recognize the importance of data and analytically rigorous foundations for decisionmaking.

The need for carefully constructed metrics for pollution control and natural resource management is made more urgent by the United Nations' Millennium Development Goals (MDGs), which commit the nations of the world to progress on a range of critical development issues. The MDGs include specific targets for poverty alleviation, improved health care, and education as well as a commitment to environmental sustainability. However, the environmental dimension of the MDGs has been criticized as insufficiently defined and inadequately measured. The Pilot 2006 Environmental Performance Index (EPI) shows how this gap might be filled.

The EPI centers on two broad environmental protection objectives: (1) reducing environmental stresses on human health, and (2) promoting ecosystem vitality and sound natural resource management. Derived from a careful review of the environmental literature, these twin goals mirror the priorities expressed by policymakers—most notably the environmental dimension of the MDGs. Environmental health and ecosystem vitality are gauged using sixteen indicators tracked in six well-established policy categories: Environmental Health, Air Quality, Water Resources, Productive Natural Resources, Biodiversity and Habitat, and Sustainable Energy.

The Pilot 2006 EPI deploys a proximity-to-target methodology focused on a core set of environmental outcomes linked to policy goals for which every government should be held accountable. By identifying specific targets and measuring how close each country comes to them, the EPI provides a factual foundation for policy analysis and a context for evaluating performance. Issue-by-issue and aggregate rankings facilitate cross-country comparisons both globally and within relevant peer groups.

The real value of the EPI lies not in the overall rankings but comes from careful analysis of the underlying data and indicators. In displaying the results by issue, policy category, peer group, and country, the EPI makes it easy to spot leaders and laggards, highlight best policy practices, and identify priorities for action. More generally, the EPI provides a powerful tool for evaluating environmental investments and improving policy results.

While a lack of time-series data and other data gaps constrain the current effort, over time, this methodology should facilitate rankings based on rate of progress toward established goals and enable global-scale assessments of the world's environmental trajectory.

Table 1 below presents the Pilot EPI scores and rankings with "sparklines" highlighting the relative performance of each country in addressing (1) environmental health challenges, and (2) the five underlying policy categories that contribute to ecosystem vitality.

Top-ranked countries—New Zealand, Sweden, Finland, the Czech Republic, and the United Kingdom—all commit significant resources and effort to environmental protection, resulting in strong performance across most of the policy categories. The five lowest-ranked countries—Ethiopia, Mali, Mauritania, Chad, and Niger—are underdeveloped nations with little capacity to invest in environmental infrastructure (drinking water and sanitation systems) or aggressive pollution control and systematic natural resource management.

A number of policy conclusions can be drawn from the Pilot 2006 Environmental Performance Index and analysis of the underlying indicators:

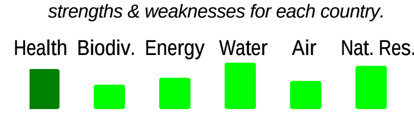
- In spite of data gaps, methodological limitations, and serious scientific uncertainties, the EPI demonstrates that environmental policy results can be tracked with the same outcome-oriented and performance-based rigor that applies to poverty reduction, health promotion, and other global development goals.
- If environmental protection efforts are to be made more empirically grounded and analytically rigorous, policymakers need to (1) set clearer targets, especially on the range of important issues for which none now exist, (2) invest in serious data monitoring, indicator tracking, and evaluation programs, and (3) incorporate targets and reporting into policy formation and implementation efforts at the global, regional, national, state/provincial, and local scales.
- Target-based environmental performance benchmarks make cross-country comparisons possible on an issue-by-issue and aggregate basis. Comparative analysis provides information on policy options, a context for evaluating performance, and a basis for holding governments accountable for environmental results.
- Every country confronts critical environmental challenges. Developed countries often suffer from pollution and degraded ecosystems. Developing countries must face the additional burden of investing in water and sanitation systems while establishing governance structures to support pollution control and natural resource management.
- Wealth and a country's level of economic development emerge as significant determinants of environmental outcomes. But policy choices also affect performance. At every level of development, some countries achieve environmental results that far exceed their peers. In this regard, good governance appears highly correlated with environmental success.
- The EPI provides a basis for examining the relationship between economic competitiveness and environmental protection. Top-ranked EPI countries emerge as among the most productive and competitive in the world. But industrialization and economic development do lead to environmental stresses, the risk of degradation of ecosystems, and the depletion of natural resources.

The Pilot 2006 EPI represents a "work in progress" meant to stimulate debate on appropriate metrics and methodologies for tracking environmental performance, enable analysis of the determinants of environmental success, and highlight the need for increased investment in environmental indicators and data. The Pilot EPI will be refined as existing conceptual, methodological, and data challenges are overcome.

Table 1: EPI Scores (0–100)

Rank	Country	EPI Score	Policy Categories*
1	New Zealand	88.0	
2	Sweden	87.8	
3	Finland	87.0	
4	Czech Rep.	86.0	
5	Unit. Kingdom	85.6	
6	Austria	85.2	
7	Denmark	84.2	
8	Canada	84.0	
9	Malaysia	83.3	
10	Ireland	83.3	
11	Portugal	82.9	
12	France	82.5	
13	Iceland	82.1	
14	Japan	81.9	
15	Costa Rica	81.6	
16	Switzerland	81.4	
17	Colombia	80.4	
18	Norway	80.2	
19	Greece	80.2	
20	Australia	80.1	
21	Italy	79.8	
22	Germany	79.4	
23	Spain	79.2	
24	Taiwan	79.1	
25	Slovakia	79.1	
26	Chile	78.9	
27	Netherlands	78.7	
28	United States	78.5	
29	Cyprus	78.4	
30	Argentina	77.7	
31	Slovenia	77.5	
32	Russia	77.5	
33	Hungary	77.0	
34	Brazil	77.0	
35	Trin. & Tob.	76.9	
36	Lebanon	76.7	
37	Panama	76.5	
38	Poland	76.2	
39	Belgium	75.9	
40	Ecuador	75.5	
41	Cuba	75.3	
42	South Korea	75.2	
43	Jamaica	74.7	
44	Venezuela	74.1	
45	Israel	73.7	
46	Gabon	73.2	
47	Unit. Arab Em.	73.2	
48	Suriname	72.9	
49	Turkey	72.8	
50	Bulgaria	72.0	
51	Ukraine	71.2	
52	Honduras	70.8	
53	Iran	70.0	
54	Dom. Rep.	69.5	
55	Philippines	69.4	
56	Nicaragua	69.2	
57	Albania	68.9	
58	Guatemala	68.9	
59	Saudi Arabia	68.3	
60	Oman	67.9	
61	Thailand	66.8	
62	Paraguay	66.4	
63	Algeria	66.2	
64	Jordan	66.0	
65	Peru	65.4	
66	Mexico	64.8	
67	Sri Lanka	64.6	
68	Morocco	64.1	
69	Armenia	63.8	
70	Kazakhstan	63.5	
71	Bolivia	63.4	
72	Ghana	63.1	
73	El Salvador	63.0	
74	Zimbabwe	63.0	
75	Moldova	62.9	
76	South Africa	62.0	
77	Georgia	61.4	
78	Uganda	60.8	
79	Indonesia	60.7	
80	Kyrgyzstan	60.5	
81	Nepal	60.2	
82	Tunisia	60.0	
83	Tanzania	59.0	
84	Benin	58.4	
85	Egypt	57.9	
86	Côte d'Ivoire	57.5	
87	Cen. Afr. Rep.	57.3	
88	Myanmar	57.0	
89	Rwanda	57.0	
90	Romania	56.9	
91	Malawi	56.5	
92	Namibia	56.5	
93	Kenya	56.4	
94	China	56.2	
95	Azerbaijan	55.7	
96	Papua N. G.	55.5	
97	Syria	55.3	
98	Zambia	54.4	
99	Viet Nam	54.3	
100	Cameroon	54.1	
101	Swaziland	53.9	
102	Laos	52.9	
103	Togo	52.8	
104	Turkmenistan	52.3	
105	Uzbekistan	52.3	
106	Gambia	52.3	
107	Senegal	52.1	
108	Burundi	51.6	
109	Liberia	51.0	
110	Cambodia	49.7	
111	Sierra Leone	49.5	
112	Congo	49.4	
113	Guinea	49.2	
114	Haiti	48.9	
115	Mongolia	48.8	
116	Madagascar	48.5	
117	Tajikistan	48.2	
118	India	47.7	
119	D. R. Congo	46.3	
120	Guin.-Bissau	46.1	
121	Mozambique	45.7	
122	Yemen	45.2	
123	Nigeria	44.5	
124	Sudan	44.0	
125	Bangladesh	43.5	
126	Burkina Faso	43.2	
127	Pakistan	41.1	
128	Angola	39.3	
129	Ethiopia	36.7	
130	Mali	33.9	
131	Mauritania	32.0	
132	Chad	30.5	
133	Niger	25.7	

** This column contains sparklines for each of the 6 EPI policy categories showing the relative strengths & weaknesses for each country.*



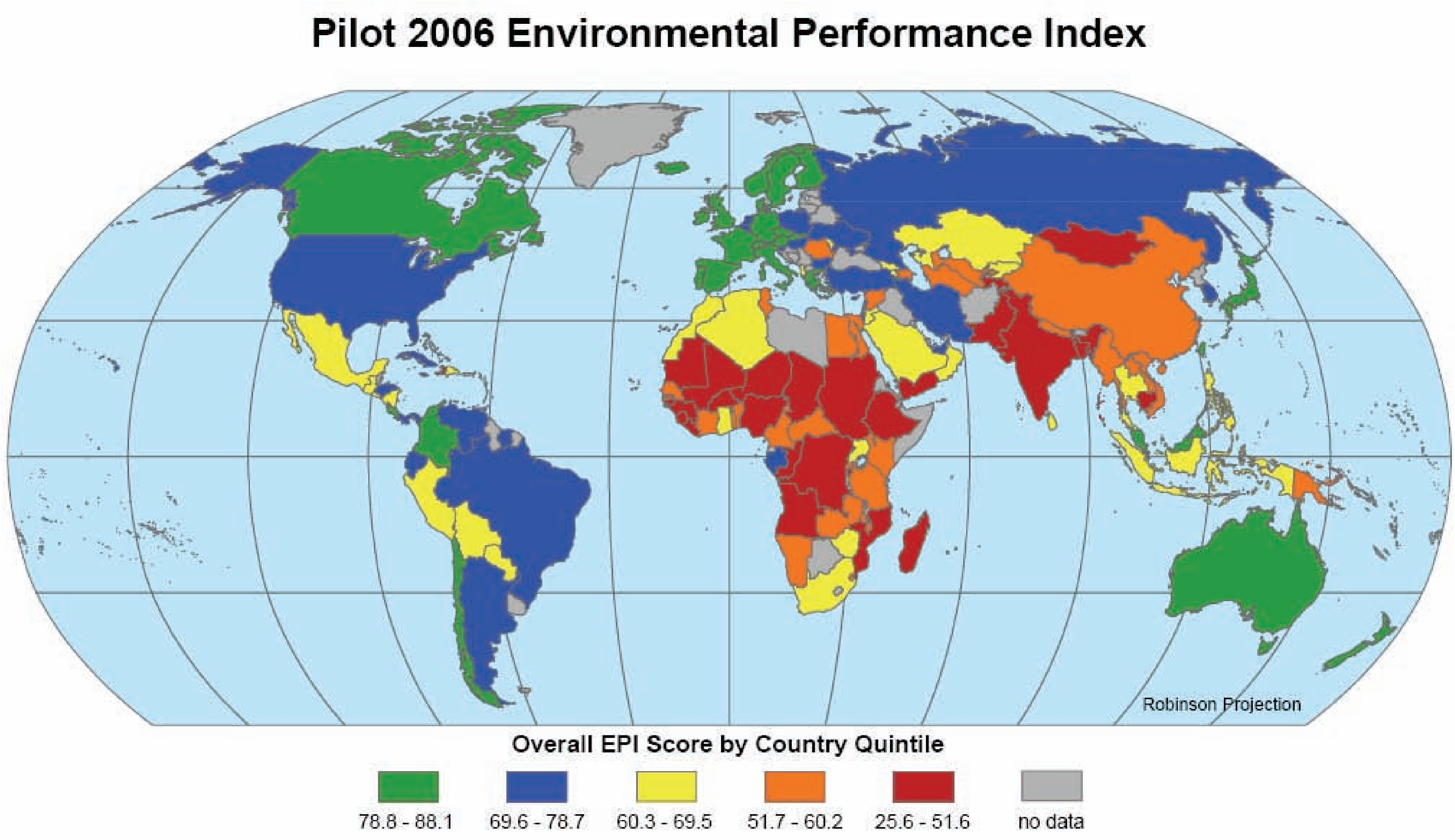


Figure 1: Map of Overall EPI Country Scores by Quintile

Table 2: Country Performance by Quintile (sorted alphabetically)

First Quintile (green)	Second Quintile (blue)	Third Quintile (yellow)	Fourth Quintile (orange)	Fifth Quintile (red)
Australia	Argentina	Albania	Azerbaijan	Angola
Austria	Belgium	Algeria	Benin	Bangladesh
Canada	Brazil	Armenia	Cameroon	Burkina Faso
Chile	Bulgaria	Bolivia	Central Afr. Rep.	Burundi
Colombia	Cuba	El Salvador	China	Cambodia
Costa Rica	Cyprus	Georgia	Côte d'Ivoire	Chad
Czech Rep.	Dominican Rep.	Ghana	Egypt	Congo
Denmark	Ecuador	Guatemala	Gambia	Dem. Rep. Congo
Finland	Gabon	Indonesia	Kenya	Ethiopia
France	Honduras	Jordan	Laos	Guinea
Germany	Hungary	Kazakhstan	Malawi	Guinea-Bissau
Greece	Iran	Kyrgyzstan	Myanmar	Haiti
Iceland	Israel	Mexico	Namibia	India
Ireland	Jamaica	Moldova	Papua New Guinea	Liberia
Italy	Lebanon	Morocco	Romania	Madagascar
Japan	Panama	Nepal	Rwanda	Mali
Malaysia	Poland	Nicaragua	Senegal	Mauritania
Netherlands	Russia	Oman	Swaziland	Mongolia
New Zealand	Slovenia	Paraguay	Syria	Mozambique
Norway	South Korea	Peru	Tanzania	Niger
Portugal	Suriname	Philippines	Togo	Nigeria
Slovakia	Trinidad & Tobago	Saudi Arabia	Tunisia	Pakistan
Spain	Turkey	South Africa	Turkmenistan	Sierra Leone
Sweden	Ukraine	Sri Lanka	Uzbekistan	Sudan
Switzerland	United Arab Em.	Thailand	Viet Nam	Tajikistan
Taiwan	United States	Uganda	Zambia	Yemen
United Kingdom	Venezuela	Zimbabwe		

1. The Need for Environmental Performance Indicators

Environmental policymaking is a difficult endeavor. Decisionmakers must address a wide range of pollution control and natural resource management challenges in the face of causal complexity, incomplete data, and a myriad of other uncertainties. Without careful analysis based on solid factual foundations, bad choices get made, investments in environmental protection under-perform, and political divisions widen.

Shifting environmental policymaking onto firmer analytic underpinnings and giving it a more empirical cast is thus a matter of some urgency. In this regard, better measurement and data are crucial.

A number of existing quantitative environmental metrics, including the 2005 Environmental Sustainability Index (Esty, Levy et al., 2005), have been criticized for being overly broad—and not focused enough on current results to be useful as a policy guide. The concept of *sustainability* itself is partly at fault. Its comprehensive and long-term focus requires that attention be paid to natural resource endowments, past environmental performance, and the ability to change future pollution and resource use trajectories—as well as present environmental results.

The Pilot 2006 EPI attempts to address this critique and focuses on countries' current environmental performance within the context of sustainability. It more narrowly tracks actual results for a core set of environmental issues for which governments can be held accountable. In gauging present performance on 16 indicators of environmental health and ecosystem vitality, it serves as a complement to measures of sustainability.

In addition to providing governments with policy guidance, the EPI promises to help break the stalemate that exists in some quarters over how best to advance environmental protection. Insofar as uncertainty over the seriousness of environmental threats, the direction of pollution and natural resource trends, or the efficacy of policy interventions is in doubt, the EPI provides a tool for clarifying issues, trends, and policy options.[1]

Driven in part by the 2000 Millennium Declaration and the MDGs, major efforts are underway to make global-scale progress in the areas of education, health, and poverty reduction.[2] While environmental sustainability was recognized in *MDG Goal 7* alongside these other agenda items, the environmental policy thrust is not keeping pace. Moreover, promising areas of synergy between the environment and these other policy domains are going unrealized. The lag in environmental policy dynamism has been traced, in part, to an inability to identify the most pressing problems, quantify the burden imposed, measure policy progress, and assure funders in both the private and public sectors that their investments in response strategies will pay off. Thus, pollution control and natural resource management issues have tended to be shuffled to the back burner.

A major effort to construct a policy-relevant set of environmental performance indicators is needed to jumpstart environmental progress in the context of sustainable development and the

[1] See also the summary report of the Millennium Project Task Force 6 on Millennium Development Goal 7 "Ensuring Environmental Sustainability."
[2] This sentiment was repeatedly expressed at the recent High Level Plenary of the General Assembly in New York, which reviewed the progress achieved in meeting the Millennium Development Goals (MDGs). Professor Jeffrey Sachs, Director of the Earth Institute at Columbia University and special advisor to the UN Secretary General on the MDGs, among others, called particular attention to this failure. UNDP/UNEP "Environment for the MDGs" policy dialogue, 14 September 2005.

MDGs. More generally, better data and analysis might help to revolutionize environmental protection, shifting governmental efforts toward more effective and efficient market mechanisms and information-based regulation (Esty, 2004).

Although the financing required for a major environmental indicator initiative would not be trivial, it is eminently affordable.[3] As a way to track the returns on environmental investments and unleash a competitive dynamic to spur better performance, metrics are very helpful.

The fundamental premise of this report is that qualitative information and subjective evaluation provide an insufficient foundation for policymaking in the environmental realm. In such a world, expectations are hard to evaluate, governments explain away sub-par performance, priorities cannot easily be set, and the limited financial resources available for environmental protection are often poorly deployed.

Quantitative measurement is needed to create a context for sound decisionmaking. Indicators that permit cross-country comparisons provide a further foundation for evaluating results, benchmarking performance, and clarifying what might be achieved in particular circumstances.

By choosing a proximity-to-target approach (see Chapter 2), the Pilot EPI seeks to meet the needs of governments to track actual, on-the-ground environmental results.[4] It offers a way to assess the effectiveness of their environmental policies against relevant performance goals. It is specifically designed to help policymakers:

- spot environmental problems;
- track pollution control and natural resource management trends;
- identify priority environmental issues;
- determine where current policies are producing good results—and where they are insufficient;
- provide a baseline for cross-country and cross-sectoral performance comparisons;
- find "peer groups" and identify leaders and laggards on an issue-by-issue basis; and
- identify best practices and successful policy models.

The Environmental Performance Index looks toward a world in which environmental targets are set explicitly, in which progress toward these goals is measured quantitatively, and policy evaluation is undertaken rigorously. As better data becomes available, particularly time-series data, future versions of the EPI will be able to track not only proximity to policy targets but also provide a "rate of progress" guide. In addition, as greater consensus emerges over long-term environmental targets, the EPI methodology will permit global aggregations that will help to establish how close the world community is to an environmentally sustainable trajectory.

More generally, the EPI team hopes to spur action on better data collection across the world—facilitating movement towards a more empirical mode of environmental protection grounded on solid facts and careful analysis. By being forthright about the limitations of this Pilot Environmental Performance Index, the Yale Center for Environmental Law and Policy and CIESIN teams hope to advance the debate over the proper issues to track and the best methodology for constructing a composite environmental performance index.

[3] Consumers Union spends approximately $200 million per year measuring the performance characteristics of commercial products for the U.S. market.(http://www.consumerreports.org/annualreport/financialreport.pdf). This is approximately ten times the amount budgeted to monitor the MDG water and sanitation goals.
[4] In deploying the proximity-to-target approach, we build upon the Environmental Vulnerability Index (SOPAC, 2003).

2. The EPI Framework

The Pilot 2006 EPI offers a composite index of current national environmental protection results. Recognizing that on-the-ground conditions are the ultimate gauge of environmental performance, it focuses on measurable outcomes that can be linked to policy targets and, in principle, tracked over time.

The EPI builds on measures relevant to the goal of reducing environmental stresses on human health, which we call the Environmental Health objective. It also includes measures relevant to the goal of reducing the loss or degradation of ecosystems and natural resources—we call this the Ecosystem Vitality objective.

The quantitative metrics of the EPI encompass 16 indicators or datasets. These indicators were chosen through a broad-based review of the environmental policy literature, the policy consensus emerging from the Millennium Development Goal dialogue, and expert judgment. Together they span the range of priority environmental issues that are measurable through currently available data sources.

For each indicator, we have also identified a relevant long-term public health or ecosystem sustainability goal. Drawn from international agreements, standards set by international organizations or national authorities, or prevailing consensus among environmental scientists, the targets do not vary by country. Rather, they serve as absolute benchmarks for long-term environmental sustainability.

For each country and each indicator, we calculate a proximity-to-target value. Our data matrix covers 133 countries for which we have values across the 16 indicators. Data gaps mean that 60-plus countries cannot be ranked in the Pilot 2006 EPI.

Using the 16 indicators, we are able to evaluate environmental health and ecosystem vitality performance at three levels of aggregation.

First, we calculate scores, building on two to five underlying indicators, within six core policy categories—Environmental Health, Air Quality, Water Resources, Biodiversity and Habitat, Productive Natural Resources, and Sustainable Energy. This level of aggregation permits countries to track their relative performance within these well-established policy lines.

Second, we calculate scores within the two broad objectives—Environmental Health and Ecosystem Vitality. In the latter category, we draw upon the five policy category scores linked to this second objective.

Finally, we calculate an overall Environmental Performance Index, which is the average of the two broad objective scores.

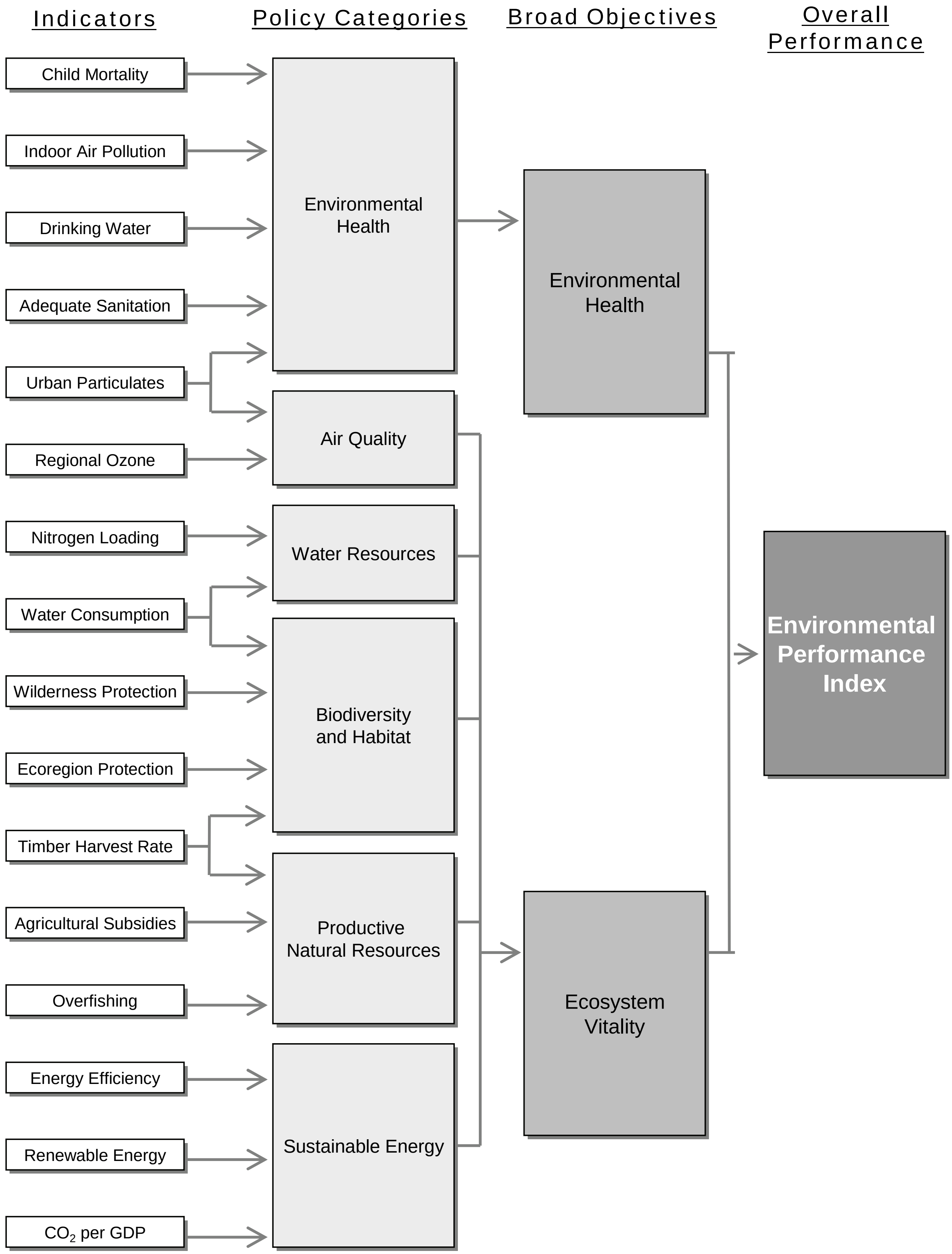


Figure 2: Construction of the EPI

2.1. Indicator Selection

Indicators were sought to cover the full spectrum of issues underlying each of the major policy categories identified. This exercise began with an effort to specify the relevant MDG issues in each policy category as established by reference to the environmental science and policy literature. For each issue identified, the EPI team attempted to find one or more datasets suitable for indicator construction. But the attempt to be comprehensive was constrained by a lack of reliable data, as discussed in more detail below.

To ensure the use of the most relevant and best available metrics, the following indicator selection criteria were applied:

- *Relevance*. The indicator clearly tracks the environmental issue of concern in a way that is relevant to countries under a wide range of circumstances, including various geographic, climatic, and economic conditions.
- *Performance orientation*. The indicator tracks ambient conditions or on-the-ground results (or is a "best available data" proxy for such outcome measures).
- *Transparency*. The indicator provides a clear baseline measurement, ability to track changes over time, and transparency as to data sources and methods.
- *Data quality*. The data used by the indicator should meet basic quality requirements—and represent the best measure available.

2.2. Data Gaps and Country Coverage

The Pilot 2006 EPI builds on the best environmental data available. But much of it is not very good, and the gaps are significant. A lack of reliable data and limited country coverage severely constrain this effort to provide a firmer analytic foundation for environmental decisionmaking. Dozens of countries cannot be included in the EPI because data are not available for one or more of the 16 EPI indicators. And we lack reliable measures for many critical issues including: basic air pollutant emissions, such as SO_2 and VOCs; water pollution, such as fecal coliform and salinity; human exposures to toxic chemicals and heavy metals; and hazardous waste management and disposal (See Box 1 below). We looked for data across each of the 16 indicators for all countries. We found sufficient data for 133 countries.

Because most of the indicators are unrelated to other measures and because of our focus on *actual* policy results, we chose not to do imputations to fill holes in the data matrix. There were three exceptions to this rule. First, because of their high degree of correlation, countries with data points for either access to water or access to sanitation were included even if the other data point was missing. Second, countries without natural or plantation forests were given the value of zero for the timber harvest rate. Landlocked countries were given "no data" for the overfishing indicator, which measures a country's fish catch relative to productivity in its own coastal waters.

2.3. Targets

Research and policy dialogues concerning the measurement of environmental performance have long recognized the benefits arising from the use of absolute reference points rather than relative measures of country performance. Absolute targets provide more useful information about country-specific conditions and policy results, as well as areas in need of increased attention, resources, and worldwide trajectories. A country in 30th place in a comparative ranking might be one of many nations very close to an ultimate target—meaning that the issue probably does not deserve priority attention. On the other hand, it could be that the top 30 countries are all very far from the ultimate target—and the issue should be a point of policy focus for everyone. In short, a proximity-to-target measure helps to clarify a comparative ranking and highlight policy priorities.

Box 1: Data Gaps

The Pilot 2006 EPI falls short of covering the full spectrum of Environmental Health and Ecosystem Vitality challenges in many respects. A number of important issues are not reflected in the index due to a lack of data. Notably, we have no reliably constructed indicators with broad-based country coverage of:

- human exposure to toxic chemicals;
- waste management and disposal practices;
- SO_2 emissions and acid rain;
- recycling and reuse rates;
- lead and mercury exposure;
- wetlands loss;
- soil productivity and erosion;
- greenhouse gas emissions (beyond CO_2);
- and ecosystem fragmentation.

Absent time series data on most of the 16 indicators, we cannot calculate (as we had hoped to) a Rate of Progress Index, meaning that we are unable to report on which countries are gaining (or losing) ground most quickly on the policy targets.

To develop the targets for the Pilot 2006 EPI, we screened international agreements, environmental and public health standards generated by international organizations and national governments, the scientific literature, and expert opinion from around the world. The targets should not be construed as policy goals specifically for industrialized nations with the resources to invest in pollution abatement technology and clean-up programs. On the contrary, though ambitious, obtaining or moving toward these targets is crucial for all countries regardless of development stage. And, in fact, some developing countries are closer than developed countries to the targets. Notably, with regard to sustainable energy and protecting biodiversity and habitat, many developing countries have high scores.

In practice, we found that four of the five Environmental Health indicators had explicit consensus targets already established. Only four of the twelve Ecosystem Vitality indicators had such targets established. This suggests that there is a clear need for the international policy community to sharpen its focus on desired outcomes and the requirements for long-term environmental sustainability.

2.4. Calculating the EPI

To make the 16 indicators comparable, each was converted to a proximity-to-target measure with a theoretical range of zero to 100. To avoid extreme values skewing aggregations, the indicator values for "outlier" countries were adjusted to make them equal to the value of the 5^{th} percentile country, a recognized statistical technique called winsorization. To avoid rewarding "over-performance," no indicator values above the long-term target were used. In the few cases where a country did better than the target, the value was reset so that it was equal to the target. Once those two adjustments were made, a simple arithmetic transformation was undertaken—stretching the observed values onto a zero to 100 scale where 100 corresponded to the target and zero to the worst observed value.

To help identify appropriate groupings and weights for each indicator, we carried out a principal component analysis (PCA). The PCA helped identify three clear groups of variables, corresponding to the Environmental Health, Sustainable Energy, and Biodiversity and Habitat categories. We used the statistically derived PCA factor loads as weights for these indicators. The other three categories did not have clear referents in the PCA results but emerged from our literature search and expert consultations. Absent a PCA-derived basis for weighting the indicators in these three categories, equal weights were used.

Table 3: EPI Indicators, Targets, and Weighting

Objective	Policy Category	Indicator*	Data Source*	Target	Target Source	Weight within Category	Weight within EPI
Environmental Health		Urban Particulates	World Bank, WHO	10 μg/m^3	Expert judgment [a]	.13	.50
		Indoor Air Pollution	WHO	0% of house-holds using solid fuels	Expert judgment [b]	.22	
		Drinking Water	WHO-UNICEF Joint Monitoring Program	100% access	MDG 7, Target 10, Indicator 30	.22	
		Adequate Sanitation	WHO-UNICEF Joint Monitoring Program	100% access	MDG 7, Target 10, Indicator 31	.22	
		Child Mortality	UN Population Division	0 deaths per 1,000 pop aged 1-4	MDG 4, Target 5, Indicator 13	.21	
Ecosystem Vitality and Natural Resource Management	Air Quality	Urban Particulates	World Bank, WHO	10 μg/m^3	Expert judgment [a]	.50	.10
		Regional Ozone	MOZART model	15 ppb	Expert judgment [c]	.50	
	Water Resources	Nitrogen Loading	UNH Water Systems Analysis Group	1 mg/liter	GEMS/Water expert group	.50	.10
		Water Consumption	UNH Water Systems Analysis Group	0% oversub-scription	By definition	.50	
	Biodiversity and Habitat	Wilderness Protection	CIESIN, Wildlife Conservation Society	90% of wild areas protected	Linked to MDG 7, Target 9	.39	.10
		Ecoregion Protection	CIESIN	10% for all biomes	Convention on Biological Diversity	.39	
		Timber Harvest Rate	FAO	3%	Expert judgment [d]	.15	
		Water Consumption	UNH Water Systems Analysis Group	0% oversub-scription	By definition	.07	
	Productive Natural Resources	Timber Harvest Rate	FAO	3%	Expert judgment [d]	.33	.10
		Overfishing	South Pacific Applied Geosciences Commission	No overfishing	By definition	.33	
		Agricultural Subsidies	WTO, USDA-ERS	0%	GATT and WTO agreements	.33	
	Sustainable Energy	Energy Efficiency	Energy Information Administration	1,650 Terajoules per million $ GDP	Linked to MDG 7, Target 9, Indicator 27	.43	.10
		Renewable Energy	Energy Information Administration	100%	Johannesburg Plan of Implementation	.10	
		CO_2 per GDP	Carbon Dioxide Information Analysis Center	0 net emissions	Expert judgment [e]	.47	

** Note: Full indicator names, definitions, and data sources are provided in Appendix H.*
[a] Determined in consultation with Kiran Pandey from the World Bank and other air pollution experts;
[b] Determined in consultation with Kirk Smith and Daniel Kammen at UC Berkeley and the indoor air pollution literature;
[c] Determined in consultation with Denise Mauzerall and her air pollution team at Princeton University;
[d] Determined in consultation with Lloyd Irland and Chad Oliver from the Yale School of Forestry and Environmental Studies;
[e] Strict interpretation of the goal of the 1992 UN Framework Convention on Climate Change.

3. Results and Analysis

The Pilot EPI results provide fertile ground for the analysis of country-level environmental performance. They also let us assess the prospects for making greater use of target-oriented decisionmaking in the sphere of environmental sustainability. The findings, and a review of global leaders and laggards in environmental performance, confirm some common perceptions about the determinants of policy success. But they also reveal some surprises and otherwise unexpected relationships among countries.

3.1. Overall EPI Results

The top five countries in the Pilot 2006 EPI are New Zealand, Sweden, Finland, the Czech Republic, and the United Kingdom. The lowest five ranked countries are Ethiopia, Mali, Mauritania, Chad, and Niger. Mid-ranked performers of note include the United States (28), Russia (32), Brazil (34), Mexico (66), South Africa (76), and China (94).

Table 1 shows that most of the top performers in the EPI are developed economies with high capacity for sophisticated environmental protection. The leaders, including industrialized countries in Europe, Asia, and the Americas, all invest heavily in protecting the environmental health of their citizens. Of the 20 countries with the highest EPI scores, all but two have Environmental Health scores in the high 90s. However, these top-ranked countries show considerable spread in their Ecosystem Vitality scores. Average scores for each of the five policy areas that fall within the Ecosystem Vitality objective range from 60 to 81, corresponding to Ecosystem Vitality ranks ranging from 9^{th} to 88^{th}. For example, New Zealand's management of productive natural resources shows plenty of room for improvement. And Sweden's biodiversity and habitat protection emerges as sub-par.

The countries at the bottom of the EPI rankings are more diverse than those at the top. Niger and Chad, for example have extremely low Environmental Health scores. Pakistan and Mongolia, however, also have EPI scores in the bottom 20 but have Environmental Health scores in the middle of the pack. There are not many surprises among the worst performing countries. For the most part these are either densely populated industrializing countries with stressed ecosystems (Bangladesh, India, and Pakistan), arid states with limited natural resource endowments (Mauritania, Mali, and Yemen), or very poor countries (Ethiopia, Chad, and Niger). In every case, the countries with low EPI scores have under-invested in environmental infrastructure (drinking water and sanitation systems) and lack the capacity for aggressive pollution control or systematic natural resource management.

Among the middle-rank countries, performance is often uneven. Russia, for example, has top-tier scores in water but disastrously low sustainable energy results. Likewise, Brazil has very high water scores but low biodiversity indicators. The United States stands near the top in environmental health, but ranks near the bottom in management of productive natural resources.

Table 4: EPI scores (alphabetical, 0-100)

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
57	Albania	68.9	58	Guatemala	68.9	62	Paraguay	66.4
63	Algeria	66.2	113	Guinea	49.2	65	Peru	65.4
128	Angola	39.3	120	Guinea-Bissau	46.1	55	Philippines	69.4
30	Argentina	77.7	114	Haiti	48.9	38	Poland	76.2
69	Armenia	63.8	52	Honduras	70.8	11	Portugal	82.9
20	Australia	80.1	33	Hungary	77.0	90	Romania	56.9
6	Austria	85.2	13	Iceland	82.1	32	Russia	77.5
95	Azerbaijan	55.7	118	India	47.7	89	Rwanda	57.0
125	Bangladesh	43.5	79	Indonesia	60.7	59	Saudi Arabia	68.3
39	Belgium	75.9	53	Iran	70.0	107	Senegal	52.1
84	Benin	58.4	10	Ireland	83.3	111	Sierra Leone	49.5
71	Bolivia	63.4	45	Israel	73.7	25	Slovakia	79.1
34	Brazil	77.0	21	Italy	79.8	31	Slovenia	77.5
50	Bulgaria	72.0	43	Jamaica	74.7	76	South Africa	62.0
126	Burkina Faso	43.2	14	Japan	81.9	42	South Korea	75.2
108	Burundi	51.6	64	Jordan	66.0	23	Spain	79.2
110	Cambodia	49.7	70	Kazakhstan	63.5	67	Sri Lanka	64.6
100	Cameroon	54.1	93	Kenya	56.4	124	Sudan	44.0
8	Canada	84.0	80	Kyrgyzstan	60.5	48	Suriname	72.9
87	Central Afr. Rep.	57.3	102	Laos	52.9	101	Swaziland	53.9
132	Chad	30.5	36	Lebanon	76.7	2	Sweden	87.8
26	Chile	78.9	109	Liberia	51.0	16	Switzerland	81.4
94	China	56.2	116	Madagascar	48.5	97	Syria	55.3
17	Colombia	80.4	91	Malawi	56.5	24	Taiwan	79.1
112	Congo	49.4	9	Malaysia	83.3	117	Tajikistan	48.2
15	Costa Rica	81.6	130	Mali	33.9	83	Tanzania	59.0
86	Côte d'Ivoire	57.5	131	Mauritania	32.0	61	Thailand	66.8
41	Cuba	75.3	66	Mexico	64.8	103	Togo	52.8
29	Cyprus	78.4	75	Moldova	62.9	35	Trinidad & Tobago	76.9
4	Czech Rep.	86.0	115	Mongolia	48.8	82	Tunisia	60.0
119	Dem. Rep. Congo	46.3	68	Morocco	64.1	49	Turkey	72.8
7	Denmark	84.2	121	Mozambique	45.7	104	Turkmenistan	52.3
54	Dominican Rep.	69.5	88	Myanmar	57.0	78	Uganda	60.8
40	Ecuador	75.5	92	Namibia	56.5	51	Ukraine	71.2
85	Egypt	57.9	81	Nepal	60.2	47	United Arab Em.	73.2
73	El Salvador	63.0	27	Netherlands	78.7	5	United Kingdom	85.6
129	Ethiopia	36.7	1	New Zealand	88.0	28	United States	78.5
3	Finland	87.0	56	Nicaragua	69.2	105	Uzbekistan	52.3
12	France	82.5	133	Niger	25.7	44	Venezuela	74.1
46	Gabon	73.2	123	Nigeria	44.5	99	Viet Nam	54.3
106	Gambia	52.3	18	Norway	80.2	122	Yemen	45.2
77	Georgia	61.4	60	Oman	67.9	98	Zambia	54.4
22	Germany	79.4	127	Pakistan	41.1	74	Zimbabwe	63.0
72	Ghana	63.1	37	Panama	76.5			
19	Greece	80.2	96	Papua New Guinea	55.5			

3.2. EPI Results by Peer Group

While each country has unique socio-economic and geographic characteristics, risk preferences, environmental policy priorities, and development goals, cross-country comparisons nevertheless yield useful insights. "Peer group" analysis provides performance comparisons of countries that are similar with respect to certain characteristics, such as socio-economic development, climate, land area, and population density. This analysis allows the identification of leaders and laggards and the exchange of information on policy experiences and best practices.

Nations at a similar level of development (e.g. OECD, LDCs) provide a starting point for comparative analysis. Other points of comparison include: regional groupings; (e.g. ASEAN, NIS); political associations or free-trade areas (e.g. EU, FTAA); and those with similar climatic circumstances (e.g. desert countries) or demographic structures (e.g. high population density). We present all these potential peer groups below.

Grouping OECD countries highlights many of the EPI's top performers (Table 5). Twenty-one of the OECD countries rank within the top 25 countries overall, and all OECD countries rank in the top half of the EPI rankings. By comparing countries that are at a similar level of development, these high achievers are able to adequately benchmark themselves against other countries facing the challenges inherent in developed nations. For instance, while developed countries generally perform better on water quality and access, air quality, and environmental health indicators, these same countries can look to one another to determine how to improve energy efficiency, reduce CO_2 emissions, and better protect biodiversity and habitat.

Grouping Least Developed Countries (LDCs) highlights the relationship between economic capacity and environmental performance (Table 6). All of the LDCs rank within the bottom half of the EPI, and make up eight of the ten lowest scoring countries. The limited financial resources of these countries severely constrain their ability to meet environmental policy targets, particularly those within the air quality and environmental health policy categories.

Table 5: OECD Member Countries — Organisation for Economic Co-operation and Development member countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	New Zealand	88.0	11	France	82.5	21	Slovakia	79.1
2	Sweden	87.8	12	Iceland	82.1	22	Netherlands	78.7
3	Finland	87.0	13	Japan	81.9	23	United States	78.5
4	Czech Rep.	86.0	14	Switzerland	81.4	24	Hungary	77.0
5	United Kingdom	85.6	15	Norway	80.2	25	Poland	76.2
6	Austria	85.2	16	Greece	80.2	26	Belgium	75.9
7	Denmark	84.2	17	Australia	80.1	27	South Korea	75.2
8	Canada	84.0	18	Italy	79.8	28	Turkey	72.8
9	Ireland	83.3	19	Germany	79.4	29	Mexico	64.8
10	Portugal	82.9	20	Spain	79.2			

Table 6: LDCs — Least Developed Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Uganda	60.8	12	Gambia	52.3	23	Mozambique	45.7
2	Nepal	60.2	13	Senegal	52.1	24	Yemen	45.2
3	Tanzania	59.0	14	Burundi	51.6	25	Sudan	44.0
4	Benin	58.4	15	Liberia	51.0	26	Bangladesh	43.5
5	Central Afr. Rep.	57.3	16	Cambodia	49.7	27	Burkina Faso	43.2
6	Myanmar	57.0	17	Sierra Leone	49.5	28	Angola	39.3
7	Rwanda	57.0	18	Guinea	49.2	29	Ethiopia	36.7
8	Malawi	56.5	19	Haiti	48.9	30	Mali	33.9
9	Zambia	54.4	20	Madagascar	48.5	31	Mauritania	32.0
10	Laos	52.9	21	Dem. Rep. Congo	46.3	32	Chad	30.5
11	Togo	52.8	22	Guinea-Bissau	46.1	33	Niger	25.7

Note: Countries identified are those listed by the United Nations Office of the High Representative for the Least Developed Countries, Land-Locked Developing Countries and Small Island Developing States' List of Least Developed Countries found at http://www.un.org/special-rep/ohrlls/ldc/list.htm.

Table 7: High Population Density Countries — Countries and territories in which more than half the land area has a population density above 100 persons per square kilometer

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Japan	81.9	7	Belgium	75.9	13	Nepal	60.2
2	Italy	79.8	8	South Korea	75.2	14	Rwanda	57.0
3	Germany	79.4	9	Jamaica	74.7	15	Burundi	51.6
4	Netherlands	78.7	10	Philippines	69.4	16	Haiti	48.9
5	Trinidad & Tobago	76.9	11	Sri Lanka	64.6	17	India	47.7
6	Lebanon	76.7	12	El Salvador	63.0	18	Bangladesh	43.5

Note: Countries identified using CIESIN's PLACE dataset (CIESIN 2003).

Table 8: Desert Countries — Countries that are more than 50% desert (WWF Biome Classification)

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Israel	73.7	6	Morocco	64.1	11	Turkmenistan	52.3
2	Iran	70.0	7	Kazakhstan	63.5	12	Uzbekistan	52.3
3	Oman	67.9	8	Egypt	57.9	13	Pakistan	41.1
4	Algeria	66.2	9	Namibia	56.5	14	Mauritania	32.0
5	Jordan	66.0	10	Azerbaijan	55.7	15	Niger	25.7

Note: Countries identified using CIESIN's PLACE dataset (CIESIN 2003)

Table 9: FTAA Member Countries — Free Trade Area of the Americas Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Canada	84.0	9	Panama	76.5	17	Guatemala	68.9
2	Costa Rica	81.6	10	Ecuador	75.5	18	Paraguay	66.4
3	Colombia	80.4	11	Jamaica	74.7	19	Peru	65.4
4	Chile	78.9	12	Venezuela	74.1	20	Mexico	64.8
5	United States	78.5	13	Suriname	72.9	21	Bolivia	63.4
6	Argentina	77.7	14	Honduras	70.8	22	El Salvador	63.0
7	Brazil	77.0	15	Dominican Rep.	69.5	23	Haiti	48.9
8	Trinidad & Tobago	76.9	16	Nicaragua	69.2			

Table 10: EU Member Countries — European Union Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	87.8	8	Portugal	82.9	14	Slovakia	79.1
2	Finland	87.0	9	France	82.5	15	Netherlands	78.7
3	Czech Rep.	86.0	10	Greece	80.2	16	Slovenia	77.5
4	United Kingdom	85.6	11	Italy	79.8	17	Hungary	77.0
5	Austria	85.2	12	Germany	79.4	18	Poland	76.2
6	Denmark	84.2	13	Spain	79.2	19	Belgium	75.9
7	Ireland	83.3						

Table 11: ASEAN (Plus Three) Countries — Association of Southeast Asian Nations Member Countries and China, Japan, and South Korea

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Malaysia	83.3	5	Thailand	66.8	9	Viet Nam	54.3
2	Japan	81.9	6	Indonesia	60.7	10	Laos	52.9
3	South Korea	75.2	7	Myanmar	57.0	11	Cambodia	49.7
4	Philippines	69.4	8	China	56.2			

Table 12: African Union Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Gabon	73.2	14	Malawi	56.5	27	Guinea	49.2
2	Algeria	66.2	15	Namibia	56.5	28	Madagascar	48.5
3	Ghana	63.1	16	Kenya	56.4	29	Guinea-Bissau	46.1
4	Zimbabwe	63.0	17	Zambia	54.4	30	Mozambique	45.7
5	South Africa	62.0	18	Cameroon	54.1	31	Nigeria	44.5
6	Uganda	60.8	19	Swaziland	53.9	32	Sudan	44.0
7	Tunisia	60.0	20	Togo	52.8	33	Burkina Faso	43.2
8	Tanzania	59.0	21	Gambia	52.3	34	Angola	39.3
9	Benin	58.4	22	Senegal	52.1	35	Ethiopia	36.7
10	Egypt	57.9	23	Burundi	51.6	36	Mali	33.9
11	Côte d’Ivoire	57.5	24	Liberia	51.0	37	Mauritania	32.0
12	Central Afr. Rep.	57.3	25	Sierra Leone	49.5	38	Chad	30.5
13	Rwanda	57.0	26	Congo	49.4	39	Niger	25.7

Table 13: NIS Member Countries — Russia and Newly Independent States that were republics of the former Soviet Union

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Russia	77.5	5	Moldova	62.9	9	Turkmenistan	52.3
2	Ukraine	71.2	6	Georgia	61.4	10	Uzbekistan	52.3
3	Armenia	63.8	7	Kyrgyzstan	60.5	11	Tajikistan	48.2
4	Kazakhstan	63.5	8	Azerbaijan	55.7			

Table 14: APEC Member Countries — Asia-Pacific Economic Cooperation Member Countries

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	New Zealand	88.0	7	United States	78.5	13	Mexico	64.8
2	Canada	84.0	8	Russia	77.5	14	Indonesia	60.7
3	Malaysia	83.3	9	South Korea	75.2	15	China	56.2
4	Japan	81.9	10	Philippines	69.4	16	Papua New Guinea	55.5
5	Australia	80.1	11	Thailand	66.8	17	Viet Nam	54.3
6	Chile	78.9	12	Peru	65.4			

Densely populated countries are dispersed throughout the EPI rankings, with the highest (Japan) ranking 14th in the EPI and the lowest (Bangladesh) ranking 125th (Table 7). These disparate rankings mirror the varied socio-economic and regional affiliations of these countries. This peer group makes it clear that demography is not destiny. Low-performing high population density countries clearly would benefit from adoption of the best practices of high-performers on issues that relate to their common circumstances. In particular, sharing information on how to protect wilderness and control urban air pollution would be useful.

The Desert Countries peer grouping takes into consideration the unique ecological challenges these countries face (Table 8). The top ten countries fall into the mid-range of the EPI ranking and the last three countries in this peer group—Pakistan, Mauritania, and Niger—rank in the lowest ten overall. This peer group permits policy comparisons related to dealing with aridity and the subsequent water management and ecosystem vulnerability issues that arise.

Peer groups based on free-trade areas tend to overlap and coincide with regional groupings. In the case of the FTAA, member countries range from 8th ranked (Canada), to 114th ranked (Haiti), demonstrating the vast range in environmental performance across the FTAA, which may become a source of trade tensions (Table 9). All of the EU countries, on the other hand, rank within the top third of the EPI, leaving much less scope for trade disputes arising from disparate environmental standards or performance (Table 10).

Regional associations provide a natural basis for peer grouping. Shared geography represents an important point of similarity, and countries often think of themselves as being similar to their neighbors. In tables 12 through 13 above, the member countries are sometimes similarly ranked, as in the case of the African Union and NIS. In other cases, their ranks are vastly disparate, as in the case of APEC.

3.3. Cluster Analysis

Countries may have similar EPI scores but very different patterns across the 16 indicators and policy categories. To help governments identify peer countries that are similarly situated with respect to the individual indicators, we carried out a statistical procedure known as cluster analysis (for more information, refer to Appendix F). This process allowed us to group countries in terms of overall similarity across the 16 indicators. This process generated six country clusters that seem useful as a way to help countries look beyond their income-level or geographic peer groups for models of environmental success in countries facing similar challenges. See Figures 3-9 for spider graphs and a map of the cluster analysis peer groupings.

Cluster One

Cluster One is a combination of oil-rich countries from the Middle East and other Eastern European and Central Asian countries with growing economies and significant water stress. On average, these countries are fairly close to targets for the Environmental Health and Productive Natural Resources indicators, but they are very far from targets concerning the Sustainable Energy and Biodiversity and Habitat indicators. They also exhibit high levels of air pollution.

Cluster Two

Cluster Two combines primarily Latin American and Asian countries with relatively intact natural systems but growing resource pressures. These countries are characterized by good water systems but poor air quality. They have mid-range scores on the other measures.

Cluster Three

The countries in this cluster, which includes some of the world's largest and most rapidly industrializing nations, face the challenges of building environmental infrastructure as well as developing systems to control air and water pollution and protect ecosystems. Pollution and resource management challenges are growing in all of these countries. Air Quality and Biodiversity and Habitat scores are particularly low.

Cluster Four

Cluster Four contains most of the less developed economies of Sub-Saharan Africa and a few from Asia. They all face serious sustainable development challenges and environmental health threats. Many of these countries have suffered recent conflicts. All are characterized by very poor scores on Environmental Health but mid-range to good scores on the other measures, reflecting low levels of industrialization and therefore limited pollution and ecosystem degradation.

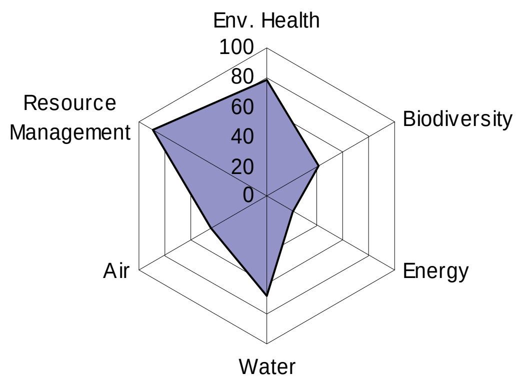
Cluster Five

Cluster Five is made up of European and major Asian economies as well as the United States and Venezuela. This is one of two groupings dominated by wealthy countries. Compared to the other wealthy countries, this group does significantly worse in terms of natural resource management and slightly better in terms of biodiversity protection.

Cluster Six

Cluster Six is made up of European countries with a few additional resource-rich countries. This is the other group that contains primarily wealthy countries. These countries show somewhat better management of productive natural resources and somewhat worse biodiversity protection than their counterparts in Cluster Five.

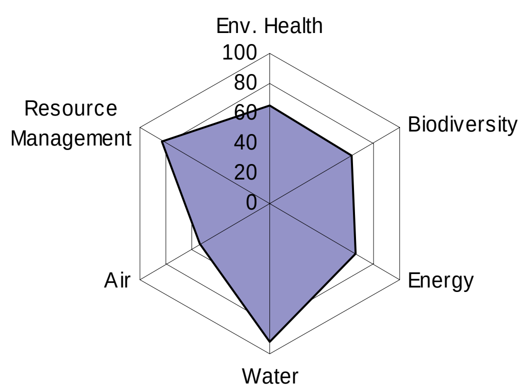
Cluster One Attributes | **Countries in Cluster**



- Armenia
- Azerbaijan
- Bulgaria
- Iran
- Kazakhstan
- Moldova
- Oman
- Russia
- Saudi Arabia
- Syria
- Trinidad & Tobago
- Turkmenistan
- Ukraine
- United Arab Emirates
- Uzbekistan

Figure 3: Cluster One

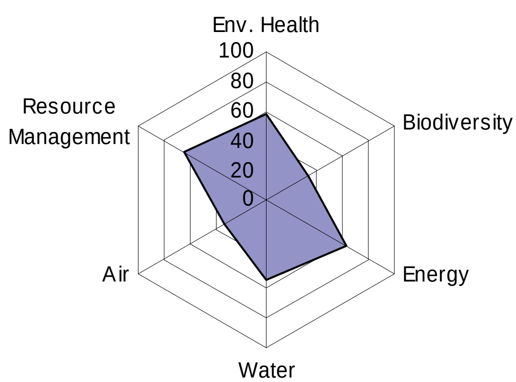
Cluster Two Attributes | **Countries in Cluster**



- Bolivia
- Brazil
- Colombia
- Costa Rica
- Cuba
- Dominican Republic
- Ecuador
- Gabon
- Georgia
- Guatemala
- Honduras
- Indonesia
- Jamaica
- Kyrgyzstan
- Malaysia
- Myanmar
- Nepal
- Nicaragua
- Panama
- Paraguay
- Peru
- Philippines
- Sri Lanka
- Suriname
- Tajikistan
- Thailand
- Vietnam
- Zimbabwe

Figure 4: Cluster Two

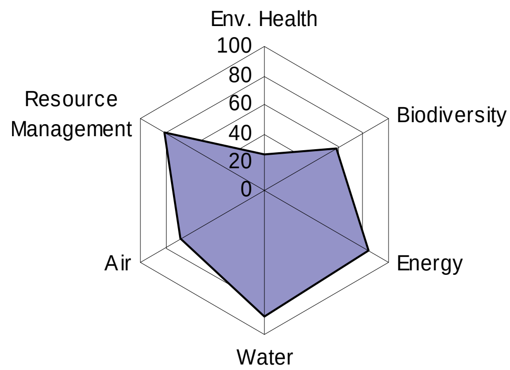
Cluster Three Attributes | **Countries in Cluster**



- Algeria
- Bangladesh
- China
- Egypt
- El Salvador
- Haiti
- India
- Mauritania
- Mexico
- Mongolia
- Morocco
- Pakistan
- Romania
- Tunisia
- Yemen

Figure 5: Cluster Three

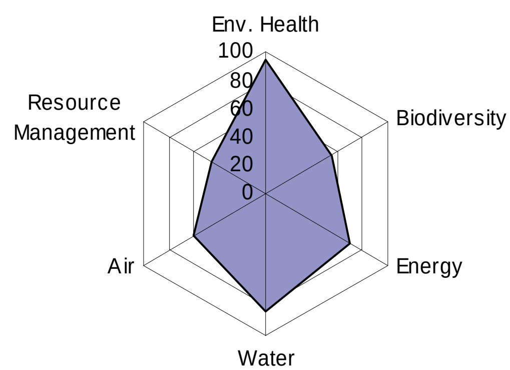
Cluster Four Attributes	Countries in Cluster



– Angola
– Benin
– Burkina Faso
– Burundi
– Cambodia
– Cameroon
– Central Af. Rep.
– Chad
– Congo Côte d'Ivoire
– Dem. Rep. Congo
– Ethiopia
– Gambia
– Ghana
– Guinea
– Guinea-Bissau
– Kenya
– Laos
– Liberia
– Madagascar
– Malawi
– Mali
– Mozambique
– Namibia
– Niger
– Nigeria
– Papua New Guinea
– Rwanda
– Senegal
– Sierra Leone
– Sudan
– Swaziland
– Tanzania
– Togo
– Uganda
– Zambia

Figure 6: Cluster Four

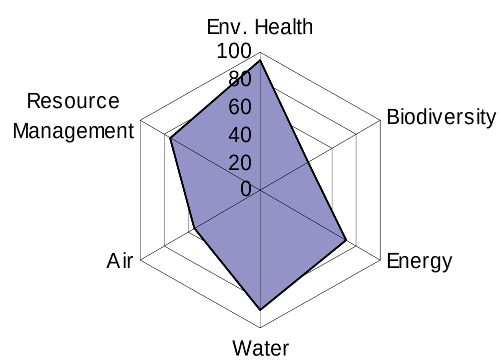
Cluster Five Attributes	Countries in Cluster



– Cyprus
– France
– Hungary
– Iceland
– Israel
– Italy
– Japan
– Jordan
– New Zealand
– Norway
– Slovakia
– Slovenia
– South Africa
– South Korea
– Spain
– Switzerland
– Taiwan
– United States
– Venezuela

Figure 7: Cluster Five

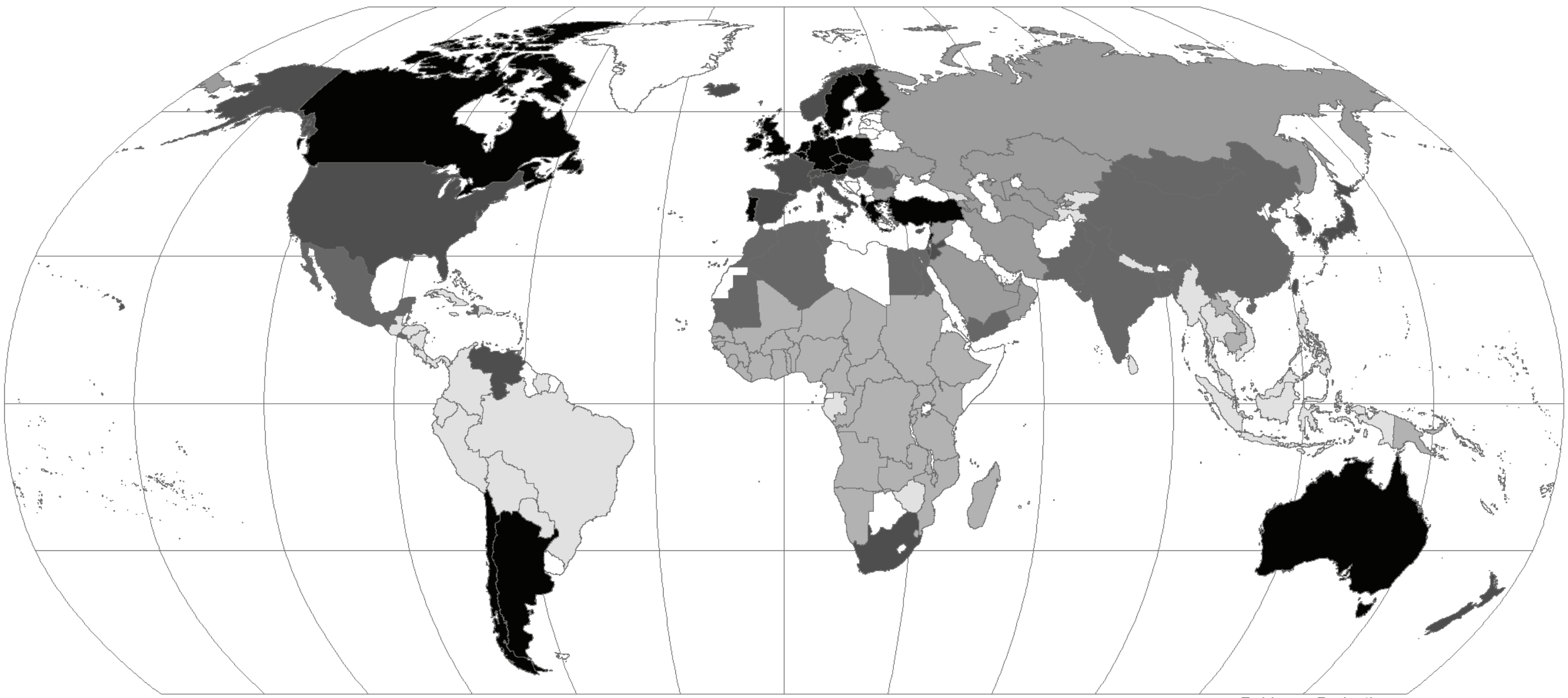
Cluster Six Attributes	Countries in Cluster



– Albania
– Argentina
– Australia
– Austria
– Belgium
– Canada
– Chile
– Czech Republic
– Denmark
– Finland
– Germany
– Greece
– Ireland
– Lebanon
– Netherlands
– Poland
– Portugal
– Sweden
– Turkey
– United Kingdom

Figure 8: Cluster Six

Pilot 2006 Environmental Performance Index
Cluster Analysis Peer Groups



Each color represents a peer group of countries based on cluster analysis.

- Cluster 1: Resource-rich countries with very poor efficiencies
- Cluster 2: Countries that are moderately better than average across the board
- Cluster 3: Countries that are moderately below average across the board
- Cluster 4: Countries with very low Environmental Health scores
- Cluster 5: Wealthy countries with average Ecosystem scores
- Cluster 6:Wealthy countries with above-average Ecosystem scores
- no data

Figure 9: Map of Cluster Analysis

3.4. EPI Drivers

This section analyzes the EPI scores in relation to possible determinants of environmental policy success. In particular, we explore the correlation between the EPI and (1) GDP per capita; (2) good governance; and (3) the Human Development Index (HDI). We also explore whether environmental success must be sacrificed to achieve economic competitiveness, as traditional economic theory has suggested.

GDP per capita

There is a statistically significant correlation between GDP per capita and the EPI. Nevertheless, at every income level there is some variation in EPI scores. The spread in scores is greatest at the lowest levels of income. For example, Tanzania does far better than Niger at a similar level of income. The most developed countries consistently have scores in the top half of the EPI distribution. But even here, countries such as Sweden and Belgium differ markedly in their scores.

A plot of EPI scores against GDP (log) shows that countries with per capita incomes above $10,000 all have EPI scores greater than 65. Yet there is little relationship between per-capita income and EPI scores among these wealthy countries. Likewise, among the poor countries there is considerable variation in EPI scores, even though the very poorest all have scores below 60.

Beneath the aggregation level of the EPI, the only policy category that demonstrates a strong relationship to income is the Environmental Health category. This correlation makes sense, since most of the indicators included in this category—water and sanitation, child mortality, indoor air pollution, and urban particulates concentrations—depend on resource capacity and investment. None of the other policy categories showed a strong correlation with income, although the Productive Natural Resources category has a weak negative correlation with income. Thus, it appears that at every level of development, some nations are managing their pollution control and natural resource management challenges relatively well. Others with the same economic capacity are performing much less well.

We examined the relationship between per capita income and some of the individual indicators to get a more precise picture of how income levels affect environmental performance. As already noted, the Environmental Health scores have the highest correlation with per capita income. Conceptually, they have the strongest relationship to economic development, therefore this result is not surprising. The indicators that are strongly negatively correlated with per capita income reflect a mix of dynamics. The Regional Ozone indicator reflects both the fact that regional ozone concentrations have not been the focus of major policy action (as compared to urban particulates), and that long-range transport dynamics tend to circulate the highest ozone levels within a range of latitudes dominated by wealthier countries.

The other indicators for which poorer countries tend to be closer to the targets primarily reflect differences in economic opportunity. For example, to seriously engage in overfishing requires the ability to build, operate and finance large sophisticated fishing fleets. It is not surprising, therefore, that no country below the median income level has the highest intensity of overfishing. By contrast, more than 25% of the countries in the wealthiest decile have the highest score possible. In a similar vein, one reason that most wealthy countries tend to have poorer energy efficiency and renewable energy scores is that they have economies that bring greater economic returns from energy consumption. Likewise, the high scores for protection of wilderness in poor countries reflect in part their lack of economic development and therefore relatively pristine land.

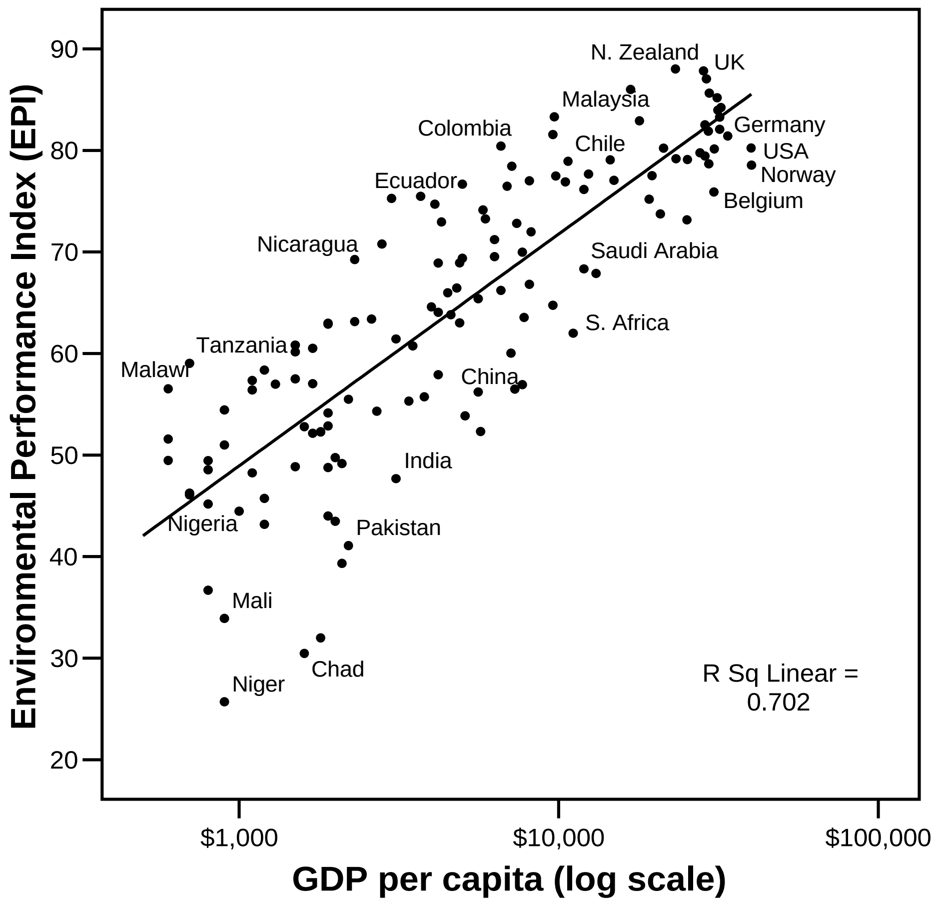


Figure 10: Relationship of 2006 EPI and GDP per capita

Table 15: Correlation between GDP per capita and EPI Indicators

Significant and Positive		Significant and Negative		Not Significant	
Indoor Air Pollution	0.875	Agricultural Subsidies	-0.570	Nitrogen Loading	0.114
Adequate Sanitation	0.851	Regional Ozone	-0.493	CO2 per GDP	0.068
Drinking Water	0.787	Energy Efficiency	-0.224	Water Consumption	-0.114
Child Mortality	0.772	Overfishing	-0.211	Ecoregion Protection	-0.129
Urban Particulates	0.447	Renewable Energy	-0.199		
Timber Harvest Rate	0.290	Wilderness Protection	-0.192		

Note: Pearson's Correlation Coefficient. T value significance determined at .001 level or better.

Good Governance

The figure below shows a strong relationship between environmental results and good governance as measured in the 2005 ESI. The governance measure in the ESI encompassed a dozen variables including: corruption; rule of law; regulatory effectiveness; and the vigor of debate on environmental issues. Indeed, governance explains a significant part of the variance in EPI scores. This result provides support for the policy emphasis being placed on governance in the international arena.

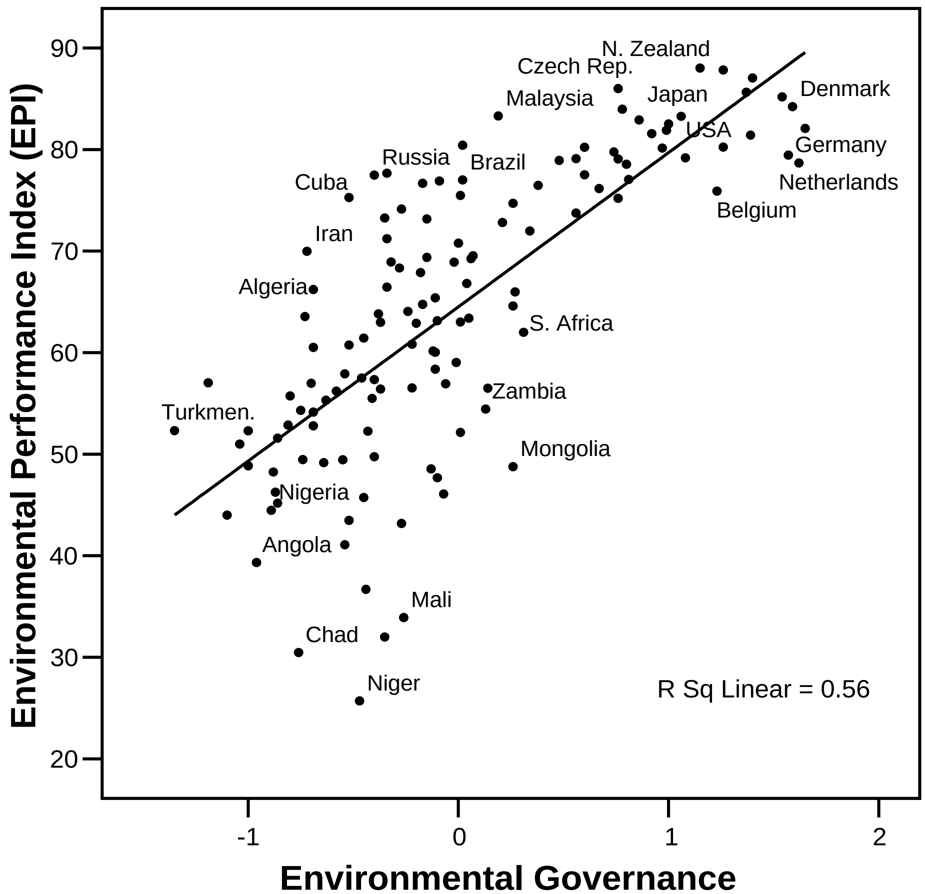


Figure 11: Relationship of 2006 EPI and Governance

(from the 2005 Environmental Sustainability Index)

EPI versus Human Development Index

The relationship between the EPI and the Human Development Index (HDI) is very similar to that between the EPI and per capita income. In general, the countries with the highest HDI scores also have the lowest variance in environmental performance and show up in the top half of the EPI distribution. Countries with lower HDI scores almost always show less strong environmental performance.

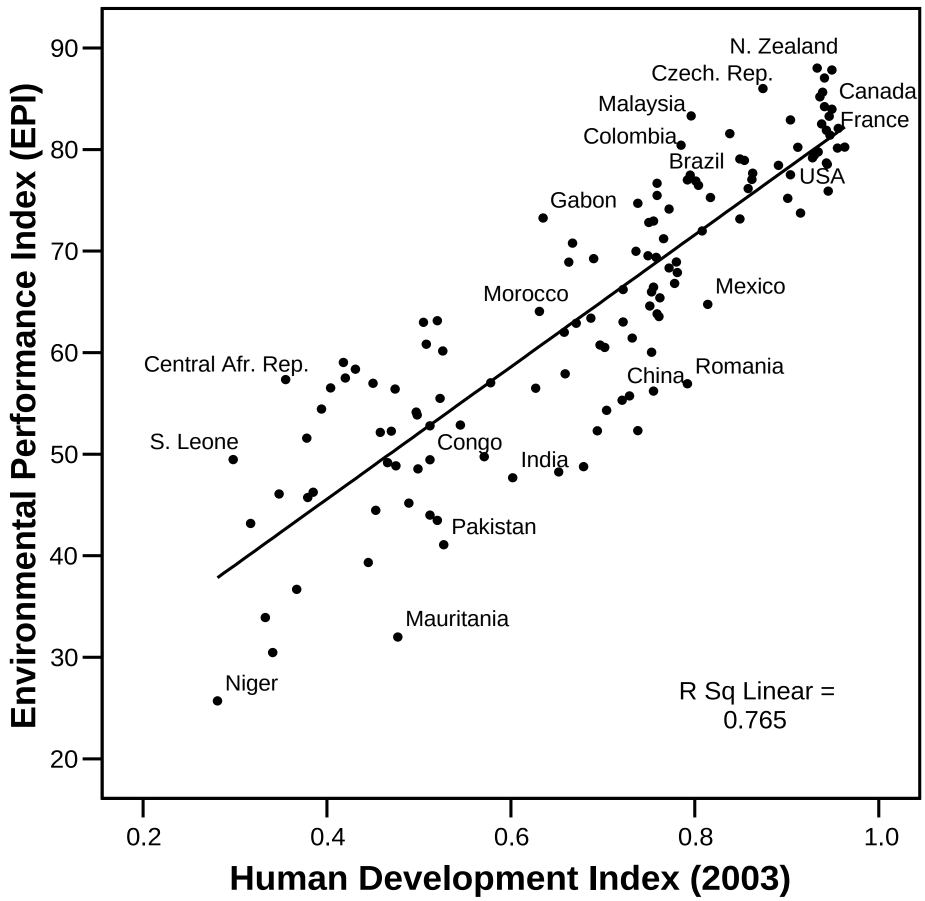


Figure 12: Relationship of 2006 EPI and Human Development Index

EPI versus Competitiveness

The positive relationship between the EPI and as measured by the World Economic Forum's 2005 Global Competitiveness Index (GCI) (Lopez-Claro, 2005) suggests that good environmental results do not have to be sacrificed to achieve economic success (see Figure 13). But this result may be explained by the high degree of correlation between both of these measures and GDP. There is considerable spread in environmental performance among less competitive economies, with countries such as Pakistan and the Philippines sharing similar GCI scores but very different environmental performance profiles.

The correlation revealed between environmental performance and competitiveness tends to be consistent with the Porter Hypothesis (suggesting that demanding environmental standards will spur innovation and competitive advantage) (Porter, 1991). But absent time-series data, this relationship cannot be confirmed as a causal linkage.

We can, however, explore the relationship between competitiveness and ecosystem degradation and the depletion of natural resources, as measured by the Ecosystem Vitality scores within the EPI. The results, shown in Figure 14, show no clear pattern. This suggests that some countries may be choosing to enhance their competitiveness by pursuing economic growth with little regard to the environmental consequences. Other countries are achieving strong competitive positions without diminishing ecosystem vitality. More work needs to be done, however, to make fuller sense of the competitiveness-environmental relationship.

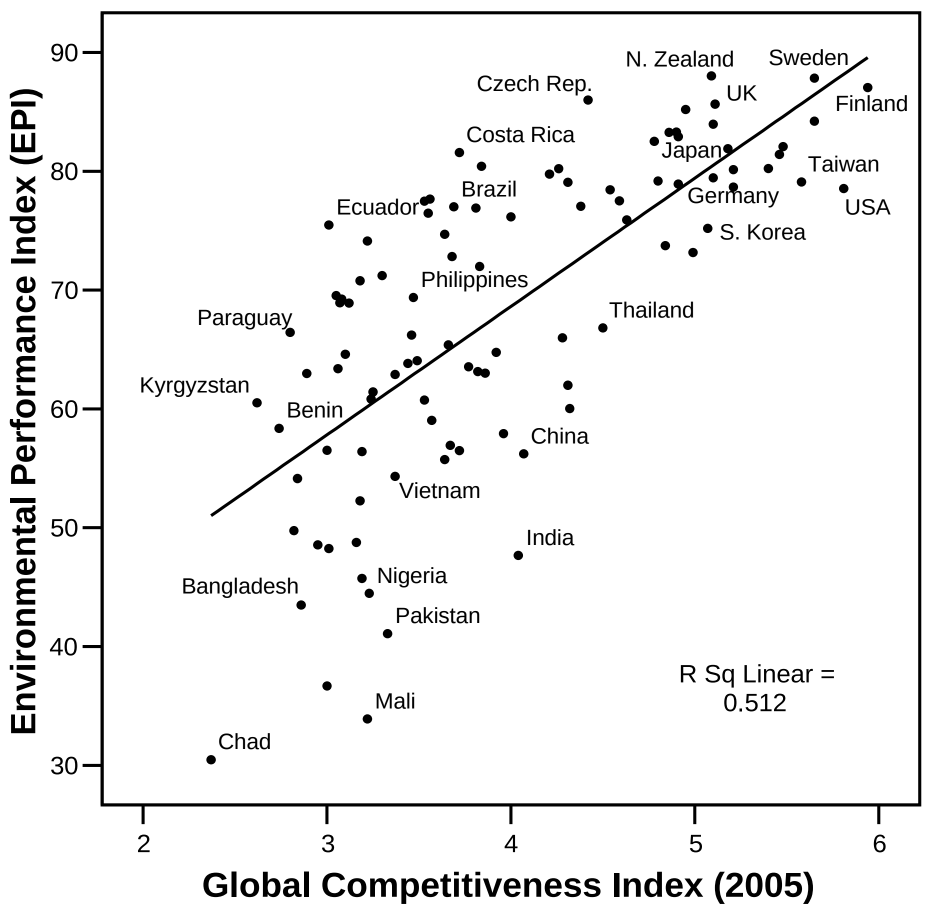


Figure 13: Relationship of 2006 EPI and Competitiveness

(From the Global Competitiveness Report (Porter et al., 2005)

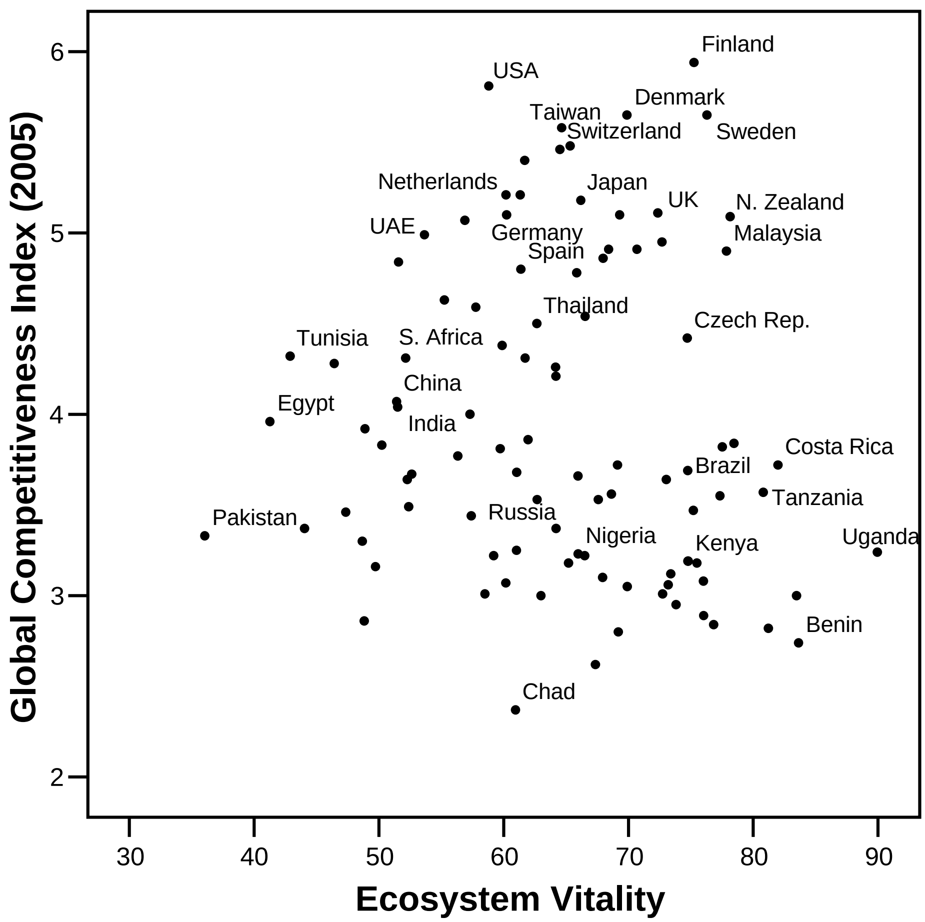


Figure 14: Relationship of Competitiveness and Ecosystem Vitality

3.5. Implications for Global Policymaking

An examination of the proximity-to-target scores can give us some insights into the nature of global policy challenges from the perspective of environmental sustainability. We can graphically summarize these scores across the 16 indicators with "box plot" diagrams.

Figure 15 portrays the distribution of proximity-to-target scores, according to the following conventions:

- The range of values seen in the middle 50% of countries is represented by the shaded bar.
- The median value is represented by the thick vertical line within the shaded bars.
- The thin horizontal line extends a distance of 1.5 times the length of the shaded bar (or less if the values do not extend this far). It is used to identify outliers; under conditions of normal distribution 99% of the cases would be within the range defined by these thin lines.
- The outlier values are marked by circles (○); the extreme outliers (located at a distance from the shaded bar edge that is more than three times the width of the shaded bar) are marked by stars (*).

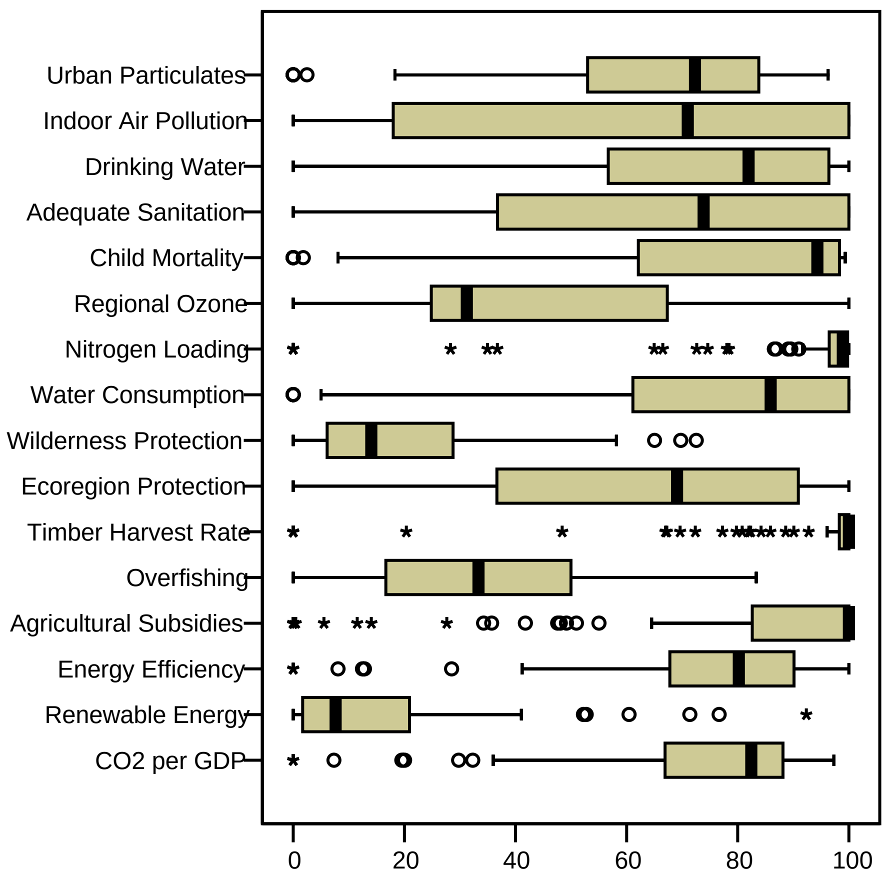


Figure 15: Distribution of Proximity-to-Target Scores for All Countries

For the indicators that show relatively wide shaded bars and few outliers, the policy action required is likely to consist of broad programmatic interventions aimed at improving large groups of countries. For the most part these indicators are likely to be well suited to MDG-type attention, in which international targets are agreed to and implementation measures are incorporated into the actions of international agencies, NGOs, national governments, and the private sector.

In other indicators, by contrast, most countries are near the target already, distributions are highly uneven, and extreme outliers dominate the overall picture. This is especially true for the Nitrogen Loading, Timber Harvest Rate, and Agricultural Subsidies indicators. Policy action in these issues may require a more focused approach aimed at the special circumstances in the extreme outlier countries.

There are three indicators where the majority of countries are less than 50% of the way to the target—Wilderness Protection, Overfishing, and Renewable Energy. These represent distinct and difficult policy challenges. Wilderness Protection is an issue for which there is not any significant international policy action. This inaction contributes to the small number of high scores on this indicator. There has been policy coordination on protected areas more generally, and some of the success of this coordination shows up in the higher scores on Ecoregion Protection. One of the key global policy challenges moving ahead is to extend protection into high-priority wilderness regions. Clearly there is much work to be done to ensure appropriate habitat preservation and biodiversity protection globally.

Overfishing represents quite a different challenge. Declining fish stocks have been a focus of international policy discussions for a long time. Governments have engaged in various modes of collaboration, target-setting, and implementation. But, these policy actions have been highly ineffective. The challenge in the fishing arena is to devise new approaches that might yield better results. Recent discussions concerning large-scale marine sanctuaries constitute one promising example. But effectively enforced quotas limiting fishing in depleted fisheries will also be needed.

Finally, renewable energy represents a domain that has been the subject of coordinated policy action for a relatively short period of time. The Johannesburg Plan of Implementation, endorsed at the World Summit on Sustainable Development in 2002, called on countries to make progress in increasing their use of renewable energy. Other regional bodies and national governments have taken on this target as well. Here the challenge is to build on this consensus, create incentives to promote technological innovation, and find ways to ensure that implementation occurs.

4. Results by Policy Category

Much of the policy value of the EPI comes not from the overall scores or rankings, but from a careful analysis of the individual policy categories and the underlying indicators. This section reviews the importance of each policy category and presents category-by-category results. Tables showing country scores for each policy category can be found in Appendix A. Additional detail on the logic for the each category's policy context, indicators chosen, and future prospects for expanded performance-based measurement can be found in Appendix D. The raw data for the underlying indicators can be found in Appendix H.

Core Area:
Environmental Public Health

4.1. Environmental Health

Reducing the environmental burden of disease is a globally recognized priority that has been embedded in the MDGs through a variety of indicators, such as those relating to water supply, sanitation, and child mortality. The EPI utilizes these indicators (Drinking Water, Adequate Sanitation, and Child Mortality) together with two measures of air quality (Urban Particulates and Indoor Air Pollution) to rank countries in terms of their performance on environmental health.

Mortality rates for children between one and four years of age provide a good indicator of the effect of the environment on human health, particularly in the developing world. Poor air quality and an inadequate or unsanitary water supply in a country often manifest themselves in respiratory and intestinal problems and disease. These effects can be seen most often in children, as they are more sensitive to poor environmental quality. By considering only mortality rates for children one to four years of age, we better focus on the impact of environmental conditions as opposed to health care infrastructure.

Air pollution is a threat to human health for many reasons, but especially because poor air quality can lead to respiratory distress. From a public health perspective, air pollutants are responsible for nearly five percent of the global burden of disease (UNEP 2002). Air pollution aggravates asthma and other allergic respiratory diseases, and can result in adverse pregnancy outcomes, such as stillbirth and low birth weight. Studies also show that human life can be cut short due to indoor and urban air pollution—including exposure to particulates (WHO 2002).

The health and well-being of humans and ecosystems in countries also depends heavily on the quantity and quality of water resources available. Clean drinking water is essential to human health. Unhealthy or inadequate water and sanitation can result in diarrhea and other intestinal problems, which is a leading cause of death among children in developing countries (Bryce et al. 2005).

The quality of environmental health in a country is highly correlated with wealth. Countries at higher levels of development generally have the capacity to invest in environmental infrastructure so their people have better access to safe drinking water and adequate sanitation. They also have little need to light indoor fires indoors for heating and cooking, and therefore tend to have significantly less indoor air pollution (Ezzati and Kammen, 2002). Top performers have low rates of child mortality, indicating that they perform well in areas related to environmental health that could not be directly measured through available datasets. From the figure below, it appears that environmental health gains are greatest as countries approach per capita incomes of $10,000, after which performance tends to level off (see Figure 16).

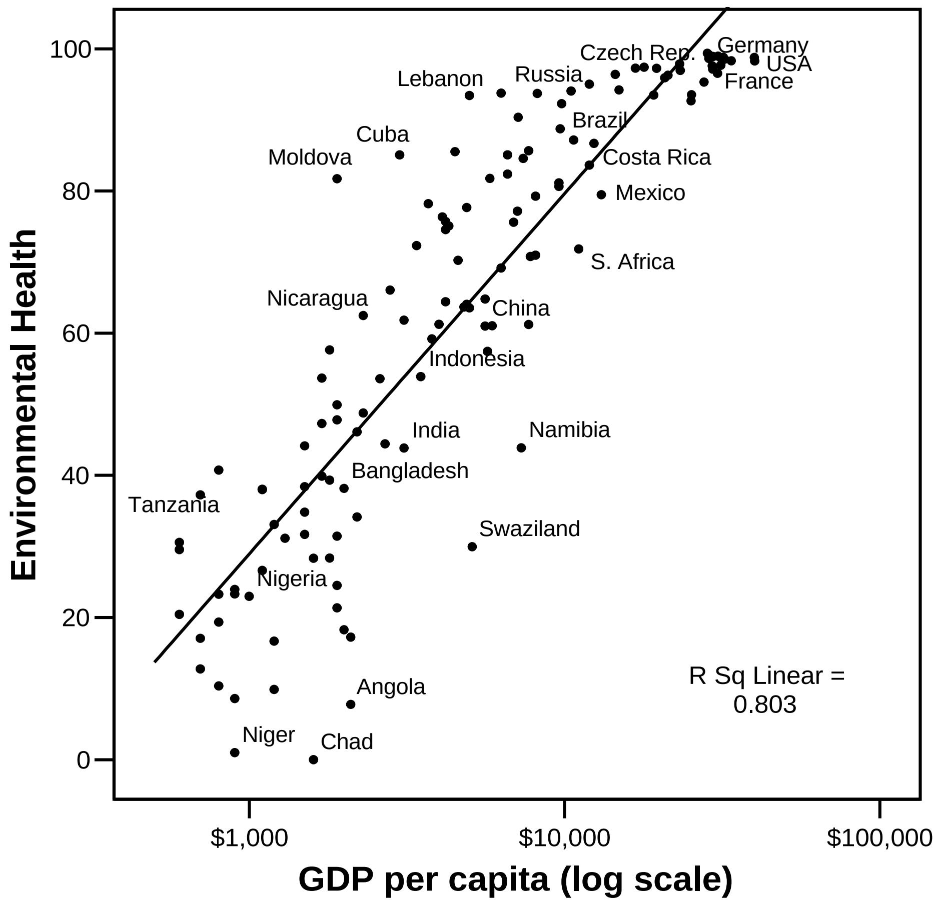


Figure 16: Relationship of Environmental Health and GDP per capita

Core Area: Ecosystem Vitality and Natural Resource Management

4.2. Air Quality

Air pollution comes from a variety of sources—power generation, industrial production, vehicles, and residential heating and cooking. It arises at a range of different levels from the individual household to the global scale. In relation to Ecosystem Vitality, air pollution is a leading cause of soil and water acidification, which results in declining fish stocks, decreasing biological diversity in acid-sensitive lakes, the degradation of forests and soils, and lost agricultural productivity. Fossil fuel combustion is the major source of air pollution, generating particulates, VOCs, SO_2, NO_2, and CO_2. From an ecosystem perspective, reactive chemicals such as benzene, SO_2, and NO_2 are the most relevant.

It would be useful to track all of these pollutants, but data are not available on a reliable world-wide basis for most of them. Thus, the EPI Air Quality policy category includes just two indicators: urban particulate concentrations (Urban Particulates) and regional ozone concentrations (Regional Ozone). Urban particulates, for which city-level data are available for most countries in the world, must presently serve as a proxy for the broader set of concerns that should be monitored. The lack of local-level data on reactive chemical concentrations is partially made up for by the inclusion of regional ozone levels. Ground-level ozone is formed by the interaction of hydrocarbons (unburned or evaporated gasoline) and nitrogen oxides in the presence of sunlight. Ozone creates smog and can reduce the ability of plants to photosynthesize, thereby reducing crop and forest productivity.

The Air Quality category scores are presented in Table A2 in Appendix A. The top-ranked countries are in tropical Africa, where regional ozone concentrations are low due to low levels of industrialization and vehicle use. Urban particulates are not a significant problem for the same reasons. The top-ranked industrialized countries are Sweden and Finland. In general, island countries such as New Zealand and the UK demonstrate above-average performance because air pollution from upwind sources gets dispersed to other locations. India and China are in the bottom decile, as are several other South Asian nations, reflecting their rapid industrialization with limited pollution control.

4.3. Water Resources

The health and well-being of ecosystems depends heavily on the quantity and quality of the water resources available. Water is necessary for all biological life, and also underpins global food production by providing the fundamental resource upon which agriculture, livestock production, fisheries, and aquaculture depend. Water serves numerous roles in the industrial and municipal sectors as well.

Given water's crucial role in maintaining healthy ecosystems as well as facilitating and regulating bio-geochemical cycles, there is growing concern that human impacts on water resources are reaching critical thresholds. The impacts are of three main kinds: over-subscription of available water resources (consumption in excess of recharge); engineering works for flood control or to support power generation; and pollutant discharges into water bodies. Natural freshwater scarcity can exacerbate each of these problems.

While we would like measures of all the impacts noted above, data limitations again make this difficult. The only indicators available for the Water Resources policy category are nitrogen loading per average flow of a country's river basins (Nitrogen Loading) and the percentage of territory that is affected by oversubscription of water resources (Water Consumption). These indicators address two of the critical human impacts on water systems. The third area of concern, engineering works, proved difficult to assess given competing human and ecological needs (see Appendix D, Box D2 for details). Notably, while dams and channelization destroy habitat and disrupt hydrological flows that may be important for ecosystem vitality, they provide hydropower, flood control, irrigation systems, and drinking water—all of which enhance human welfare.

Nitrogen loading is a widespread phenomenon caused by atmospheric nitrogen deposition, plant nitrogen fixation, nitrogenous fertilizer loads, livestock nitrogen loading, and human nitrogen loading. Increases in the global nitrogen cycle are resulting in eutrophication of water bodies and areas of anoxic conditions (or "dead zones") from excessive algae growth in coastal zones. Oversubscription of water resources in any portion of a country's territory means that ecosystems are likely not receiving sufficient water flows to preserve their functioning and their potential to dilute water pollutants is reduced.

Performance with respect to water resources shows no clear pattern in relation to GDP per capita. Some wealthy countries confront serious water challenges; others do not. Similarly, some poor nations face water problems while other developing countries do not. Rather, climatic factors and natural endowments appear to be key determinants of the ranking of countries in this policy category. Water abundant countries generally do well on this measure—with several tropical water-abundant countries performing in the top 10 (see Appendix A, Table A3). Densely settled European countries generally perform in the middle third. Spain, Belgium and the Netherlands are all in the bottom third, however. At the 96th rank, the United States performs surprisingly poorly—probably owing to high input agriculture and the large portions of the American West where water resources are heavily oversubscribed. The worst performers are all arid or semi-arid countries, with limited water with which to work and population levels that outstrip supply.

4.4. Productive Natural Resources

Productive natural resources such as forests, soils (agriculture), freshwater, and fisheries are crucial to economic activities. Many of these resources and the ecosystems on which they depend are being lost or degraded. According to the recently completed Millennium Ecosystem Assessment, "over the past 50 years, humans have changed ecosystems more rapidly and extensively than in any comparable period of time in human history" (Millennium Ecosystem Assessment, 2005). The scientists involved in the Assessment warn that the coming years bring an increased likelihood of non-linear changes to ecosystems (such as accelerating, abrupt, and irreversible changes) that could have significant impacts on human well-being.

The agricultural, forestry, and fishing sectors are heavily dependent on natural resources. If managed improperly, these economic activities degrade the surrounding resources. Agricultural cropland takes up 23% of the terrestrial land surface globally. Unsustainable farming contributes to soil nutrient depletion, erosion, and water pollution. Timber extraction for construction, fuel wood, and paper has translated into unsustainable rates of deforestation in many of the world's regions, particularly in the tropics. The 2005 Forest Resources Assessment, authored by the FAO, found a net forest loss (deforestation offset by aforestation) of 7.3 million hectares per year—an area about the size of Sierra Leone or Panama (FAO, 2005). Finally, global fisheries are being depleted due to industrial fishing practices and the lack of a global regulatory framework to support sustainable fishing. The latest figures from the FAO suggest that 52% of commercial fish species are fully exploited, 17% overexploited, and eight percent depleted (FAO, 2004).

Given limited data, only three indicators are available to reflect these sectors: agricultural subsidies adjusted for environmental payments as percent of agricultural value added (Agricultural Subsidies); timber harvest as a percentage of standing forests (Timber Harvest Rate); and productivity overfishing (Overfishing). The Agricultural Subsidies measure nets out so-called "green-box" subsidies, which support sustainable practices, and thereby measures only those subsidies that are likely to create incentives for excessive chemical use, farming on marginal lands, and other ecologically damaging practices. Although an imperfect measure, the Subsidies indicator captures an important aspect of agricultural sustainability (see Appendix D, Section 5).

Lacking a well-defined metric for sustainable forestry, we rely upon data for timber harvests as a percentage of total forests. The Timber Harvest Rate indicator reflects round wood production in cubic meters as a fraction of the total standing forest volume. Forestry experts suggest that culling three percent of standing forest volume annually would represent a sustainable rate of forest exploitation in most circumstances. This target is admittedly crude, but must suffice until better data on forest management are available.

The third Productive Natural Resources indicator provides a measure of overfishing. Calculated by fisheries experts at the University of British Columbia, this indicator records each country's total fish catch relative to the tons of carbon per square kilometer of ocean shelf.[5] Although this metric only captures overfishing within a country's exclusive economic zone—and thus does not count flag ship fishing on the high seas—it offers a starting point for tracking national fishing practices.

The imperfect and indirect nature of these metrics is disappointing. Because of the important impact sustainable management of productive natural resources has on a country's successful development and long-term prosperity, this policy category emerges as a priority for future indicator development.

Countries that perform poorly in this category tend to have very low scores for at least two of the three indicators. A number of low-income countries outperform high-income countries because their use of productive natural resources is limited (Figure 17). OECD countries, for instance, tend to be some of the worst performers in this category (the United States (124), Japan (131), and Norway (131), for example) due to substantial agricultural subsidization and a high degree of overfishing. Pakistan (121) and Bangladesh (124) also fall near the bottom of the range of scores. Their poor performance arises from overfishing and a high rate of timber harvest relative to forest volume.

The top performers in the category of Productive Natural Resources are a mixture of two types of countries (see Appendix A, Table A4). One set of leading-edge countries has sizeable endowments of natural resources and is doing a good job of managing them. Paraguay (1) and Bolivia (4) are good examples of this set. The other top-performing group has less substantial endowments of natural resources but also uses them less intensively. These countries include former Soviet republics, such as Armenia, Kazakhstan, Kyrgyzstan, Azerbaijan, Uzbekistan, Turkmenistan, and Tajikistan. Ranking among the twenty best performers in the category, they all have little or no agricultural subsidies and relatively modest timber harvesting, rather than good management practices *per se*. As landlocked countries, they have no overfishing.

5 Note that land-locked countries were not required to have this variable in order to calculate the natural resource policy category score.

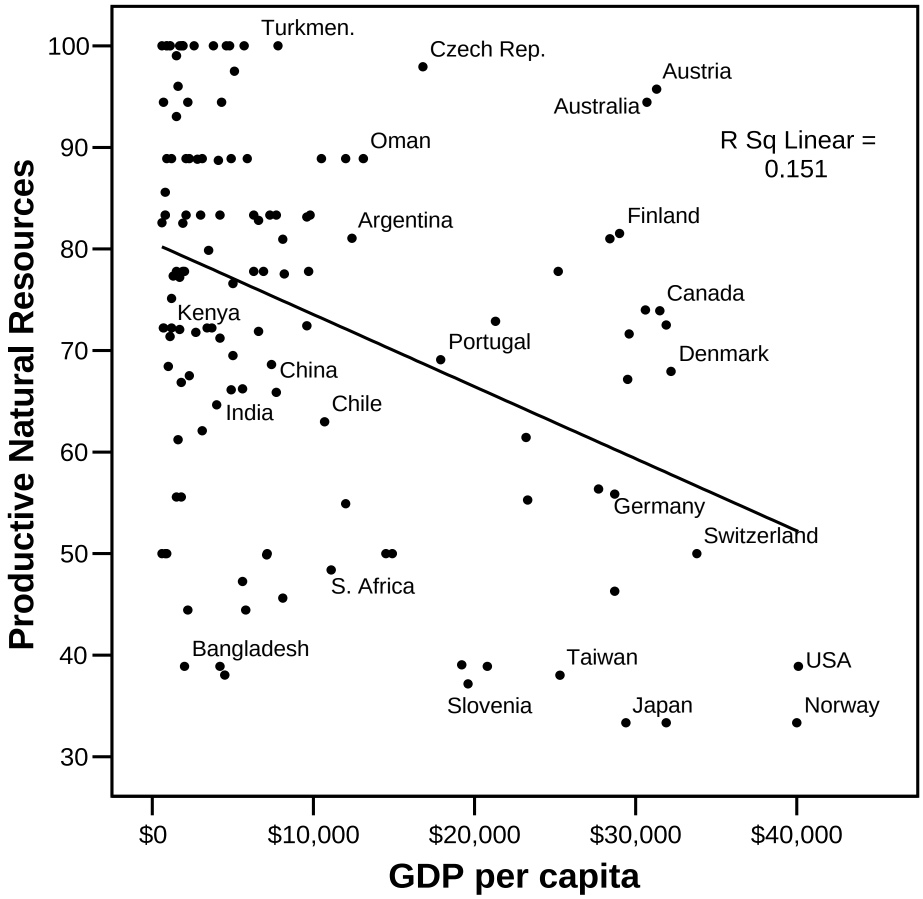


Figure 17: Relationship of Productive Resource Management and GDP per capita

4.5. Biodiversity & Habitat

Biodiversity and the habitat and ecosystem services it provides are increasingly recognized as an important component of sustainable development. The value of the goods and services provided by biodiversity was estimated at 33 billion dollars per year in 1997, and the benefits derived from biodiversity conservation are estimated to exceed its costs by 100:1 (Balmford, 2002; Costanza, 1997). Despite the importance of biological diversity to human well-being, anthropogenic environmental alteration and rates of biodiversity loss have reached unprecedented levels.

Both biodiversity and habitat protection are difficult to measure. Few datasets exist in this policy category, never mind ones that would provide an accurate gauge of performance. Given these limitations, we have relied upon two indicators related to protected areas: a measure of the evenness of protected areas coverage by biome (Ecoregion Protection) and a measure of the degree to which the country's wildest areas are protected (Wilderness Protection).

The former is important because the internationally recognized goal of protecting 10% of a country's territory (absent some effort to evenly protect all biomes in a country) can result in under-representation and loss of key ecosystems. The latter recognizes that establishing protected areas will be easiest in those regions of a country that are least developed. Beyond these two measures, we include the indicators of Water Consumption and Timber Harvest Rates, which reflect the important role that water plays in sustaining ecosystems and the significant concentration of biodiversity in forest areas.

High scores in this category are split between two different types of countries—those with large endowments of biodiversity that are going to great lengths to protect them, and those that have very small endowments that have to do very little in terms of ecosystem protection (see Appendix A, Table A5). Venezuela (2), Panama (4), Costa Rica (7), and Honduras (9) fall into the former category, while Benin (1) and Mongolia (15) fall into the latter category.

The bottom twenty is made up of two types of countries: (A) OECD countries like Austria, Switzerland, the Netherlands, Germany, and Belgium that have been developing for centuries and now have populations spread over most of the landscape, leaving little scope for habitat protection, and (B) less developed countries like Haiti, Syria, Yemen, Mauritania, and Tunisia that both lack substantial natural endowments and show little concern (often reflecting little capacity) for the protection of biodiversity and habitat.

4.6. Sustainable Energy

Climate change—and its potential impacts, including global warming, sea level rise, increased severity of windstorms, and changed rainfall patterns—represents perhaps the most serious environmental threat facing the world today. Much of the problem with greenhouse gas (GHG) emissions arises from fossil fuel burning. Energy therefore emerges as a fundamental policy category for tracking and analysis.

In this policy category, the EPI relies upon three indicators: energy consumption per unit GDP (Energy Efficiency), renewable energy production as a percentage of total domestic energy consumption (Renewable Energy), and carbon dioxide (CO_2) emissions per GDP (CO_2 per GDP). These measures provide a gauge of each country's progress toward a sustainable energy future with a reduced exposure to climate change. Additional details concerning these indicators are provided in Appendix D.

We measure energy efficiency (denominating energy use by GDP) and CO_2 per GDP because absolute measures are driven largely by economic growth and population expansion—not policy prescription. From a greenhouse gas control perspective, the absolute level of emissions globally is critical. Developing countries, however, need growth to alleviate poverty and meet other development needs of their people. So a metric that puts emphasis on decoupling energy and CO_2 emissions from economic growth provides a better gauge of policy "success," particularly given the need for a single global target and the preponderance of developing nations in the EPI rankings.

In the category of sustainable energy, the best performing countries are also among the world's poorest—Uganda, Mali, Cambodia, Laos, and Chad. The high scores reflect the fact that these countries use little energy and emit low levels of GHGs as a result of their limited industrialization and general underdevelopment (see Appendix A, Table A6). More industrialized economies were found dispersed throughout this category. Switzerland (18), Austria (34), Denmark (37), and Ireland (39) emerge as the best performers. OPEC nations, the former Soviet republics, and Arab States utilize little to no renewable energy, have low levels of energy efficiency, and also generate significant CO_2 emissions, resulting in the worst scores in this category.

5. EPI Sensitivity Analysis

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The robustness of the EPI cannot be fully assessed without evaluation of uncertainties underlying the index and an evaluation of the sensitivity of the country scores and rankings to the structure and aggregation approach utilized. To test this robustness, the EPI team has continued its partnership with the Joint Research Centre (JRC) of the European Commission in Ispra, Italy. A summary of the JRC sensitivity analysis follows. The more detailed version is included in Appendix G.

Every composite index, including the EPI, involves subjective judgments such as the selection of indicators, the choice of aggregation model, and the weights applied to the indicators. Because the quality of an index depends on the soundness of its assumptions, good practice requires evaluating confidence in the index and assessing the uncertainties associated with its development process. To ensure the validity of the policy conclusions extracted from the EPI, it is important that the sensitivity of the index to alternative methodological assumptions be adequately studied.

Sensitivity analysis lets one examine the framework of a composite index by looking at the relationship between information flowing in and out of it (Saltelli, Chan et al., 2000). Using sensitivity analysis, we can study how variations in EPI scores and ranks derive from different sources of variation in the assumptions.

Sensitivity analysis also demonstrates how each indicator depends upon the information that composes it. It is thus closely related to uncertainty analysis, which aims to quantify the overall uncertainty in a country's score (or rank) as a result of the uncertainties in the index construction. A combination of uncertainty and sensitivity analyses can help to gauge the robustness of the EPI results, to increase the EPI's transparency, to identify the countries that improve or decline under certain assumptions, and to help frame the debate around the use of the index.

The validity of the EPI scoring and respective ranking is assessed by evaluating how sensitive it is to the assumptions that have been made about its structure and the aggregation of the 16 indicators. The sensitivity analysis is mainly related to: (1) variability in the target values (2) equal weighting versus principal component analysis weighting of indicators (3) aggregation at the indicator level versus the policy category level.

How do the EPI ranks compare to the most likely ranks under alternative methodological approaches?

The most likely (median) rank of a country considering all combinations of assumptions in the sensitivity analysis rarely deviates substantially from its EPI rank. For 95 out of 133 countries the difference between the EPI rank and the most likely (median) rank is less than 15 positions. The modest sensitivity of the EPI ranking to the choice of the target values, indicator weighting, and aggregation level implies a reasonably high degree of robustness of the index.

Which are the most volatile countries and why?

The top four ranking countries in the EPI all have modest volatility (one to two positions). This small degree of sensitivity implies a robust evaluation of performance for those countries. The countries that present the highest volatility (between 50 and 63 positions) are Slovenia (rank: 31) and Laos (rank: 102). Slovenia's volatility is entirely due to the combined effect of all three assumptions. Laos's high volatility is mainly attributable to the aggregation level and to its combined effect with the other two assumptions about weighting and target values.

What if alternative target values for the indicators are used instead of the current ones?

If one were to change the target value to the 90th percentile value for all indicators, such that 10% of countries achieve the target, it would play only a minor role in the sensitivity of the EPI ranking. For the set of 133 countries, the assumption regarding target values has an average impact of only two ranks. However, Chile and Egypt are among the countries that are most affected by this assumption — which improve or worsen their rank by eight positions, respectively.

What if equal weighting within each category is used, instead of the PCA-derived weights?

An equal weighting approach within each of the six policy categories affects the indicators within Environmental Health, Biodiversity and Energy Components, for which there were clear referents in the PCA results. Using equal weights within each category has a pronounced positive effect on the rank of a few countries such as Trinidad and Tobago and Papua New Guinea, but a negative effect on others such as Egypt, Spain, and Jordan. Overall, the analysis shows only a small sensitivity to the weighting assumption with an average impact of three ranks.

What if aggregation is applied at the indicator level, instead of the category level?

Weighting the 16 indicators equally contributes to the variance of the EPI scores and ranks more than any of the other two changes does. Zambia and Uganda would rise by more than 50 positions in the ranking if aggregation were done at the indicator level rather than the category level. Conversely, Ukraine, Jordan, and Moldova would fall by more than 40 positions. The reason for this effect lies in the fact that aggregation at the indicator level gives added weight to PM10, INDOOR, WATSUP, ACSAT and reduces the weight of RENPC.[6] Overall, the level at which aggregation to the EPI takes place has an average impact of 18 ranks.

Figure 18 presents an analysis of the variability of the EPI scores and the scores in six underlying policy categories. The box plots also show how well the countries of the world are doing in each category and whether the performance varies widely across countries. Looking at the global scale, the world performs best on the water issues as measured in the EPI. The weakest performance emerges in the biodiversity component. As Table 16 shows, even when acknowledging uncertainties, the confidence intervals for the median values for these six components are rather narrow.

[6] Codes, acronyms, and general metadata for all EPI indicators can be found in Appendix H.

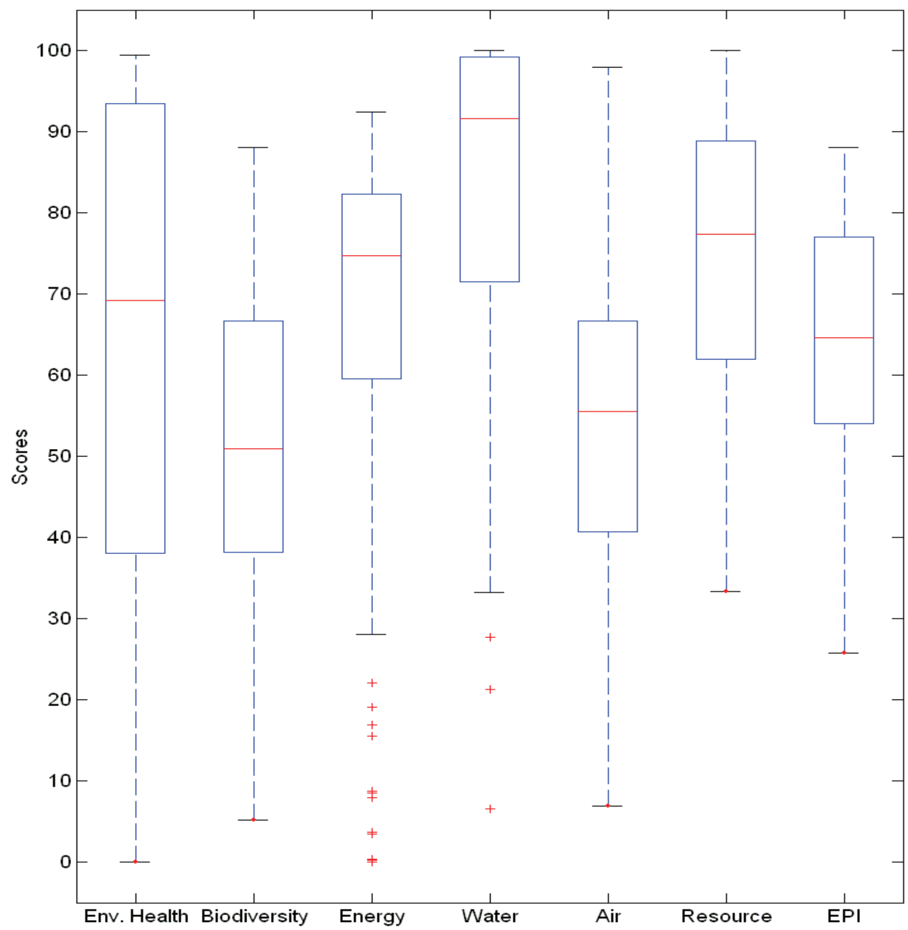


Figure 18: Boxplots of EPI & Categories Scores Across the 133 countries.

Note: The box has lines at the lower quartile, median, and upper quartile values. The whiskers are lines extending from each end of the box to show the extent of the rest of the data. Outliers (+) are data with values beyond the ends of the whiskers. If there is no data outside the whisker, a dot is placed at the bottom whisker.

Table 16: Statistics on the EPI & Categories scores

Category	25th percentile across 133 countries	75th percentile across 133 countries	Median across 133 countries	Range for the median (due to uncertainties)
Env. Health	38.0	93.4	69.2	[68.4, 70.4]
Biodiversity	38.3	66.6	50.9	[50.9, 67.1]
Energy	59.7	82.2	74.7	[57.8, 78.1]
Water	71.5	99.2	91.7	91.7
Air	40.7	66.4	55.5	[55.5, 61.5]
Resource	62.1	88.9	77.3	[77.3, 83.3]
EPI	54.1	77.0	64.6	[62.2, 67.4]

6. Conclusions

The Pilot 2006 EPI introduces a composite index of current national environmental performance based on proximity to defined policy targets. The aggregate and issue-by-issue rankings provide a basis for benchmarking pollution control and natural resource management results and clarifying which governments are performing well—and why. The data also permit analysis along a number of dimensions such as the drivers of environmental success and best policy practices adopted by leading performers.

In a realm plagued by uncertainty and often dominated by rhetoric and emotion rather than systematic analysis, the EPI shows how data-driven policymaking might enable movement toward a more fact-based, empirical, and analytically rigorous approach to environmental protection. The promise of improved results—and the ability to measure the contribution of environmental programs to better outcomes—is essential to further investments in environmental protection, particularly in the context of the environmental aspects of the Millennium Development Goals.

The EPI centers on two basic objectives: (1) protecting human health from environmental stresses, and (2) promoting ecosystem vitality and sound natural resource management. It tracks six underlying policy categories—Environmental Health, Air Quality, Water Resources, Biodiversity and Habitat, Productive Natural Resources, and Sustainable Energy—using 16 baseline datasets and associated policy targets. The proximity-to-target measures provide a way to gauge environmental results in general and a concrete set of metrics for tracking progress toward the environmental dimensions of the MDGs in particular.

The EPI report highlights a range of peer groups for each country. By grouping countries that are at the same level of development, in the same geographic region, or statistically similar (as determined by the clustering process), the EPI provides environmental decisionmakers with a way to establish a context for their policy choices and performance outcomes.

The sensitivity analysis independently conducted by the Joint Research Center of the European Commission (JRC) shows how the results of the EPI might vary if other methodological assumptions were adopted. This analysis allows us to say that alternate assumptions, with regard to the choice of indicators, aggregation methodology, and the weighting of the indicators and categories, would change the rankings, but these differences are not great except in a few cases. Thus, we can be reasonably confident in the robustness of the EPI scores and rankings—and the indicative sense they provide about which countries are performing well in response to the challenges of environmental protection.

While the Pilot EPI's usefulness is limited by data problems, methodological questions, and the inherent uncertainties of the environmental field, it still offers a valuable tool for environmental policymakers. In particular, the EPI enables them to track environmental outcomes, benchmark performance, and identify appropriate policy options. To achieve the full promise of the EPI, much better environmental data will need to be collected and disseminated.

Analysis of the EPI rankings and underlying data reveal a number of key points:

- Despite significant data shortcomings and the conceptual complexity of bringing the range of issues that fall under the environmental rubric into a single index, the EPI shows that environmental performance can be tracked in a rigorous and quantitative fashion.

- Efforts to refine the methodology for construction of composite environmental performance indices promise dividends in the policy context. Tools for moving countries quickly toward best practices are especially important in the context of achieving the environmental aspects of the Millennium Development Goals.

- Every country faces substantial challenges in reducing environment-related human health stresses and in promoting ecosystem vitality and natural resource management. No country has obtained a position of long-term environmental sustainability.

- The cross-country comparisons facilitated by the EPI provide a useful way to identify leaders, laggards, and best practices on an issue-by-issue and aggregate basis. Every country lags in performance on some issues. Each country has issues on which it can learn from the success of peer nations.

- While substantial progress has been made in some countries on many issues and in most countries on some issues, the planet remains on a less-than-sustainable course in certain important respects, notably with regard to biodiversity, energy, and climate change.

- A country's level of development emerges as an important driver of environmental performance. At every level of development, however, some countries show much better results than their peers. This suggests that policy choices (and perhaps other factors) are also important determinants of environmental performance.

- Good environmental results correlate significantly with good governance. Policy emphasis at the national and global levels on establishing the rule of law, eliminating corruption, promoting a robust policy dialogue, and setting up effective regulatory institutions appears fully justified.

- Efforts to shift environmental policymaking onto a more empirical and analytically rigorous foundation require action on a number of fronts, including: better defined policy targets, investment in data collection and indicator tracking, and use of quantitative metrics and analysis in policy formation and evaluation.

The 2006 EPI is a *pilot* index. It is very much a work in progress. Feedback on any element of the index and its underlying components would be most welcome (www.yale.edu/epi). We are eager to receive help identifying better data sources and to work with data collectors in improving the metrics and information available for policymakers and researchers. We encourage suggestions for refining the Pilot EPI methodology or reconceptualizing how environmental performance is tracked.

Pilot 2006 Environmental Performance Index

Appendix A:

Policy Category Tables & Maps

Table A1: Environmental Health Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Sweden	99.4	46	Saudi Arabia	83.7	91	Viet Nam	44.4
2	France	99.2	47	Colombia	82.4	92	Nepal	44.1
3	Australia	99.0	48	Venezuela	81.8	93	Namibia	43.9
4	United Kingdom	98.9	49	Moldova	81.7	94	India	43.8
5	Finland	98.8	50	Costa Rica	81.1	95	Yemen	40.7
6	Iceland	98.8	51	Mexico	80.6	96	Senegal	39.9
7	Norway	98.8	52	Oman	79.5	97	Gambia	39.3
8	Germany	98.7	53	Brazil	79.3	98	Haiti	38.4
9	Canada	98.6	54	Ecuador	78.2	99	Bangladesh	38.2
10	Ireland	98.6	55	Albania	77.7	100	Kenya	38.0
11	Denmark	98.5	56	Tunisia	77.2	101	Tajikistan	38.0
12	Switzerland	98.3	57	Jamaica	76.4	102	Tanzania	37.3
13	United States	98.3	58	Morocco	75.7	103	Côte d'Ivoire	34.8
14	New Zealand	97.9	59	Panama	75.6	104	Papua New Guinea	34.2
15	Austria	97.7	60	Suriname	75.1	105	Benin	33.1
16	Japan	97.6	61	Egypt	74.6	106	Uganda	31.7
17	Portugal	97.4	62	Syria	72.3	107	Cameroon	31.5
18	Czech Rep.	97.3	63	South Africa	71.8	108	Rwanda	31.1
19	Slovenia	97.3	64	Thailand	71.0	109	Burundi	30.6
20	Netherlands	97.1	65	Kazakhstan	70.8	110	Swaziland	30.0
21	Spain	97.0	66	Armenia	70.2	111	Malawi	29.6
22	Belgium	96.6	67	Dominican Rep.	69.2	112	Mauritania	28.4
23	Slovakia	96.4	68	Honduras	66.1	113	Togo	28.3
24	Greece	96.3	69	Peru	64.8	114	Central Afr. Rep.	26.6
25	Israel	95.9	70	Guatemala	64.4	115	Sudan	24.5
26	Italy	95.3	71	El Salvador	64.1	116	Zambia	24.0
27	Poland	95.0	72	Paraguay	63.4	117	Liberia	23.3
28	Hungary	94.2	73	Philippines	63.6	118	Madagascar	23.3
29	Trinidad & Tobago	94.1	74	Nicaragua	62.5	119	Nigeria	23.0
30	Ukraine	93.8	75	Georgia	61.8	120	Laos	21.4
31	Bulgaria	93.7	76	Sri Lanka	61.3	121	Sierra Leone	20.4
32	Taiwan	93.5	77	Romania	61.2	122	Congo	19.4
33	South Korea	93.5	78	Gabon	61.0	123	Cambodia	18.3
34	Lebanon	93.4	79	China	61.0	124	Guinea	17.2
35	United Arab Em.	92.7	80	Azerbaijan	59.2	125	Guinea-Bissau	17.1
36	Russia	92.3	81	Uzbekistan	57.7	126	Mozambique	16.7
37	Cyprus	90.4	82	Turkmenistan	57.4	127	Dem. Rep. Congo	12.8
38	Malaysia	88.8	83	Indonesia	53.9	128	Ethiopia	10.4
39	Chile	87.2	84	Kyrgyzstan	53.7	129	Burkina Faso	9.9
40	Argentina	86.7	85	Bolivia	53.6	130	Mali	8.6
41	Iran	85.7	86	Zimbabwe	49.9	131	Angola	7.8
42	Jordan	85.5	87	Ghana	48.8	132	Niger	1.0
43	Algeria	85.1	88	Mongolia	47.8	133	Chad	0.0
44	Cuba	85.1	89	Myanmar	47.3			
45	Turkey	84.6	90	Pakistan	46.1			

Table A2: Air Quality Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Uganda	98.0	46	Germany	61.3	91	Thailand	47.5
2	Gabon	96.1	47	Costa Rica	60.6	92	Taiwan	47.4
3	Rwanda	91.1	48	Ireland	60.3	93	South Korea	47.1
4	Burundi	90.9	49	Kazakhstan	60.1	94	Australia	47.0
5	Ghana	87.3	50	Switzerland	59.6	95	Viet Nam	45.3
6	Kenya	87.0	51	Belgium	59.0	96	Dominican Rep.	45.2
7	Liberia	86.5	52	Panama	58.6	97	United States	44.7
8	Tanzania	86.2	53	Peru	57.8	98	Romania	42.5
9	New Zealand	83.7	54	Slovakia	57.4	99	El Salvador	42.5
10	Togo	82.3	55	Austria	57.2	100	Tajikistan	40.7
11	Dem. Rep. Congo	82.3	56	Ethiopia	57.1	101	Haiti	40.7
12	Central Afr. Rep.	80.1	57	Moldova	56.9	102	Jordan	40.6
13	Malaysia	79.8	58	Ukraine	56.6	103	Yemen	39.5
14	Malawi	79.2	59	Cambodia	56.6	104	Honduras	39.5
15	Benin	78.9	60	Canada	56.2	105	Algeria	39.3
16	South Africa	78.6	61	Slovenia	56.1	106	Bolivia	39.0
17	Ecuador	78.3	62	Laos	56.0	107	United Arab Em.	38.5
18	Venezuela	76.9	63	Nigeria	55.9	108	Armenia	37.8
19	Côte d'Ivoire	76.2	64	Netherlands	55.9	109	Uzbekistan	36.4
20	Sierra Leone	75.5	65	Hungary	55.6	110	Nepal	35.9
21	Madagascar	74.7	66	Russia	55.6	111	Mexico	34.6
22	Mozambique	74.6	67	Czech Rep.	55.5	112	Georgia	33.2
23	Trinidad & Tobago	74.4	68	Italy	55.2	113	Azerbaijan	32.7
24	Swaziland	74.3	69	Gambia	54.9	114	Guatemala	32.6
25	Papua New Guinea	73.7	70	Morocco	54.4	115	Turkmenistan	32.4
26	Suriname	73.7	71	Poland	54.0	116	Syria	31.8
27	Congo	71.4	72	Paraguay	53.9	117	Iran	31.1
28	Zimbabwe	70.0	73	Senegal	52.9	118	Mauritania	30.9
29	Guinea	69.6	74	Sri Lanka	52.7	119	Saudi Arabia	30.2
30	Colombia	69.4	75	Japan	52.6	120	Mongolia	28.5
31	Namibia	69.2	76	Burkina Faso	52.4	121	India	28.4
32	Zambia	69.1	77	Lebanon	52.1	122	Oman	28.1
33	Cameroon	67.5	78	Angola	51.2	123	Myanmar	27.4
34	Sweden	66.4	79	Greece	50.9	124	Indonesia	25.1
35	Finland	65.3	80	Kyrgyzstan	50.6	125	Sudan	24.9
36	Brazil	64.0	81	Nicaragua	50.5	126	Chad	24.4
37	Chile	63.7	82	Cuba	50.2	127	Niger	22.9
38	Argentina	63.1	83	Portugal	50.1	128	China	22.3
39	Norway	62.8	84	Israel	49.6	129	Mali	21.2
40	Denmark	61.9	85	Spain	49.2	130	Egypt	14.8
41	Guinea-Bissau	61.6	86	Tunisia	49.1	131	Albania	14.4
42	United Kingdom	61.6	87	Turkey	49.1	132	Pakistan	8.2
43	Iceland	61.5	88	Bulgaria	48.8	133	Bangladesh	6.9
44	France	61.5	89	Cyprus	48.6			
45	Philippines	61.4	90	Jamaica	47.7			

Table A3: Water Scores

Rank*	Country	Score	Rank*	Country	Score	Rank*	Country	Score
1	Sierra Leone	100	46	Honduras	97.8	91	Zimbabwe	79.5
2	Liberia	100	47	Brazil	97.8	92	Paraguay	78.3
3	Costa Rica	100	48	Panama	97.6	93	Hungary	77.0
4	Norway	100	49	Colombia	97.4	94	Netherlands	76.5
5	Suriname	100	50	Philippines	97.2	95	Kazakhstan	74.7
6	Nicaragua	99.9	51	Denmark	97.1	96	United States	73.9
7	Gabon	99.9	52	Viet Nam	97.0	97	Turkmenistan	73.3
8	Guinea-Bissau	99.9	53	Czech Rep.	96.7	98	Cuba	72.6
9	Jamaica	99.9	54	Bolivia	96.6	99	Iran	72.4
10	Guatemala	99.9	55	Burundi	96.1	100	Egypt	71.5
11	Trinidad & Tobago	99.9	56	Rwanda	95.0	101	Argentina	71.4
12	Cambodia	99.9	57	Greece	94.9	102	Romania	70.6
13	Laos	99.9	58	Nigeria	94.8	103	Azerbaijan	70.5
14	Congo	99.8	59	Japan	94.8	104	India	67.6
15	Taiwan	99.8	60	Swaziland	94.4	105	Bulgaria	65.8
16	El Salvador	99.8	61	Poland	93.7	106	Oman	65.7
17	Indonesia	99.8	62	Georgia	93.0	107	Ukraine	65.2
18	Albania	99.8	63	Uganda	92.7	108	Spain	62.4
19	Dem. Rep. Congo	99.7	64	Angola	92.0	109	United Arab Em.	62.1
20	Switzerland	99.6	65	United Kingdom	91.9	110	Uzbekistan	59.6
21	Cameroon	99.6	66	Thailand	91.8	111	Niger	56.6
22	Gambia	99.6	67	France	91.7	112	Belgium	53.2
23	Ireland	99.6	68	Bangladesh	91.3	113	Saudi Arabia	52.6
24	Zambia	99.6	69	Venezuela	91.0	114	Senegal	52.0
25	Guinea	99.5	70	South Korea	90.7	115	Yemen	50.0
26	Sweden	99.5	71	Lebanon	89.3	116	China	49.6
27	Slovenia	99.5	72	Portugal	89.2	117	Armenia	49.0
28	Finland	99.5	73	Madagascar	88.8	118	Syria	48.3
29	Austria	99.4	74	Tanzania	88.6	119	Australia	47.3
30	Ghana	99.4	75	Burkina Faso	88.3	120	Moldova	46.3
31	Benin	99.4	76	Malawi	86.9	121	Israel	46.1
32	Slovakia	99.4	77	Mozambique	86.7	122	Jordan	45.8
33	Malaysia	99.3	78	Tajikistan	86.2	123	Namibia	41.7
34	Togo	99.2	79	Turkey	86.0	124	Mongolia	39.7
35	Iceland	99.2	80	Kenya	84.8	125	Pakistan	37.9
36	Nepal	99.0	81	Sudan	84.8	126	Mali	37.7
37	New Zealand	98.8	82	Germany	84.5	127	Mauritania	35.5
38	Central Afr. Rep.	98.5	83	Peru	83.8	128	Tunisia	35.1
39	Canada	98.4	84	Chile	83.7	129	Chad	35.0
40	Papua New Guinea	98.4	85	Sri Lanka	83.2	130	South Africa	33.3
41	Cyprus	98.2	86	Ecuador	82.3	131	Algeria	27.7
42	Myanmar	98.2	87	Dominican Rep.	80.8	132	Mexico	21.2
43	Côte d'Ivoire	98.0	88	Italy	80.3	133	Morocco	6.5
44	Haiti	98.0	89	Ethiopia	80.3			
45	Russia	98.0	90	Kyrgyzstan	79.7			

**Note:* *Equal rankings were given only in cases where there were countries with equal absolute scores.*

Table A4: Biodiversity and Habitat Scores

Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Benin	88.0	46	Russia	61.0	91	Denmark	40.9
2	Venezuela	88.0	47	Nepal	60.5	92	Ukraine	40.0
3	Jamaica	86.1	48	Chad	60.4	93	India	39.7
4	Panama	83.1	49	Colombia	60.2	94	Mozambique	39.6
5	Cambodia	82.6	50	Saudi Arabia	60.2	95	Madagascar	39.4
6	Zambia	81.5	51	Thailand	60.2	96	South Korea	39.4
7	Costa Rica	80.2	52	United Kingdom	58.8	97	Niger	38.9
8	Burkina Faso	79.9	53	Peru	57.4	98	Swaziland	38.7
9	Honduras	78.1	54	Sri Lanka	56.5	99	Kazakhstan	38.3
10	Laos	76.0	55	Sierra Leone	56.1	100	Uzbekistan	38.2
11	Tanzania	74.1	56	Jordan	55.9	101	Algeria	37.7
12	Uganda	73.6	57	United Arab Em.	55.5	102	Burundi	37.1
13	New Zealand	73.4	58	Sweden	55.5	103	Romania	36.8
14	Central Afr. Rep.	72.8	59	Canada	55.1	104	Liberia	36.7
15	Mongolia	71.7	60	Armenia	55.0	105	Norway	35.8
16	Malaysia	71.5	61	Morocco	54.6	106	Papua New Guinea	34.3
17	Czech Rep.	71.4	62	Portugal	54.5	107	Trinidad & Tobago	31.9
18	Dominican Rep.	70.8	63	Dem. Rep. Congo	54.3	108	Georgia	31.8
19	Côte d'Ivoire	70.6	64	Finland	54.3	109	Turkey	31.8
20	Japan	70.4	65	Kenya	54.1	110	Bulgaria	30.9
21	Nicaragua	69.3	66	Cameroon	53.9	111	Turkmenistan	30.3
22	Guatemala	69.0	67	France	50.9	112	Poland	29.1
23	Philippines	69.0	68	Brazil	50.4	113	Austria	28.8
24	Togo	68.5	69	Azerbaijan	50.1	114	Switzerland	28.5
25	Chile	68.3	70	Ghana	50.1	115	Greece	27.3
26	China	68.1	71	Argentina	49.7	116	Ireland	26.2
27	Kyrgyzstan	68.0	72	Australia	49.5	117	Netherlands	26.1
28	Namibia	68.0	73	Italy	48.7	118	Bangladesh	25.2
29	Senegal	67.5	74	Tajikistan	48.6	119	Egypt	23.9
30	Zimbabwe	67.5	75	Mexico	48.5	120	Slovenia	23.4
31	Taiwan	67.2	76	Iran	47.9	121	Pakistan	23.0
32	Suriname	66.9	77	Hungary	47.6	122	Albania	22.2
33	United States	66.8	78	Angola	47.3	123	Gambia	21.1
34	Bolivia	66.6	79	Israel	47.3	124	Germany	21.1
35	Indonesia	66.0	80	Guinea-Bissau	47.3	125	Lebanon	20.2
36	Cuba	66.0	81	South Africa	47.1	126	El Salvador	18.8
37	Malawi	64.6	82	Slovakia	45.7	127	Haiti	17.4
38	Ecuador	64.5	83	Mali	45.0	128	Syria	17.1
39	Guinea	64.3	84	Paraguay	43.8	129	Moldova	16.8
40	Congo	64.1	85	Ethiopia	43.5	130	Belgium	16.7
41	Iceland	63.6	86	Viet Nam	42.8	131	Yemen	13.7
42	Rwanda	63.2	87	Myanmar	42.7	132	Mauritania	5.89
43	Gabon	62.5	88	Nigeria	42.0	133	Tunisia	5.12
44	Spain	62.0	89	Sudan	41.2			
45	Cyprus	62.0	90	Oman	41.0			

Table A5: Productive Natural Resources Scores

Rank*	Country	Score	Rank*	Country	Score	Rank*	Country	Score
1	Paraguay	100	41	Namibia	83.3	91	Denmark	67.9
1	Armenia	100	41	Congo	83.3	92	Ghana	67.5
1	Kazakhstan	100	41	Guinea	83.3	93	Netherlands	67.2
1	Bolivia	100	41	Madagascar	83.3	94	Gambia	66.9
1	Zimbabwe	100	50	Costa Rica	83.1	95	China	66.2
1	Moldova	100	51	Colombia	82.8	96	El Salvador	66.1
1	Kyrgyzstan	100	52	Sierra Leone	82.6	97	Romania	65.9
1	Central Afr. Rep.	100	53	Sudan	82.5	98	Sri Lanka	64.6
1	Malawi	100	54	Finland	81.5	99	Chile	63.0
1	Azerbaijan	100	55	Argentina	81.1	100	India	62.1
1	Zambia	100	56	Sweden	81.0	101	New Zealand	61.4
1	Laos	100	57	Brazil	80.9	102	Togo	61.2
1	Turkmenistan	100	58	Indonesia	79.9	103	Italy	56.4
1	Uzbekistan	100	59	Malaysia	77.8	104	Germany	55.9
1	Mongolia	100	59	Panama	77.8	105	Haiti	55.6
1	Tajikistan	100	59	United Arab Em.	77.8	105	Mauritania	55.6
1	Mali	100	59	Ukraine	77.8	107	Spain	55.3
18	Nepal	99.0	59	Côte d'Ivoire	77.8	108	Poland	54.9
19	Czech Rep.	97.9	59	Cameroon	77.8	109	Switzerland	50.0
20	Swaziland	97.5	59	Cambodia	77.8	109	Slovakia	50.0
21	Chad	96.0	66	Bulgaria	77.5	109	Cyprus	50.0
22	Austria	95.7	67	Rwanda	77.3	109	Hungary	50.0
23	Australia	94.4	68	Myanmar	77.2	109	Burundi	50.0
23	Suriname	94.4	69	Lebanon	76.6	109	Ethiopia	50.0
23	Papua New Guinea	94.4	70	Burkina Faso	75.1	109	Niger	50.0
23	Guinea-Bissau	94.4	71	Belgium	74.0	116	Tunisia	49.9
27	Uganda	93.0	72	Canada	73.9	117	South Africa	48.4
28	Trinidad & Tobago	88.9	73	Greece	72.9	118	Peru	47.3
28	Gabon	88.9	74	Ireland	72.5	119	France	46.3
28	Nicaragua	88.9	75	Mexico	72.4	120	Thailand	45.6
28	Albania	88.9	76	Ecuador	72.2	121	Venezuela	44.4
28	Saudi Arabia	88.9	76	Tanzania	72.2	121	Pakistan	44.4
28	Oman	88.9	76	Benin	72.2	123	South Korea	39.0
28	Georgia	88.9	76	Syria	72.2	124	United States	38.9
28	Liberia	88.9	76	Dem. Rep. Congo	72.2	124	Israel	38.9
28	Mozambique	88.9	81	Senegal	72.1	124	Egypt	38.9
28	Angola	88.9	82	Algeria	71.9	124	Bangladesh	38.9
38	Honduras	88.8	83	Viet Nam	71.8	128	Jordan	38.0
39	Jamaica	88.7	84	United Kingdom	71.6	129	Taiwan	38.0
40	Yemen	85.6	85	Kenya	71.4	130	Slovenia	37.2
41	Russia	83.3	86	Morocco	71.2	131	Iceland	33.3
41	Cuba	83.3	87	Philippines	69.5	131	Japan	33.3
41	Iran	83.3	88	Portugal	69.1	131	Norway	33.3
41	Dominican Rep.	83.3	89	Turkey	68.6			
41	Guatemala	83.3	90	Nigeria	68.4			

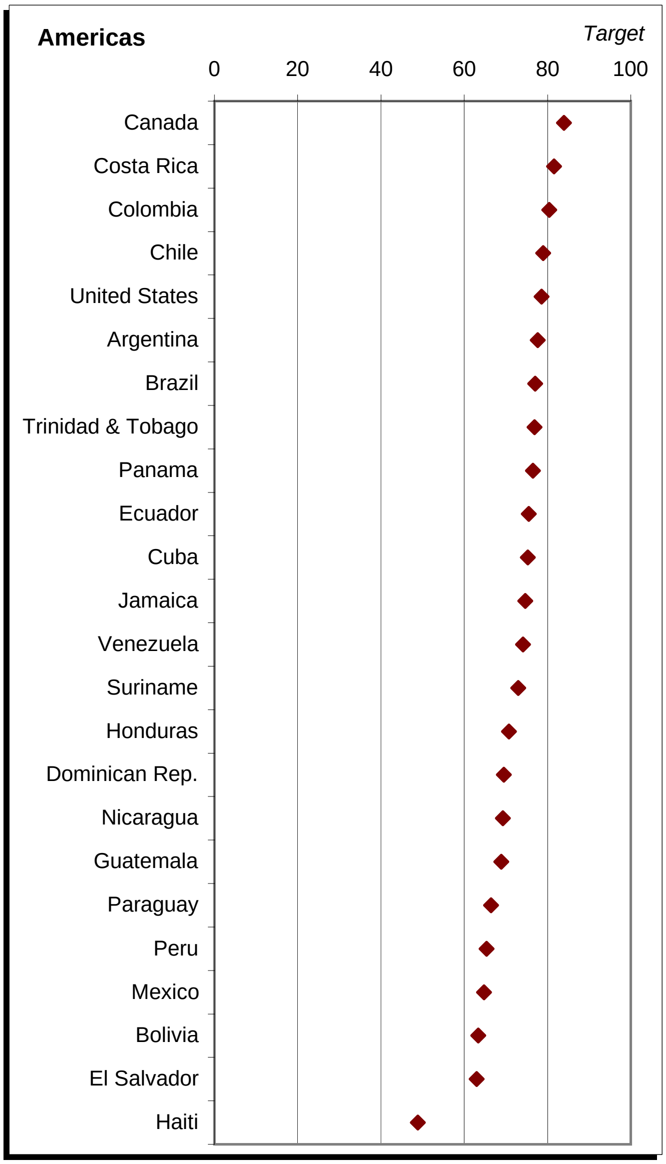
**Note: Equal rankings were given only in cases where there were countries with equal absolute scores.*

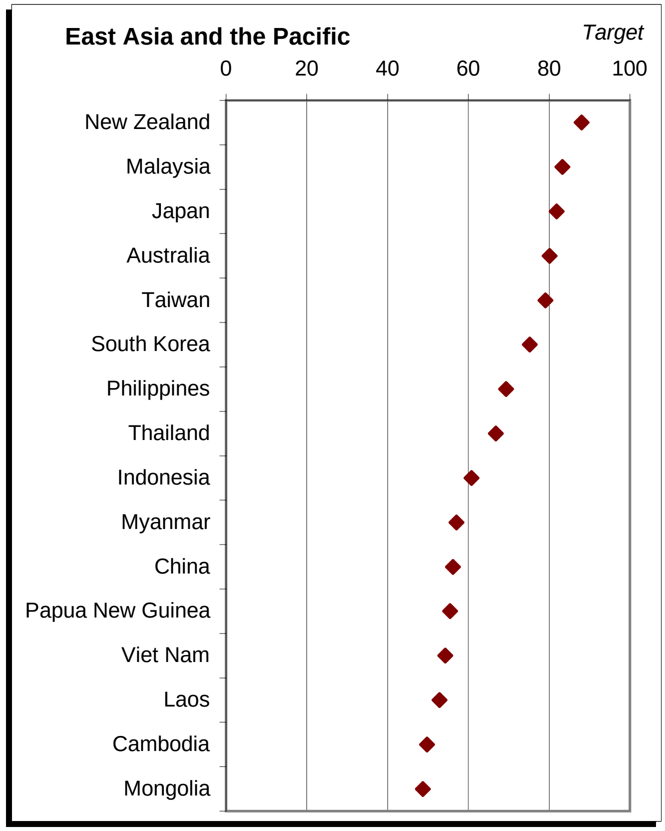
Table A6: Sustainable Energy Scores

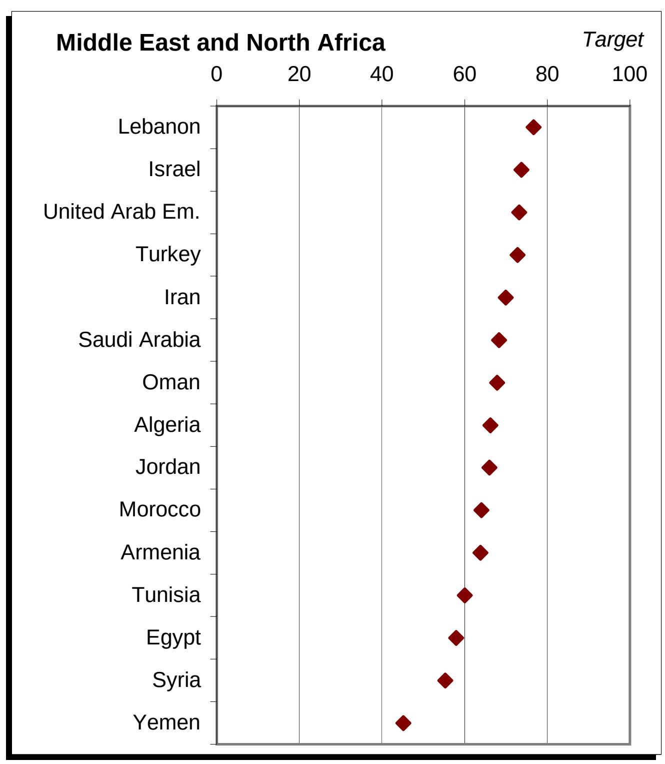
Rank	Country	Score	Rank	Country	Score	Rank	Country	Score
1	Uganda	92.4	46	Congo	79.0	91	Pakistan	66.6
2	Mali	92.1	47	France	78.9	92	Ecuador	66.4
3	Dem. Rep. Congo	90.1	48	Sweden	78.9	93	Viet Nam	64.1
4	Laos	89.8	49	Philippines	78.9	94	Bolivia	63.7
5	Cambodia	89.1	50	Germany	78.3	95	Zimbabwe	63.0
6	Central Afr. Rep.	88.8	51	Sierra Leone	78.3	96	Canada	62.8
7	Chad	88.8	52	Côte d’Ivoire	78.2	97	Lebanon	61.2
8	Burundi	88.8	53	Spain	78.0	98	Malaysia	60.8
9	Guinea	88.6	54	Argentina	77.8	99	Algeria	60.1
10	Myanmar	88.3	55	United Kingdom	77.8	100	India	59.7
11	Rwanda	87.3	56	Senegal	77.6	101	Yemen	59.2
12	Malawi	86.5	57	Norway	76.5	102	Georgia	58.2
13	Burkina Faso	86.5	58	Kenya	76.5	103	Oman	57.6
14	Nepal	86.4	59	Israel	76.0	104	Egypt	57.2
15	Costa Rica	86.0	60	Finland	75.7	105	Slovakia	56.0
16	Cameroon	85.3	61	Albania	75.6	106	Cuba	55.2
17	Haiti	84.8	62	Tunisia	75.3	107	Poland	54.7
18	Switzerland	84.7	63	Netherlands	75.3	108	South Africa	53.3
19	Ethiopia	84.1	64	Morocco	75.1	109	Czech Rep.	51.9
20	Mozambique	84.0	65	Angola	74.9	110	Jordan	51.7
21	Swaziland	83.9	66	Togo	74.8	111	China	50.8
22	Sudan	83.8	67	Greece	74.7	112	Mauritania	50.3
23	Niger	83.6	68	Chile	74.6	113	Romania	47.3
24	Peru	83.5	69	Zambia	74.2	114	Armenia	45.2
25	Gambia	83.5	70	Cyprus	73.9	115	Jamaica	42.7
26	Namibia	83.4	71	New Zealand	73.4	116	Kyrgyzstan	38.3
27	Papua New Guinea	83.3	72	Honduras	73.2	117	Iran	36.6
28	Ghana	83.3	73	Belgium	73.2	118	United Arab Em.	34.3
29	Tanzania	82.9	74	Slovenia	72.6	119	Saudi Arabia	33.1
30	Madagascar	82.7	75	Guinea-Bissau	72.1	120	Venezuela	32.1
31	Sri Lanka	82.5	76	Nicaragua	71.3	121	Bulgaria	28.1
32	El Salvador	82.5	77	Taiwan	70.7	122	Syria	22.0
33	Colombia	82.4	78	Paraguay	69.9	123	Suriname	19.1
34	Austria	82.2	79	Turkey	69.7	124	Tajikistan	16.9
35	Guatemala	82.1	80	United States	69.7	125	Russia	15.5
36	Bangladesh	81.7	81	Panama	69.5	126	Mongolia	8.7
37	Denmark	81.5	82	Dominican Rep.	69.3	127	Kazakhstan	8.5
38	Liberia	81.3	83	Hungary	69.2	128	Azerbaijan	8.0
39	Ireland	81.2	84	Iceland	68.9	129	Ukraine	3.7
40	Brazil	80.6	85	Nigeria	68.6	130	Trinidad & Tobago	3.4
41	Italy	80.3	86	Australia	68.4	131	Uzbekistan	0.4
42	Gabon	79.8	87	Thailand	68.1	132	Moldova	0.2
43	Japan	79.7	88	South Korea	68.1	133	Turkmenistan	0.0
44	Benin	79.5	89	Mexico	67.6			
45	Portugal	79.1	90	Indonesia	67.1			

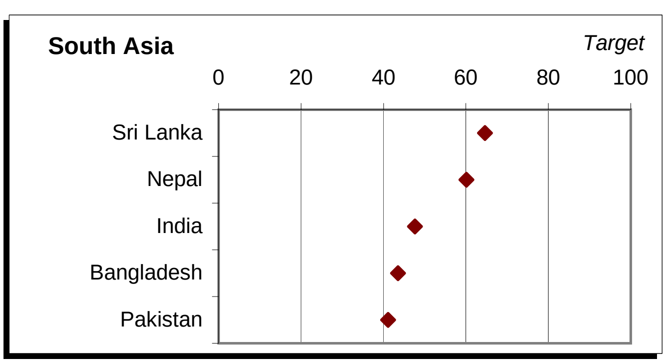
Overall Environmental Performance Index

Theoretical range of 0 to 100 (100=target met)

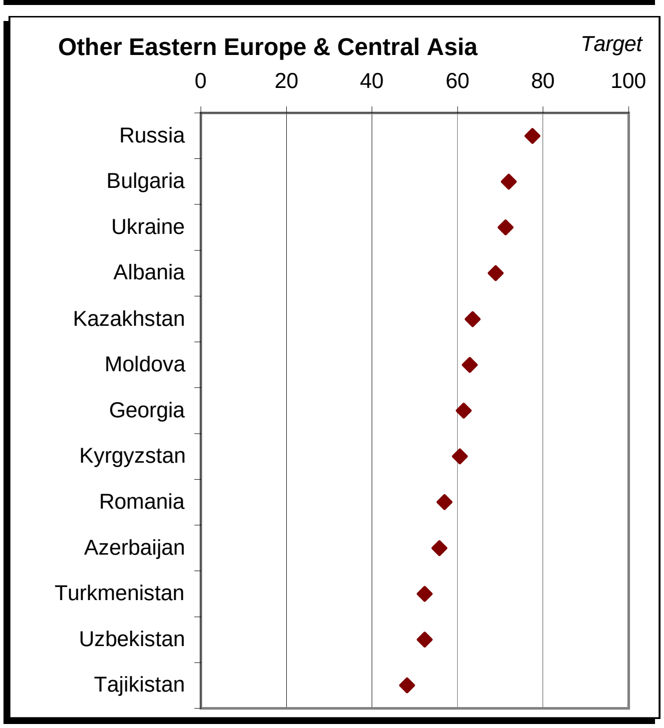









European Union +
Target
0
20
40
60
80
100
Sweden
Finland
Czech Rep.
United Kingdom
Austria
Denmark
Ireland
Portugal
France
Iceland
Switzerland
Norway
Greece
Italy
Germany
Spain
Slovakia
Netherlands
Cyprus
Slovenia
Hungary
Poland
Belgium


Other Eastern Europe & Central Asia
Target
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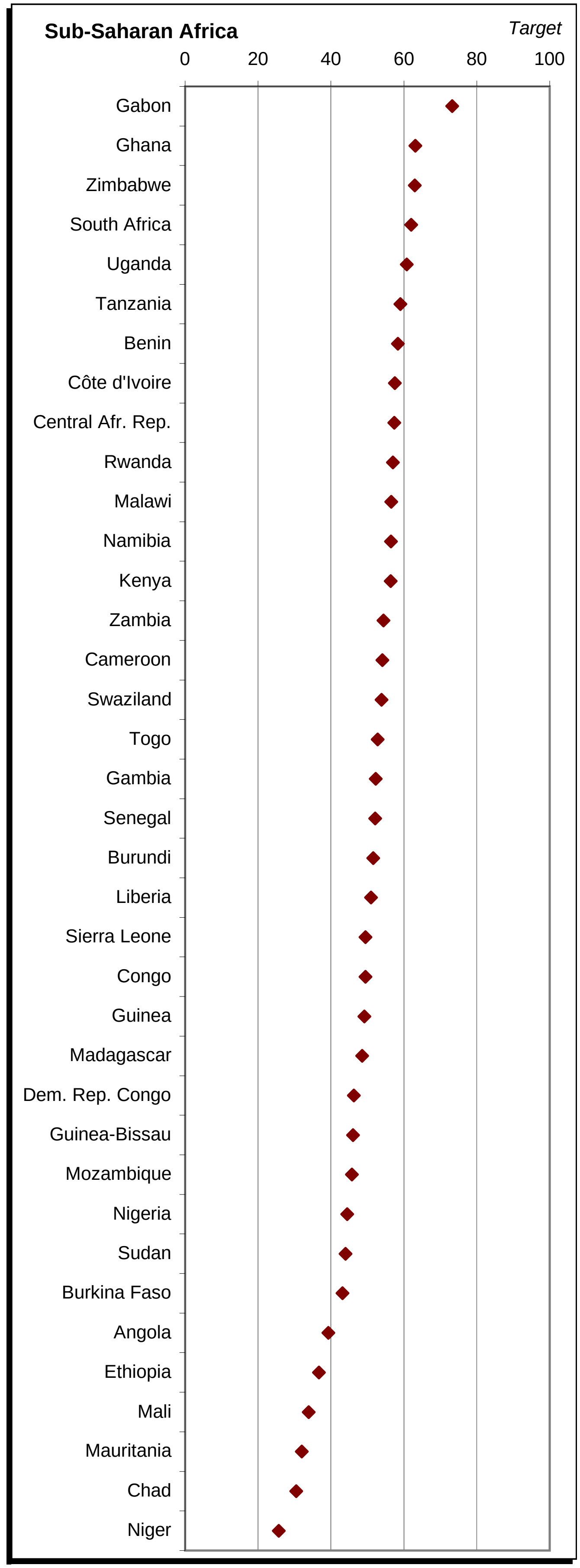
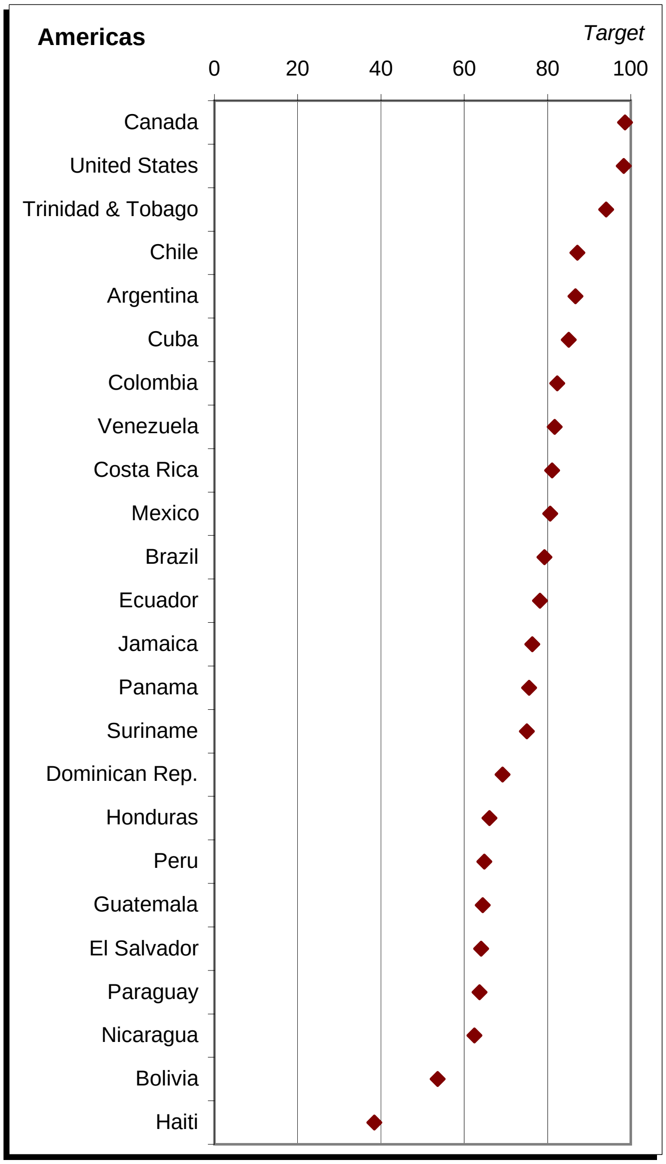
20
40
60
80
100
Russia
Bulgaria
Ukraine
Albania
Kazakhstan
Moldova
Georgia
Kyrgyzstan
Romania
Azerbaijan
Turkmenistan
Uzbekistan
Tajikistan

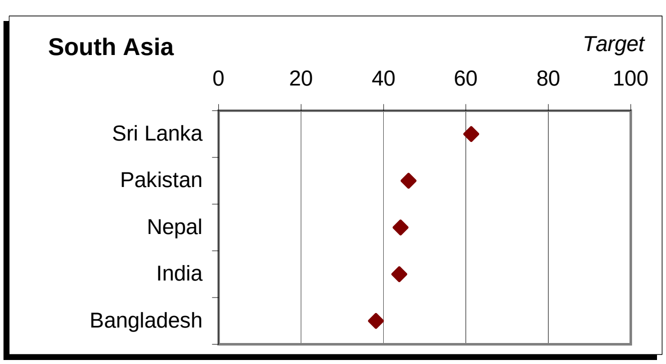

Sub-Saharan Africa
Target
0
20
40
60
80
100
Gabon
Ghana
Zimbabwe
South Africa
Uganda
Tanzania
Benin
Côte d'Ivoire
Central Afr. Rep.
Rwanda
Malawi
Namibia
Kenya
Zambia
Cameroon
Swaziland
Togo
Gambia
Senegal
Burundi
Liberia
Sierra Leone
Congo
Guinea
Madagascar
Dem. Rep. Congo
Guinea-Bissau
Mozambique
Nigeria
Sudan
Burkina Faso
Angola
Ethiopia
Mali
Mauritania
Chad
Niger

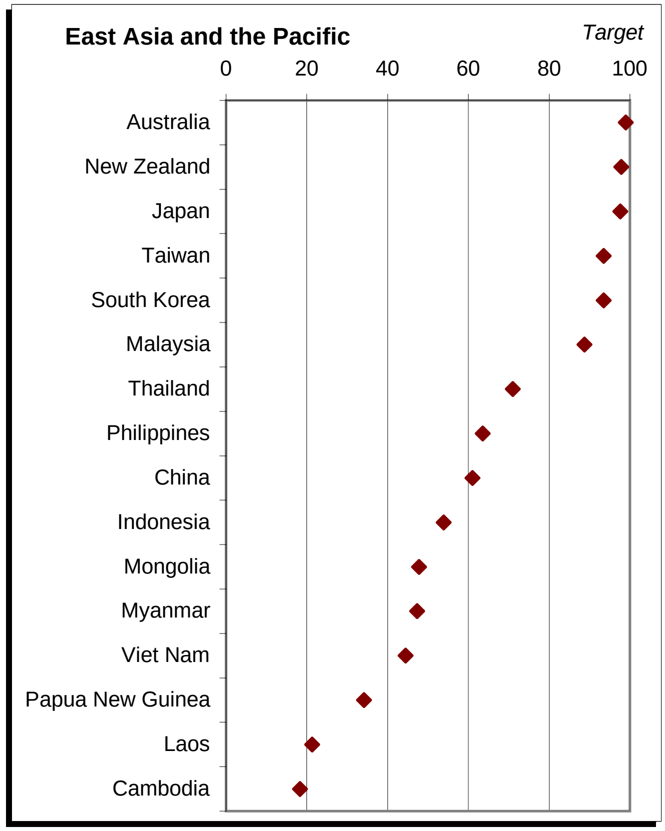
Proximity-to-Target, by Geographic Peer Group

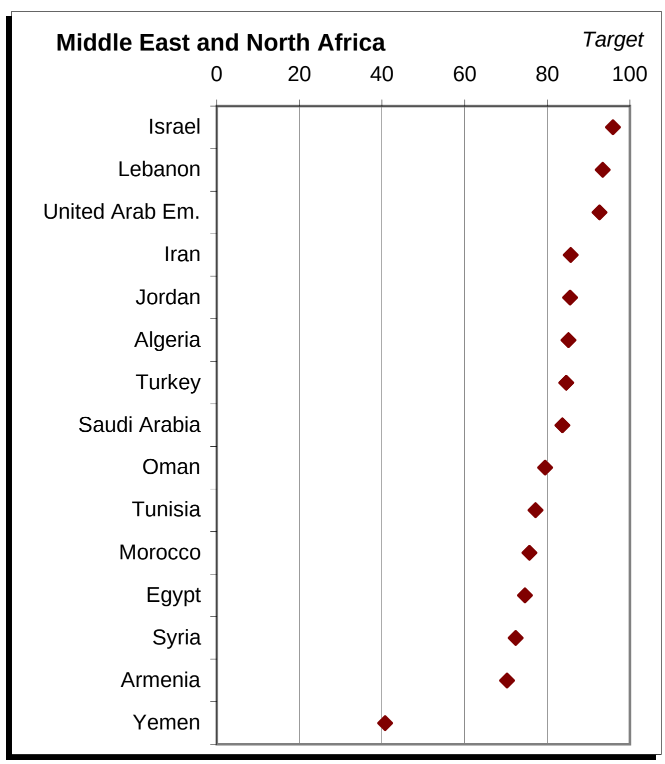
Policy Category: Environmental Health

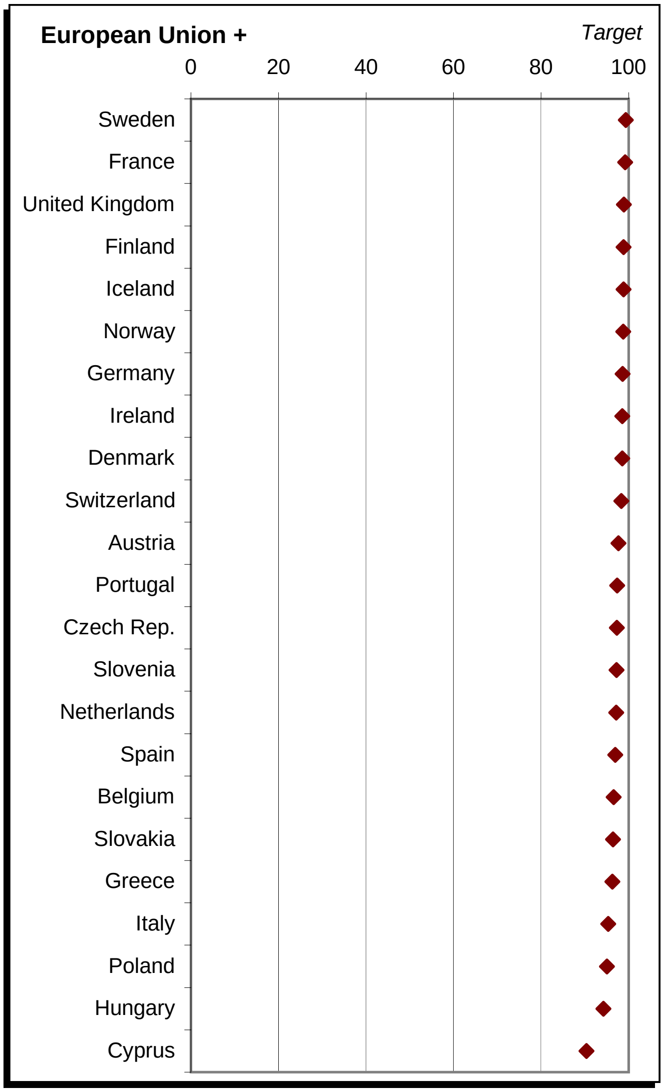
Theoretical range of 0 to 100 (100=target met)

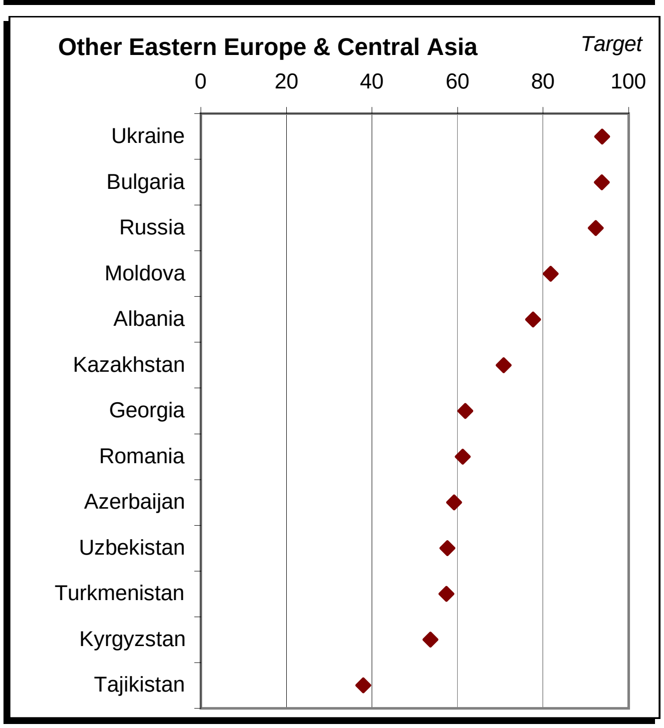









European Union +
Target
0
20
40
60
80
100
Sweden
France
United Kingdom
Finland
Iceland
Norway
Germany
Ireland
Denmark
Switzerland
Austria
Portugal
Czech Rep.
Slovenia
Netherlands
Spain
Belgium
Slovakia
Greece
Italy
Poland
Hungary
Cyprus


Other Eastern Europe & Central Asia
Target
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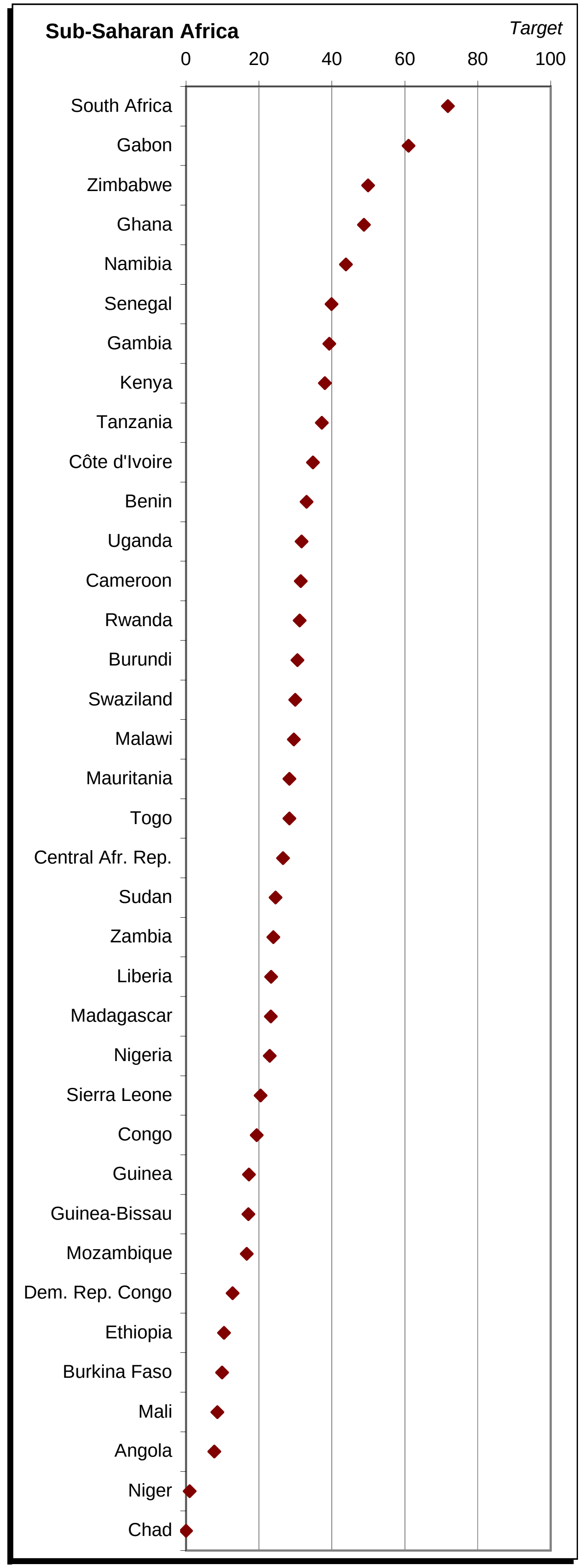
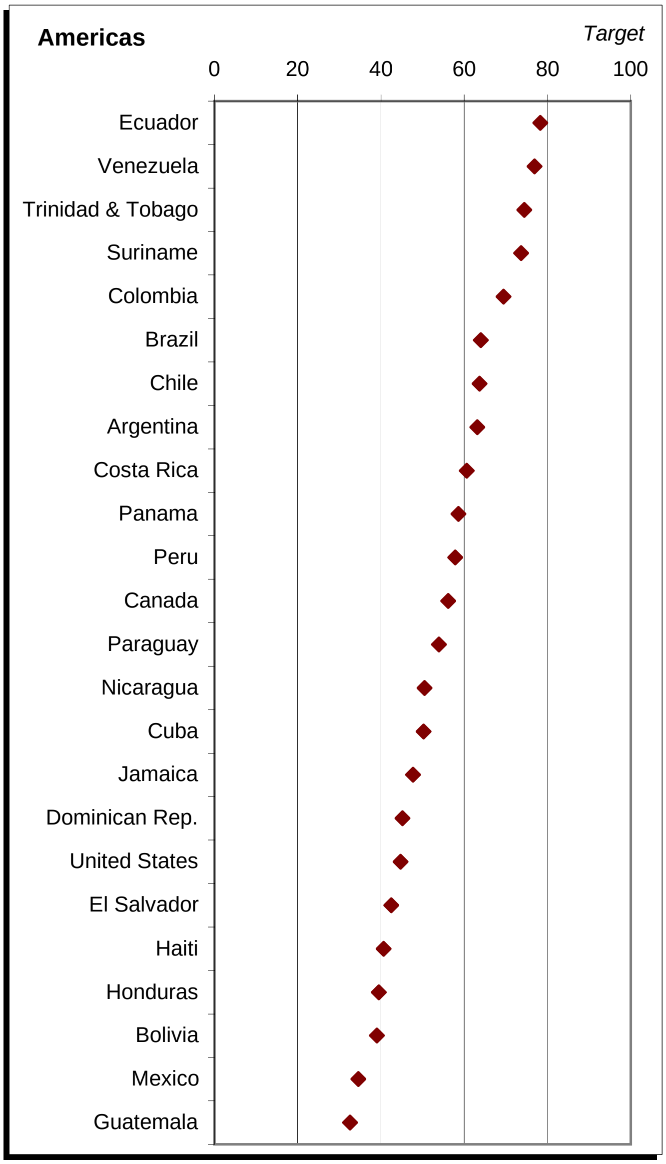
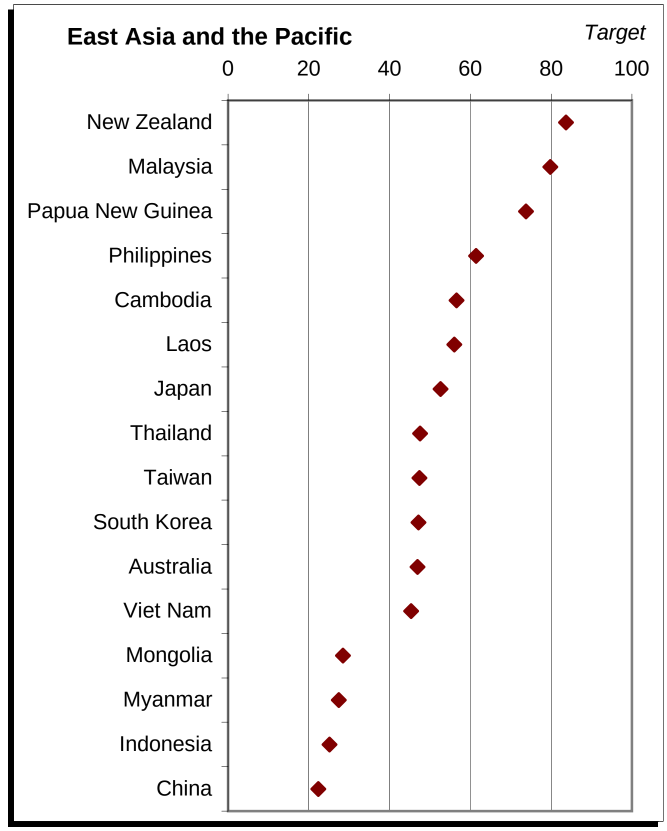
20
40
60
80
100
Ukraine
Bulgaria
Russia
Moldova
Albania
Kazakhstan
Georgia
Romania
Azerbaijan
Uzbekistan
Turkmenistan
Kyrgyzstan
Tajikistan

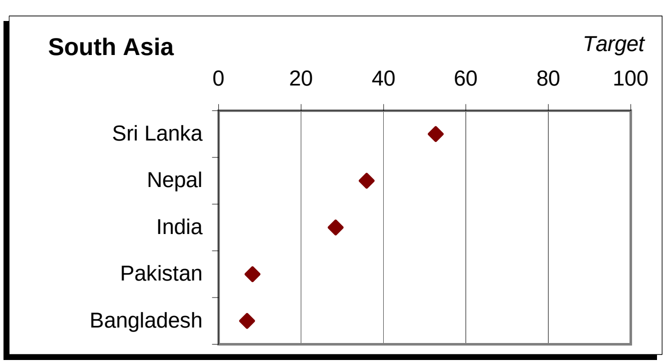

Sub-Saharan Africa
Target
0
20
40
60
80
100
South Africa
Gabon
Zimbabwe
Ghana
Namibia
Senegal
Gambia
Kenya
Tanzania
Côte d'Ivoire
Benin
Uganda
Cameroon
Rwanda
Burundi
Swaziland
Malawi
Mauritania
Togo
Central Afr. Rep.
Sudan
Zambia
Liberia
Madagascar
Nigeria
Sierra Leone
Congo
Guinea
Guinea-Bissau
Mozambique
Dem. Rep. Congo
Ethiopia
Burkina Faso
Mali
Angola
Niger
Chad

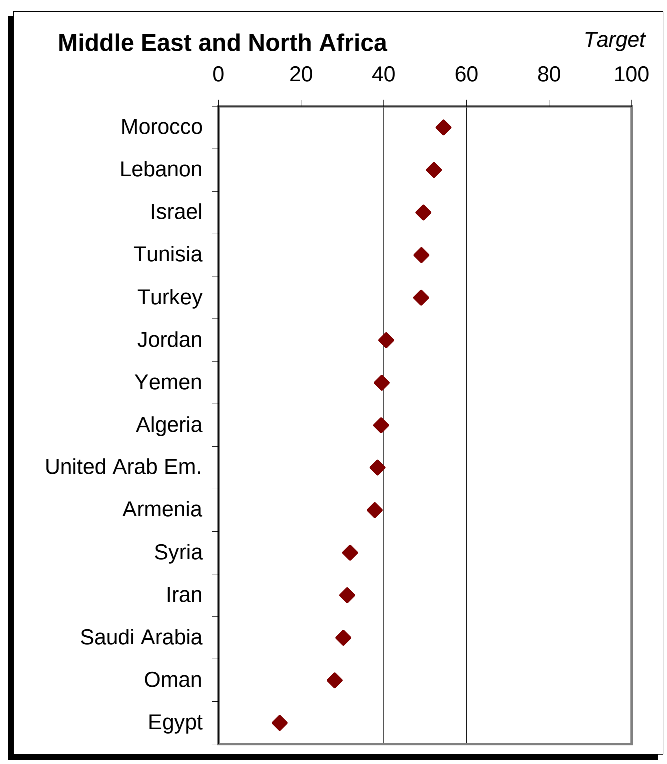
Policy Category: Air Quality

Theoretical range of 0 to 100 (100=target met)

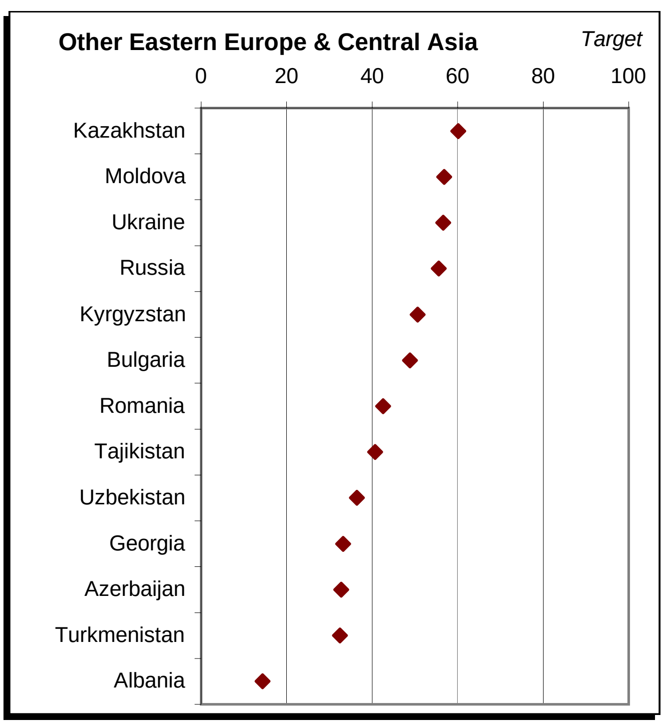









European Union +
Target
0
20
40
60
80
100
Sweden
Finland
Norway
Denmark
United Kingdom
Iceland
France
Germany
Ireland
Switzerland
Belgium
Slovakia
Austria
Slovenia
Netherlands
Hungary
Czech Rep.
Italy
Poland
Greece
Portugal
Spain
Cyprus


Other Eastern Europe & Central Asia
Target
0
20
40
60
80
100
Kazakhstan
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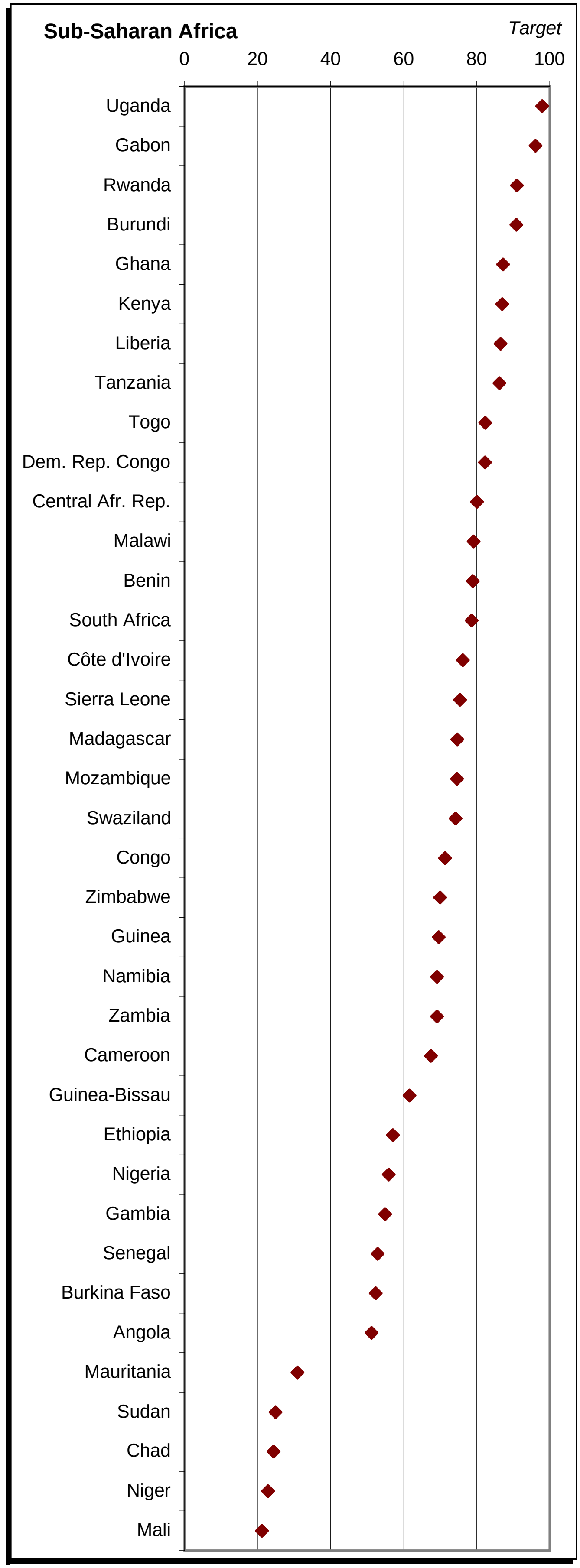
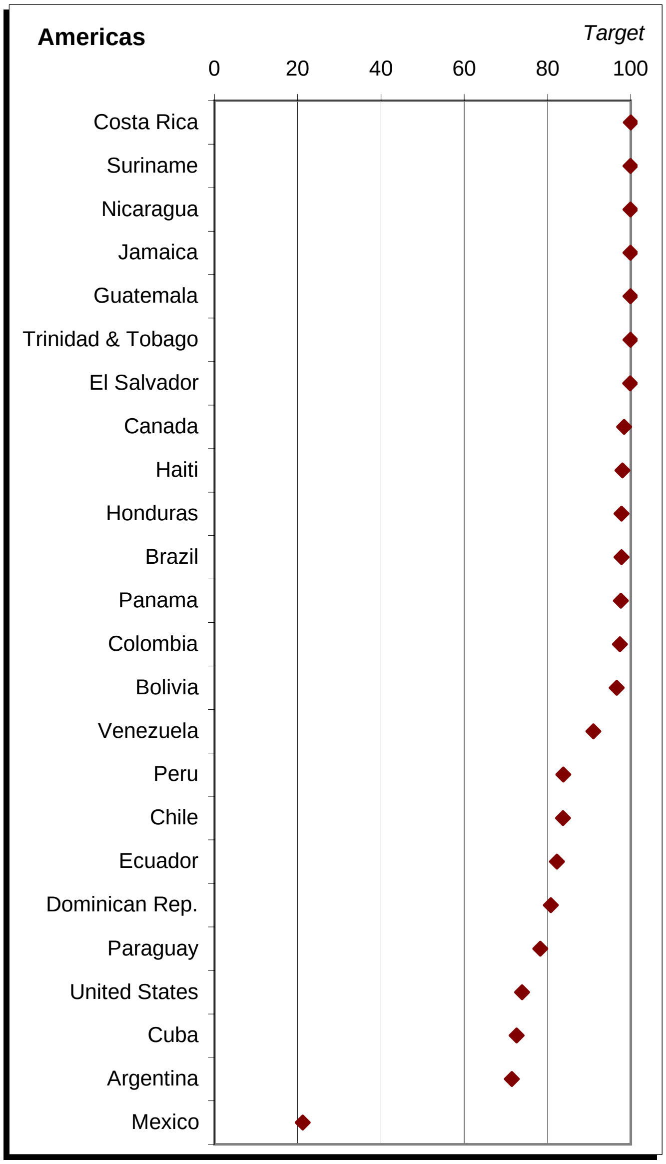
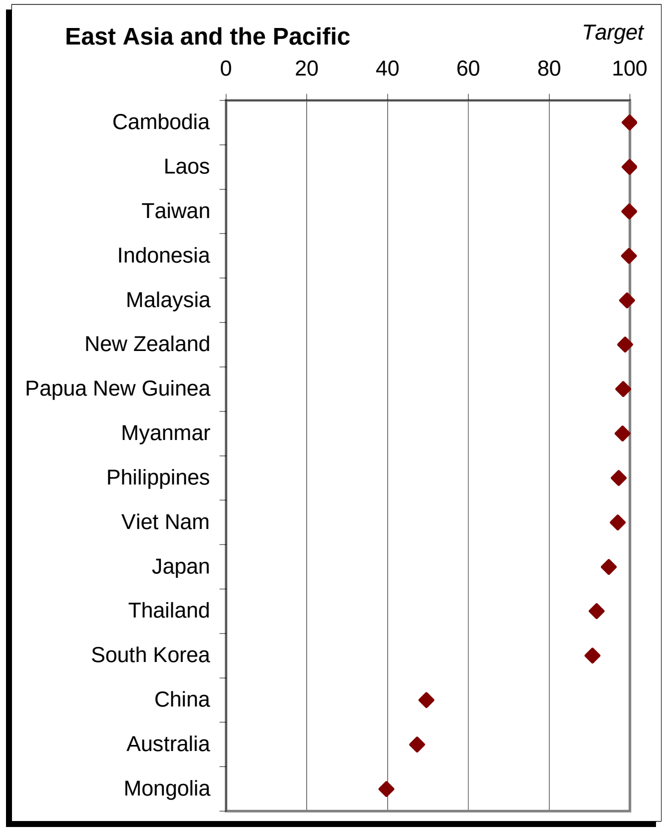
Ukraine
Russia
Kyrgyzstan
Bulgaria
Romania
Tajikistan
Uzbekistan
Georgia
Azerbaijan
Turkmenistan
Albania

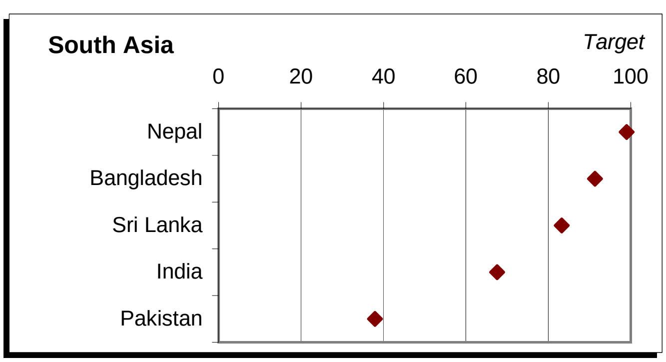

Sub-Saharan Africa
Target
0
20
40
60
80
100
Uganda
Gabon
Rwanda
Burundi
Ghana
Kenya
Liberia
Tanzania
Togo
Dem. Rep. Congo
Central Afr. Rep.
Malawi
Benin
South Africa
Côte d'Ivoire
Sierra Leone
Madagascar
Mozambique
Swaziland
Congo
Zimbabwe
Guinea
Namibia
Zambia
Cameroon
Guinea-Bissau
Ethiopia
Nigeria
Gambia
Senegal
Burkina Faso
Angola
Mauritania
Sudan
Chad
Niger
Mali

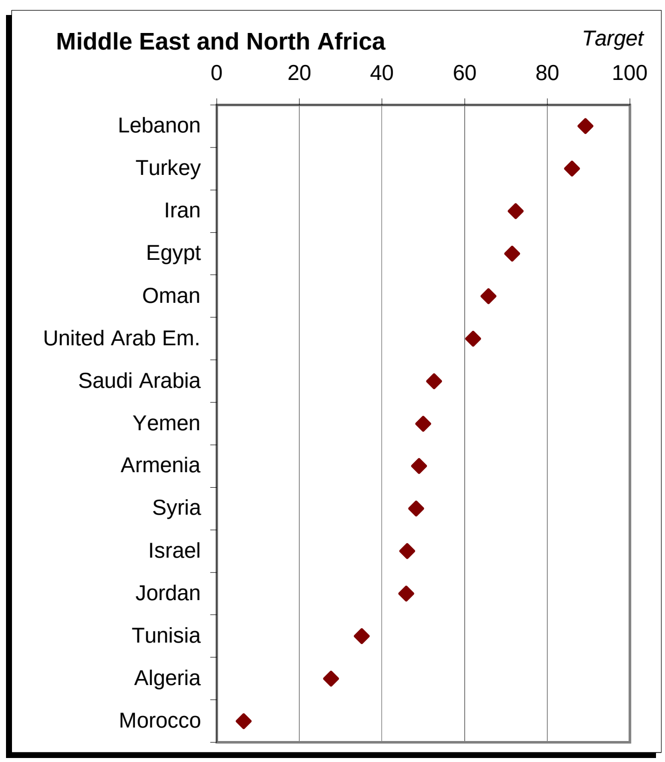
Policy Category: Water Resources

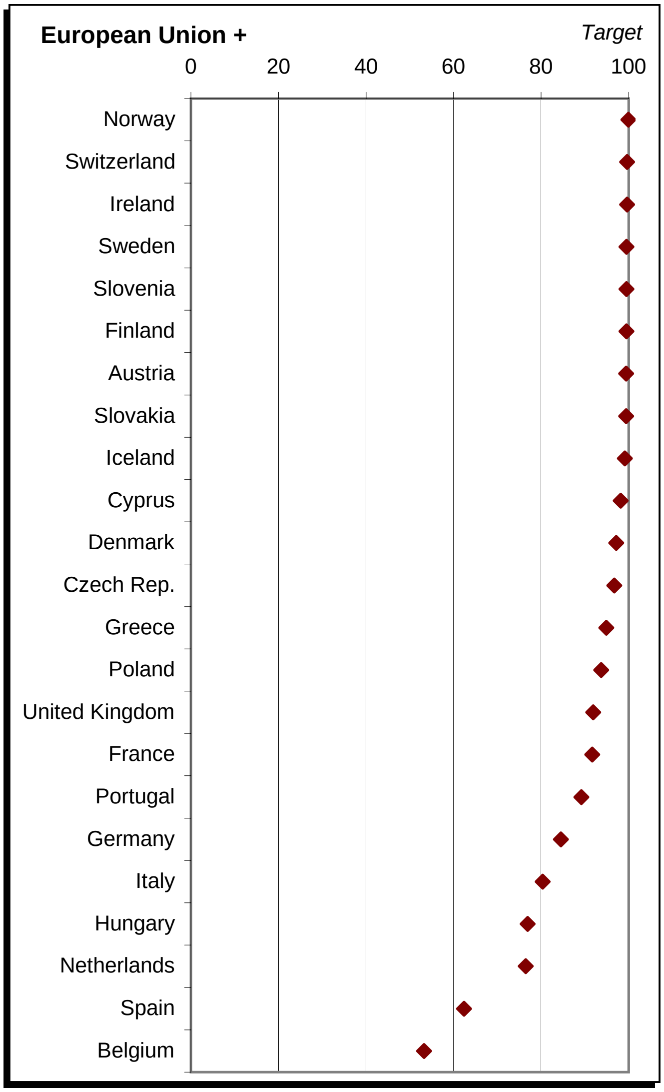
Theoretical range of 0 to 100 (100=target met)










European Union +
Target
0
20
40
60
80
100
Norway
Switzerland
Ireland
Sweden
Slovenia
Finland
Austria
Slovakia
Iceland
Cyprus
Denmark
Czech Rep.
Greece
Poland
United Kingdom
France
Portugal
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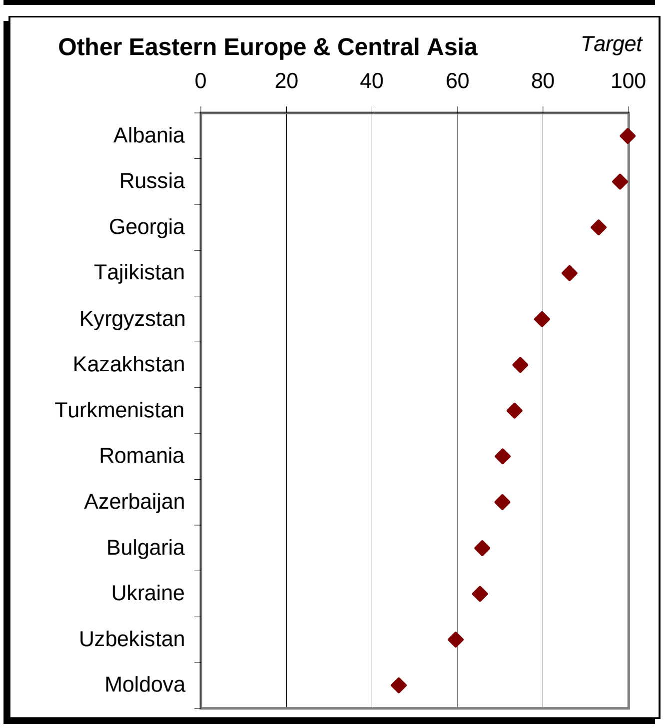
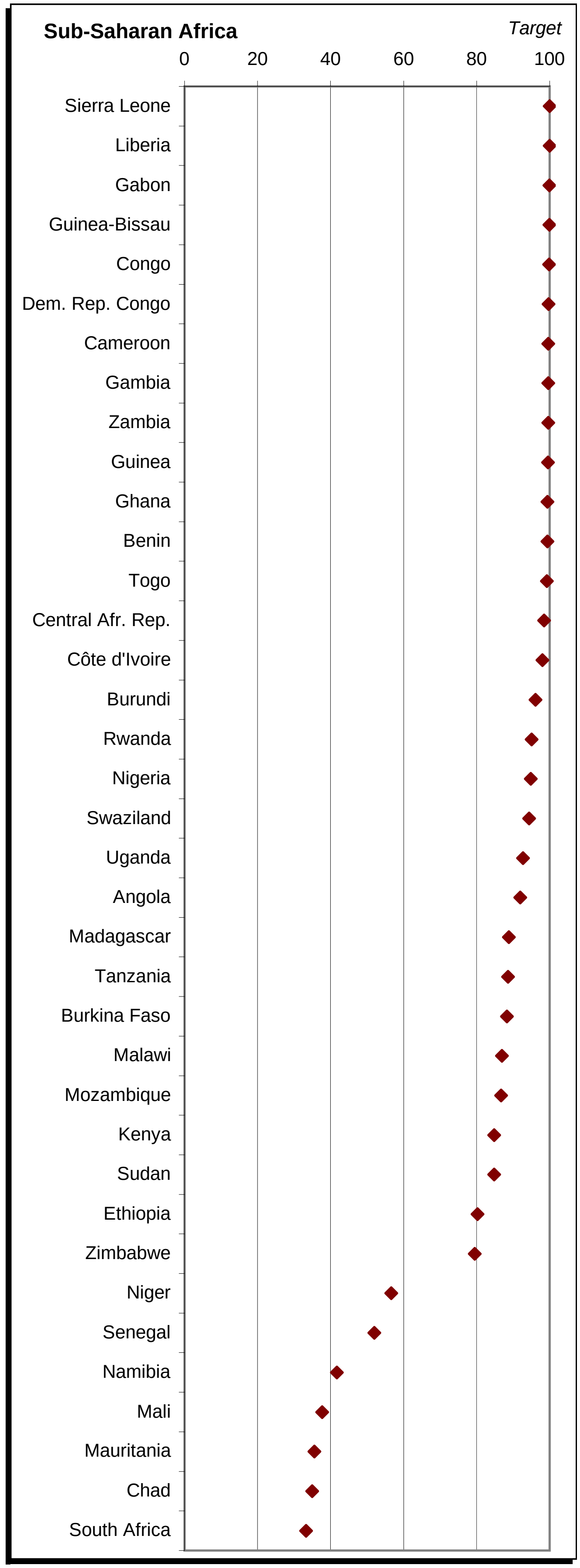
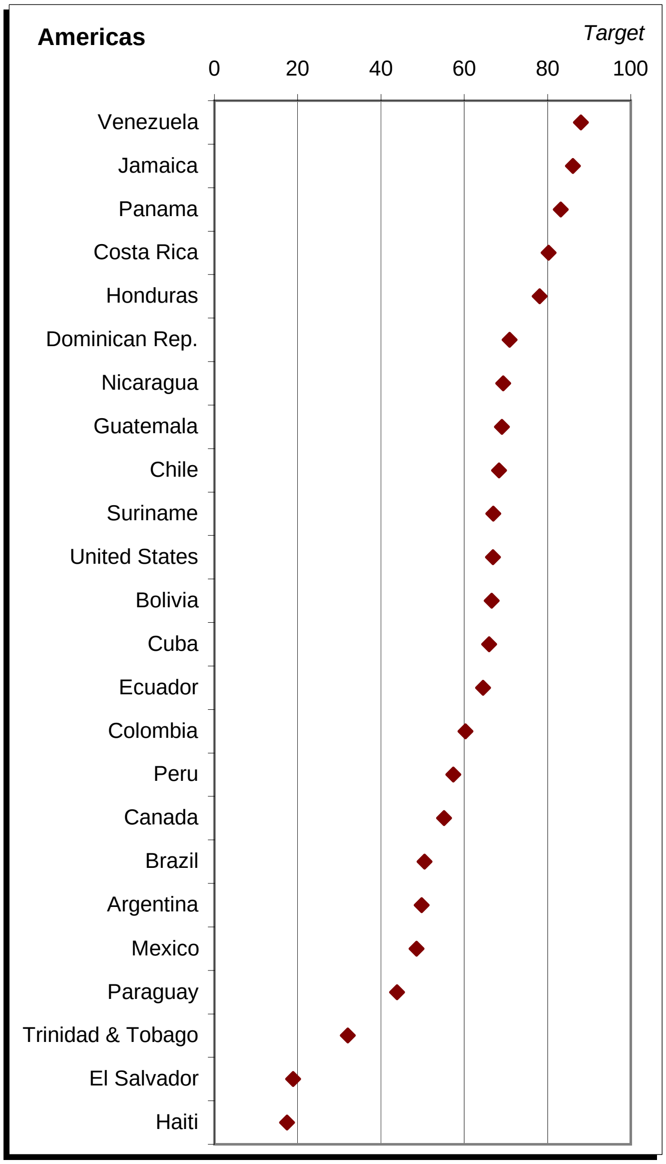
Netherlands
Spain
Belgium

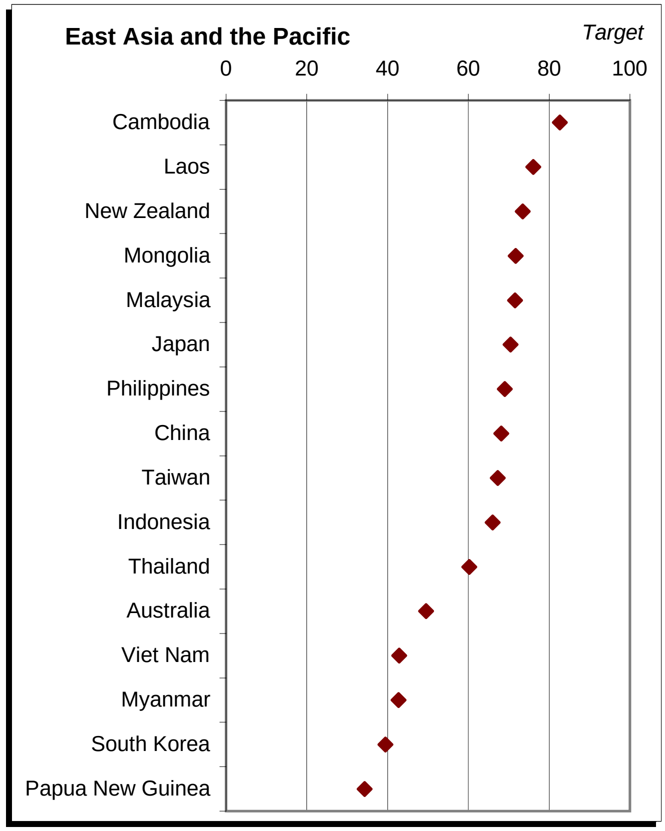

Other Eastern Europe & Central Asia
Target
0
20
40
60
80
100
Albania
Russia
Georgia
Tajikistan
Kyrgyzstan
Kazakhstan
Turkmenistan
Romania
Azerbaijan
Bulgaria
Ukraine
Uzbekistan
Moldova

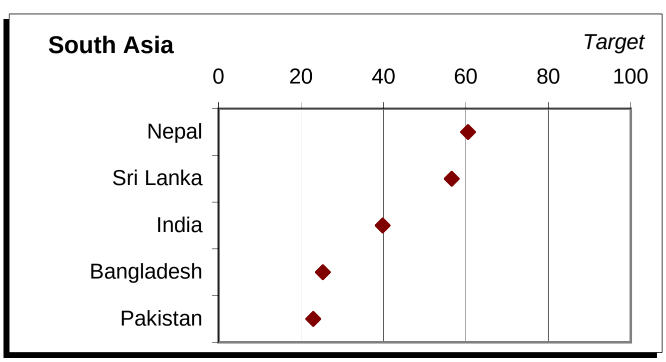

Sub-Saharan Africa
Target
0
20
40
60
80
100
Sierra Leone
Liberia
Gabon
Guinea-Bissau
Congo
Dem. Rep. Congo
Cameroon
Gambia
Zambia
Guinea
Ghana
Benin
Togo
Central Afr. Rep.
Côte d'Ivoire
Burundi
Rwanda
Nigeria
Swaziland
Uganda
Angola
Madagascar
Tanzania
Burkina Faso
Malawi
Mozambique
Kenya
Sudan
Ethiopia
Zimbabwe
Niger
Senegal
Namibia
Mali
Mauritania
Chad
South Africa

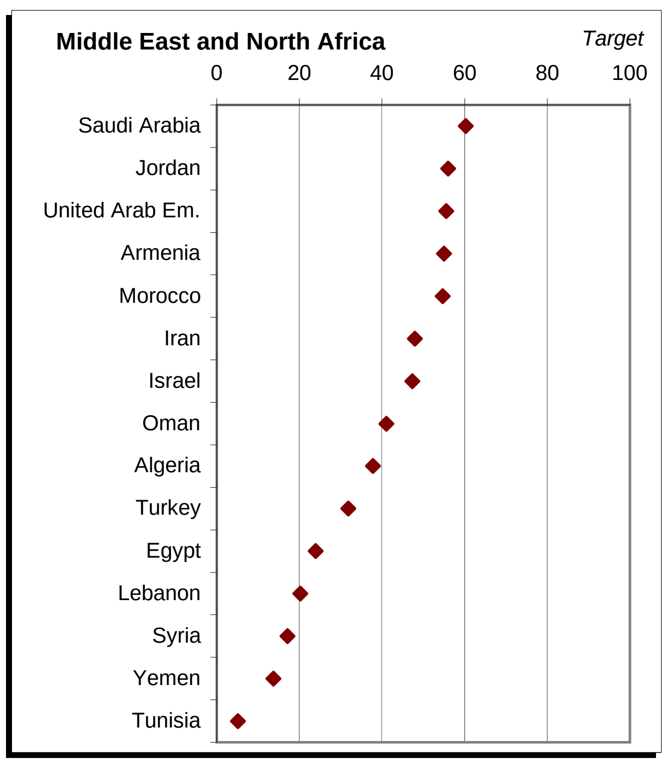
Policy Category: Biodiversity and Habitat

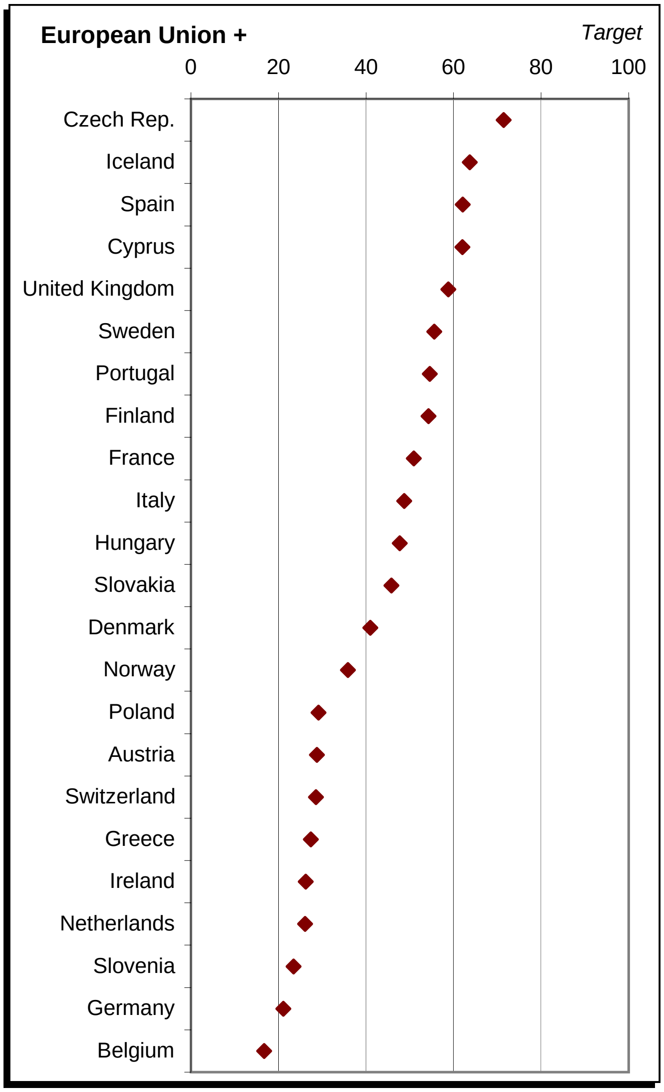
Theoretical range of 0 to 100 (100=target met)







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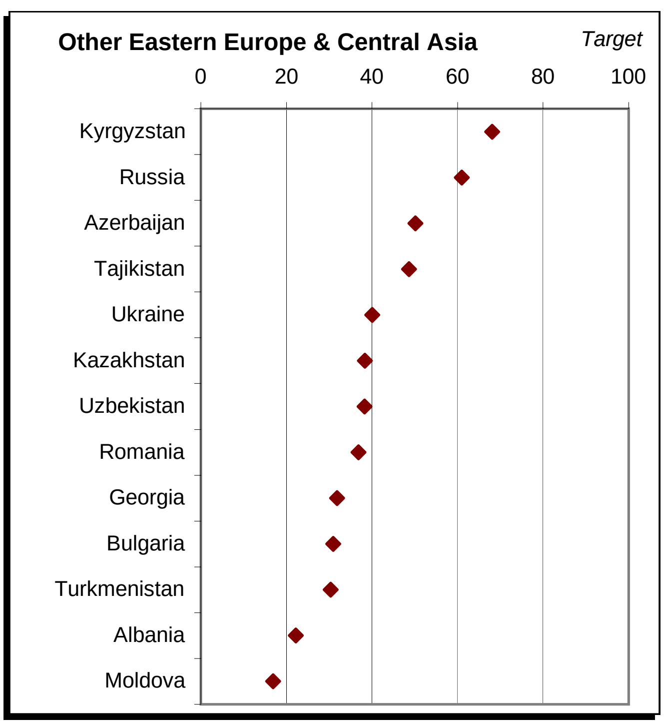
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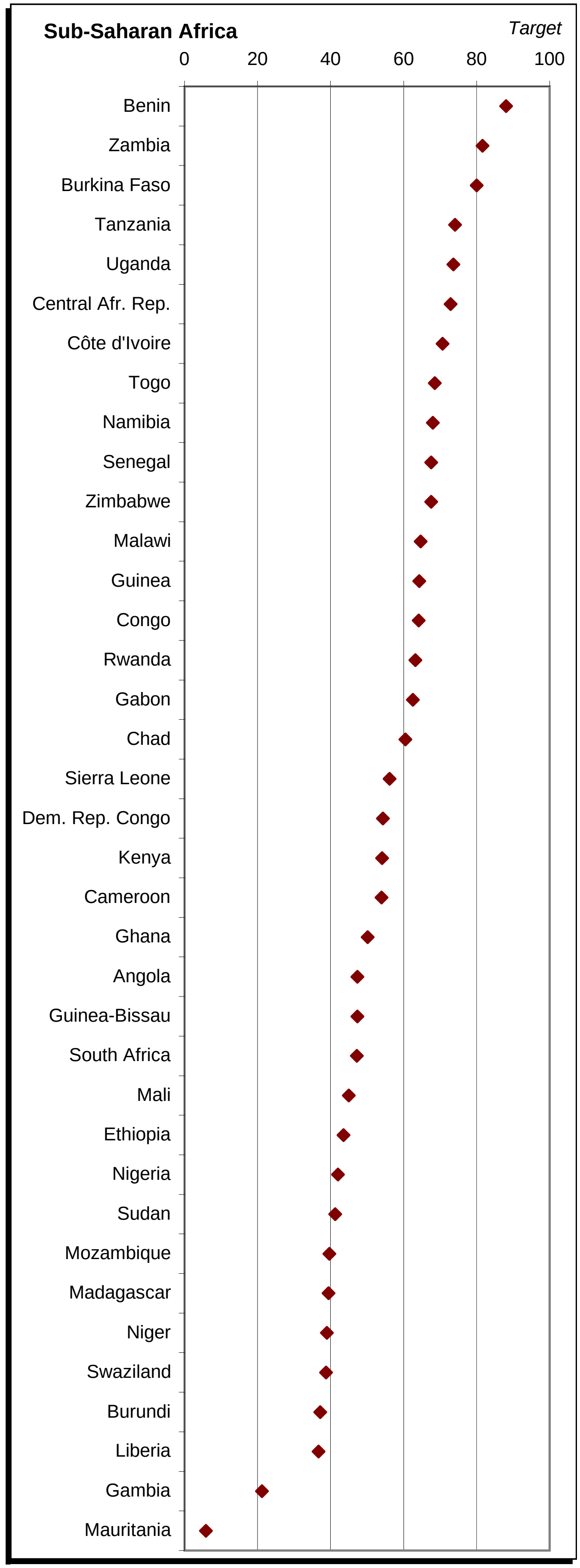
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Burkina Faso
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Côte d'Ivoire
Togo
Namibia
Senegal
Zimbabwe
Malawi
Guinea
Congo
Rwanda
Gabon
Chad
Sierra Leone
Dem. Rep. Congo
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Cameroon
Ghana
Angola
Guinea-Bissau
South Africa
Mali
Ethiopia
Nigeria
Sudan
Mozambique
Madagascar
Niger
Swaziland
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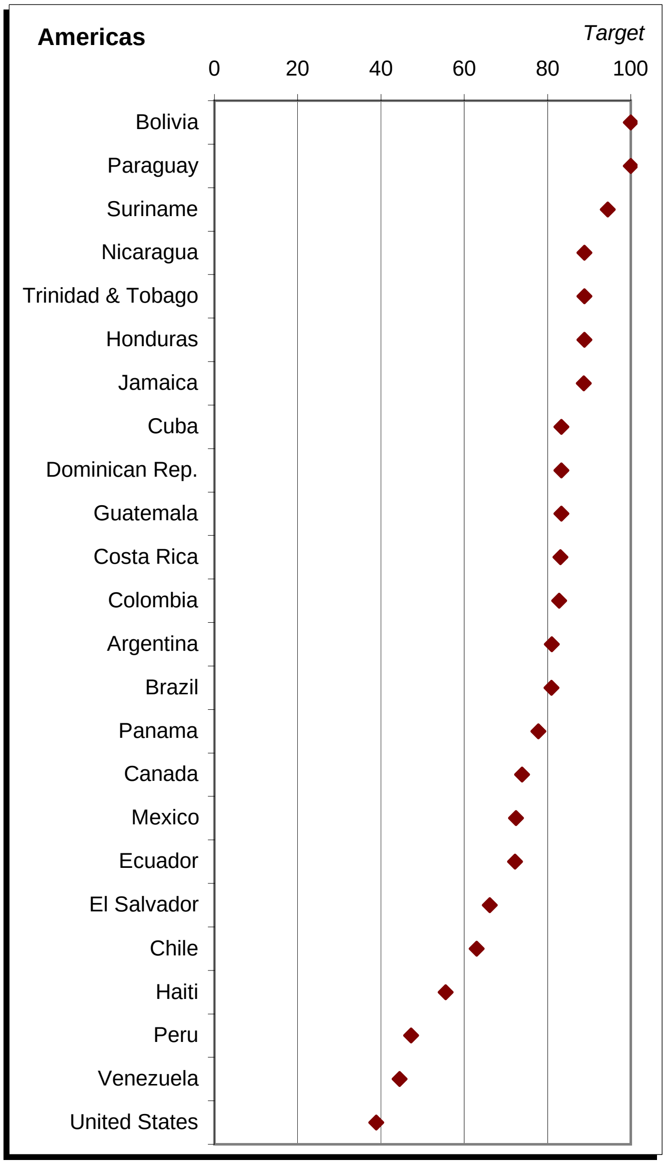
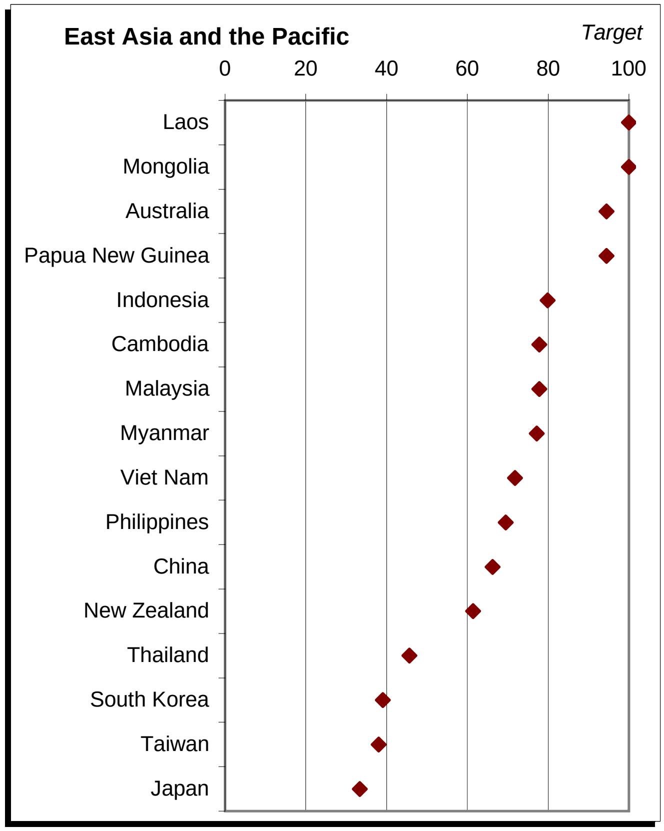
Liberia
Gambia
Mauritania

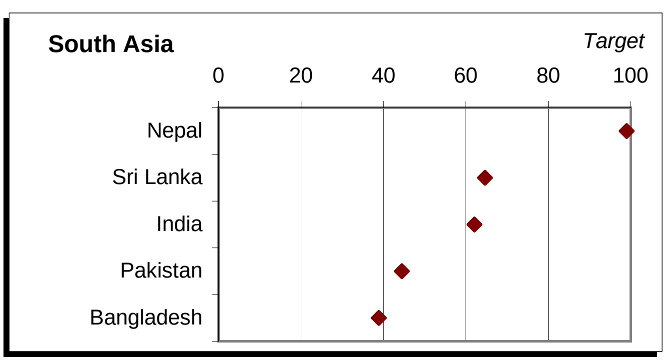
Proximity-to-Target, by Geographic Peer Group

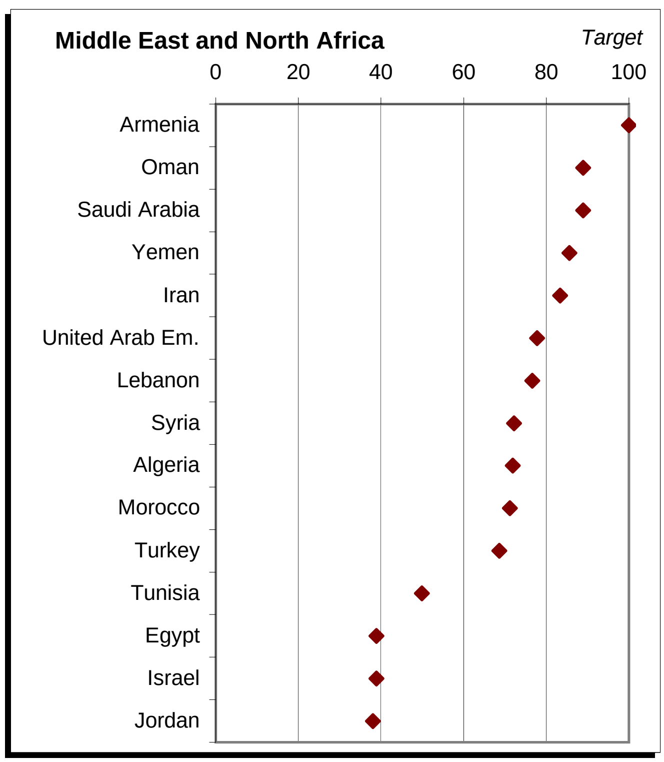
Policy Category: Productive Natural Resources

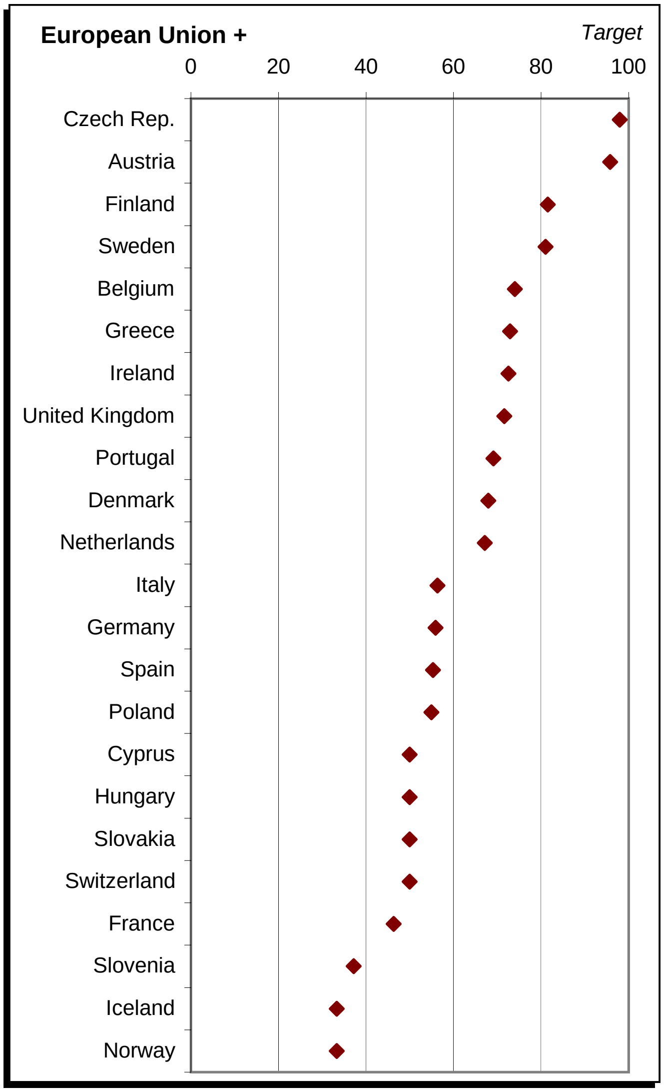
Theoretical range of 0 to 100 (100=target met)







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United Kingdom
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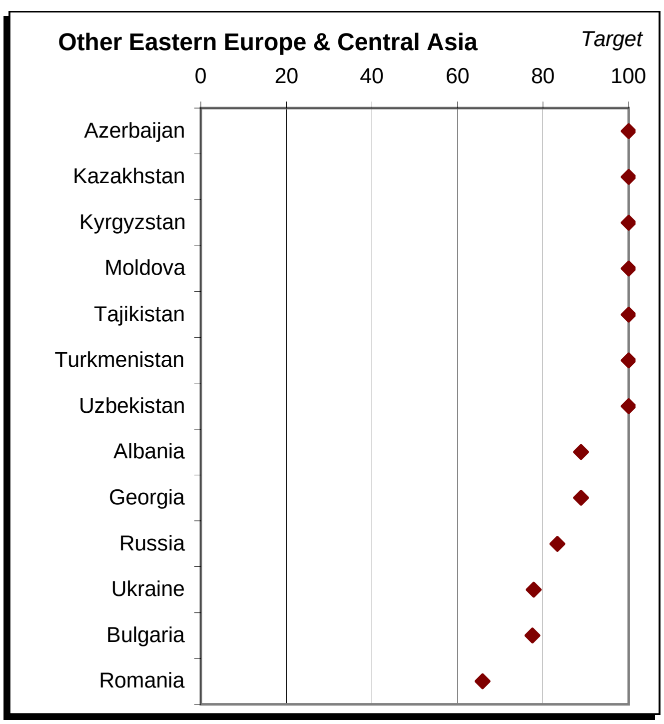
Norway


Other Eastern Europe & Central Asia
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80
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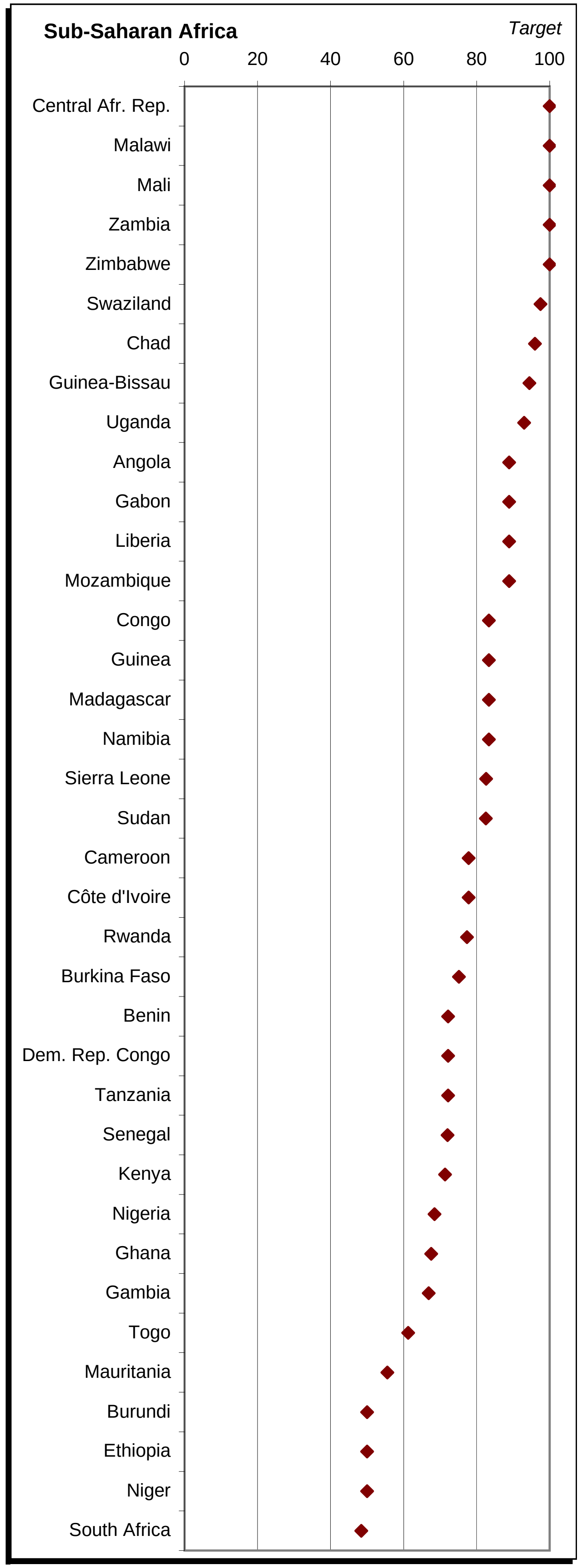
Uzbekistan
Albania
Georgia
Russia
Ukraine
Bulgaria
Romania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Malawi
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Zambia
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Chad
Guinea-Bissau
Uganda
Angola
Gabon
Liberia
Mozambique
Congo
Guinea
Madagascar
Namibia
Sierra Leone
Sudan
Cameroon
Côte d'Ivoire
Rwanda
Burkina Faso
Benin
Dem. Rep. Congo
Tanzania
Senegal
Kenya
Nigeria
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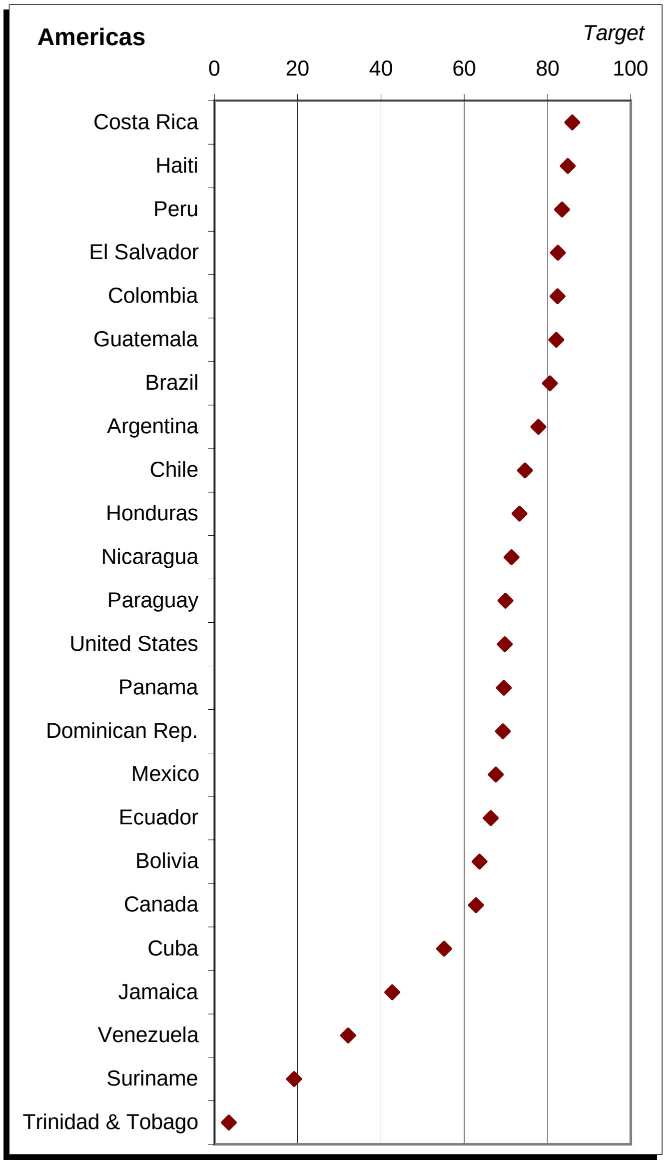
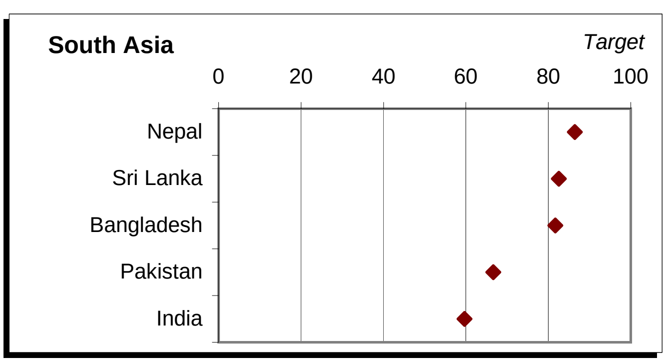
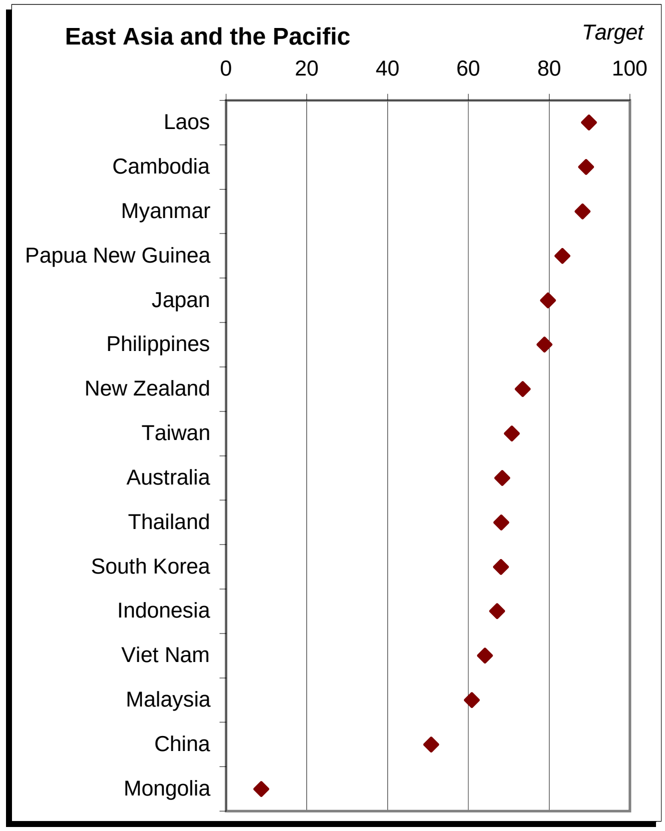
Burundi
Ethiopia
Niger
South Africa

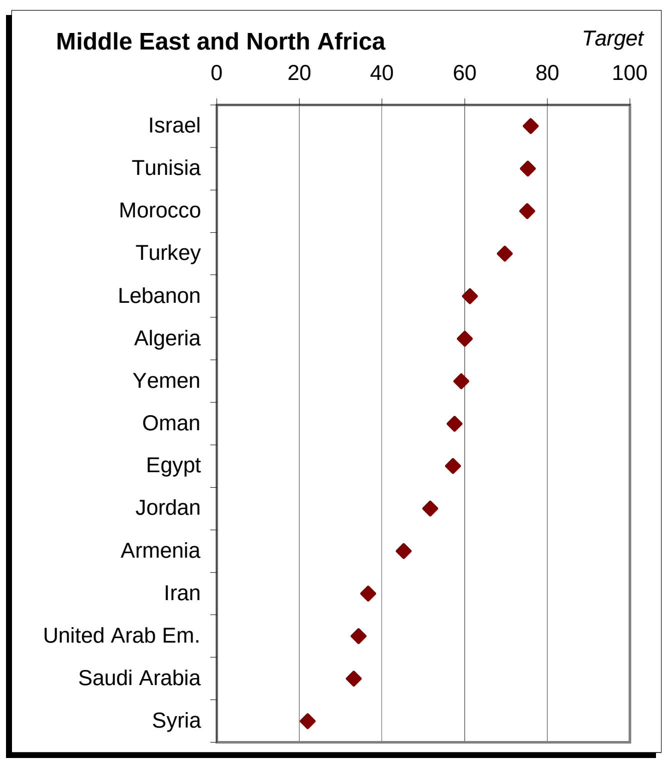
Policy Category: Sustainable Energy

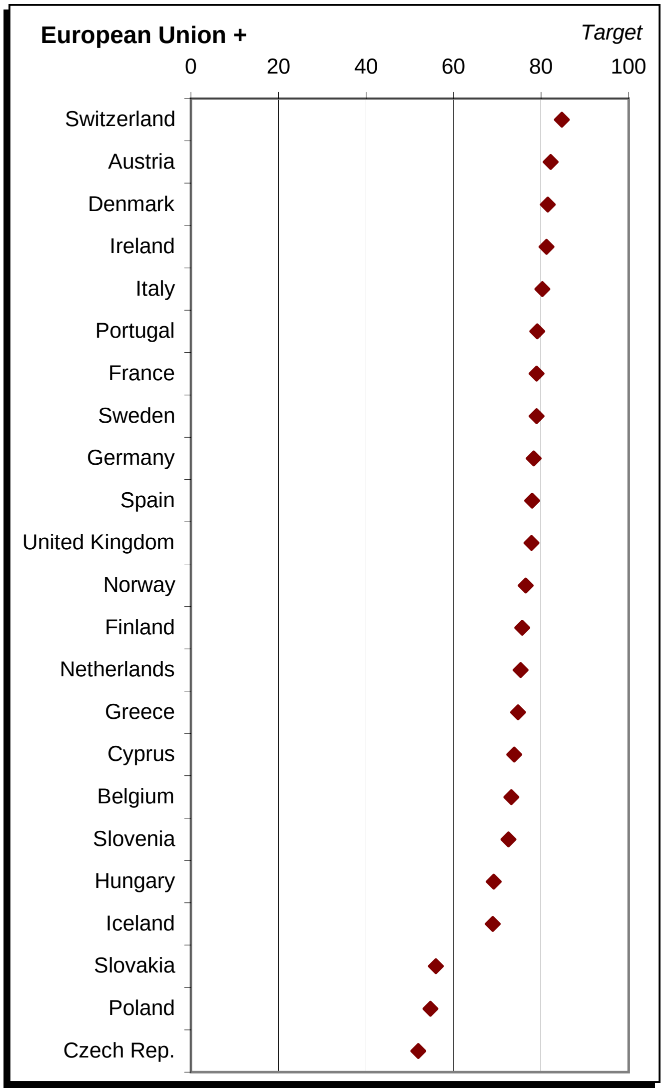
Theoretical range of 0 to 100 (100=target met)







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Denmark
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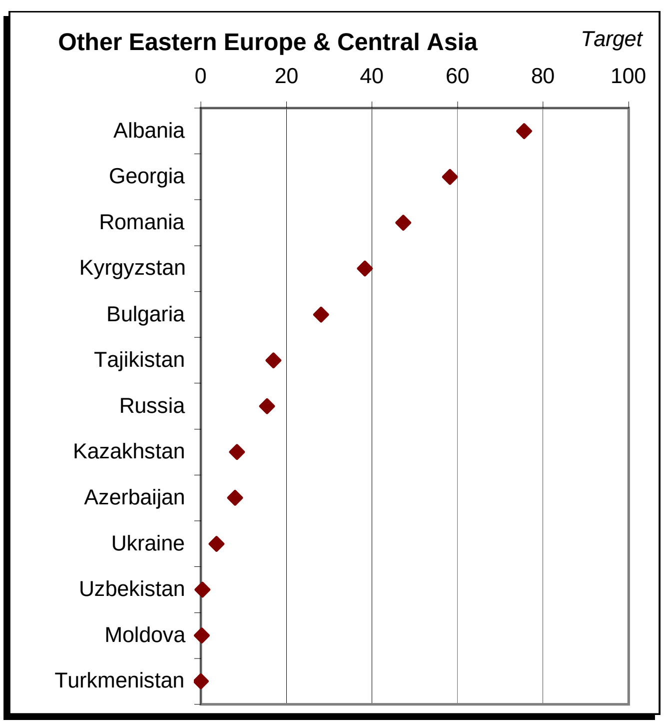
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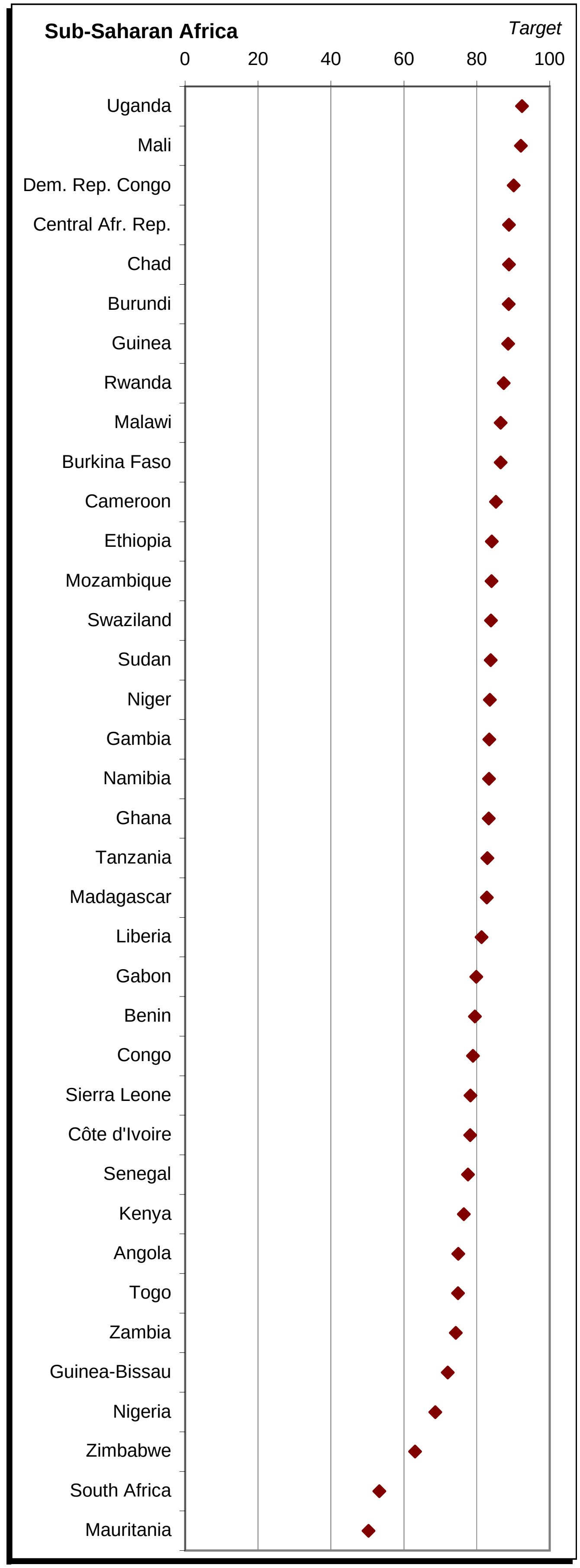
Sub-Saharan Africa
Target
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Mali
Dem. Rep. Congo
Central Afr. Rep.
Chad
Burundi
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Rwanda
Malawi
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Cameroon
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Mozambique
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Sierra Leone
Côte d'Ivoire
Senegal
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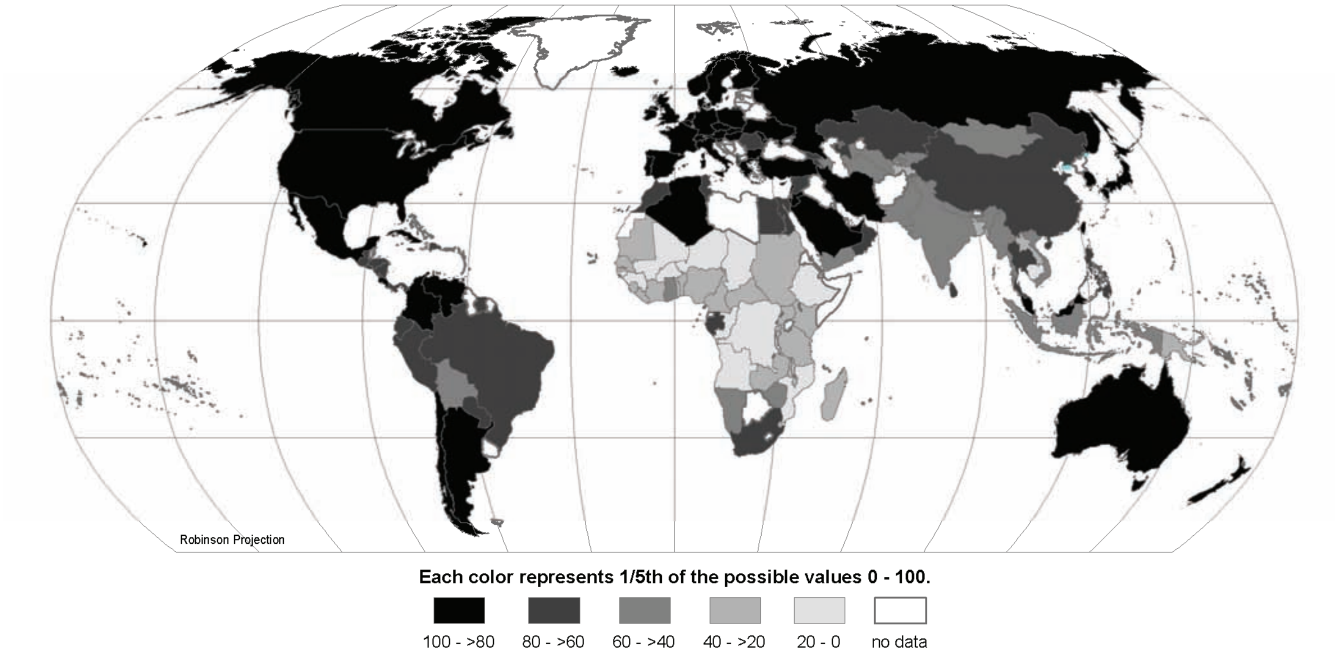
Nigeria
Zimbabwe
South Africa
Mauritania

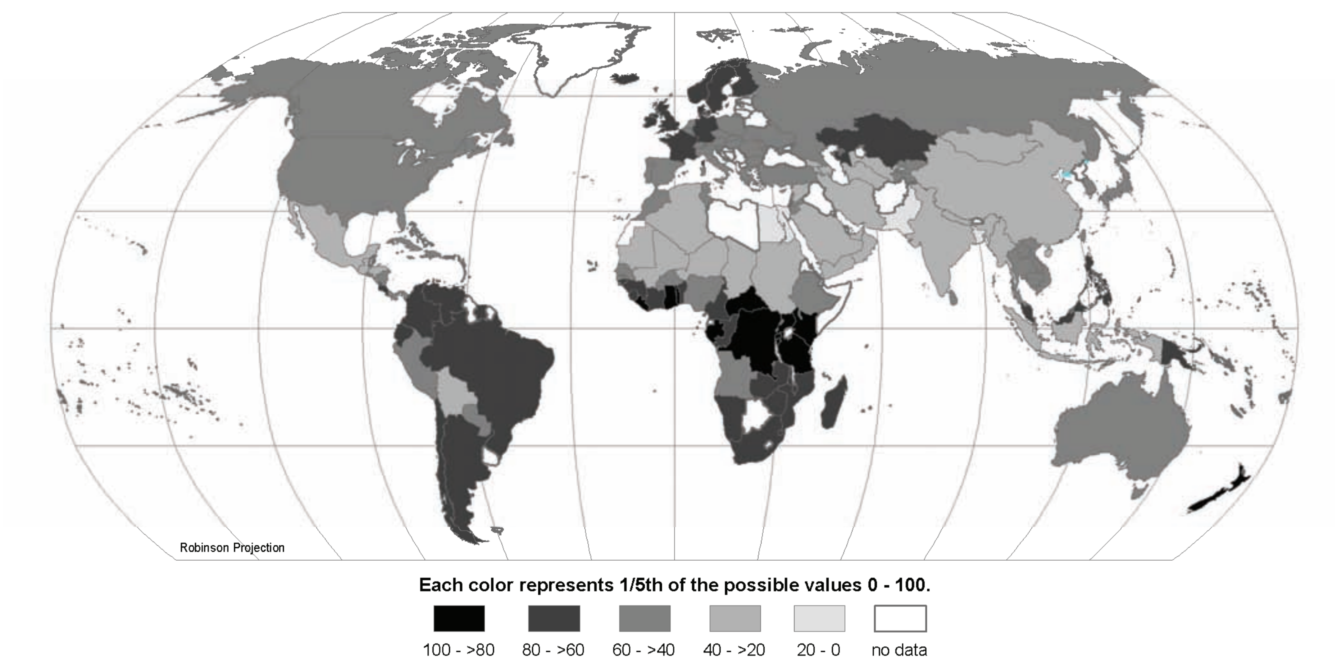
Pilot 2006 Environmental Performance Index

Policy Category: Environmental Health

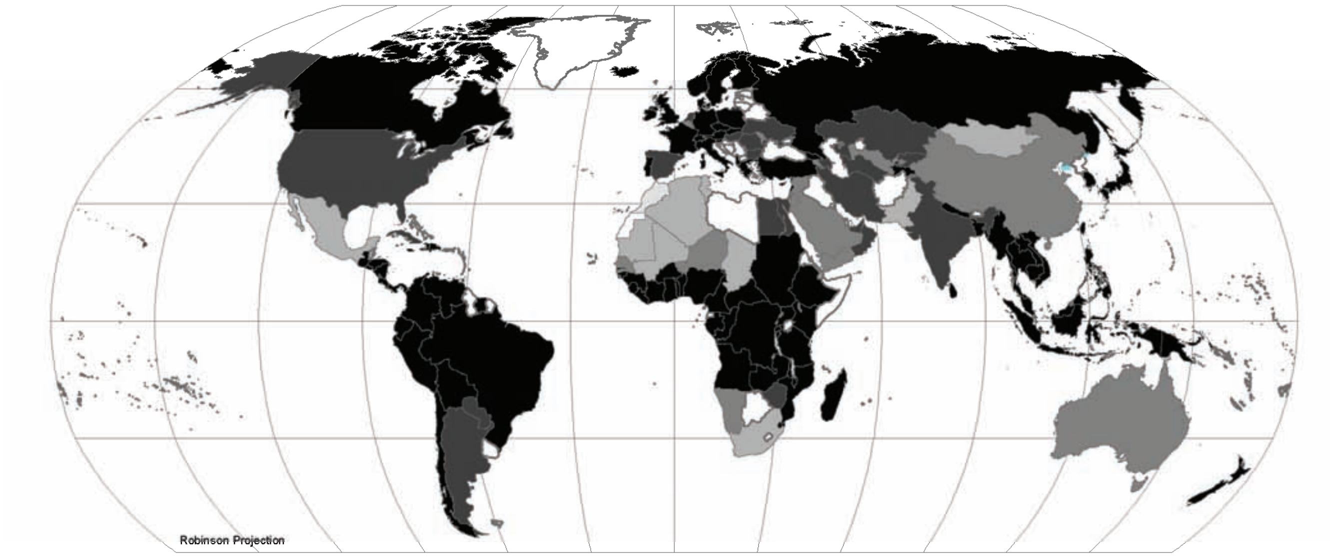


Pilot 2006 Environmental Performance Index

Policy Category: Air Quality



Pilot 2006 Environmental Performance Index
Policy Category: Water Resources



Each color represents 1/5th of the possible values 0 - 100.

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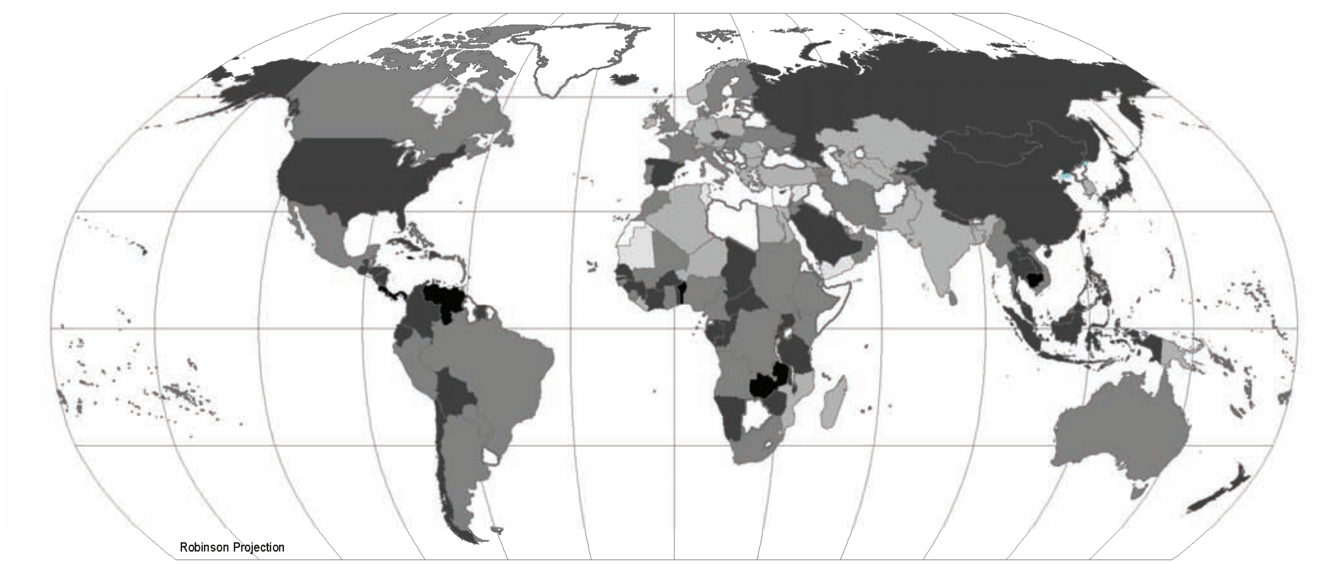
Pilot 2006 Environmental Performance Index
Policy Category: Biodiversity and Habitat



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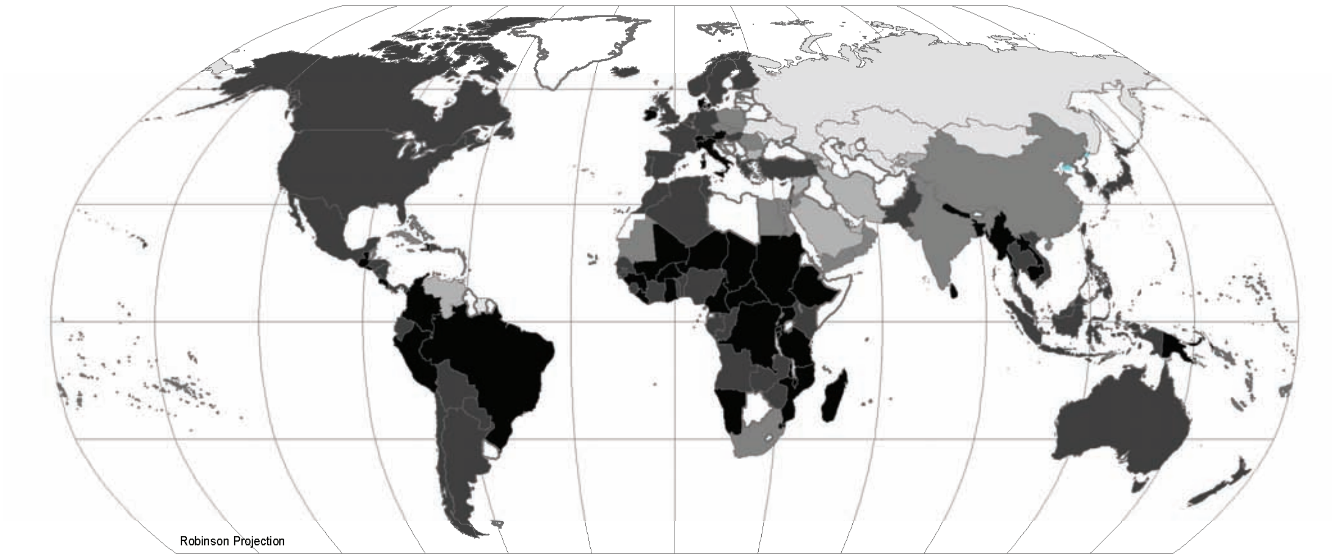
Pilot 2006 Environmental Performance Index

Policy Category: Sustainable Energy



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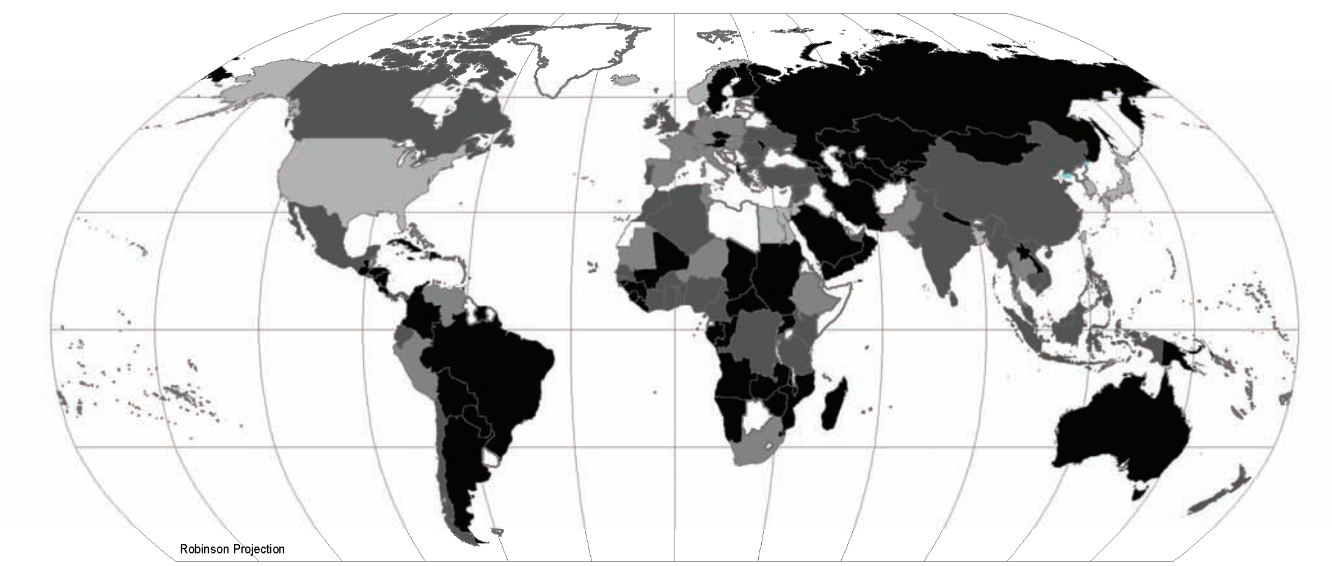
Pilot 2006 Environmental Performance Index

Policy Category: Productive Natural Resources



Each color represents 1/5th of the possible values 0 - 100.

100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

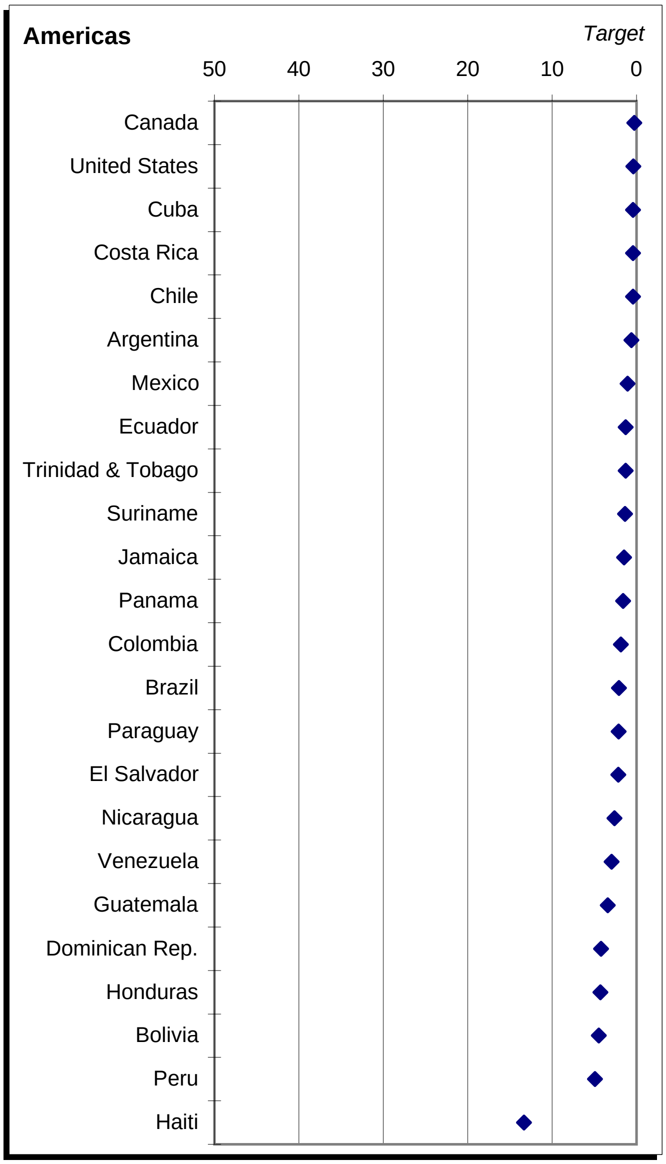
Pilot 2006 Environmental Performance Index

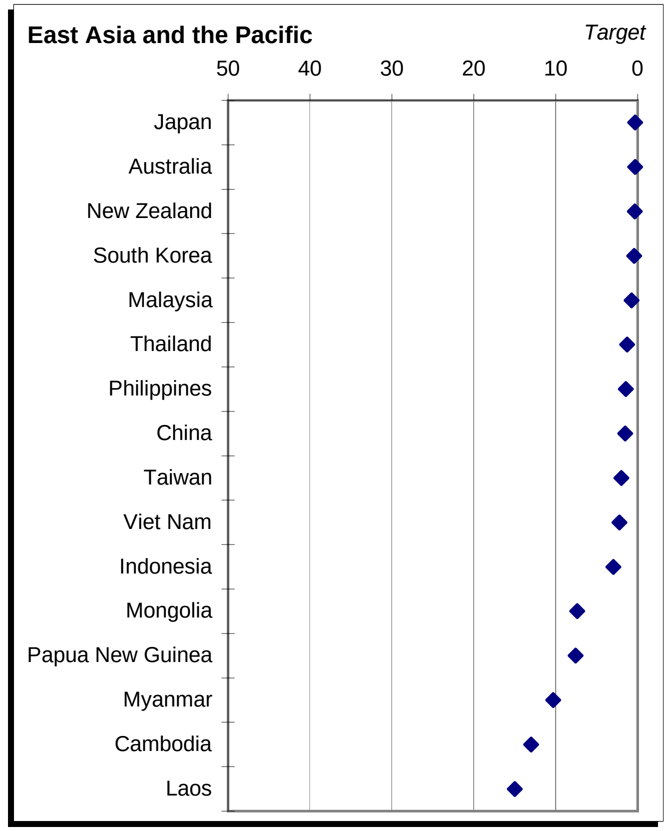
Appendix B:

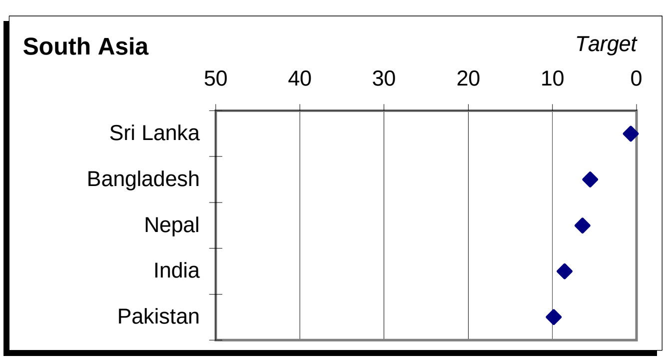
Indicator Tables & Maps

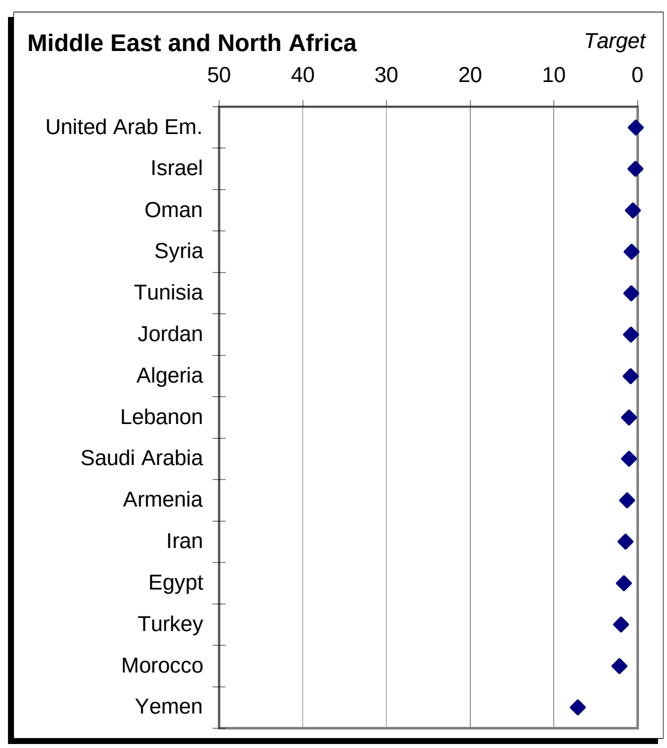
MORTALITY

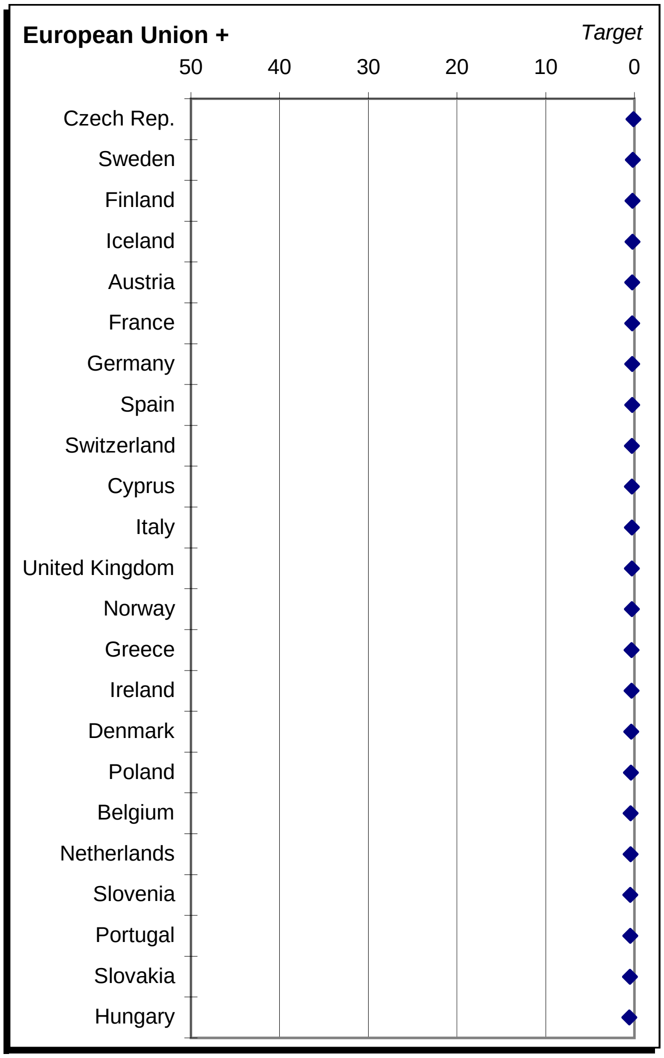
Child Mortality, percentage of deaths per 1000 children aged 1-4 years old










European Union +
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Finland
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Austria
France
Germany
Spain
Switzerland
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Norway
Greece
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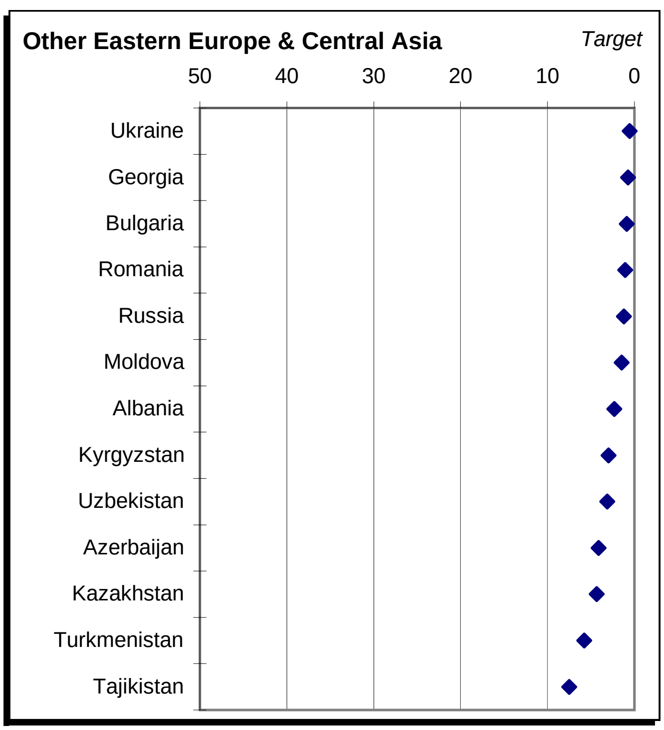
Other Eastern Europe & Central Asia
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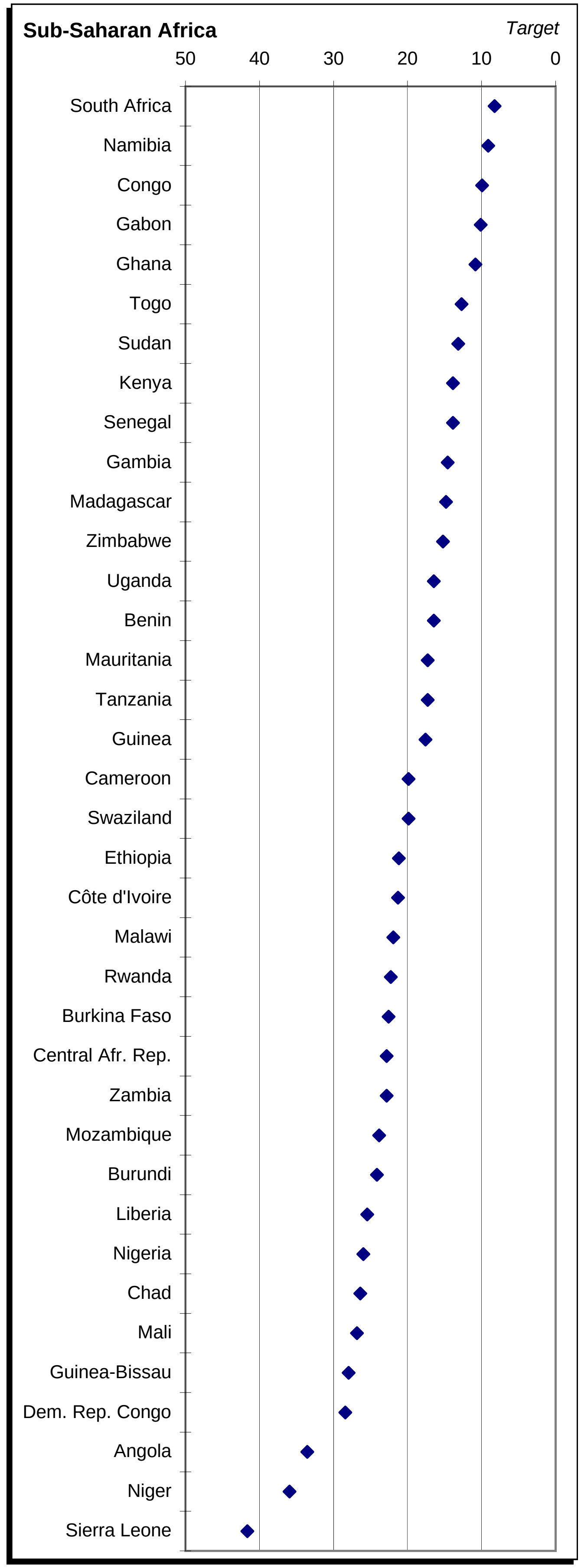
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Congo
Gabon
Ghana
Togo
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Kenya
Senegal
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Zimbabwe
Uganda
Benin
Mauritania
Tanzania
Guinea
Cameroon
Swaziland
Ethiopia
Côte d'Ivoire
Malawi
Rwanda
Burkina Faso
Central Afr. Rep.
Zambia
Mozambique
Burundi
Liberia
Nigeria
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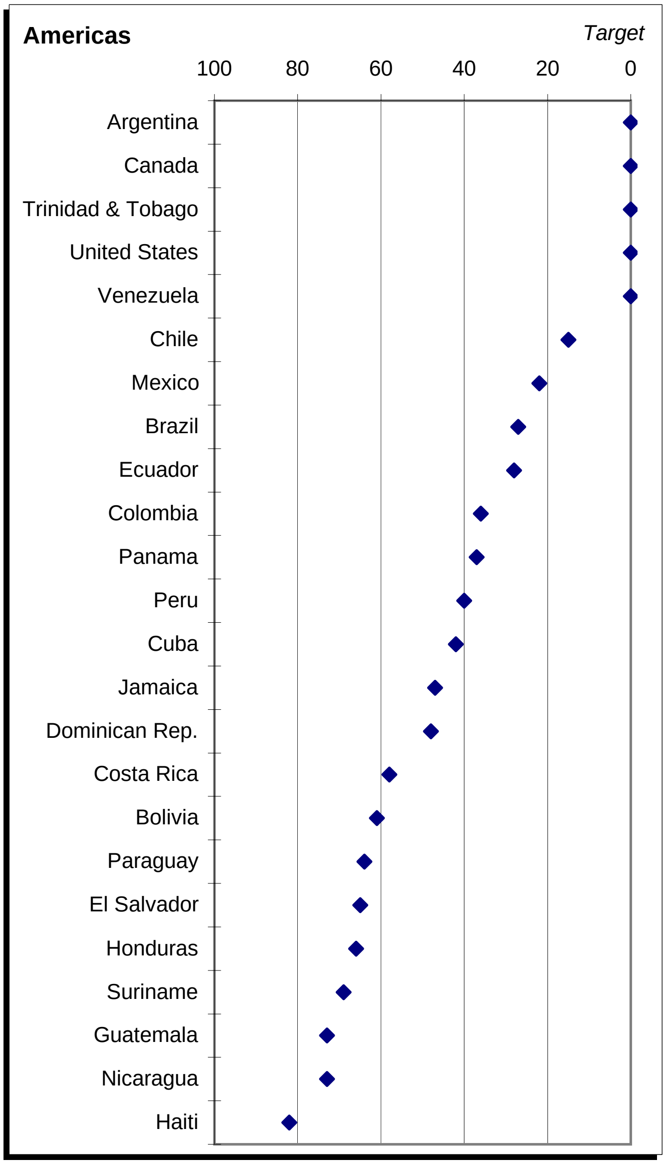
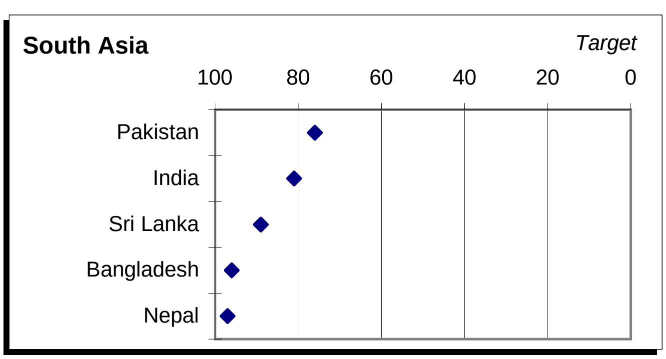
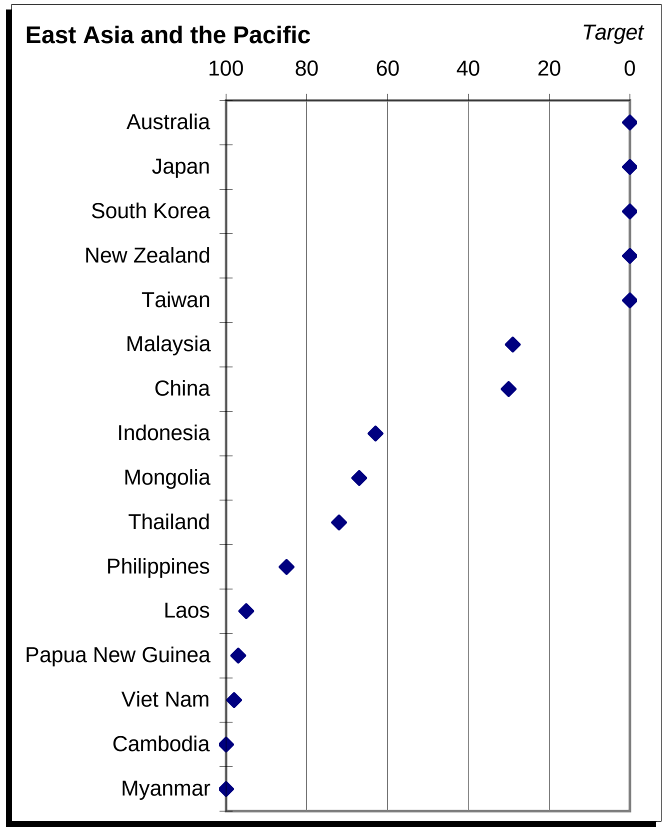
Guinea-Bissau
Dem. Rep. Congo
Angola
Niger
Sierra Leone

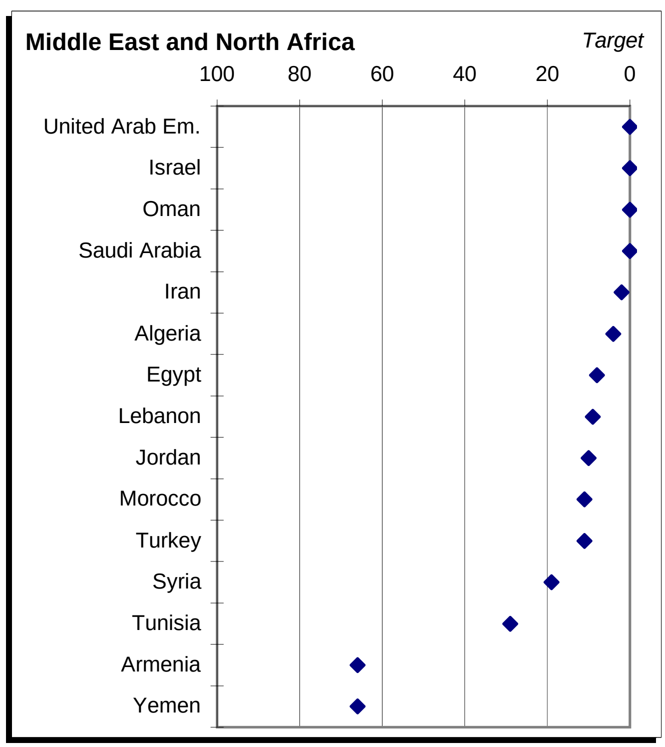
INDOOR

Indoor Air Pollution, percentage of households using solid fuels







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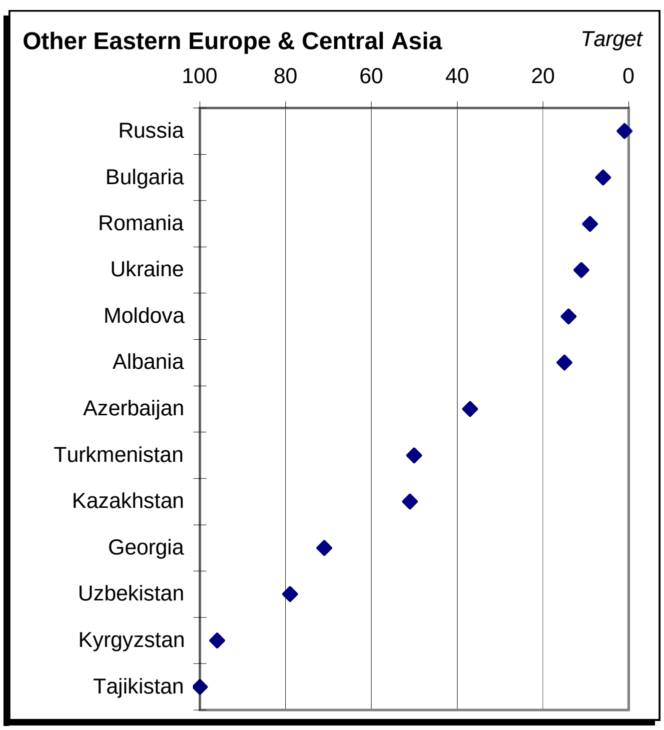
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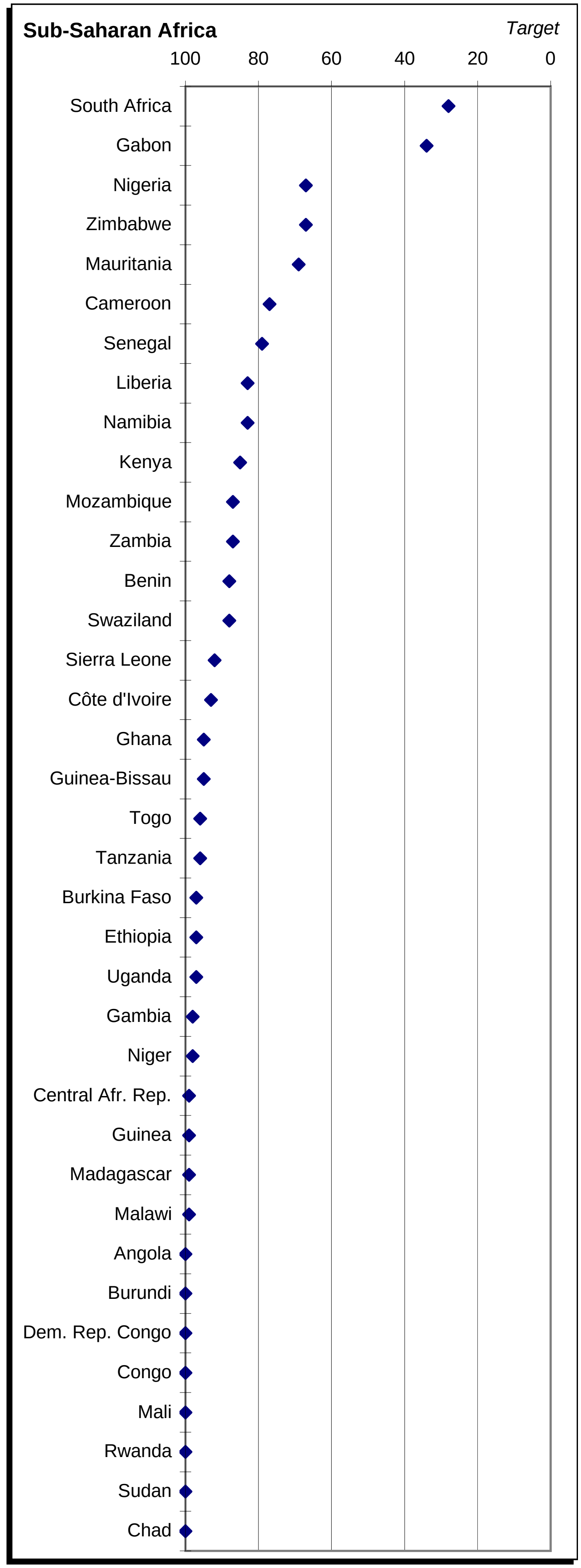
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Central Afr. Rep.
Guinea
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Malawi
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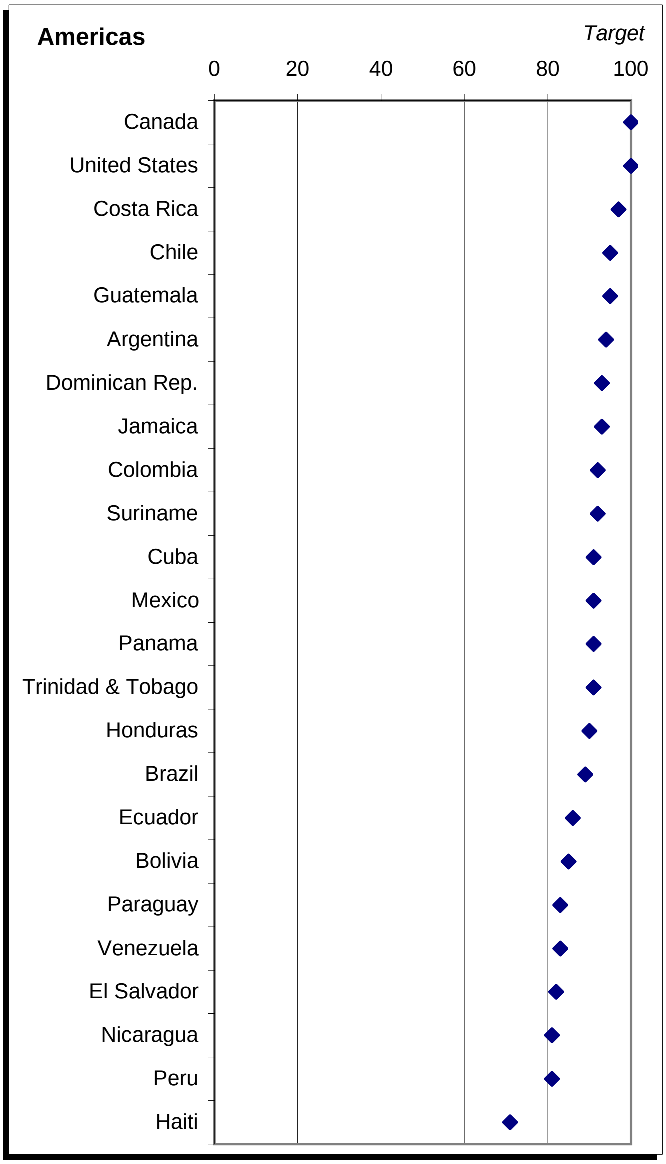
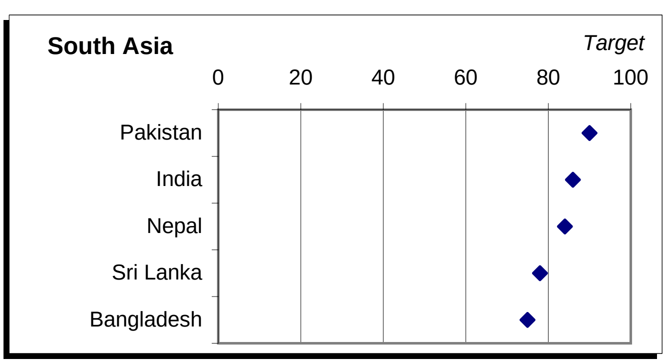
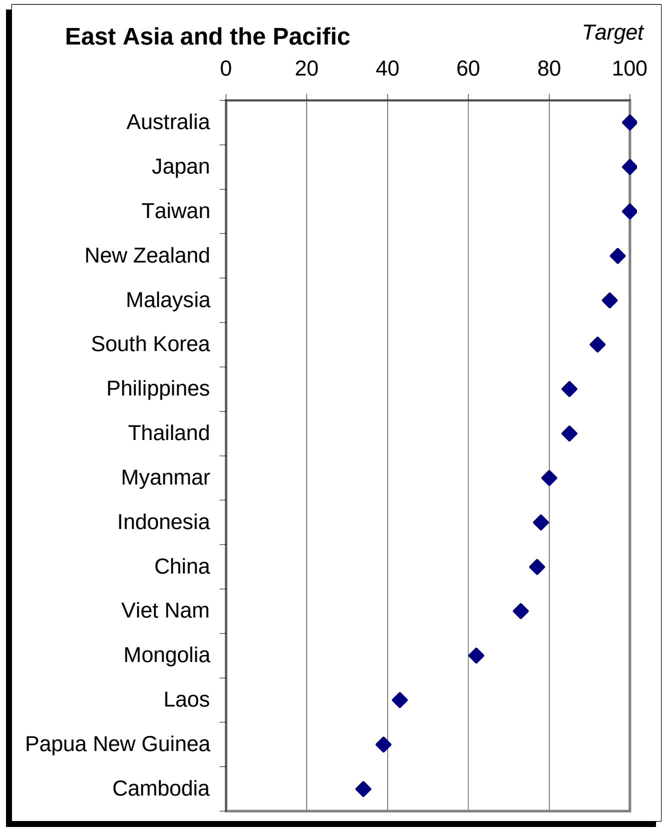
Burundi
Dem. Rep. Congo
Congo
Mali
Rwanda
Sudan
Chad

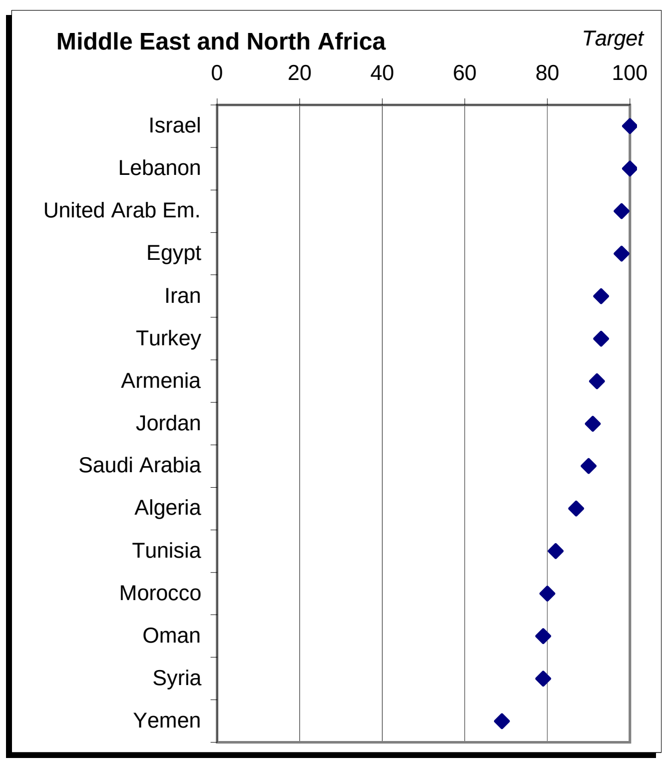
WATSUP

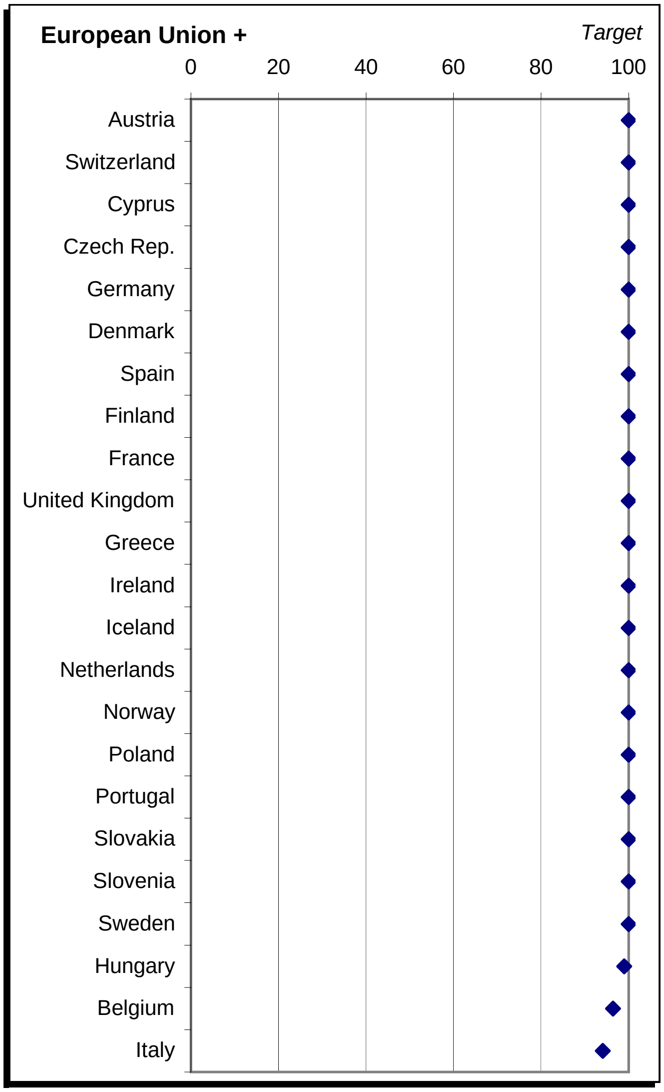
Drinking Water, percentage with access







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Denmark
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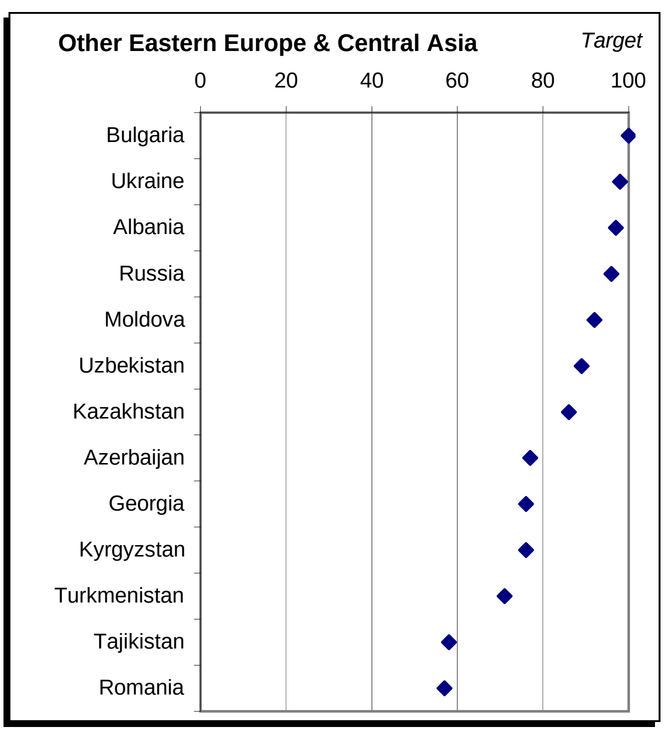
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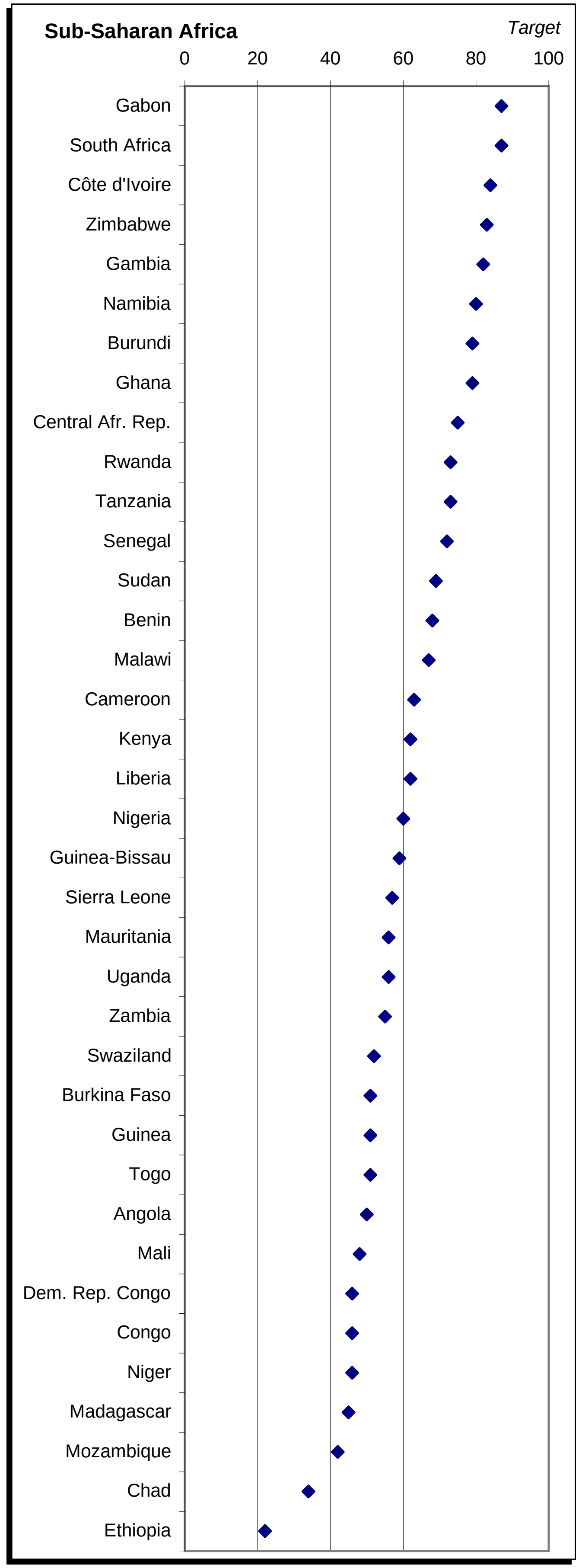
Sub-Saharan Africa
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Gambia
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Ghana
Central Afr. Rep.
Rwanda
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Swaziland
Burkina Faso
Guinea
Togo
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Congo
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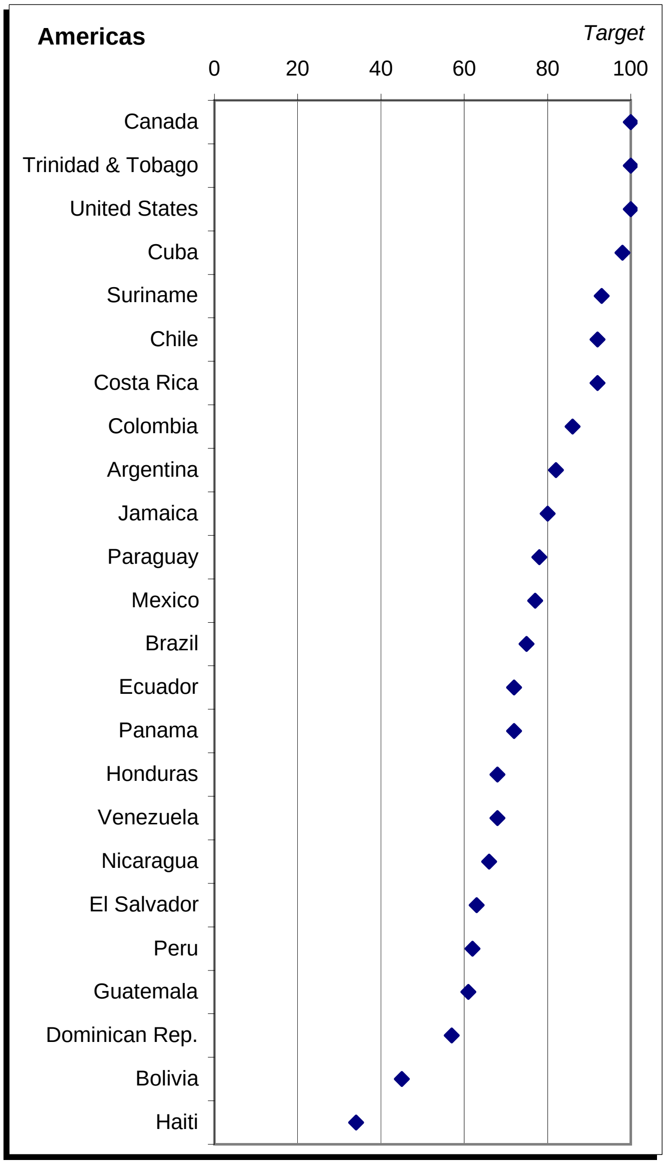
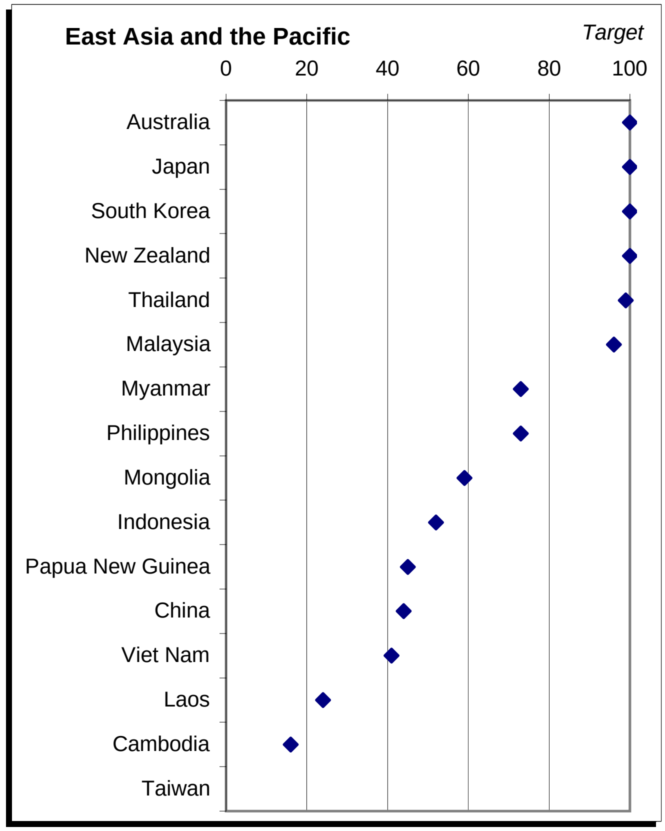
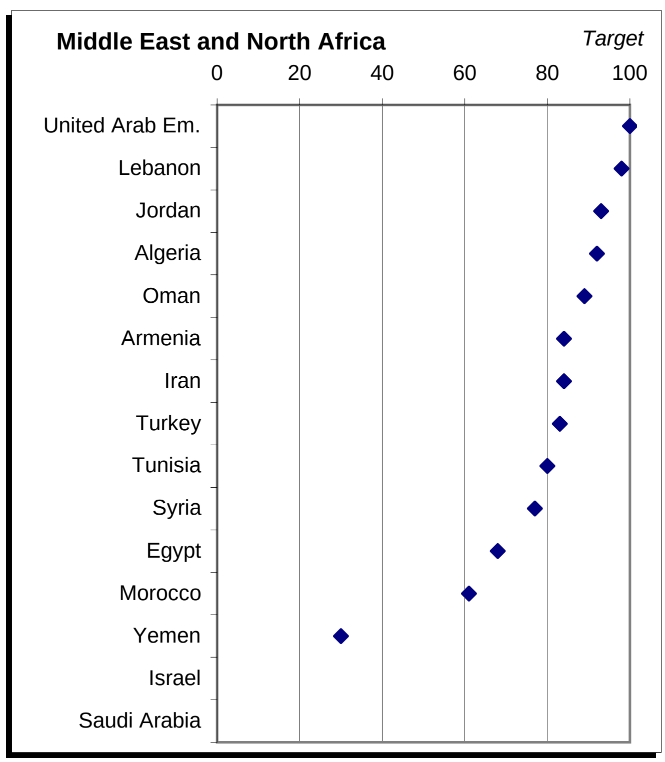
Madagascar
Mozambique
Chad
Ethiopia

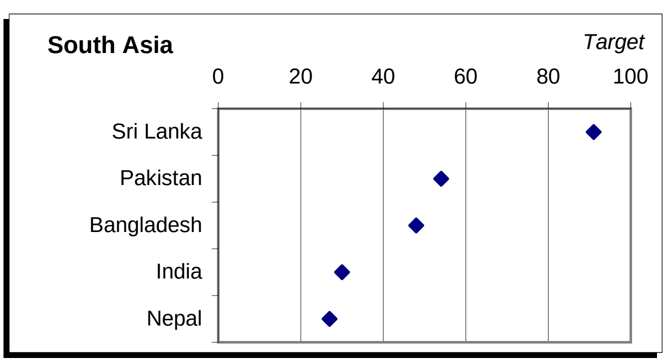
ACSAT

Adequate Sanitation, percentage with access







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Cyprus
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Greece
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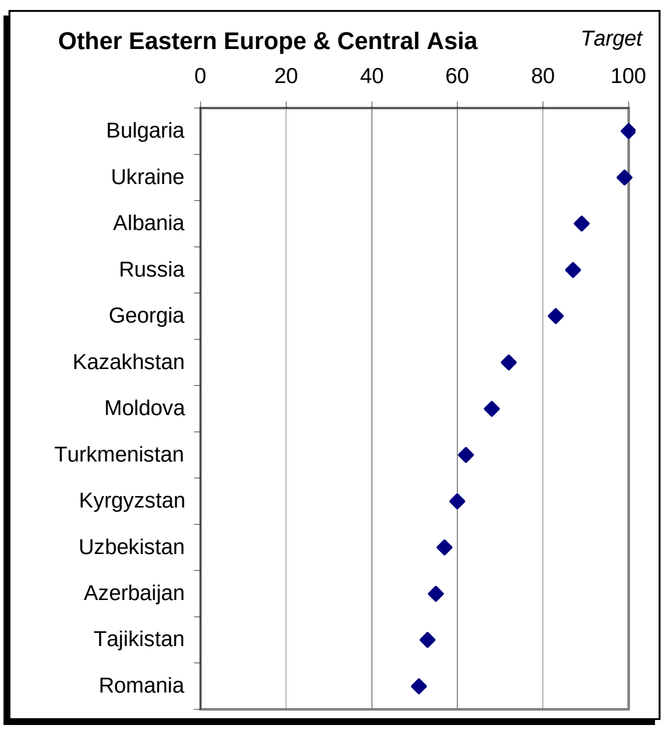
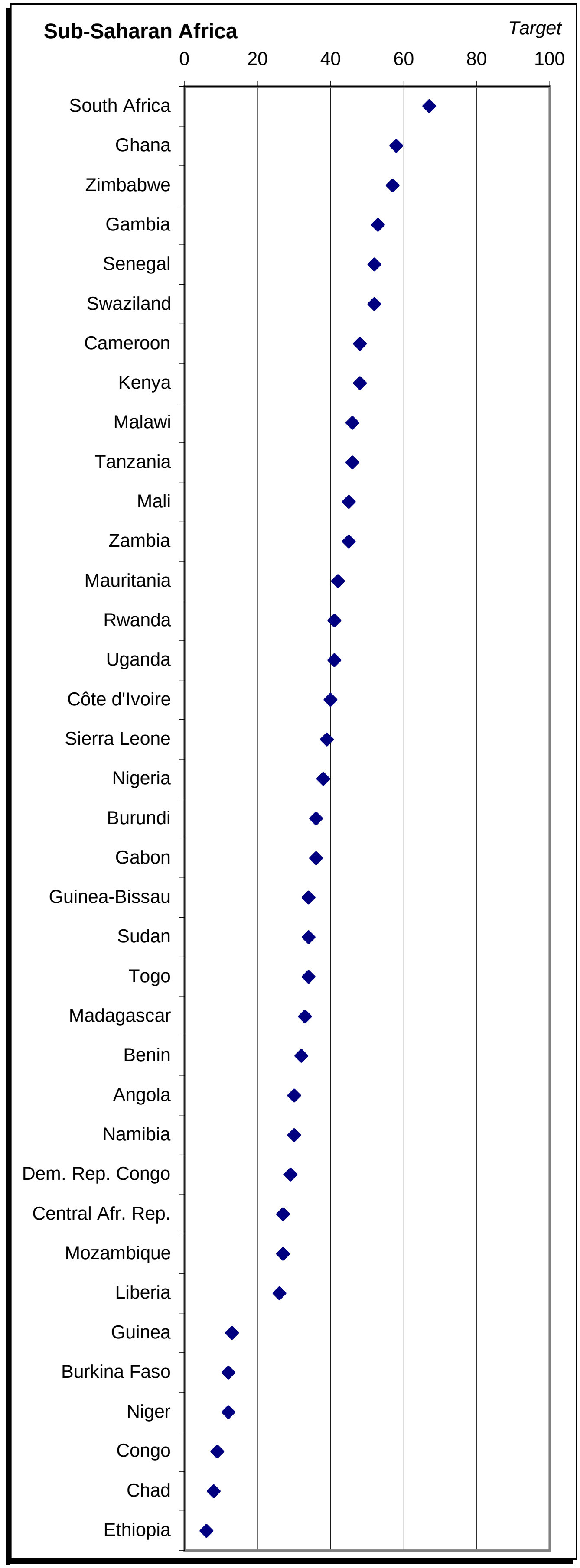
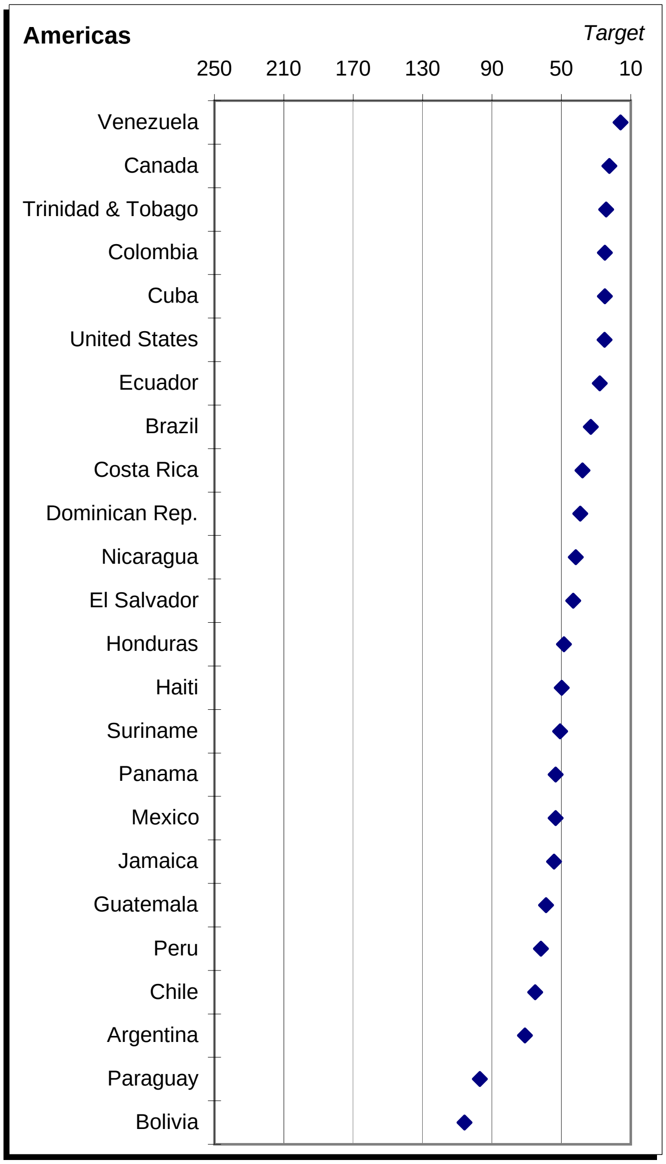
Poland
Portugal
Slovakia
Slovenia
Sweden
Hungary

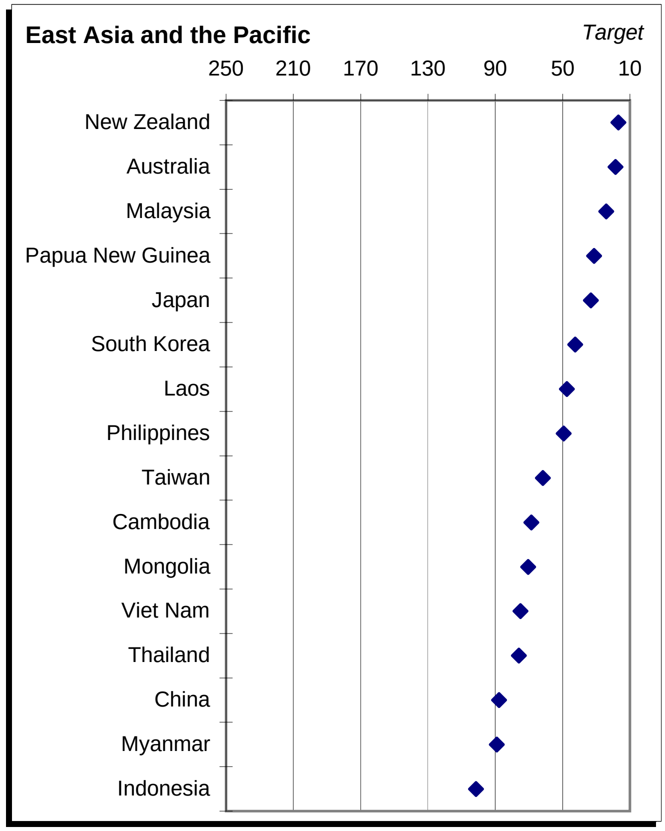

Other Eastern Europe & Central Asia
Target
0
20
40
60
80
100
Bulgaria
Ukraine
Albania
Russia
Georgia
Kazakhstan
Moldova
Turkmenistan
Kyrgyzstan
Uzbekistan
Azerbaijan
Tajikistan
Romania

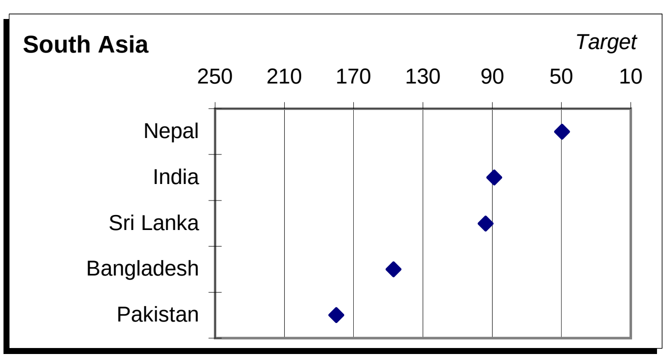

Sub-Saharan Africa
Target
0
20
40
60
80
100
South Africa
Ghana
Zimbabwe
Gambia
Senegal
Swaziland
Cameroon
Kenya
Malawi
Tanzania
Mali
Zambia
Mauritania
Rwanda
Uganda
Côte d'Ivoire
Sierra Leone
Nigeria
Burundi
Gabon
Guinea-Bissau
Sudan
Togo
Madagascar
Benin
Angola
Namibia
Dem. Rep. Congo
Central Afr. Rep.
Mozambique
Liberia
Guinea
Burkina Faso
Niger
Congo
Chad
Ethiopia

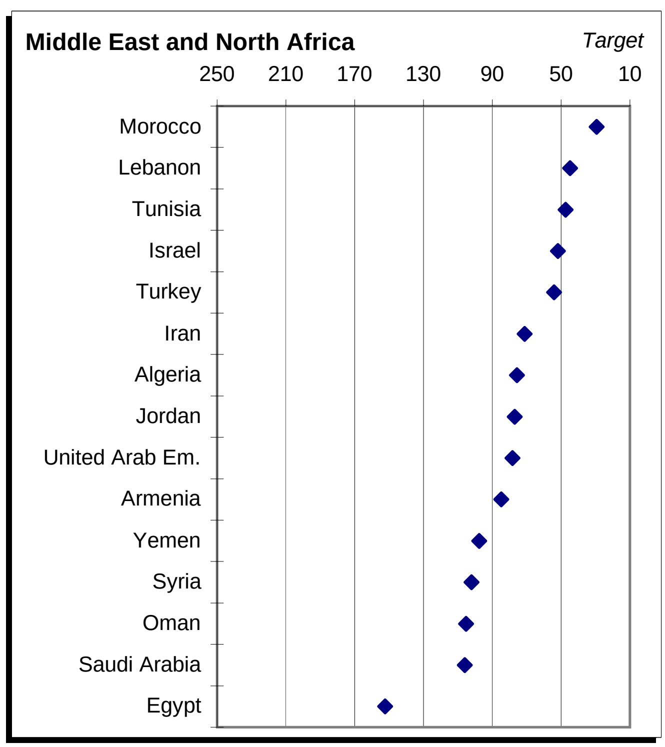
PM10

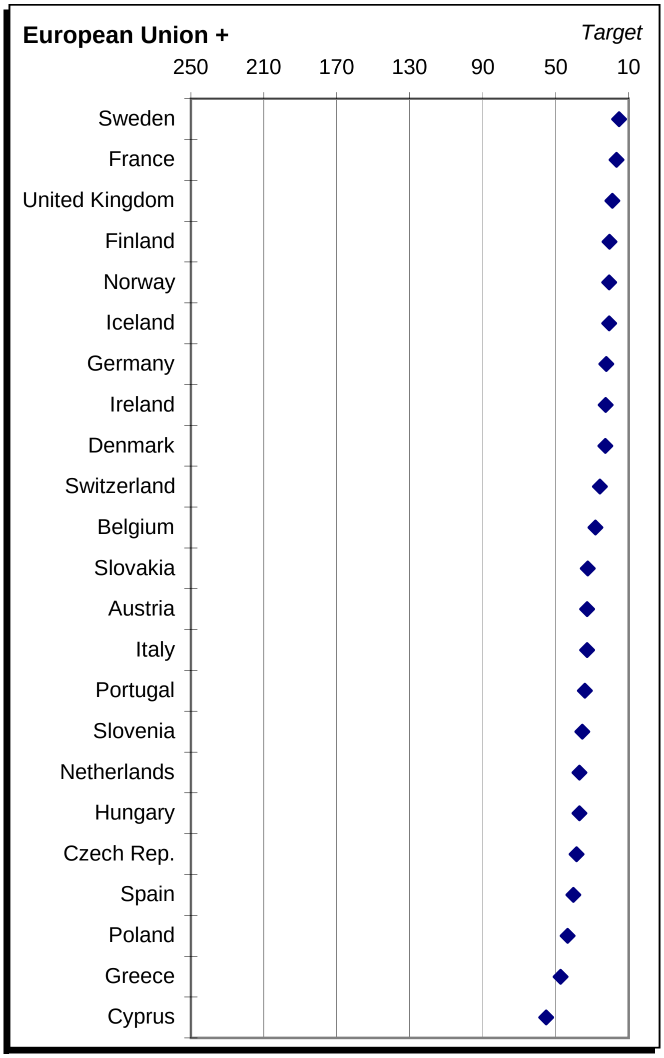
Urban Particulates, micrograms per cubic meter

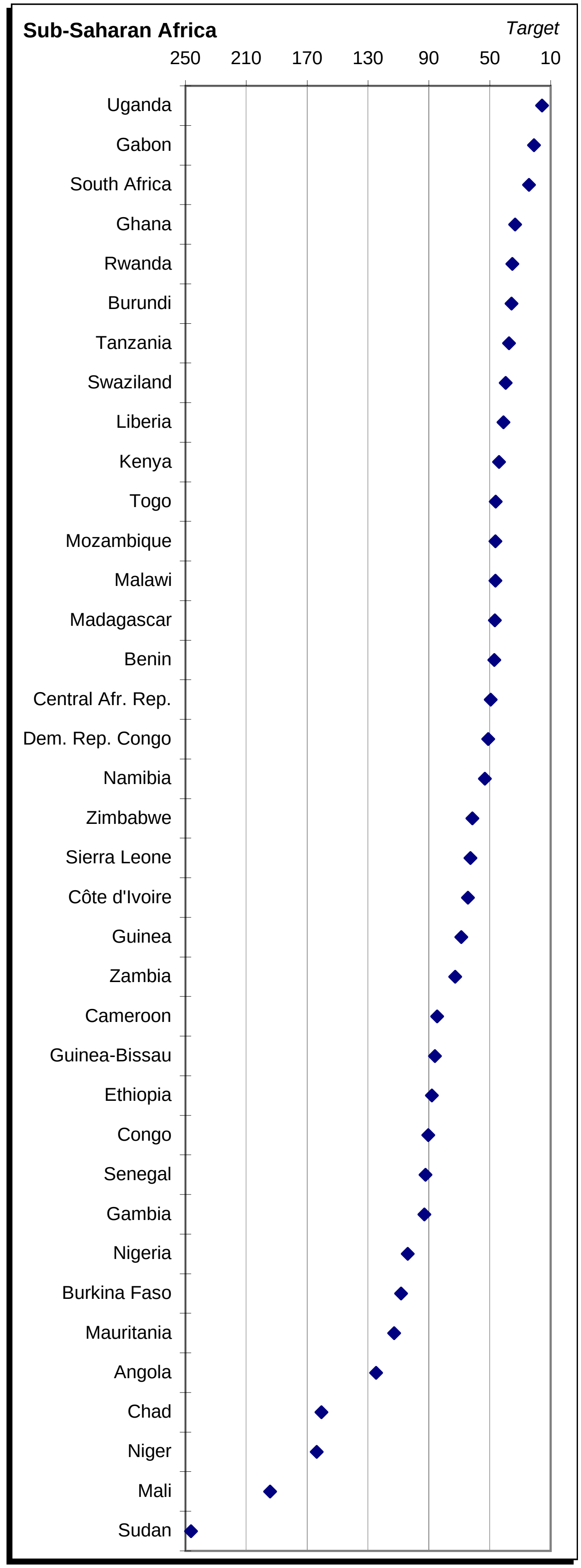


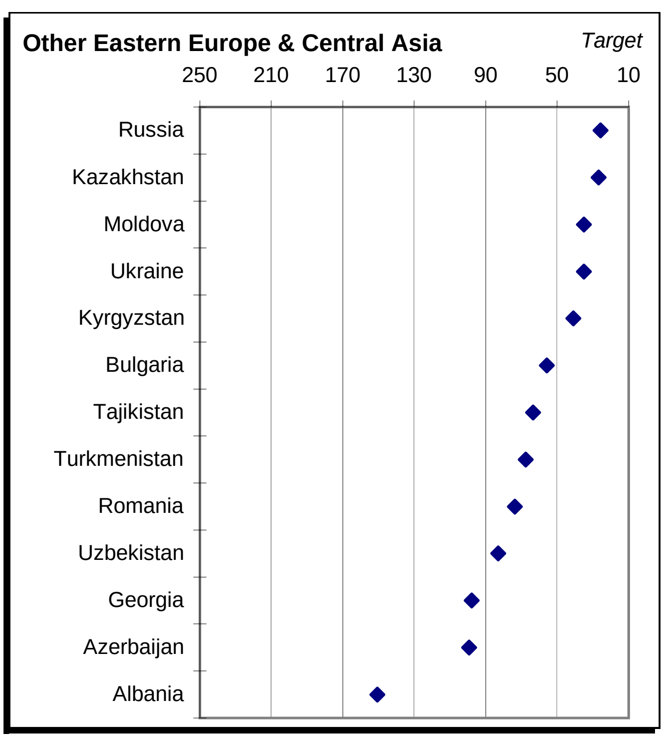






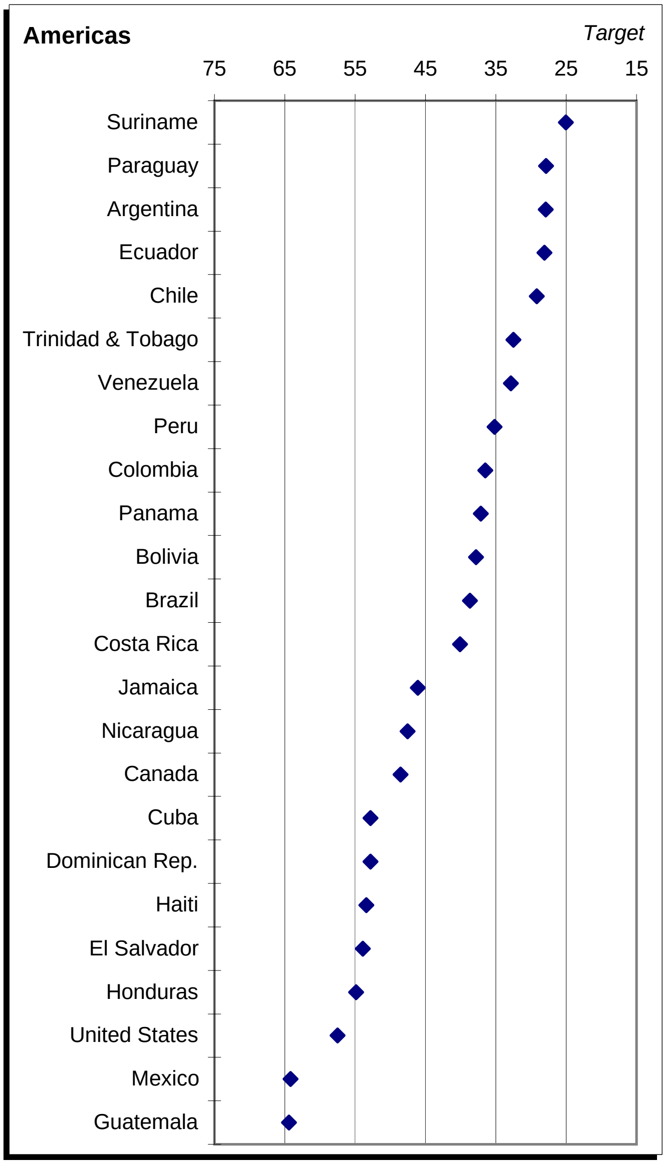

European Union +
Target
250
210
170
130
90
50
10
Sweden
France
United Kingdom
Finland
Norway
Iceland
Germany
Ireland
Denmark
Switzerland
Belgium
Slovakia
Austria
Italy
Portugal
Slovenia
Netherlands
Hungary
Czech Rep.
Spain
Poland
Greece
Cyprus

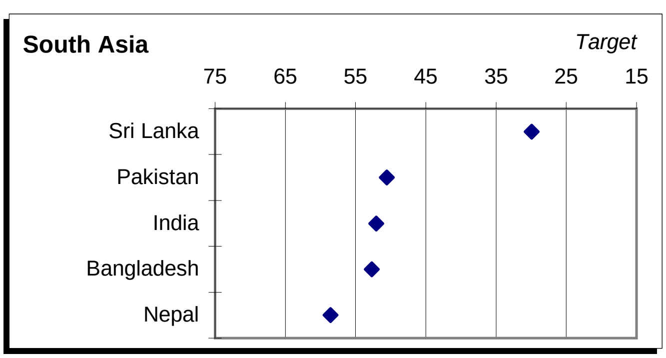

Sub-Saharan Africa
Target
250
210
170
130
90
50
10
Uganda
Gabon
South Africa
Ghana
Rwanda
Burundi
Tanzania
Swaziland
Liberia
Kenya
Togo
Mozambique
Malawi
Madagascar
Benin
Central Afr. Rep.
Dem. Rep. Congo
Namibia
Zimbabwe
Sierra Leone
Côte d'Ivoire
Guinea
Zambia
Cameroon
Guinea-Bissau
Ethiopia
Congo
Senegal
Gambia
Nigeria
Burkina Faso
Mauritania
Angola
Chad
Niger
Mali
Sudan

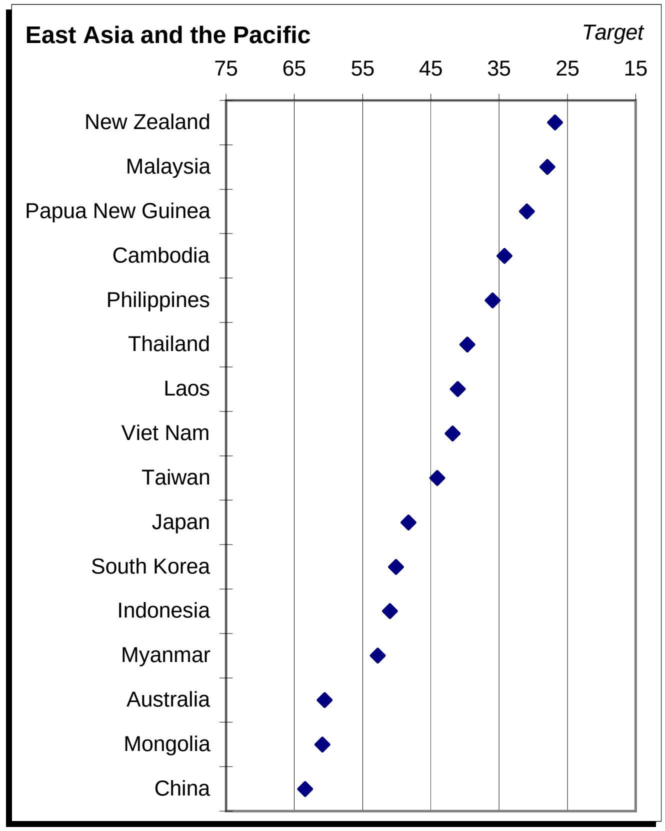

Other Eastern Europe & Central Asia
Target
250
210
170
130
90
50
10
Russia
Kazakhstan
Moldova
Ukraine
Kyrgyzstan
Bulgaria
Tajikistan
Turkmenistan
Romania
Uzbekistan
Georgia
Azerbaijan
Albania

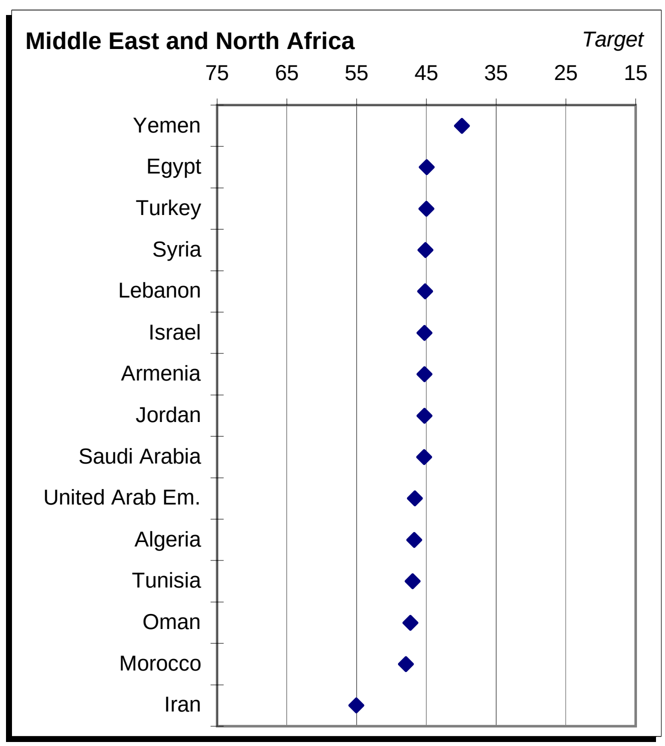
OZONE

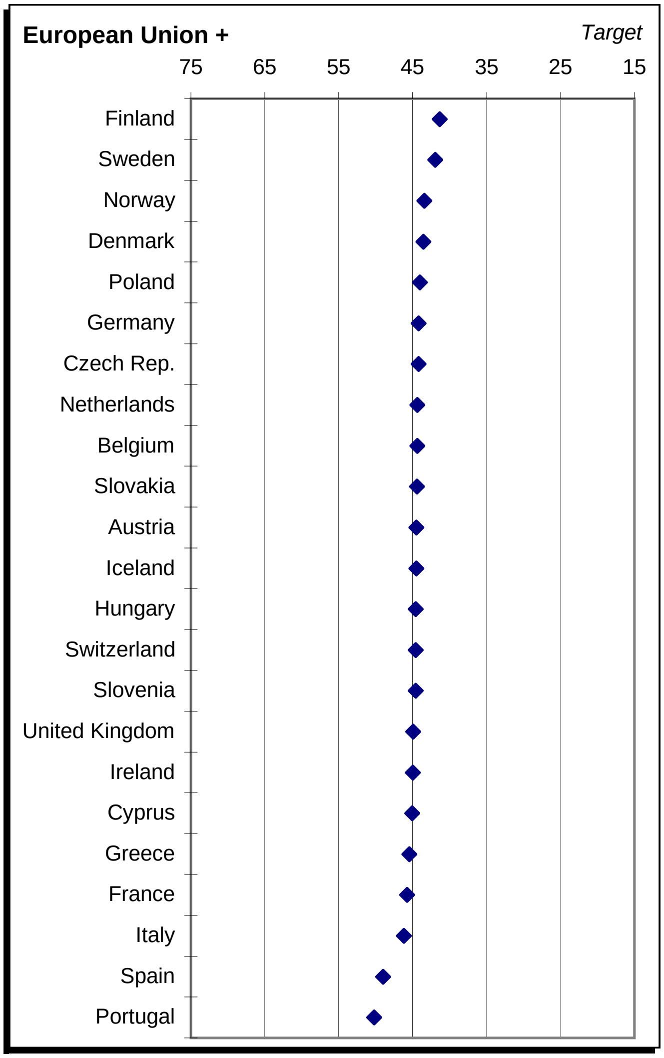
Regional Ozone, ozone concentration parts per billion

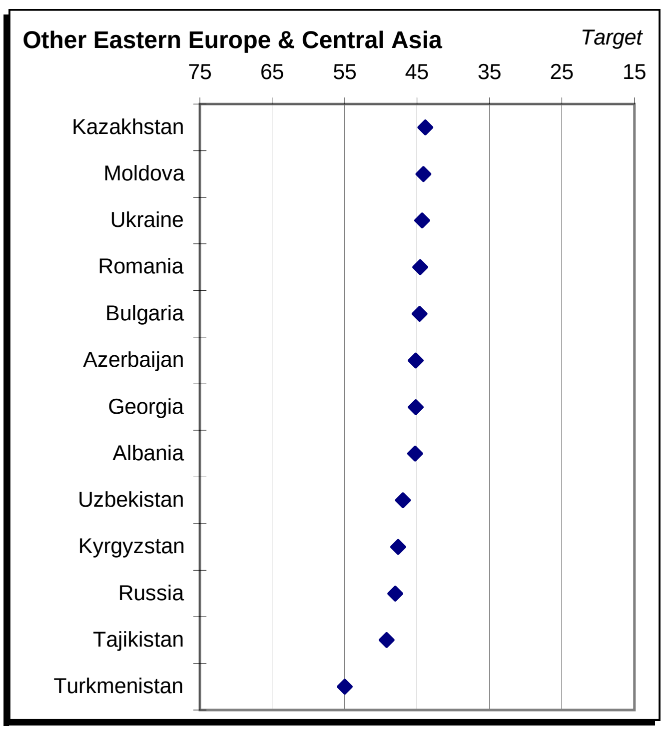


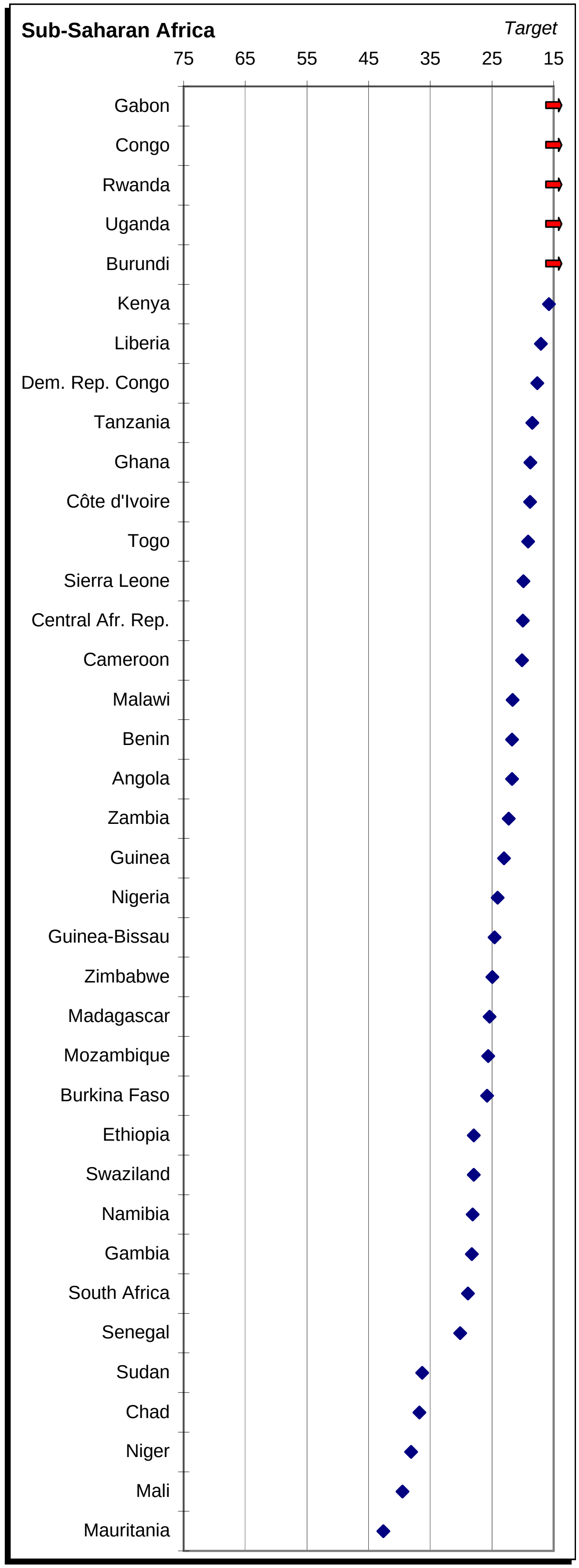






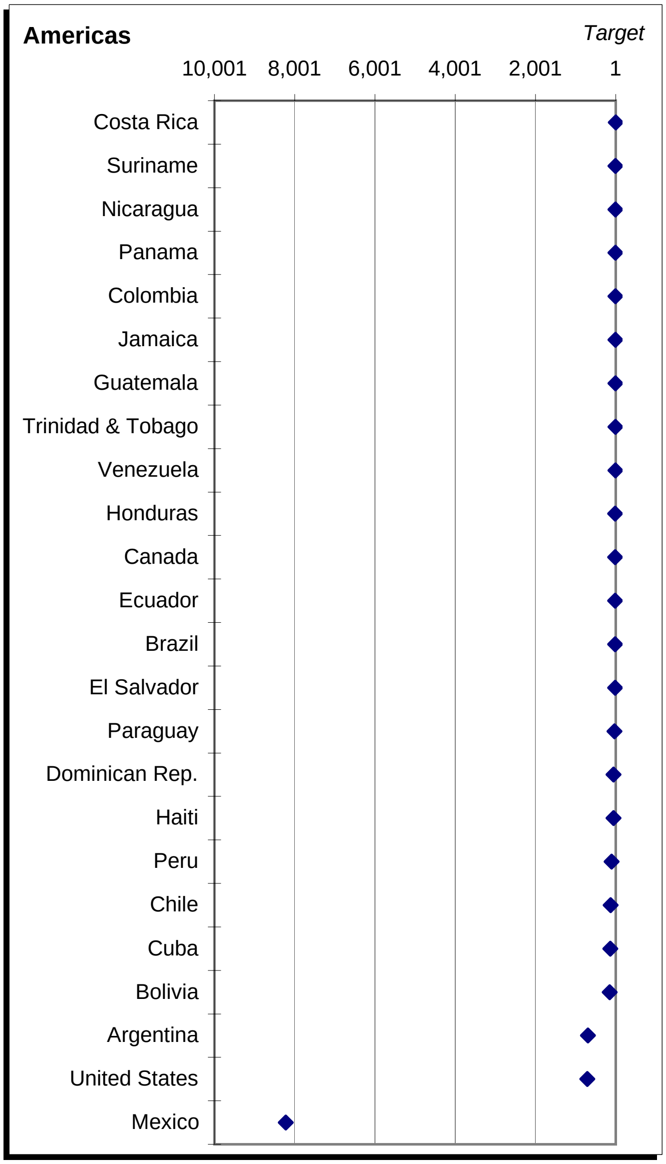

European Union +
Target
75
65
55
45
35
25
15
Finland
Sweden
Norway
Denmark
Poland
Germany
Czech Rep.
Netherlands
Belgium
Slovakia
Austria
Iceland
Hungary
Switzerland
Slovenia
United Kingdom
Ireland
Cyprus
Greece
France
Italy
Spain
Portugal

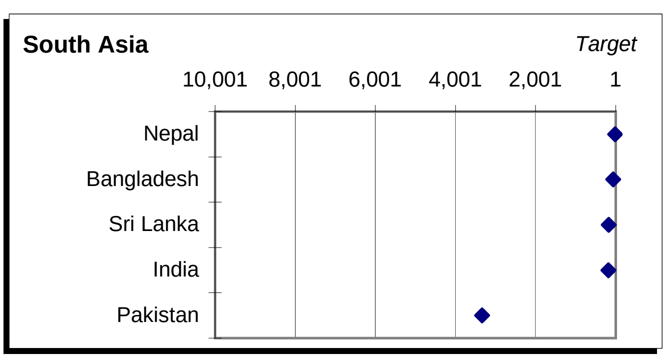

Other Eastern Europe & Central Asia
Target
75
65
55
45
35
25
15
Kazakhstan
Moldova
Ukraine
Romania
Bulgaria
Azerbaijan
Georgia
Albania
Uzbekistan
Kyrgyzstan
Russia
Tajikistan
Turkmenistan

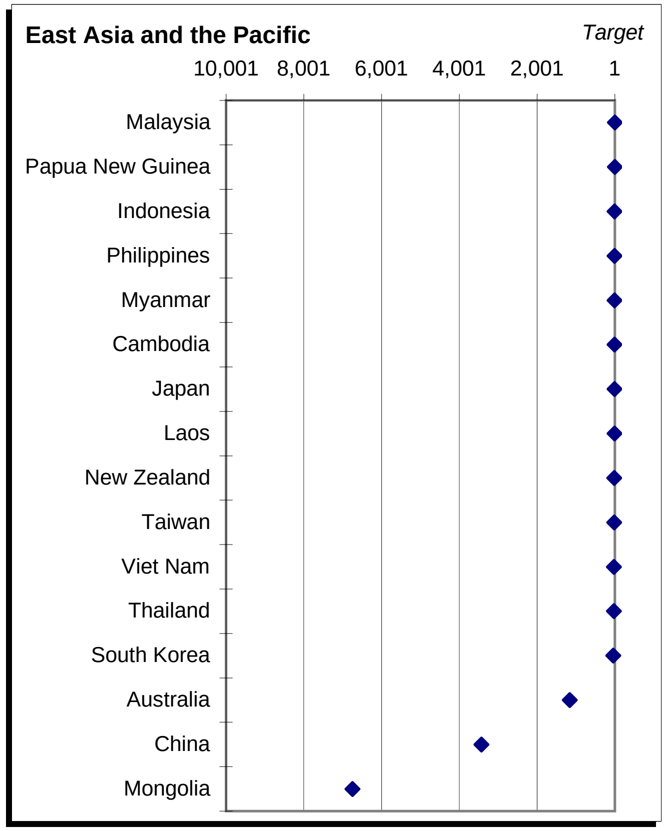

Sub-Saharan Africa
Target
75
65
55
45
35
25
15
Gabon
Congo
Rwanda
Uganda
Burundi
Kenya
Liberia
Dem. Rep. Congo
Tanzania
Ghana
Côte d'Ivoire
Togo
Sierra Leone
Central Afr. Rep.
Cameroon
Malawi
Benin
Angola
Zambia
Guinea
Nigeria
Guinea-Bissau
Zimbabwe
Madagascar
Mozambique
Burkina Faso
Ethiopia
Swaziland
Namibia
Gambia
South Africa
Senegal
Sudan
Chad
Niger
Mali
Mauritania

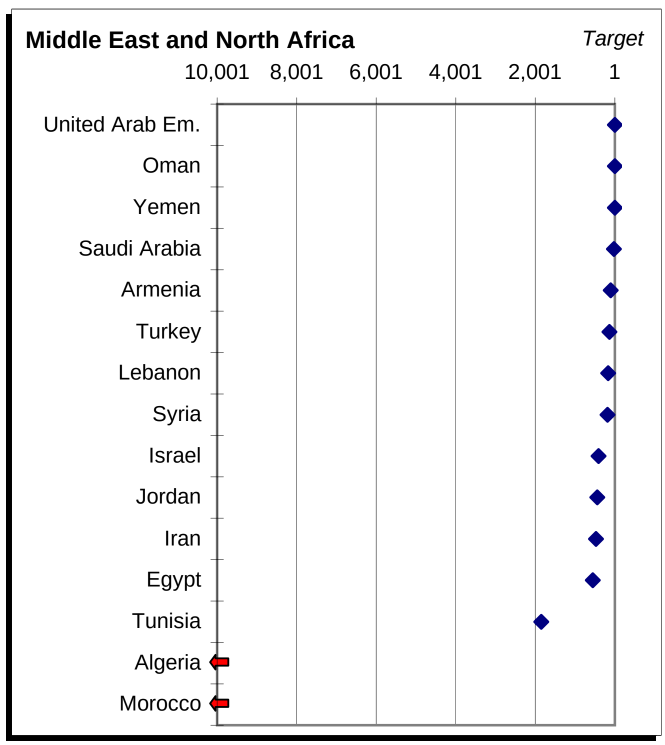
NLOAD

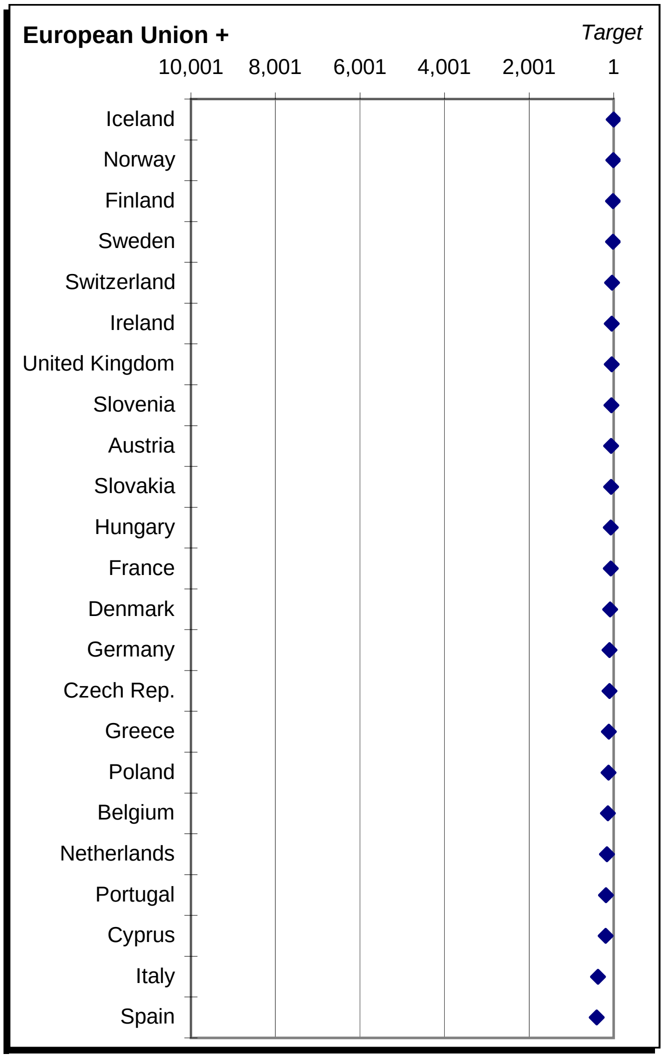
Nitrogen Loading, milligrams per Liter nitrogen in water bodies

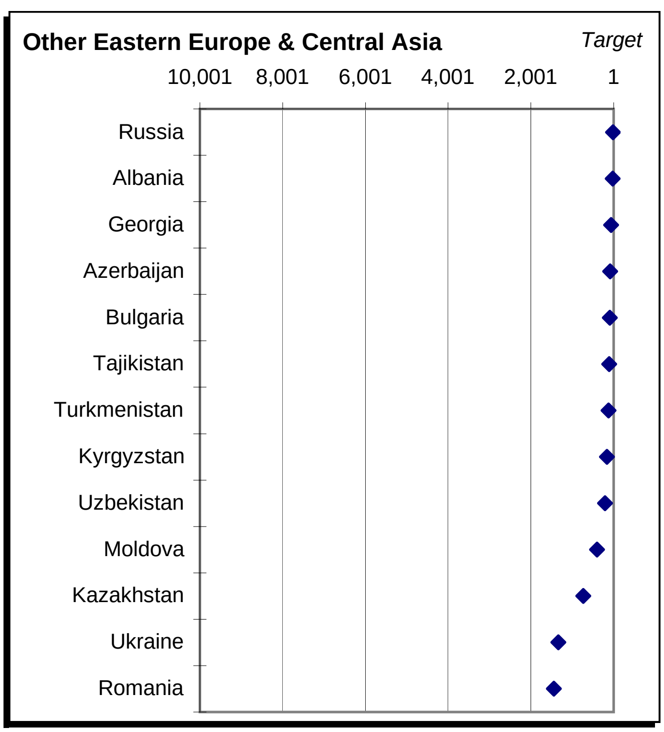


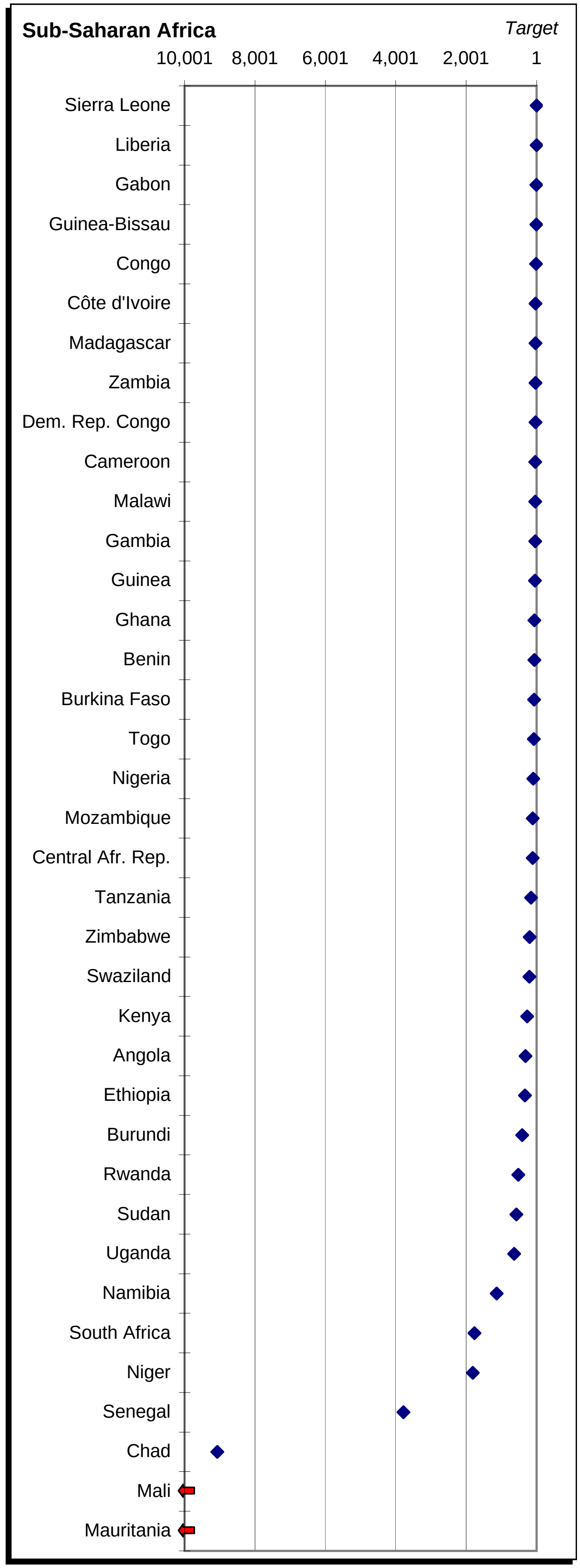






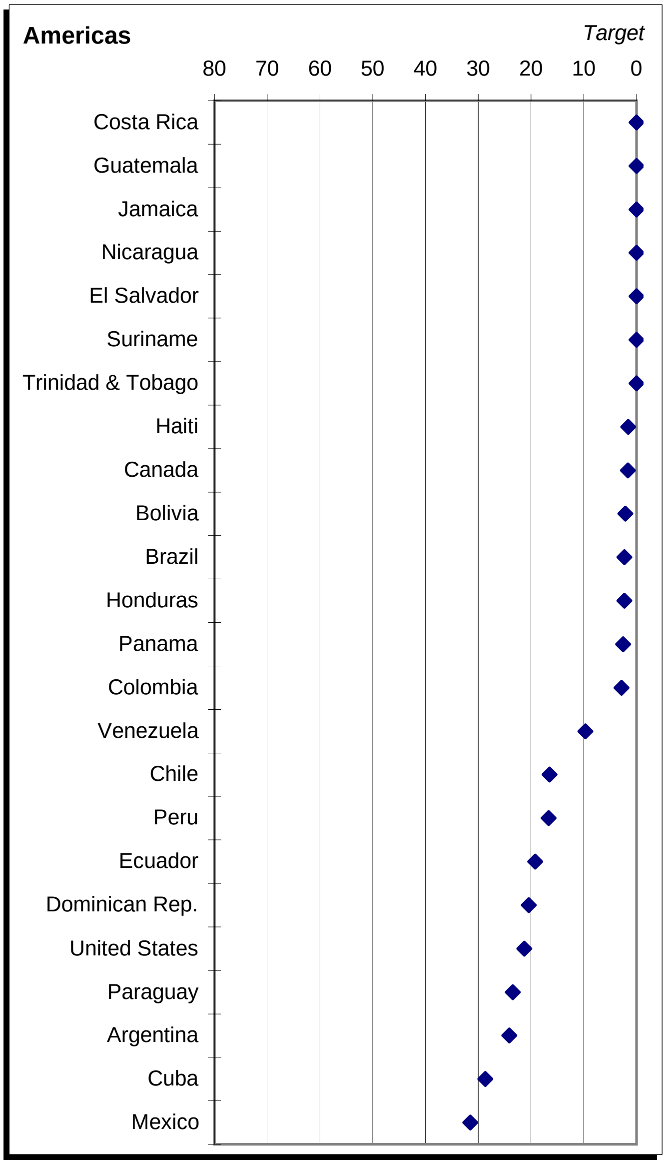

European Union +
Target
10,001
8,001
6,001
4,001
2,001
1
Iceland
Norway
Finland
Sweden
Switzerland
Ireland
United Kingdom
Slovenia
Austria
Slovakia
Hungary
France
Denmark
Germany
Czech Rep.
Greece
Poland
Belgium
Netherlands
Portugal
Cyprus
Italy
Spain

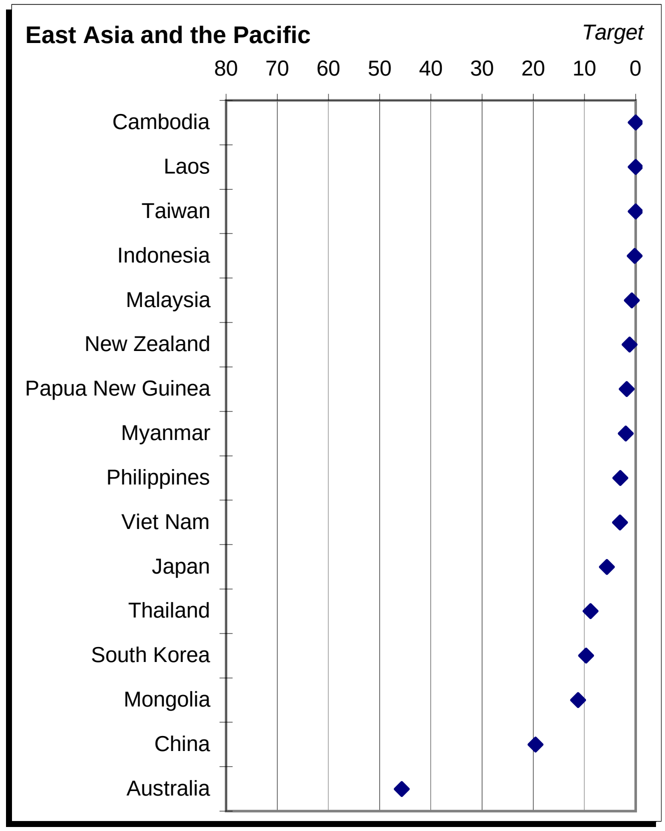

Other Eastern Europe & Central Asia
Target
10,001
8,001
6,001
4,001
2,001
1
Russia
Albania
Georgia
Azerbaijan
Bulgaria
Tajikistan
Turkmenistan
Kyrgyzstan
Uzbekistan
Moldova
Kazakhstan
Ukraine
Romania

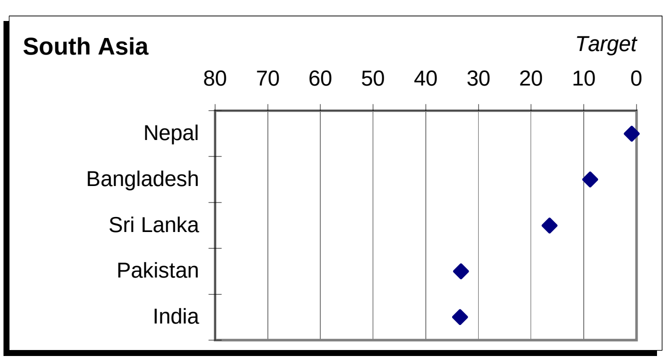

Sub-Saharan Africa
Target
10,001
8,001
6,001
4,001
2,001
1
Sierra Leone
Liberia
Gabon
Guinea-Bissau
Congo
Côte d'Ivoire
Madagascar
Zambia
Dem. Rep. Congo
Cameroon
Malawi
Gambia
Guinea
Ghana
Benin
Burkina Faso
Togo
Nigeria
Mozambique
Central Afr. Rep.
Tanzania
Zimbabwe
Swaziland
Kenya
Angola
Ethiopia
Burundi
Rwanda
Sudan
Uganda
Namibia
South Africa
Niger
Senegal
Chad
Mali
Mauritania

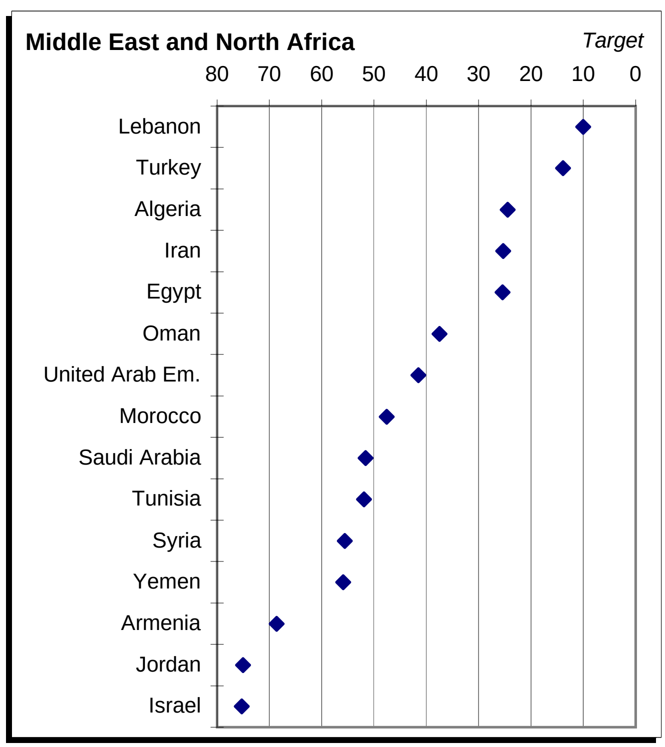
OVRSUB

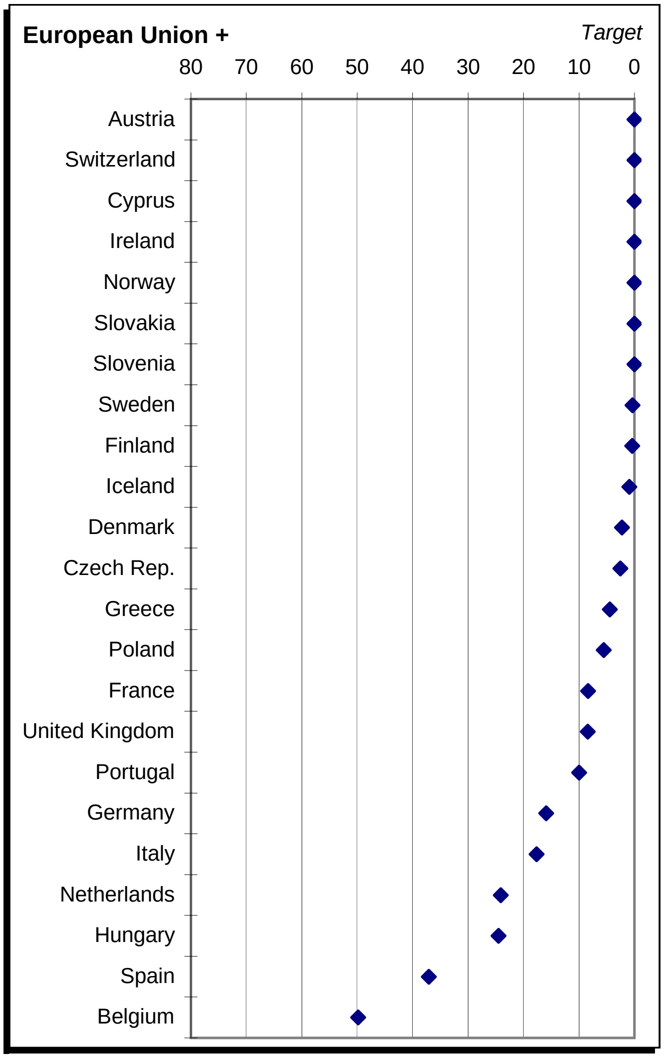
Water Consumption, percentage of territory with oversubscribed water resources

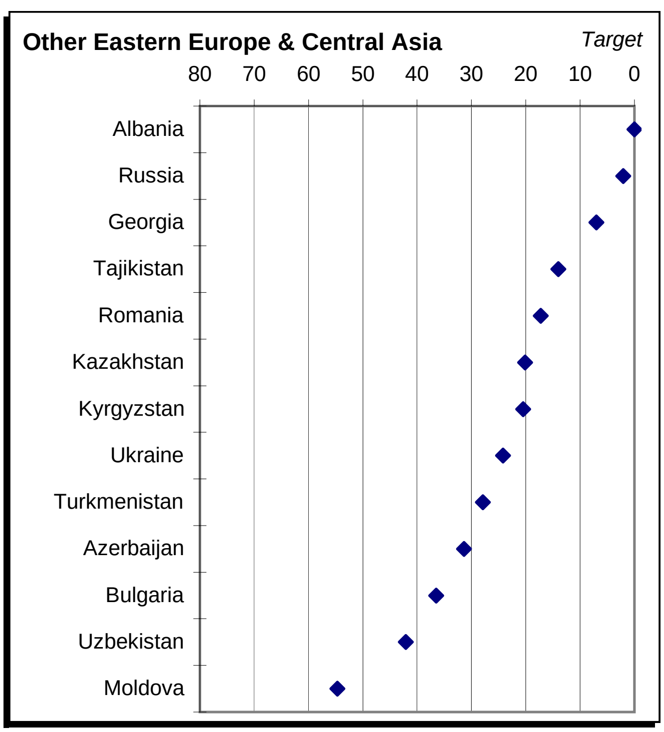


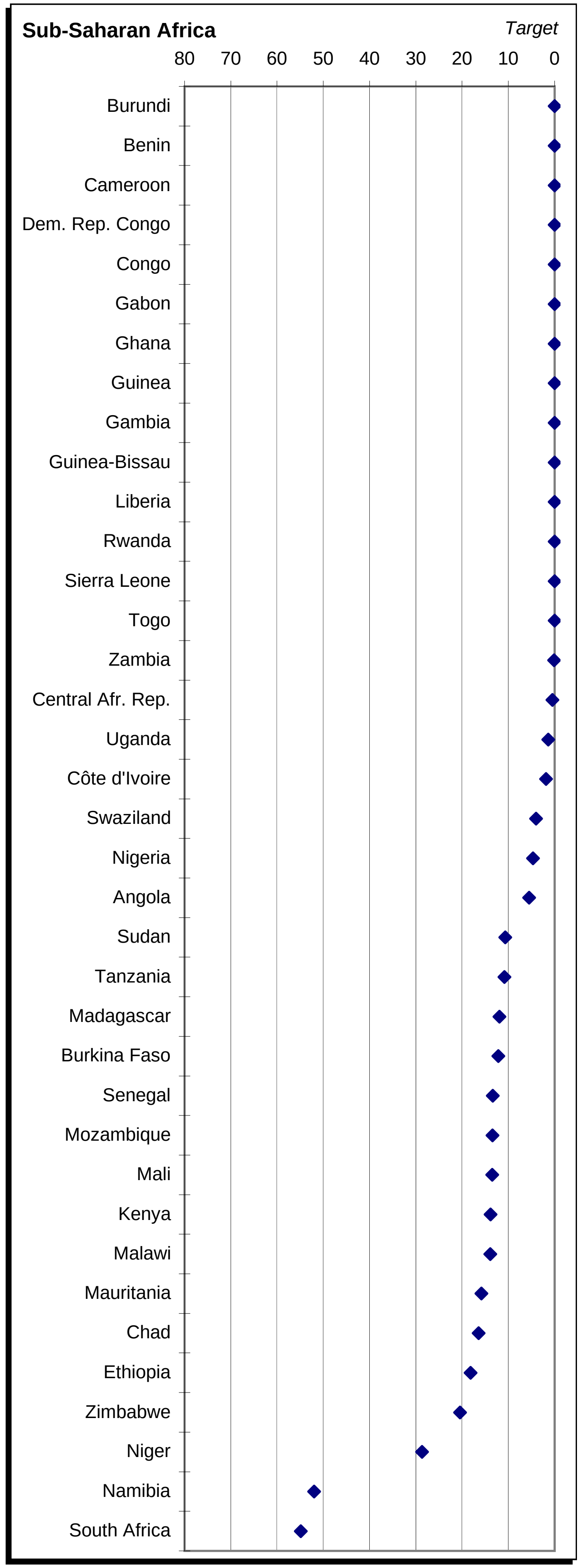







European Union +
Target
80
70
60
50
40
30
20
10
0
Austria
Switzerland
Cyprus
Ireland
Norway
Slovakia
Slovenia
Sweden
Finland
Iceland
Denmark
Czech Rep.
Greece
Poland
France
United Kingdom
Portugal
Germany
Italy
Netherlands
Hungary
Spain
Belgium

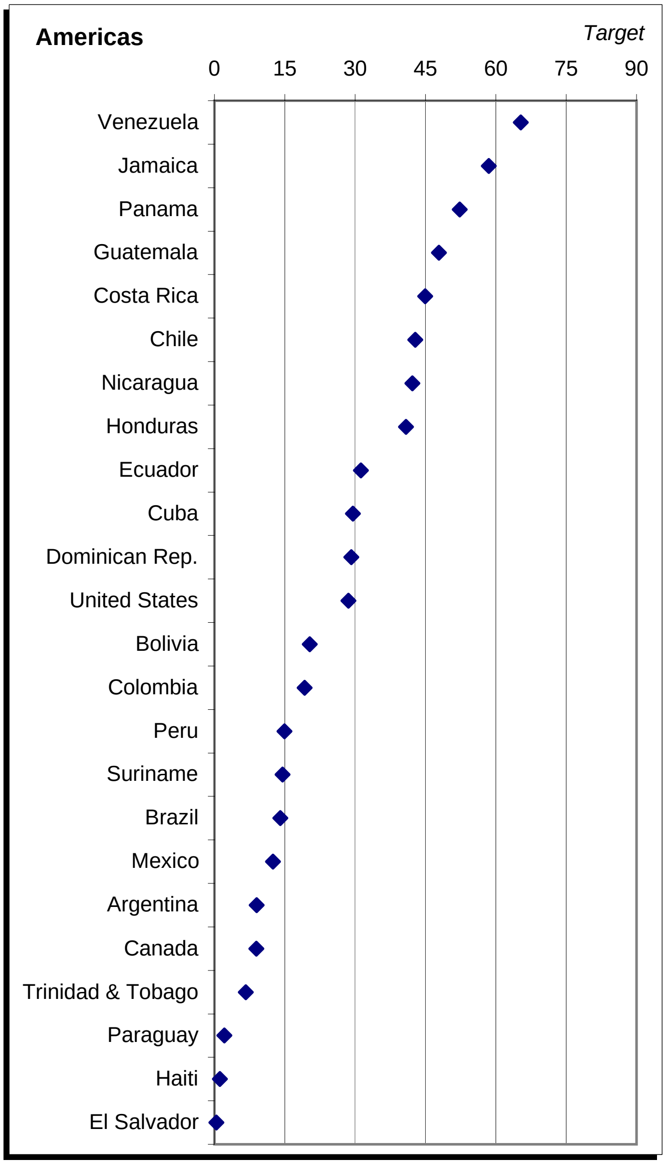

Other Eastern Europe & Central Asia
Target
80
70
60
50
40
30
20
10
0
Albania
Russia
Georgia
Tajikistan
Romania
Kazakhstan
Kyrgyzstan
Ukraine
Turkmenistan
Azerbaijan
Bulgaria
Uzbekistan
Moldova

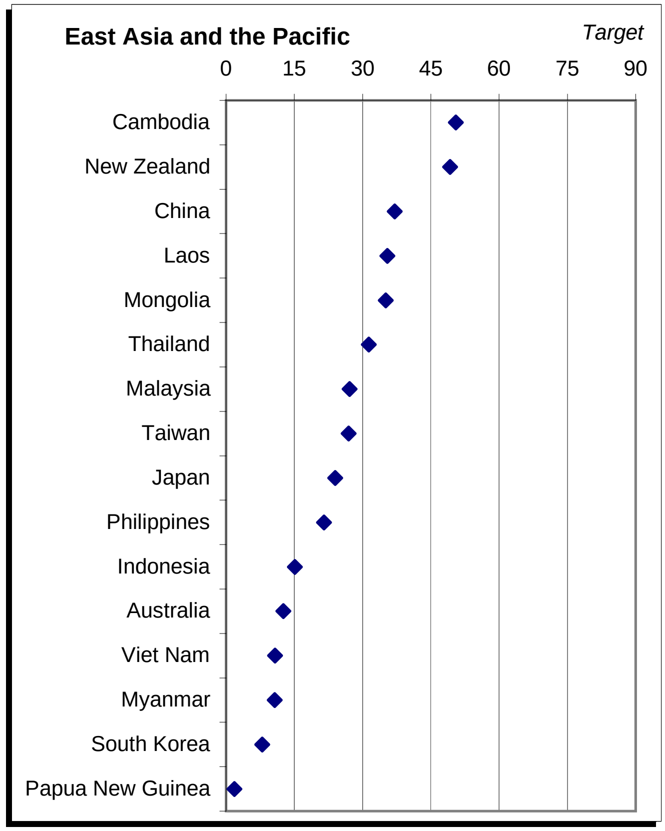

Sub-Saharan Africa
Target
80
70
60
50
40
30
20
10
0
Burundi
Benin
Cameroon
Dem. Rep. Congo
Congo
Gabon
Ghana
Guinea
Gambia
Guinea-Bissau
Liberia
Rwanda
Sierra Leone
Togo
Zambia
Central Afr. Rep.
Uganda
Côte d'Ivoire
Swaziland
Nigeria
Angola
Sudan
Tanzania
Madagascar
Burkina Faso
Senegal
Mozambique
Mali
Kenya
Malawi
Mauritania
Chad
Ethiopia
Zimbabwe
Niger
Namibia
South Africa

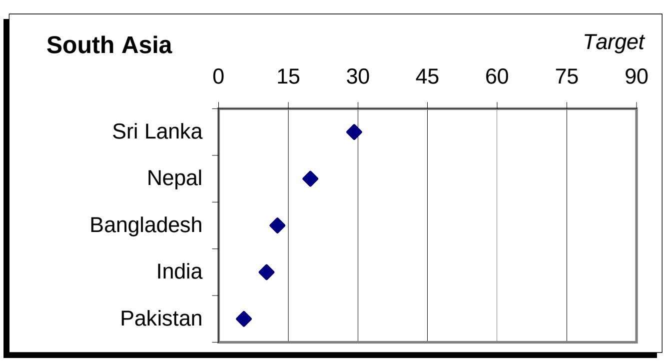
Proximity-to-Target, by Geographic Peer Group

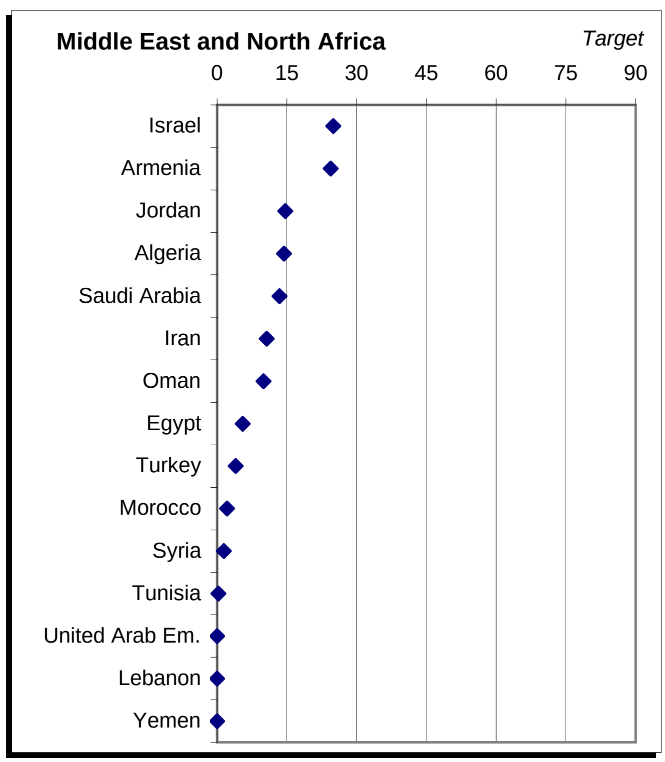
PWI

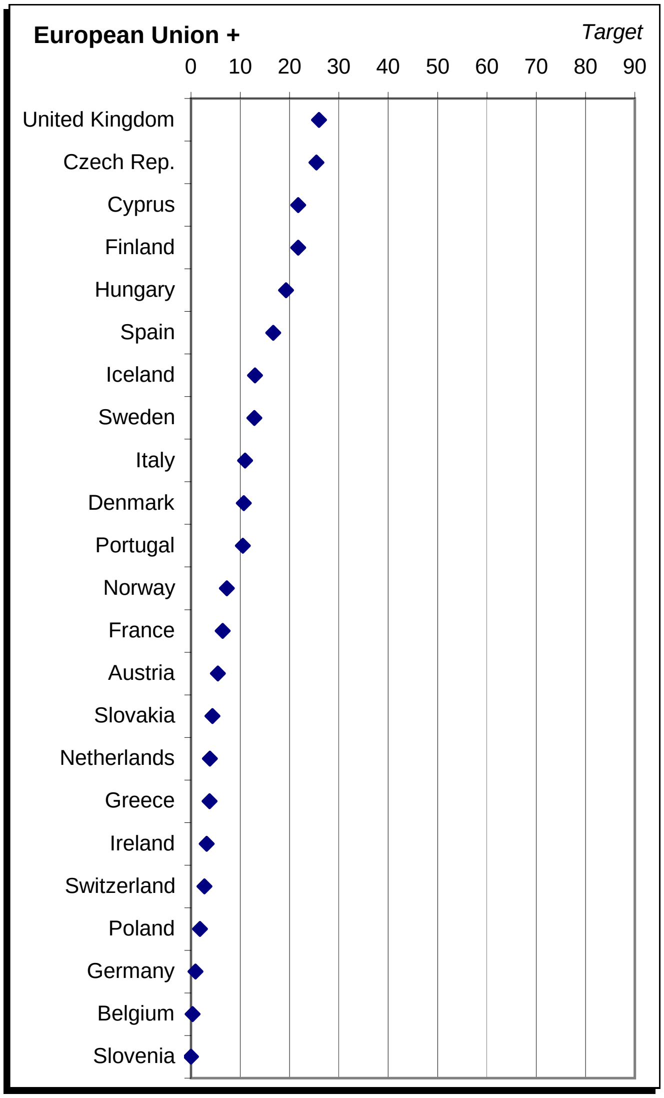
Wilderness Protection, percentage of wild areas protected

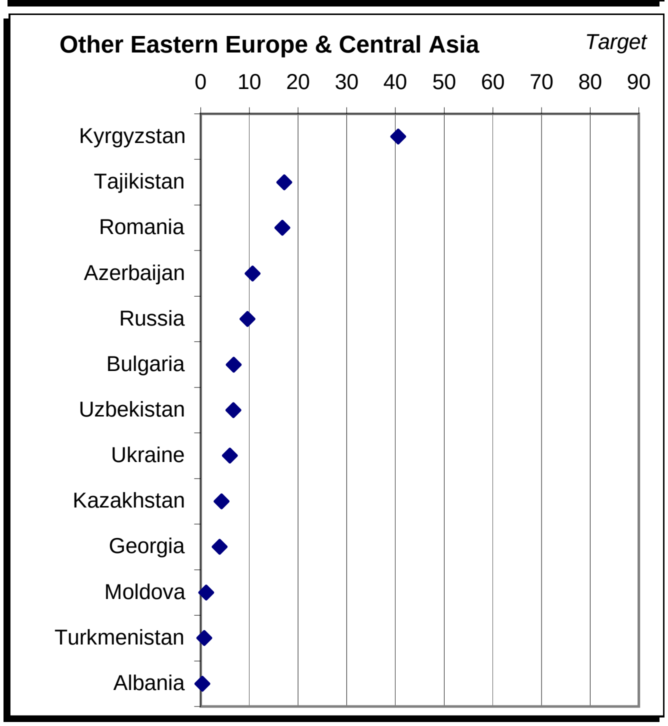


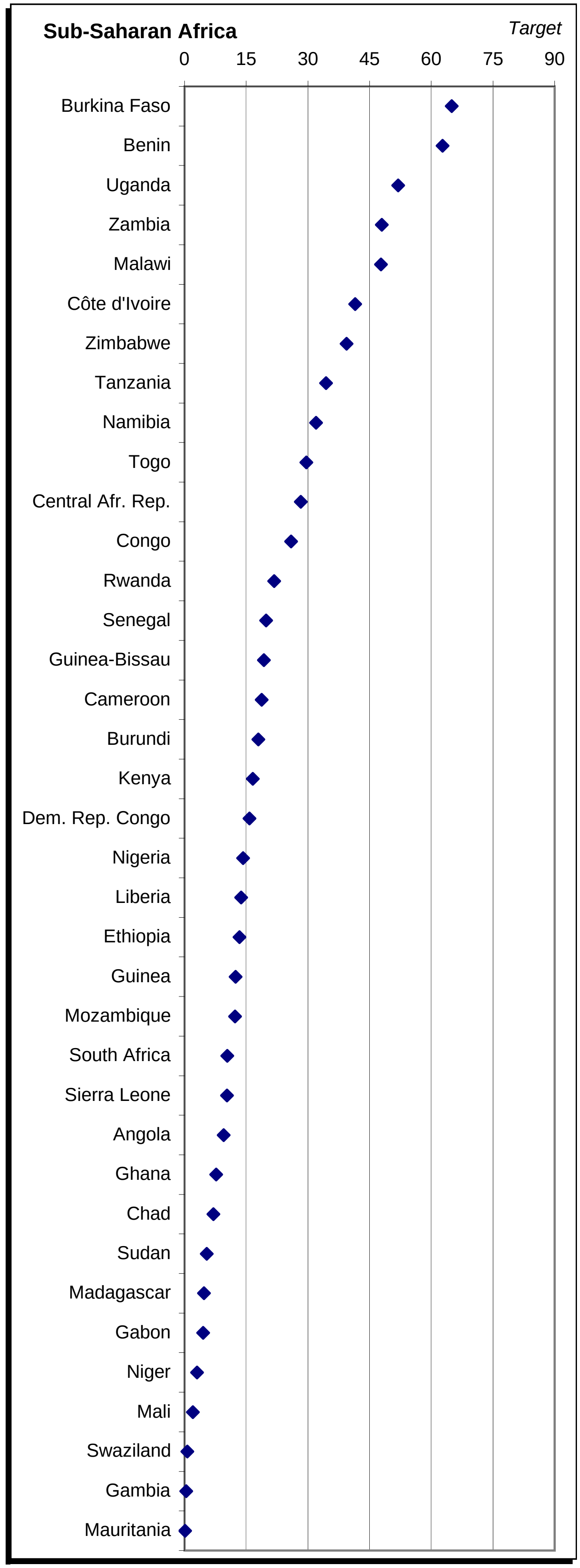







European Union +
Target
0 10 20 30 40 50 60 70 80 90
United Kingdom
Czech Rep.
Cyprus
Finland
Hungary
Spain
Iceland
Sweden
Italy
Denmark
Portugal
Norway
France
Austria
Slovakia
Netherlands
Greece
Ireland
Switzerland
Poland
Germany
Belgium
Slovenia

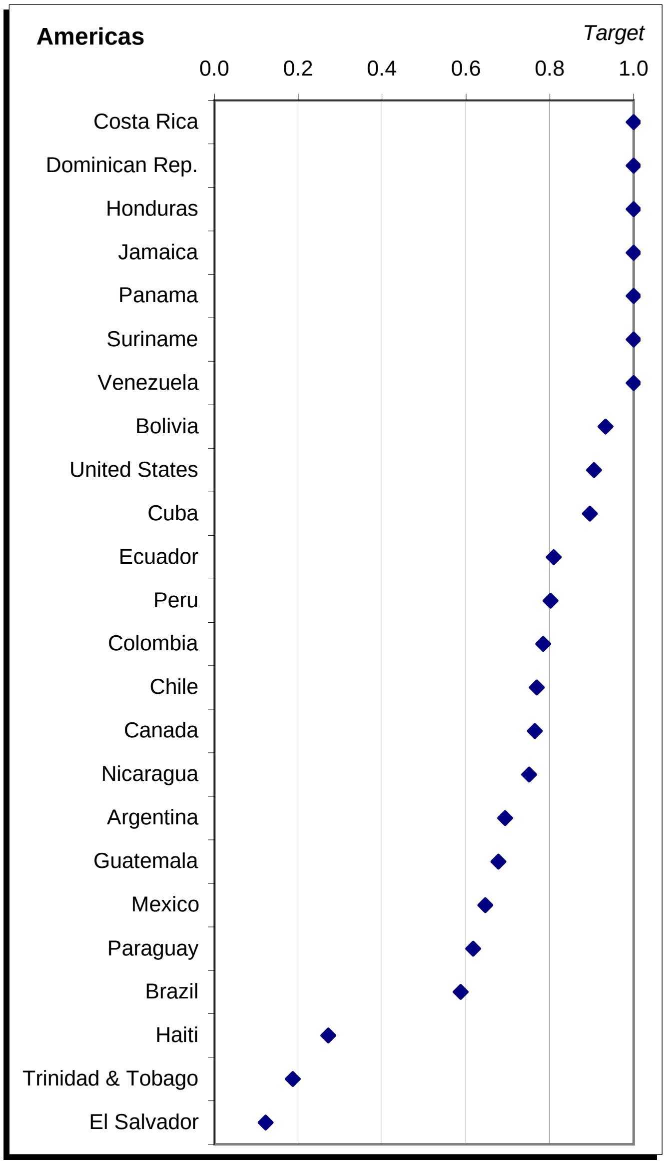

Other Eastern Europe & Central Asia
Target
0 10 20 30 40 50 60 70 80 90
Kyrgyzstan
Tajikistan
Romania
Azerbaijan
Russia
Bulgaria
Uzbekistan
Ukraine
Kazakhstan
Georgia
Moldova
Turkmenistan
Albania

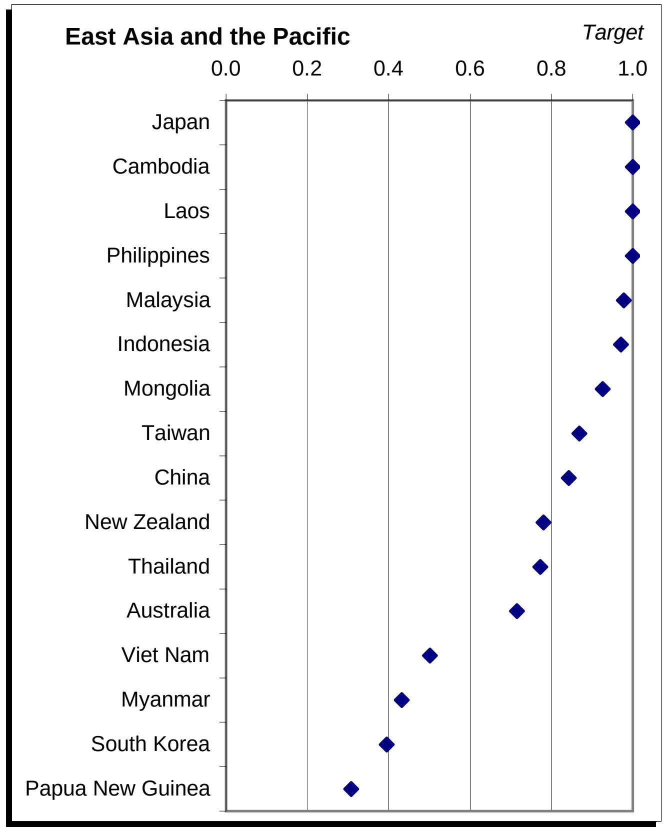

Sub-Saharan Africa
Target
0 15 30 45 60 75 90
Burkina Faso
Benin
Uganda
Zambia
Malawi
Côte d'Ivoire
Zimbabwe
Tanzania
Namibia
Togo
Central Afr. Rep.
Congo
Rwanda
Senegal
Guinea-Bissau
Cameroon
Burundi
Kenya
Dem. Rep. Congo
Nigeria
Liberia
Ethiopia
Guinea
Mozambique
South Africa
Sierra Leone
Angola
Ghana
Chad
Sudan
Madagascar
Gabon
Niger
Mali
Swaziland
Gambia
Mauritania

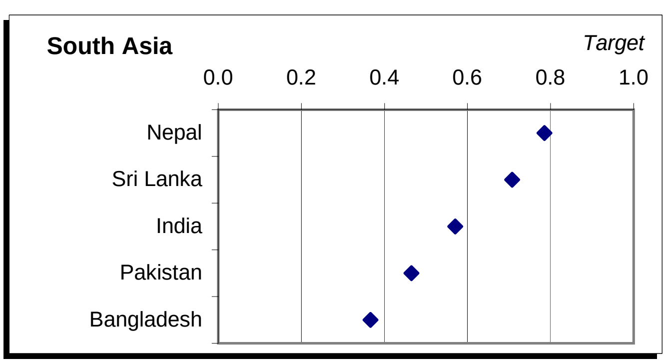
Proximity-to-Target, by Geographic Peer Group

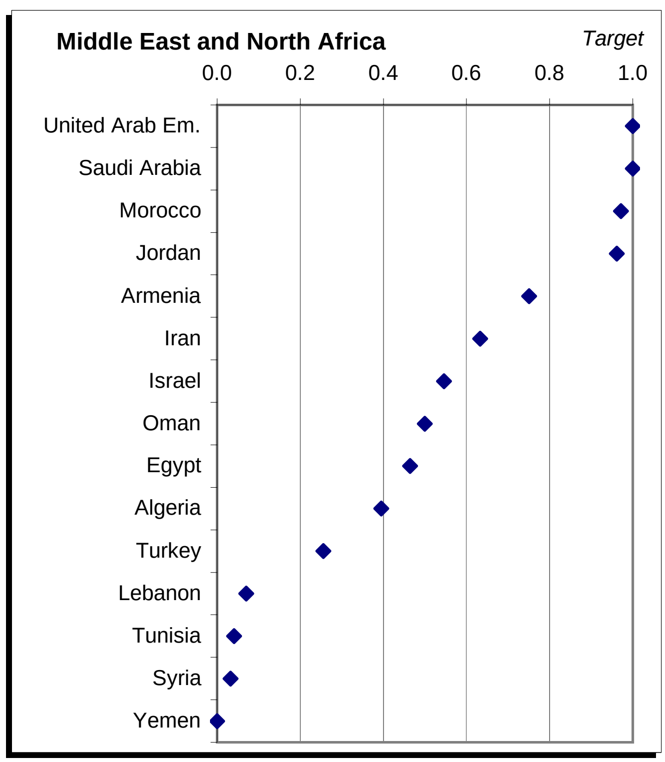
PACOV

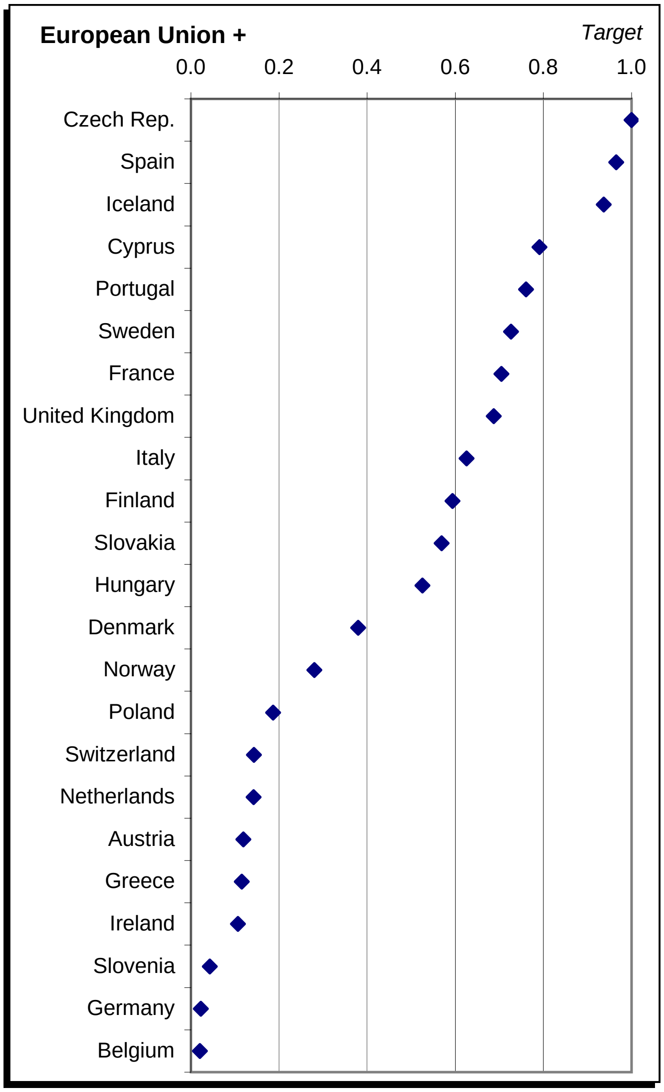
Ecoregion Protection, score 0 (0% of all biomes protected) to 1 (10% of all biomes protected)

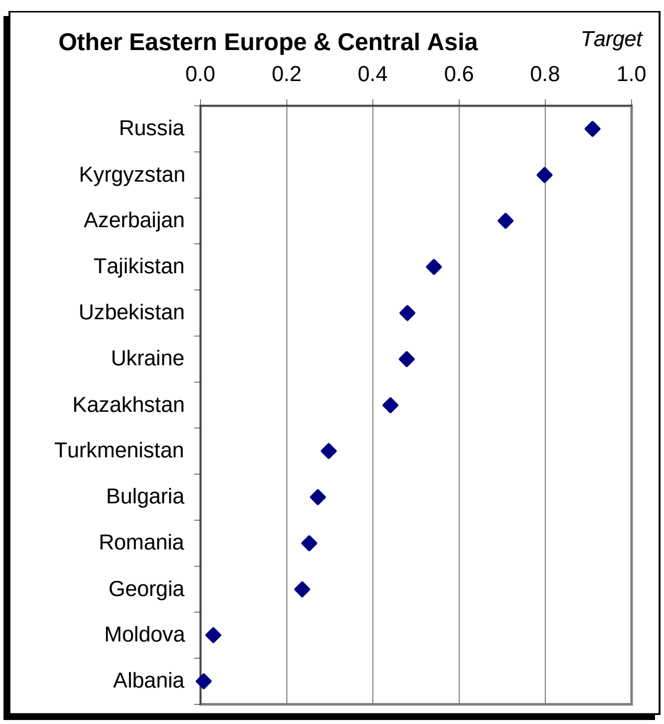


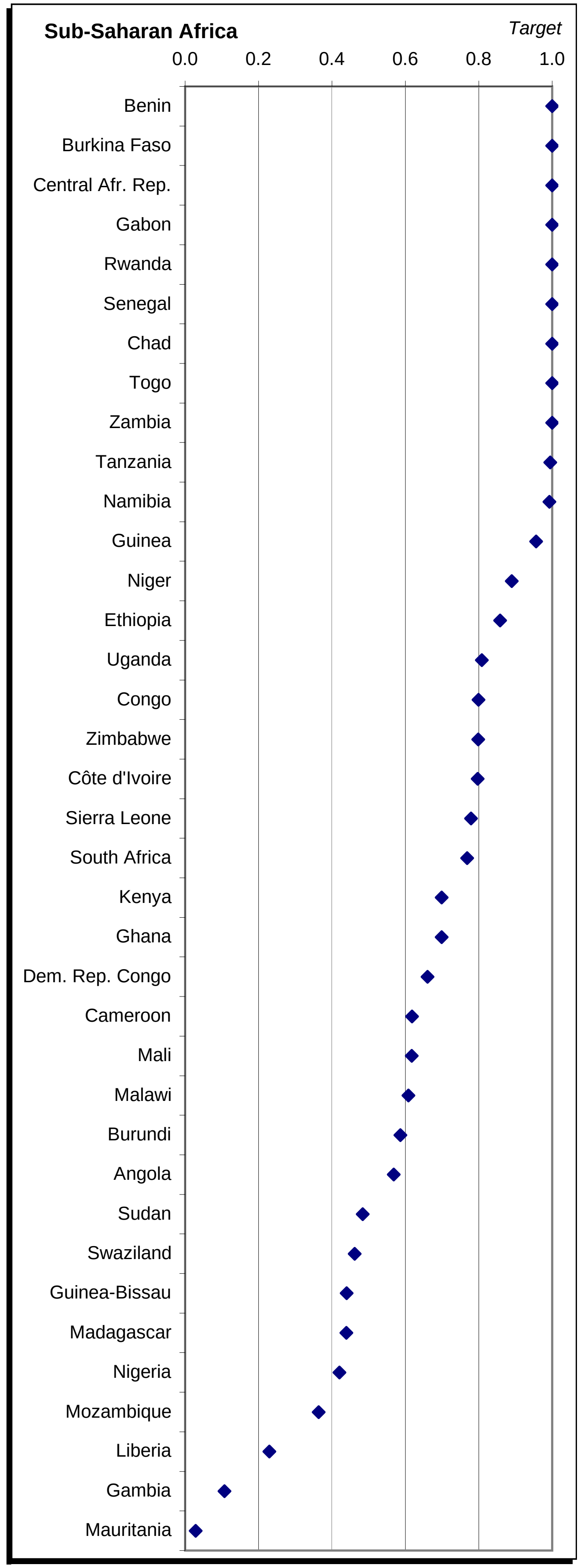






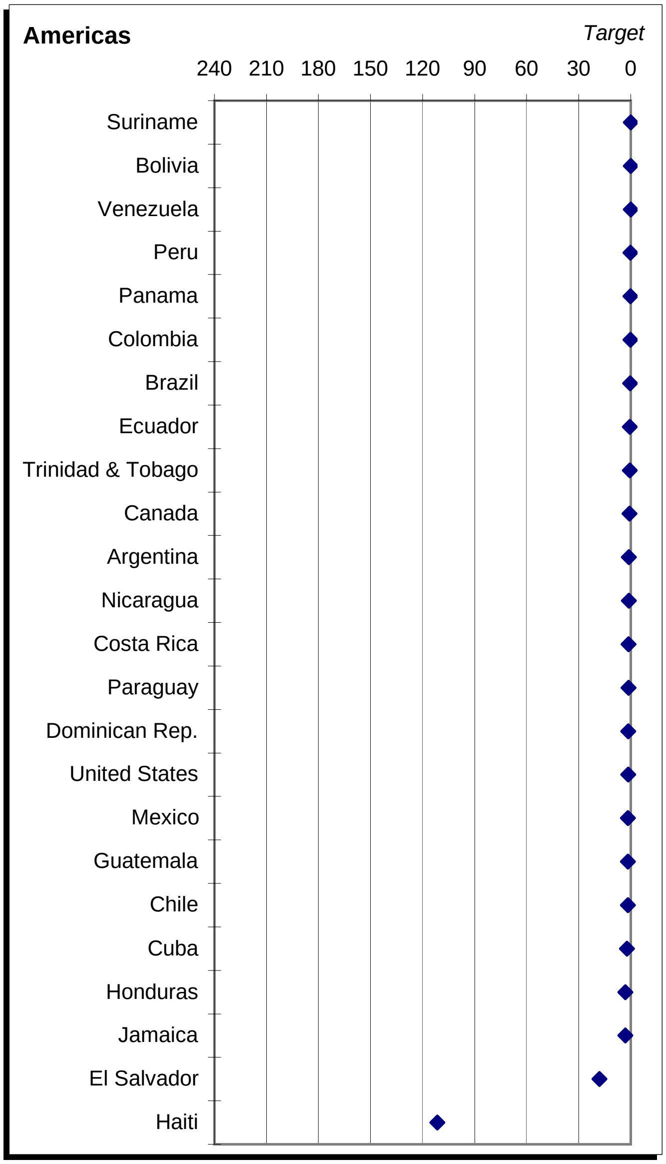

European Union +
Target
0.0
0.2
0.4
0.6
0.8
1.0
Czech Rep.
Spain
Iceland
Cyprus
Portugal
Sweden
France
United Kingdom
Italy
Finland
Slovakia
Hungary
Denmark
Norway
Poland
Switzerland
Netherlands
Austria
Greece
Ireland
Slovenia
Germany
Belgium

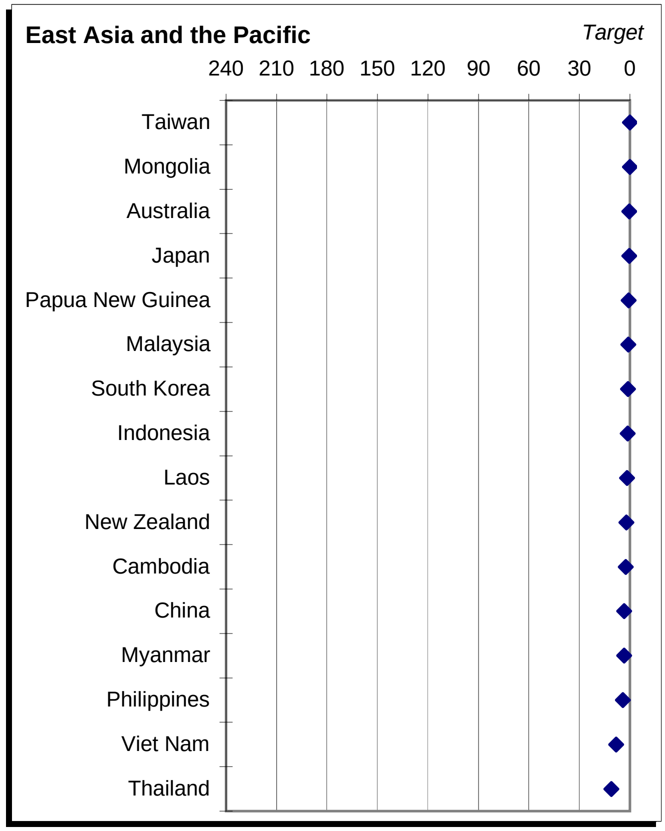

Other Eastern Europe & Central Asia
Target
0.0
0.2
0.4
0.6
0.8
1.0
Russia
Kyrgyzstan
Azerbaijan
Tajikistan
Uzbekistan
Ukraine
Kazakhstan
Turkmenistan
Bulgaria
Romania
Georgia
Moldova
Albania

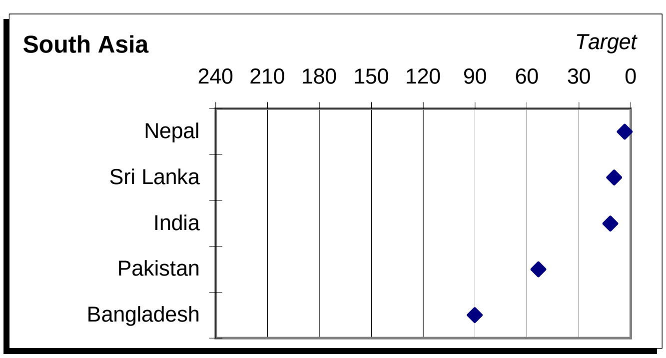

Sub-Saharan Africa
Target
0.0
0.2
0.4
0.6
0.8
1.0
Benin
Burkina Faso
Central Afr. Rep.
Gabon
Rwanda
Senegal
Chad
Togo
Zambia
Tanzania
Namibia
Guinea
Niger
Ethiopia
Uganda
Congo
Zimbabwe
Côte d'Ivoire
Sierra Leone
South Africa
Kenya
Ghana
Dem. Rep. Congo
Cameroon
Mali
Malawi
Burundi
Angola
Sudan
Swaziland
Guinea-Bissau
Madagascar
Nigeria
Mozambique
Liberia
Gambia
Mauritania

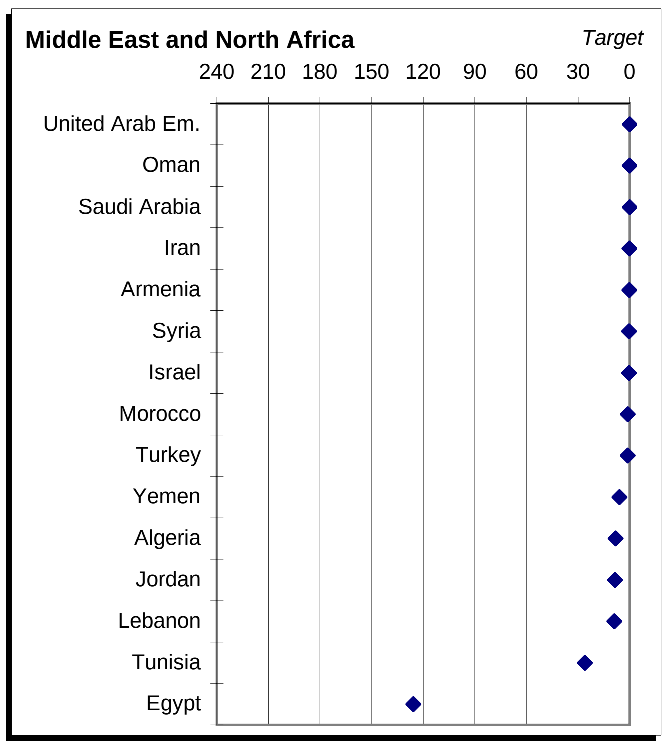
HARVEST

Timber Harvest Rate, percentage of standing forests

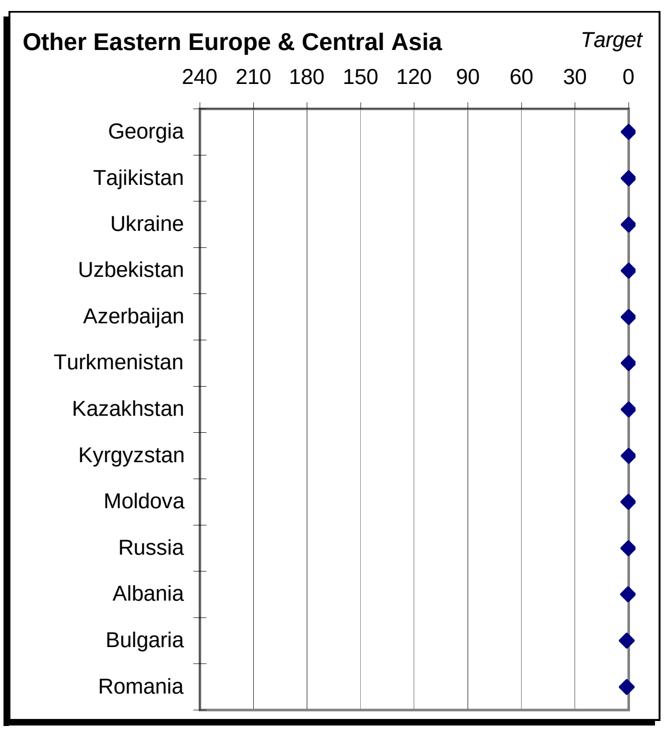


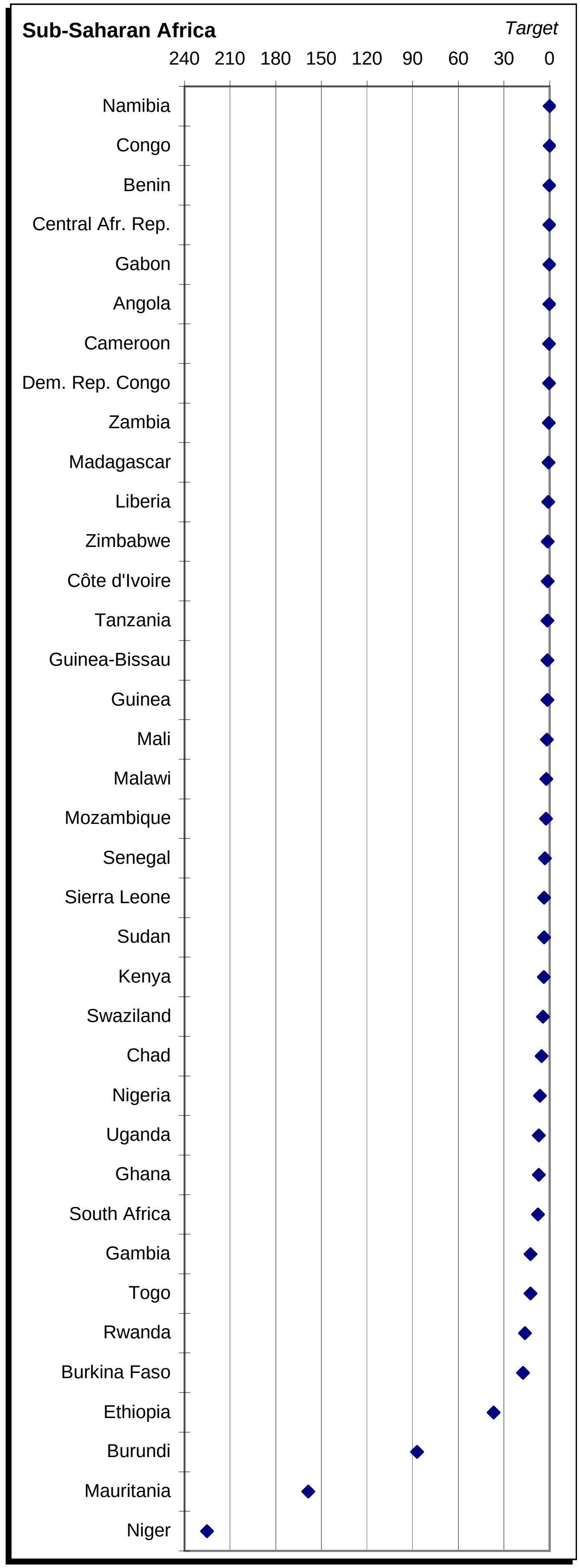






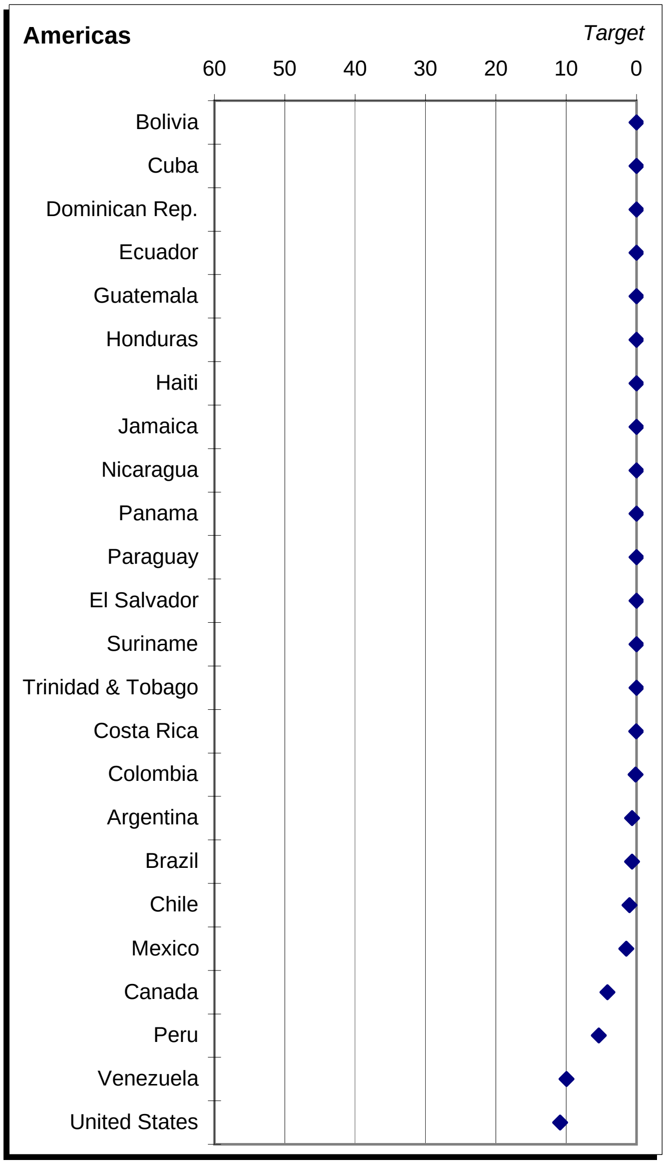

European Union +
Target
240 210 180 150 120 90 60 30 0
Iceland
Cyprus
Italy
Slovenia
Greece
Norway
Switzerland
France
Slovakia
Austria
Poland
Netherlands
Hungary
Germany
United Kingdom
Czech Rep.
Sweden
Spain
Finland
Denmark
Belgium
Portugal
Ireland

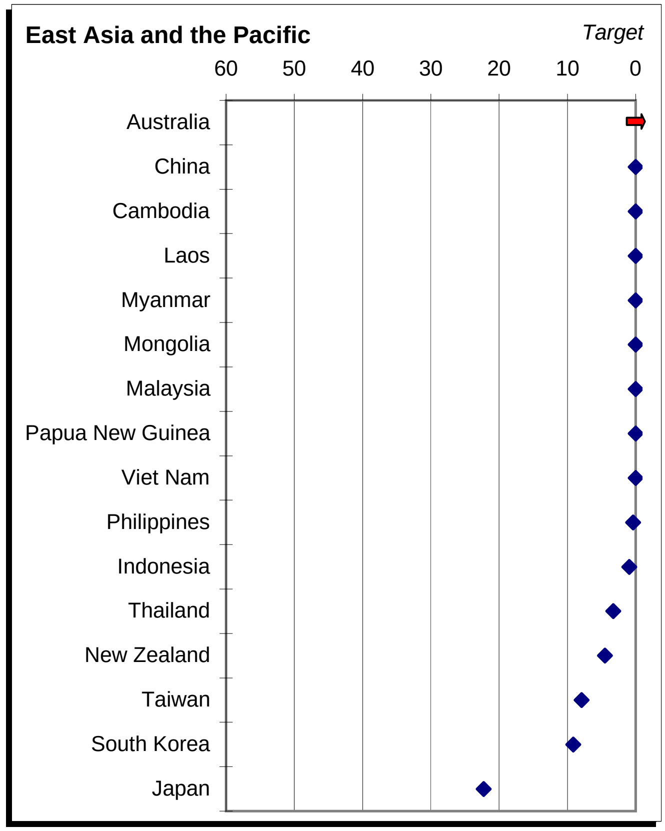

Other Eastern Europe & Central Asia
Target
240 210 180 150 120 90 60 30 0
Georgia
Tajikistan
Ukraine
Uzbekistan
Azerbaijan
Turkmenistan
Kazakhstan
Kyrgyzstan
Moldova
Russia
Albania
Bulgaria
Romania

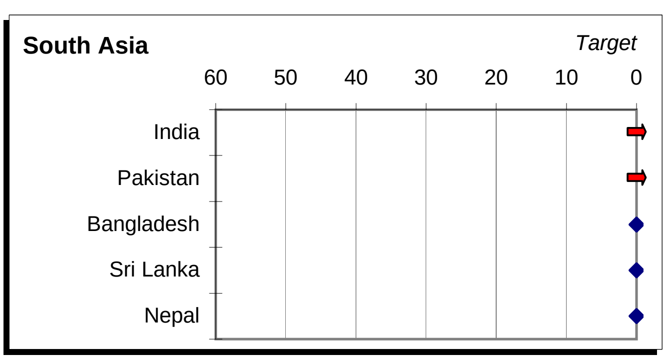

Sub-Saharan Africa
Target
240 210 180 150 120 90 60 30 0
Namibia
Congo
Benin
Central Afr. Rep.
Gabon
Angola
Cameroon
Dem. Rep. Congo
Zambia
Madagascar
Liberia
Zimbabwe
Côte d'Ivoire
Tanzania
Guinea-Bissau
Guinea
Mali
Malawi
Mozambique
Senegal
Sierra Leone
Sudan
Kenya
Swaziland
Chad
Nigeria
Uganda
Ghana
South Africa
Gambia
Togo
Rwanda
Burkina Faso
Ethiopia
Burundi
Mauritania
Niger

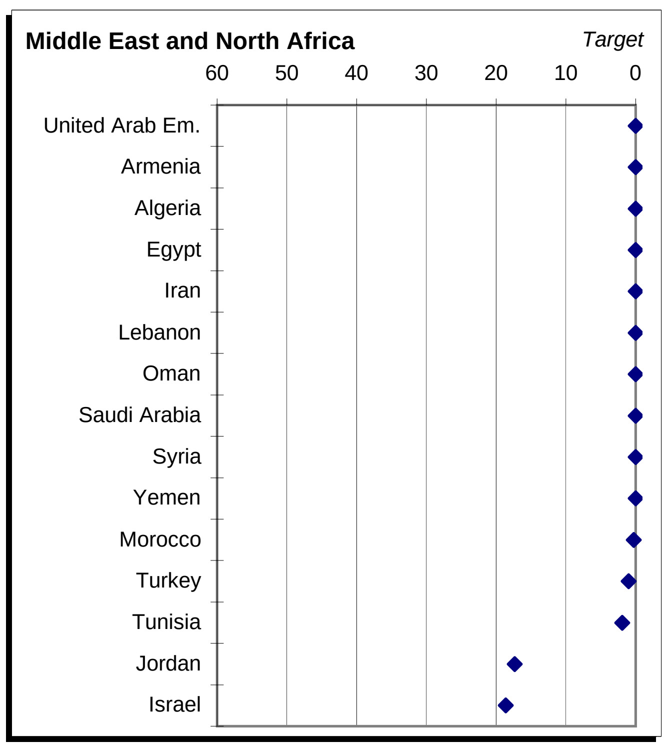
AGSUB

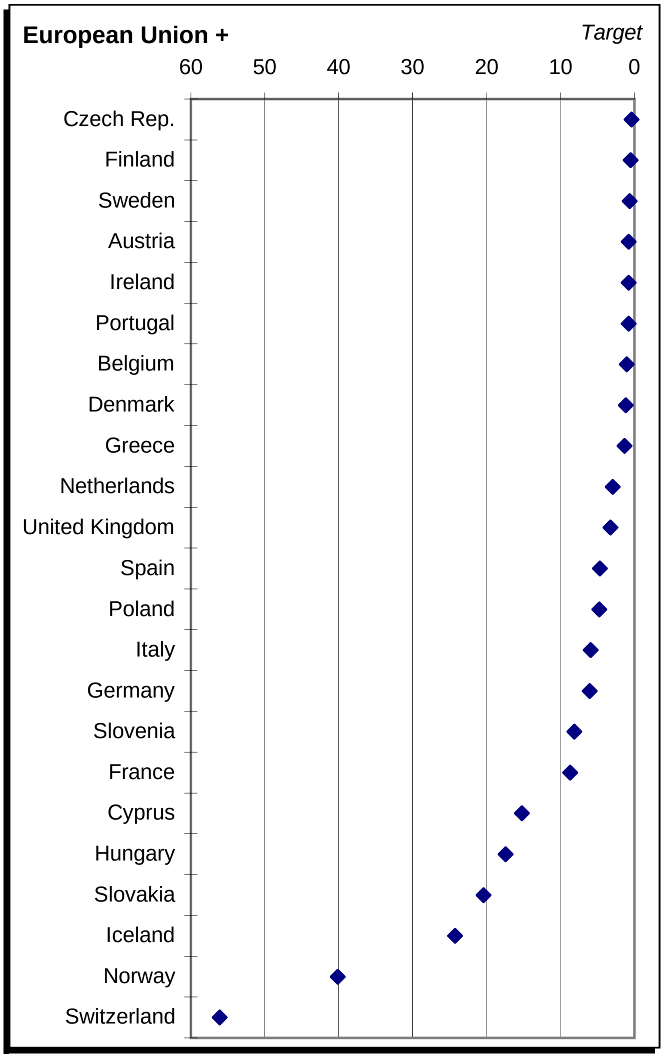
Agricultural Subsidies, percentage of agricultural GDP

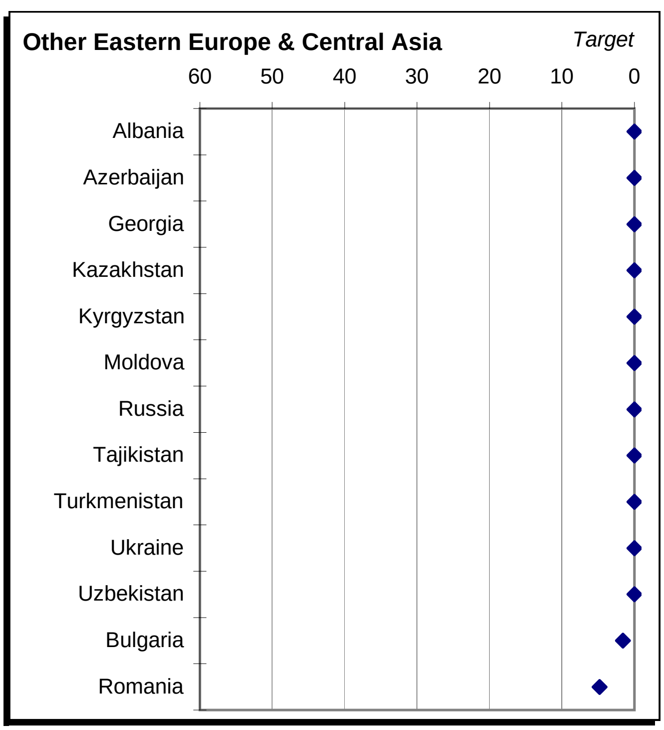


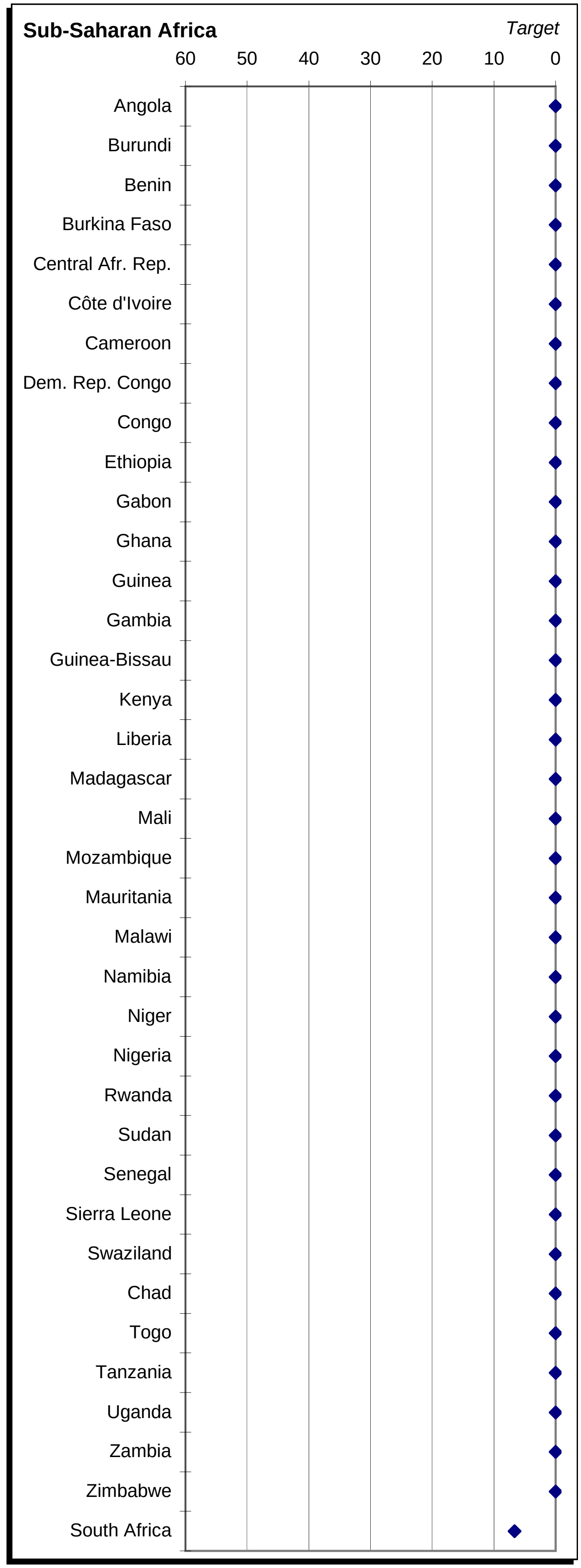






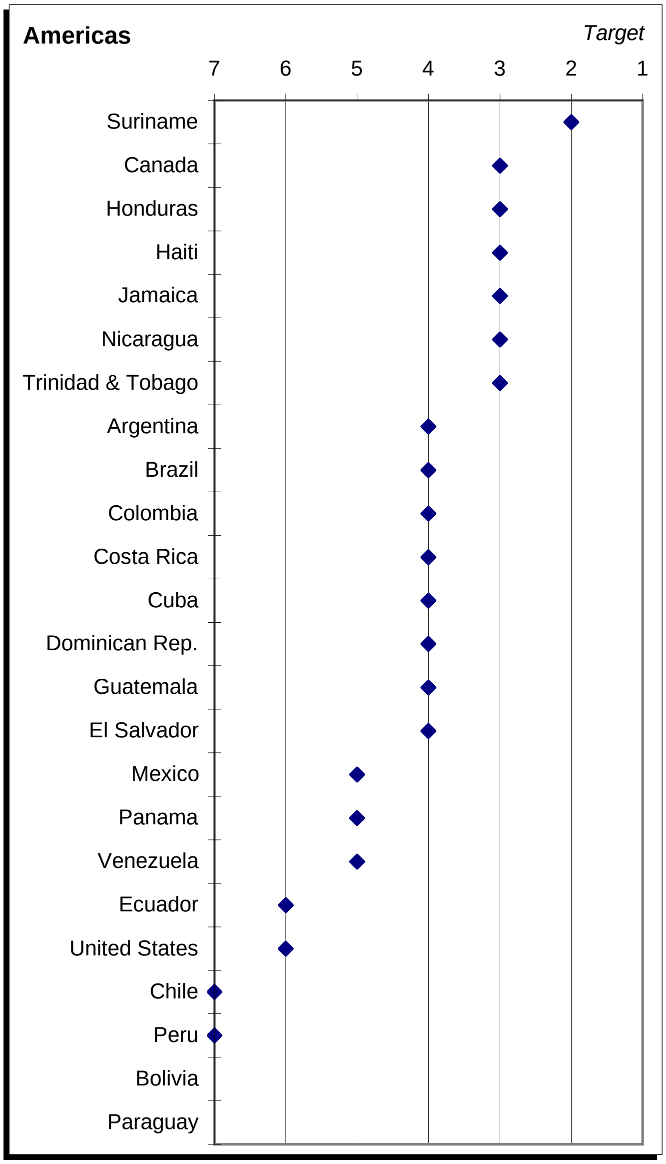

European Union +
Target
60
50
40
30
20
10
0
Czech Rep.
Finland
Sweden
Austria
Ireland
Portugal
Belgium
Denmark
Greece
Netherlands
United Kingdom
Spain
Poland
Italy
Germany
Slovenia
France
Cyprus
Hungary
Slovakia
Iceland
Norway
Switzerland

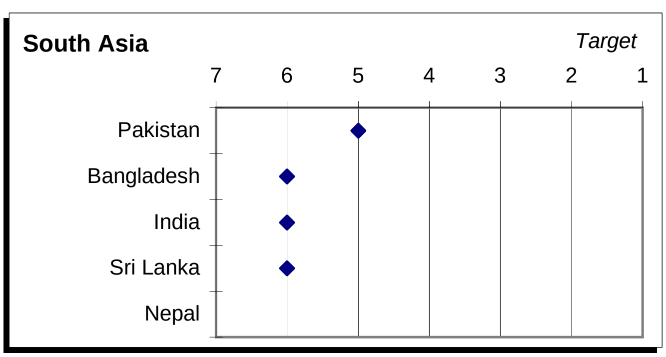

Other Eastern Europe & Central Asia
Target
60
50
40
30
20
10
0
Albania
Azerbaijan
Georgia
Kazakhstan
Kyrgyzstan
Moldova
Russia
Tajikistan
Turkmenistan
Ukraine
Uzbekistan
Bulgaria
Romania

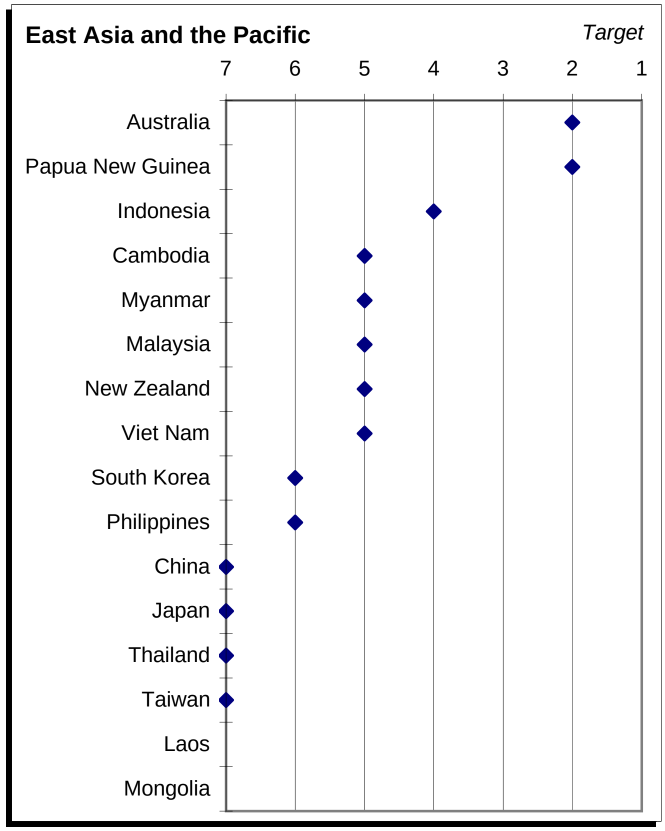

Sub-Saharan Africa
Target
60
50
40
30
20
10
0
Angola
Burundi
Benin
Burkina Faso
Central Afr. Rep.
Côte d'Ivoire
Cameroon
Dem. Rep. Congo
Congo
Ethiopia
Gabon
Ghana
Guinea
Gambia
Guinea-Bissau
Kenya
Liberia
Madagascar
Mali
Mozambique
Mauritania
Malawi
Namibia
Niger
Nigeria
Rwanda
Sudan
Senegal
Sierra Leone
Swaziland
Chad
Togo
Tanzania
Uganda
Zambia
Zimbabwe
South Africa

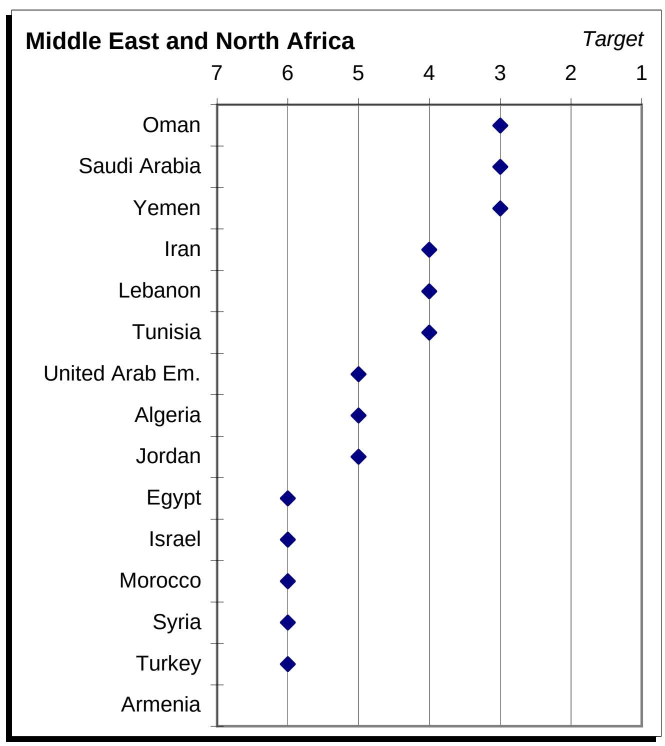
OVRFSH

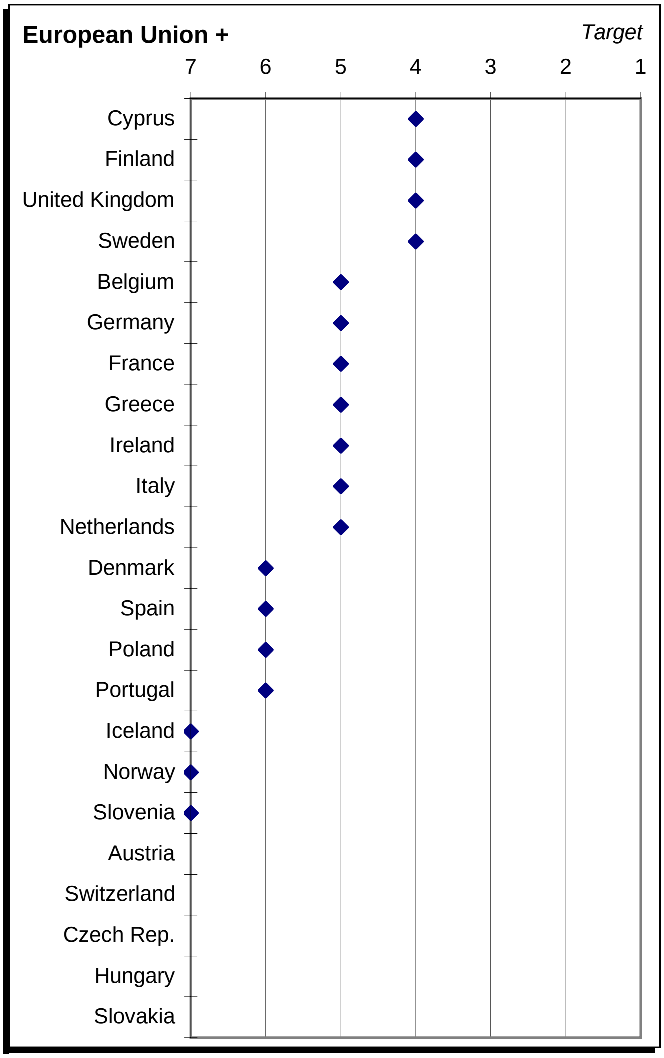
Overfishing, score of 1 (no overfishing) to 7 (overfishing)

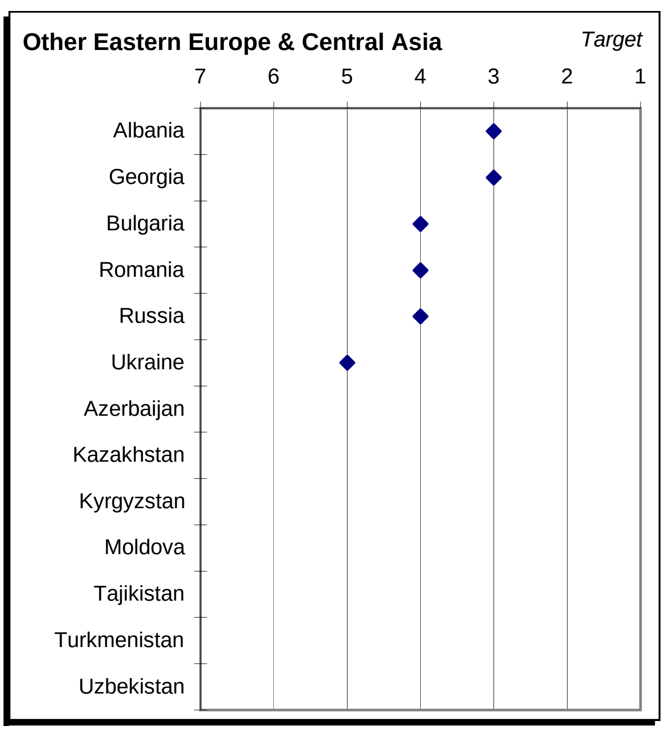


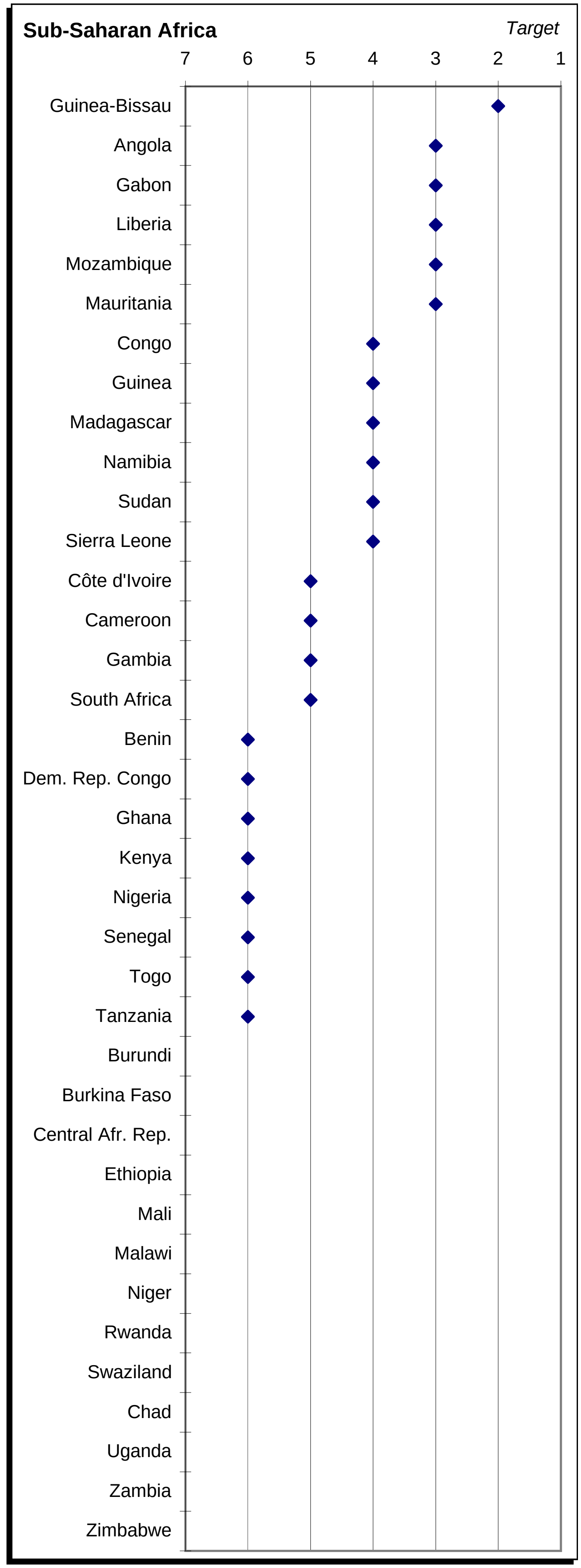






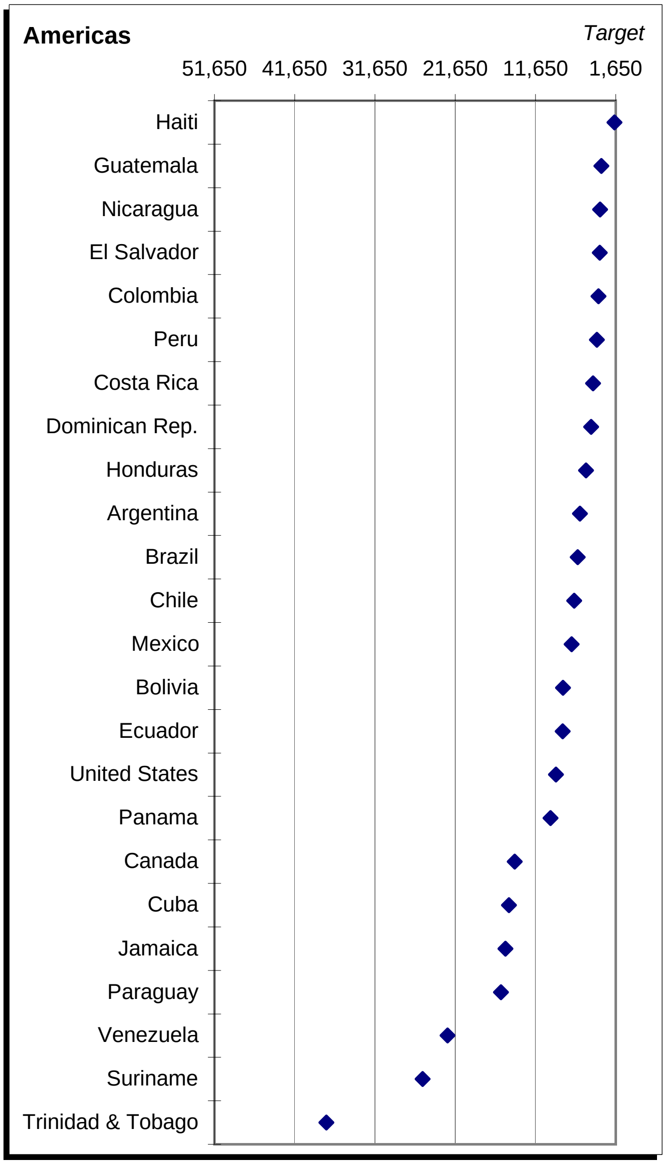

European Union +
Target
7
6
5
4
3
2
1
Cyprus
Finland
United Kingdom
Sweden
Belgium
Germany
France
Greece
Ireland
Italy
Netherlands
Denmark
Spain
Poland
Portugal
Iceland
Norway
Slovenia
Austria
Switzerland
Czech Rep.
Hungary
Slovakia

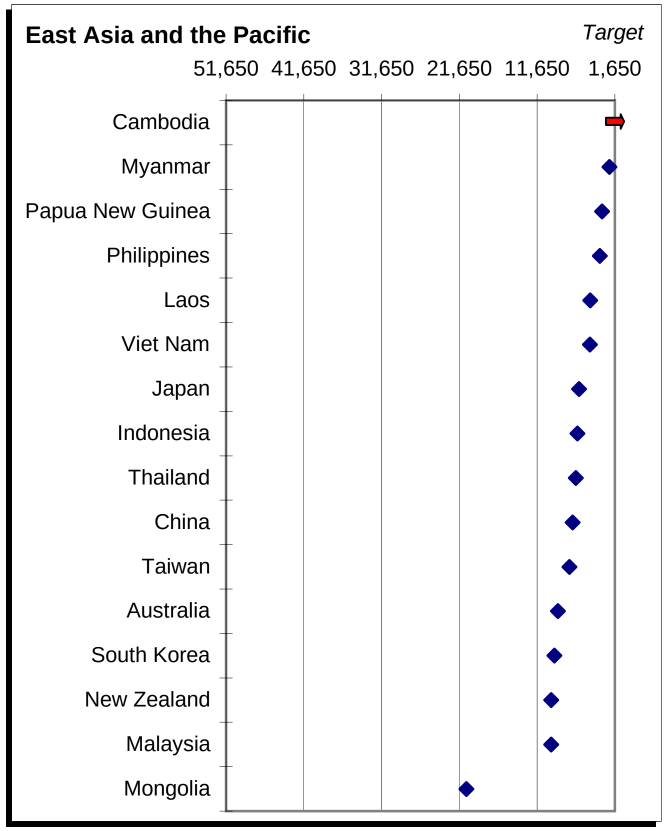

Other Eastern Europe & Central Asia
Target
7
6
5
4
3
2
1
Albania
Georgia
Bulgaria
Romania
Russia
Ukraine
Azerbaijan
Kazakhstan
Kyrgyzstan
Moldova
Tajikistan
Turkmenistan
Uzbekistan

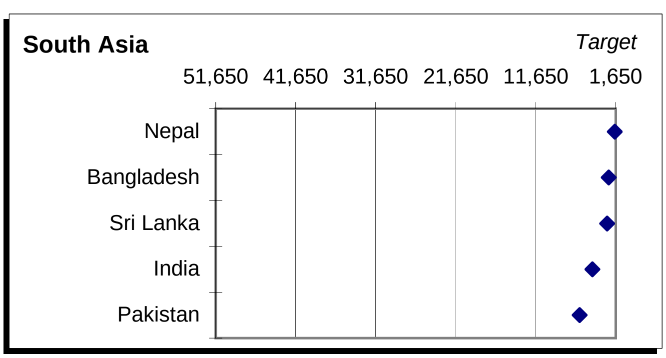

Sub-Saharan Africa
Target
7
6
5
4
3
2
1
Guinea-Bissau
Angola
Gabon
Liberia
Mozambique
Mauritania
Congo
Guinea
Madagascar
Namibia
Sudan
Sierra Leone
Côte d'Ivoire
Cameroon
Gambia
South Africa
Benin
Dem. Rep. Congo
Ghana
Kenya
Nigeria
Senegal
Togo
Tanzania
Burundi
Burkina Faso
Central Afr. Rep.
Ethiopia
Mali
Malawi
Niger
Rwanda
Swaziland
Chad
Uganda
Zambia
Zimbabwe

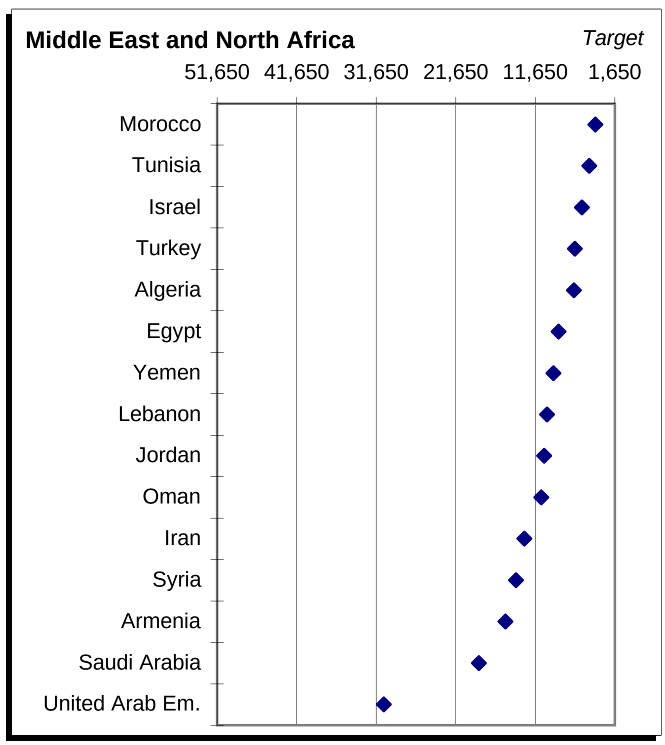
ENEFF

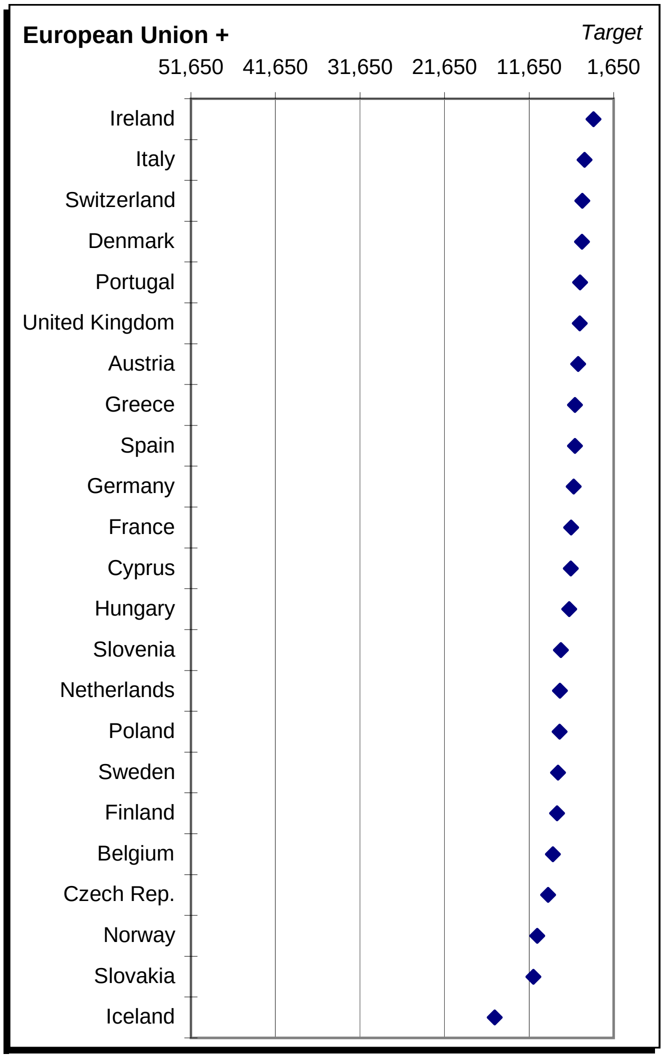
Energy Efficiency, Terajoules per million $ GDP (PPP)

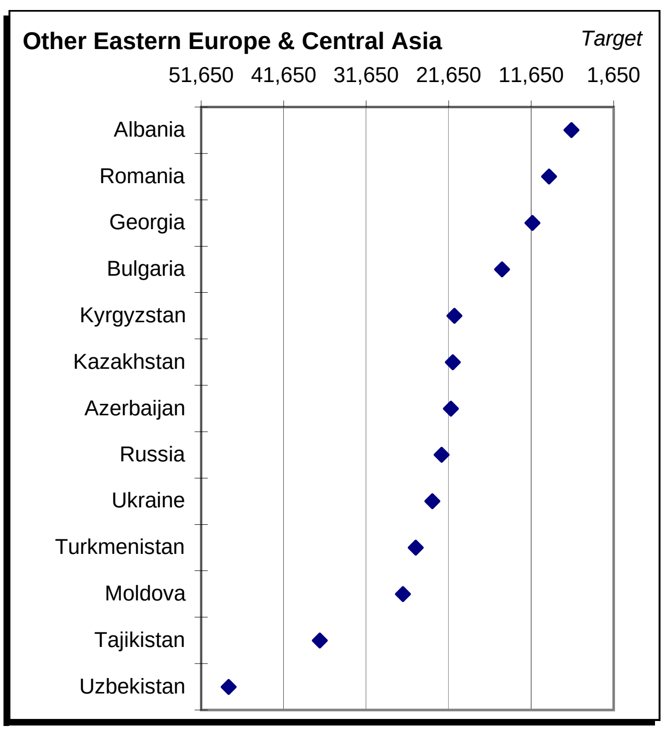


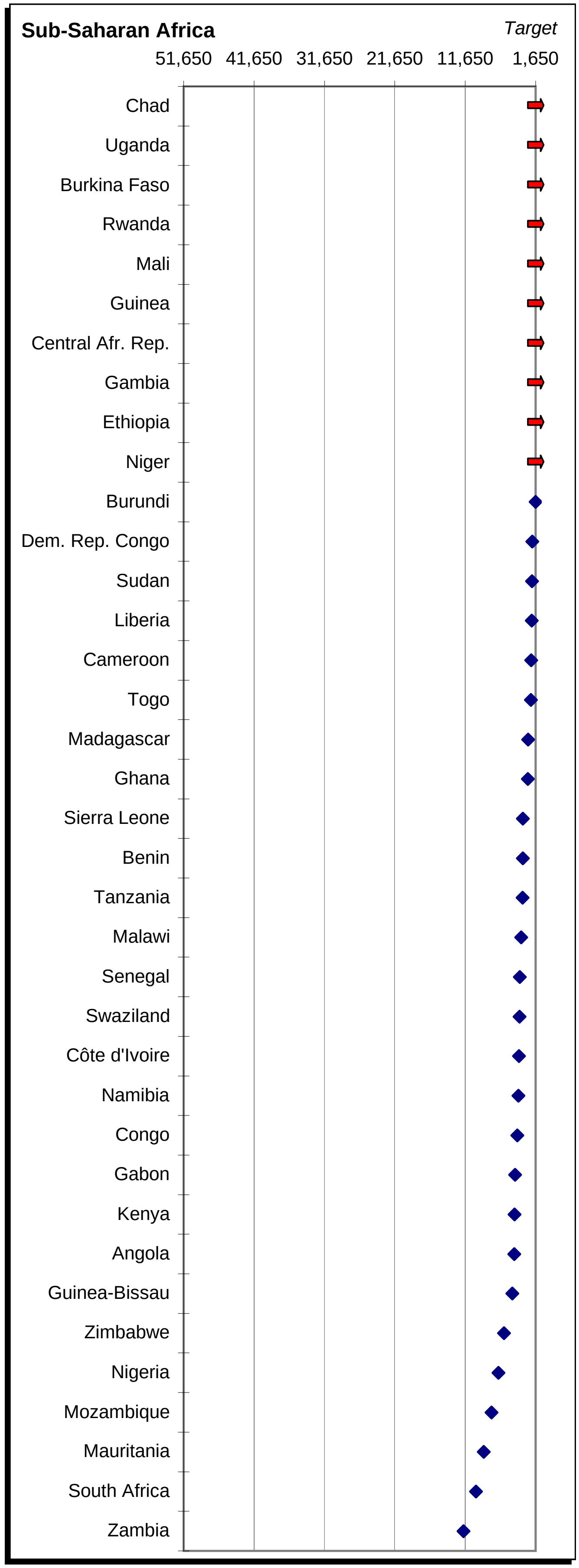






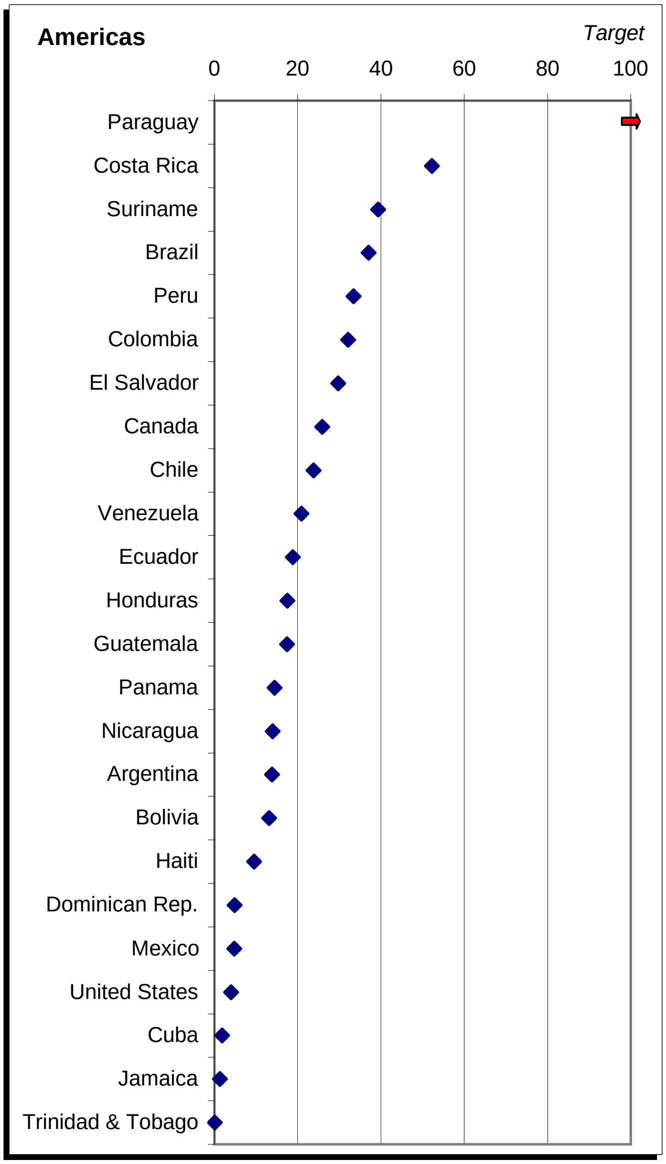

European Union +
Target
51,650
41,650
31,650
21,650
11,650
1,650
Ireland
Italy
Switzerland
Denmark
Portugal
United Kingdom
Austria
Greece
Spain
Germany
France
Cyprus
Hungary
Slovenia
Netherlands
Poland
Sweden
Finland
Belgium
Czech Rep.
Norway
Slovakia
Iceland

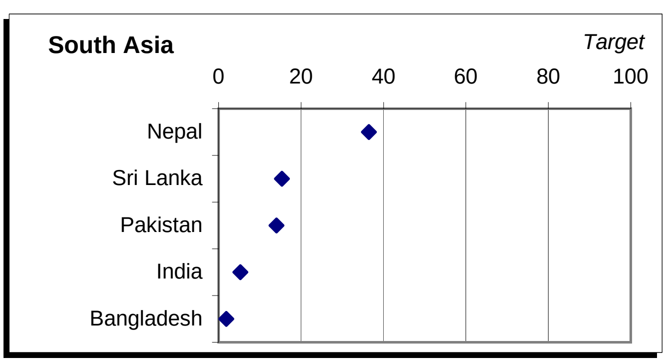

Other Eastern Europe & Central Asia
Target
51,650
41,650
31,650
21,650
11,650
1,650
Albania
Romania
Georgia
Bulgaria
Kyrgyzstan
Kazakhstan
Azerbaijan
Russia
Ukraine
Turkmenistan
Moldova
Tajikistan
Uzbekistan

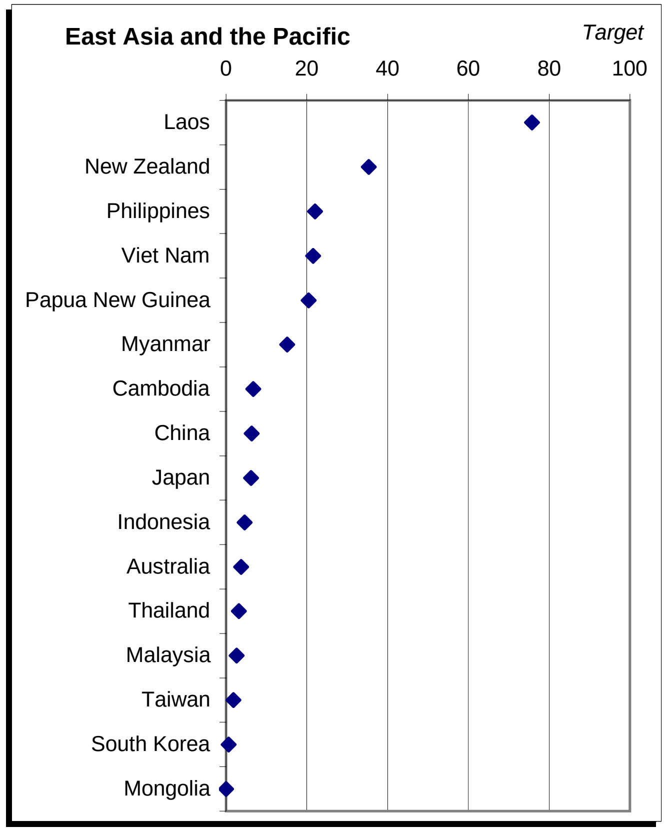

Sub-Saharan Africa
Target
51,650
41,650
31,650
21,650
11,650
1,650
Chad
Uganda
Burkina Faso
Rwanda
Mali
Guinea
Central Afr. Rep.
Gambia
Ethiopia
Niger
Burundi
Dem. Rep. Congo
Sudan
Liberia
Cameroon
Togo
Madagascar
Ghana
Sierra Leone
Benin
Tanzania
Malawi
Senegal
Swaziland
Côte d'Ivoire
Namibia
Congo
Gabon
Kenya
Angola
Guinea-Bissau
Zimbabwe
Nigeria
Mozambique
Mauritania
South Africa
Zambia

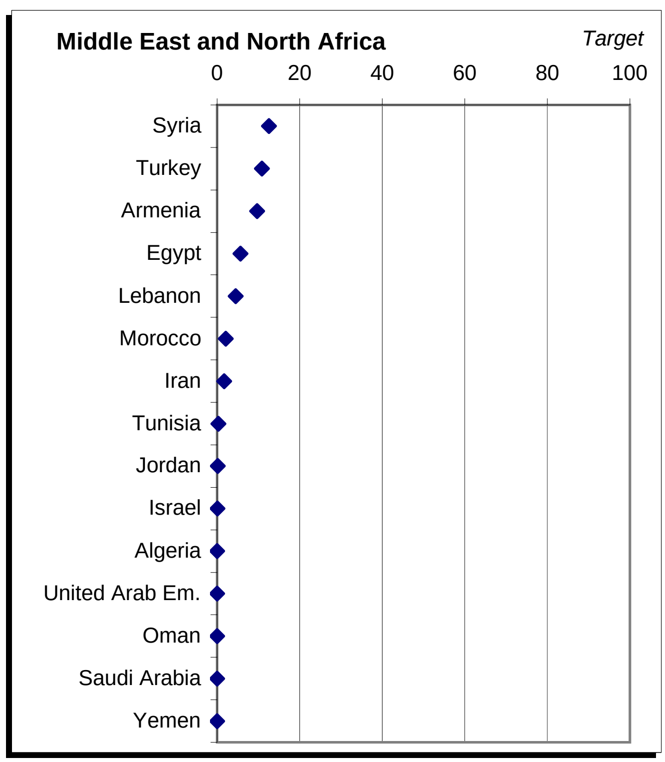
RENPC

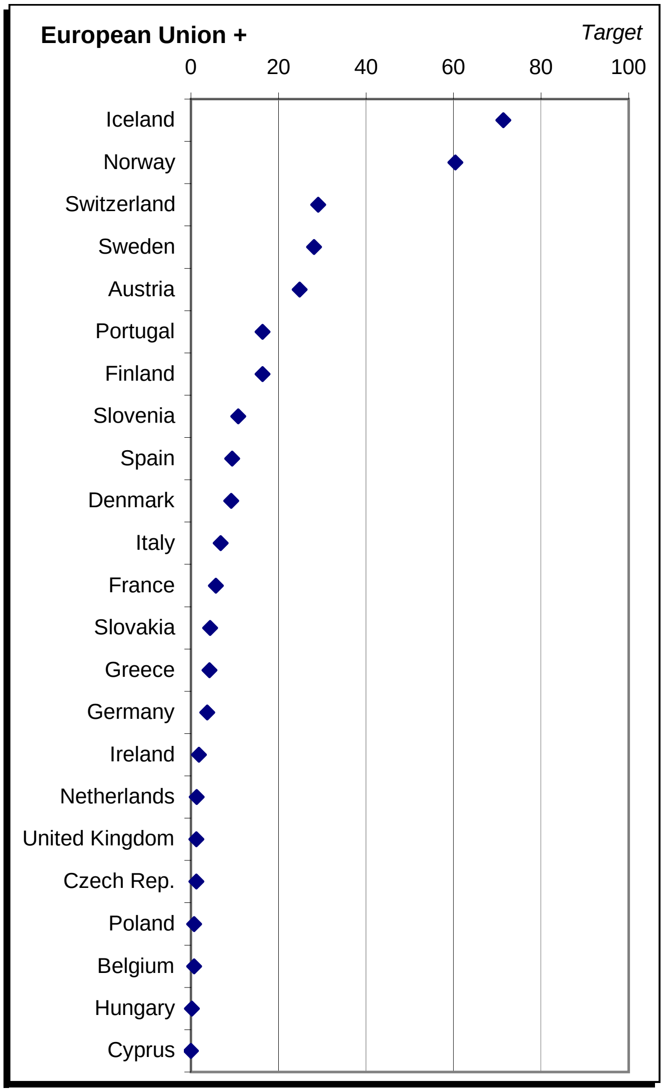
Renewable Energy, percentage of total energy consumption

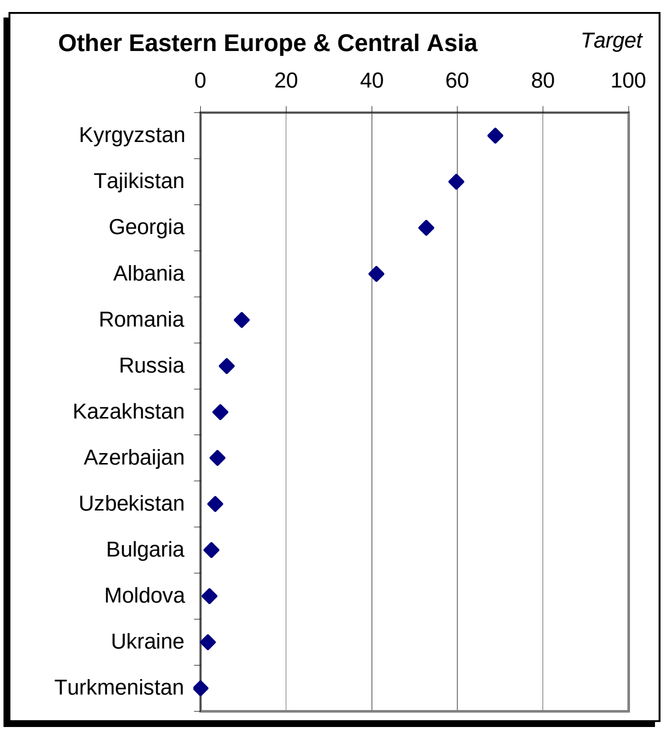


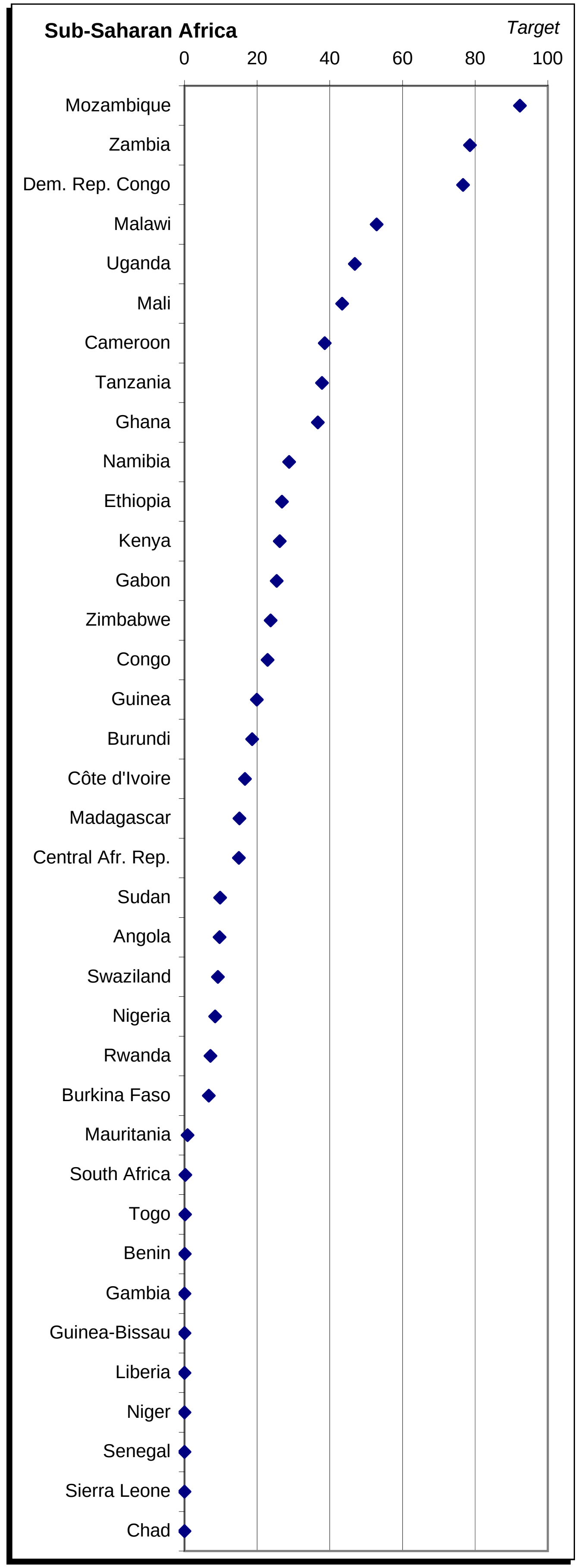






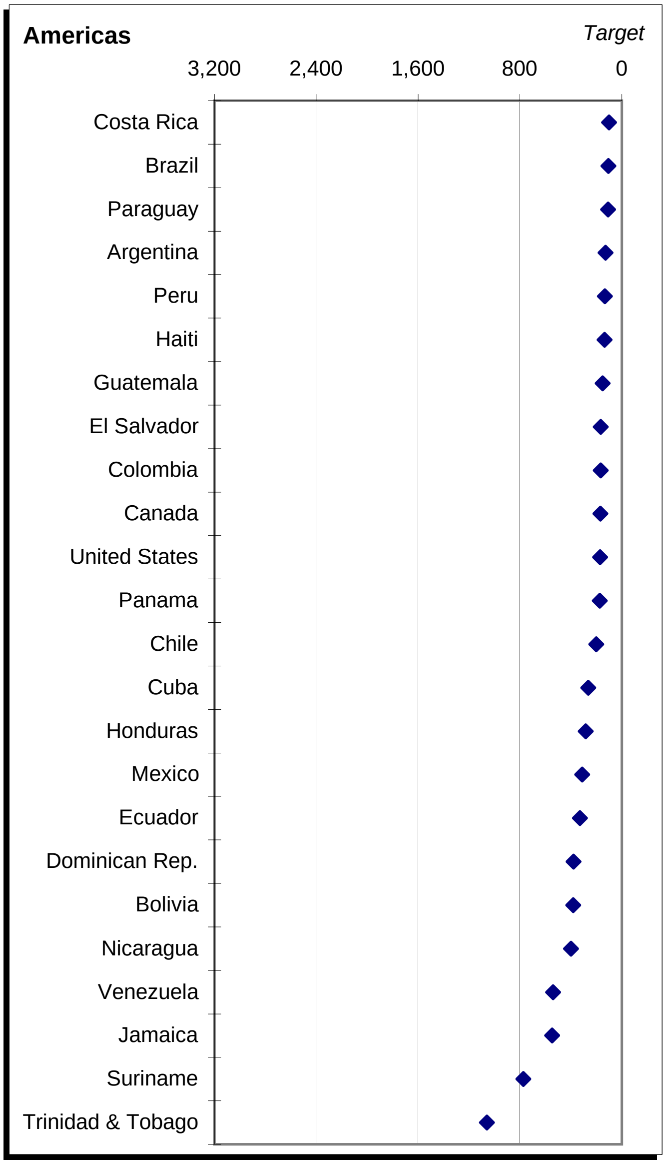

European Union +
Target
0
20
40
60
80
100
Iceland
Norway
Switzerland
Sweden
Austria
Portugal
Finland
Slovenia
Spain
Denmark
Italy
France
Slovakia
Greece
Germany
Ireland
Netherlands
United Kingdom
Czech Rep.
Poland
Belgium
Hungary
Cyprus

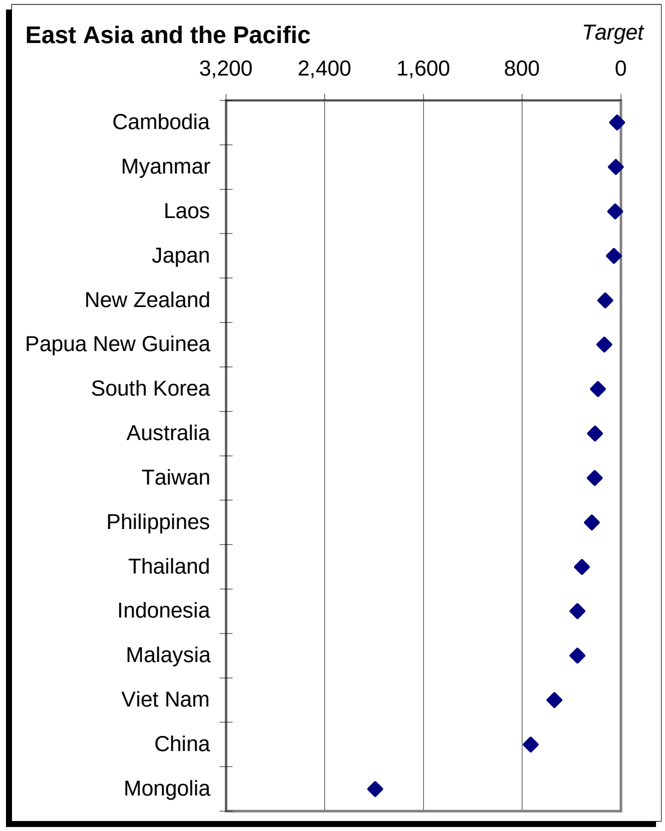

Other Eastern Europe & Central Asia
Target
0
20
40
60
80
100
Kyrgyzstan
Tajikistan
Georgia
Albania
Romania
Russia
Kazakhstan
Azerbaijan
Uzbekistan
Bulgaria
Moldova
Ukraine
Turkmenistan

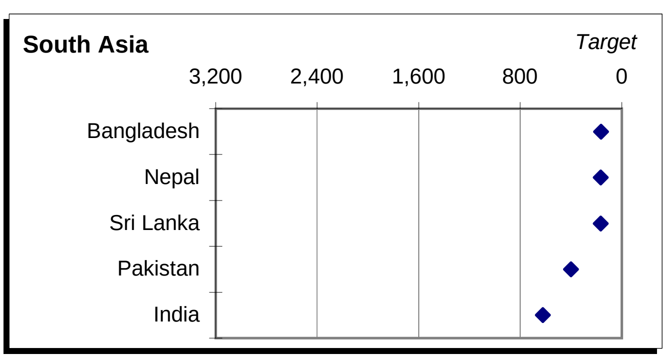

Sub-Saharan Africa
Target
0
20
40
60
80
100
Mozambique
Zambia
Dem. Rep. Congo
Malawi
Uganda
Mali
Cameroon
Tanzania
Ghana
Namibia
Ethiopia
Kenya
Gabon
Zimbabwe
Congo
Guinea
Burundi
Côte d'Ivoire
Madagascar
Central Afr. Rep.
Sudan
Angola
Swaziland
Nigeria
Rwanda
Burkina Faso
Mauritania
South Africa
Togo
Benin
Gambia
Guinea-Bissau
Liberia
Niger
Senegal
Sierra Leone
Chad

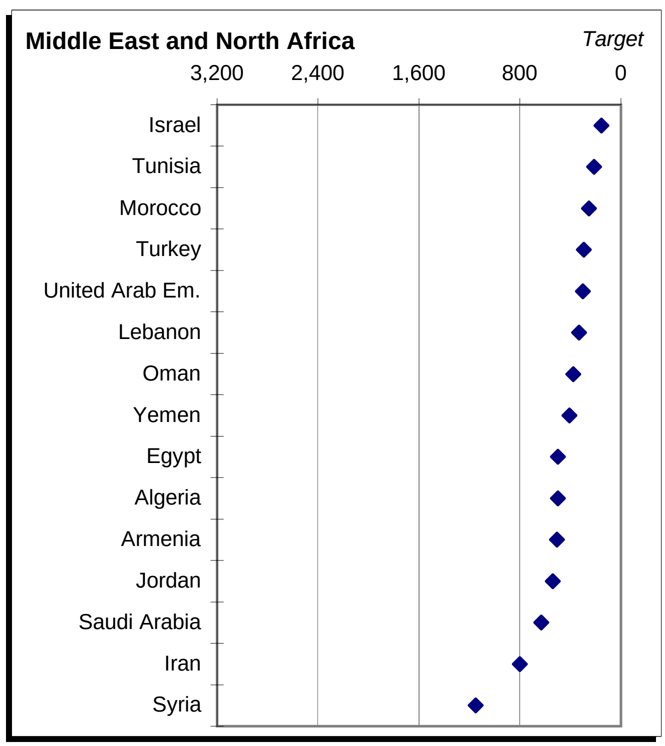
CO2GDP

CO_2 per GDP, emissions per GDP (PPP)

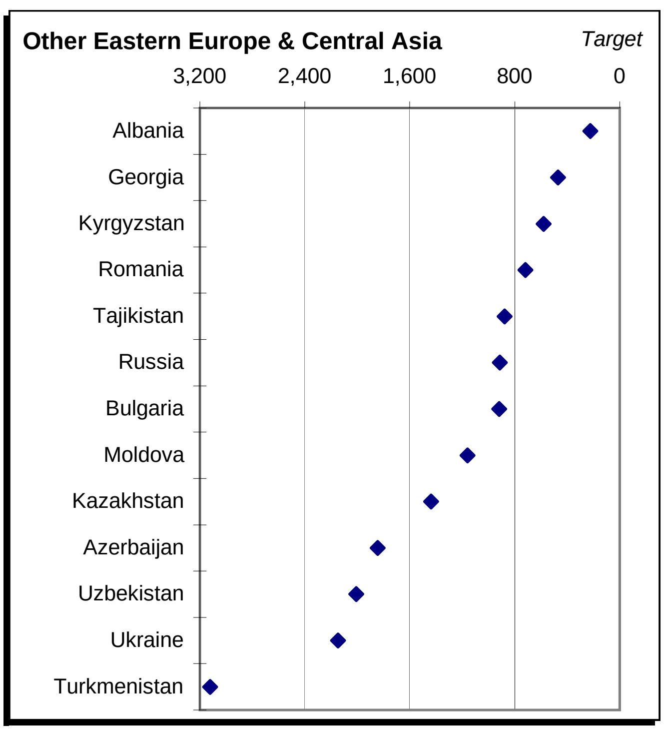


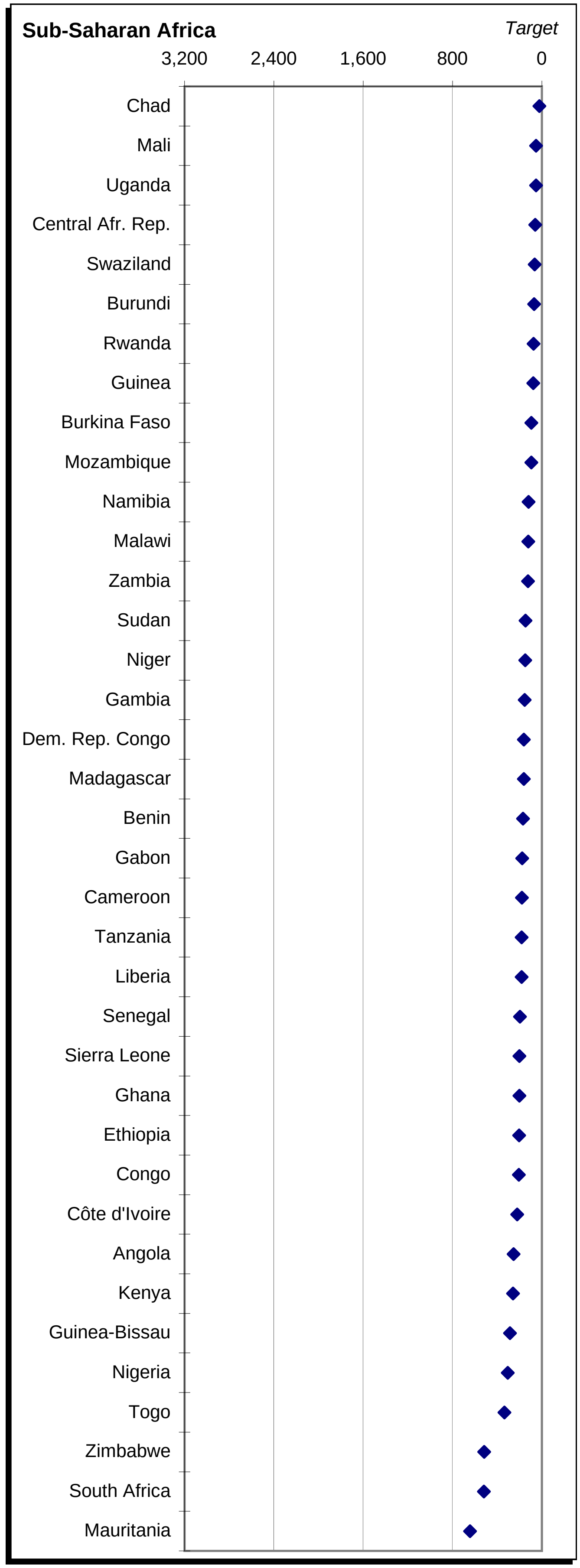




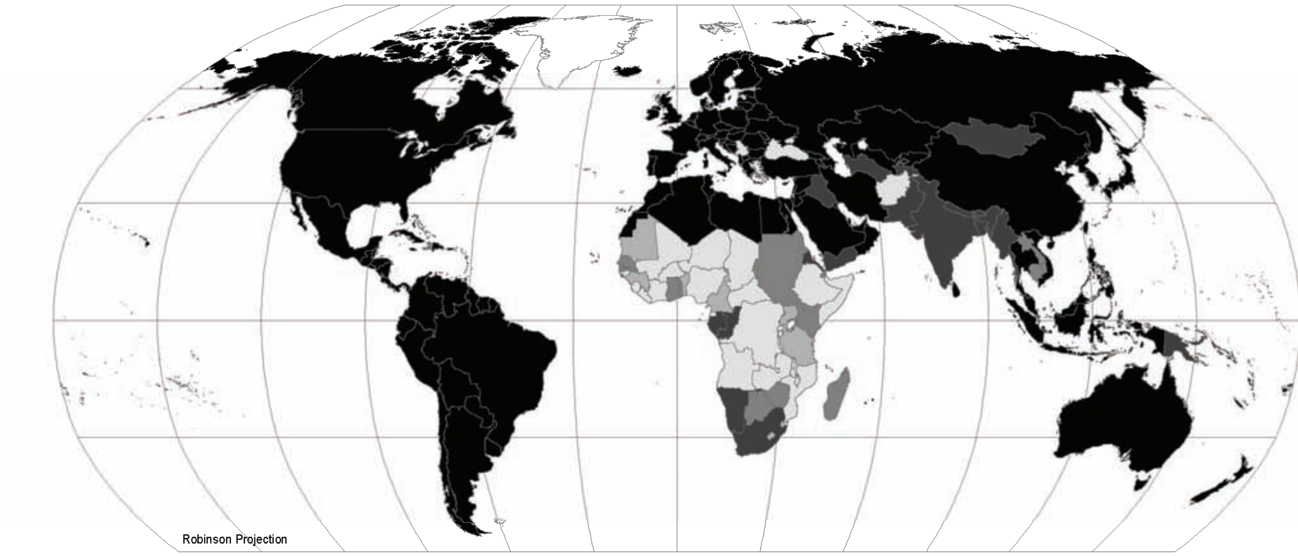



European Union +
Target
3,200
2,400
1,600
800
0
Switzerland
Sweden
France
Denmark
Austria
Iceland
Netherlands
Norway
Germany
Belgium
Finland
Italy
Ireland
Spain
United Kingdom
Portugal
Cyprus
Slovenia
Greece
Hungary
Slovakia
Poland
Czech Rep.


Other Eastern Europe & Central Asia
Target
3,200
2,400
1,600
800
0
Albania
Georgia
Kyrgyzstan
Romania
Tajikistan
Russia
Bulgaria
Moldova
Kazakhstan
Azerbaijan
Uzbekistan
Ukraine
Turkmenistan


Sub-Saharan Africa
Target
3,200
2,400
1,600
800
0
Chad
Mali
Uganda
Central Afr. Rep.
Swaziland
Burundi
Rwanda
Guinea
Burkina Faso
Mozambique
Namibia
Malawi
Zambia
Sudan
Niger
Gambia
Dem. Rep. Congo
Madagascar
Benin
Gabon
Cameroon
Tanzania
Liberia
Senegal
Sierra Leone
Ghana
Ethiopia
Congo
Côte d'Ivoire
Angola
Kenya
Guinea-Bissau
Nigeria
Togo
Zimbabwe
South Africa
Mauritania

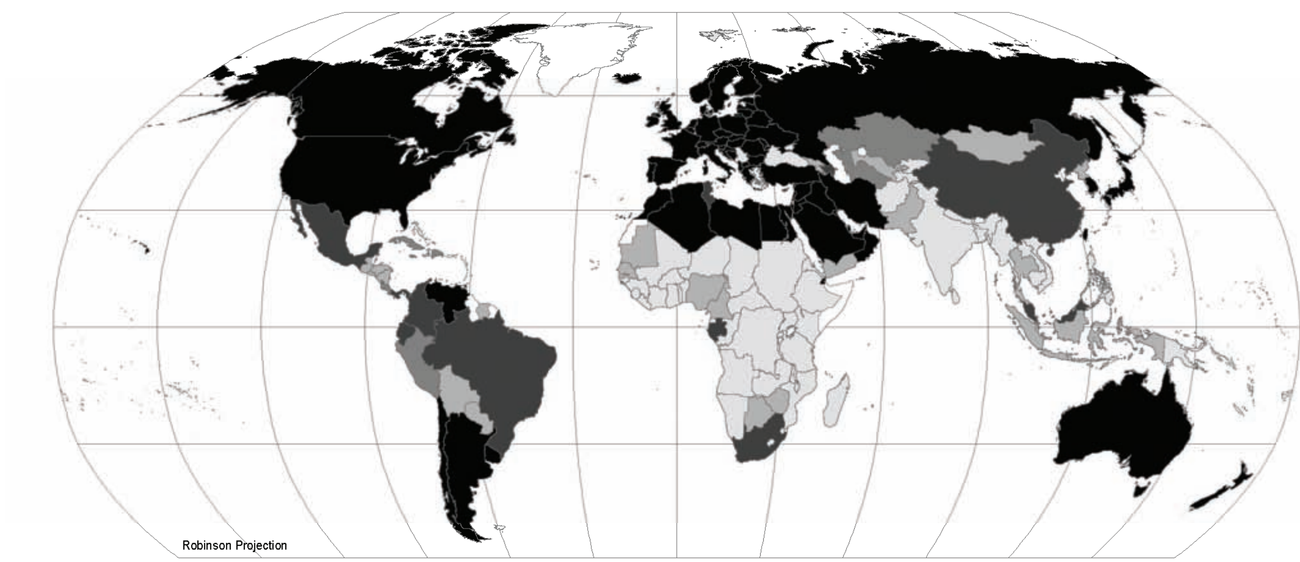
Pilot 2006 Environmental Performance Index
Indicator: MORTALITY



Standardized Proximity to Target (100 = target met)

100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

Pilot 2006 Environmental Performance Index
Indicator: INDOOR

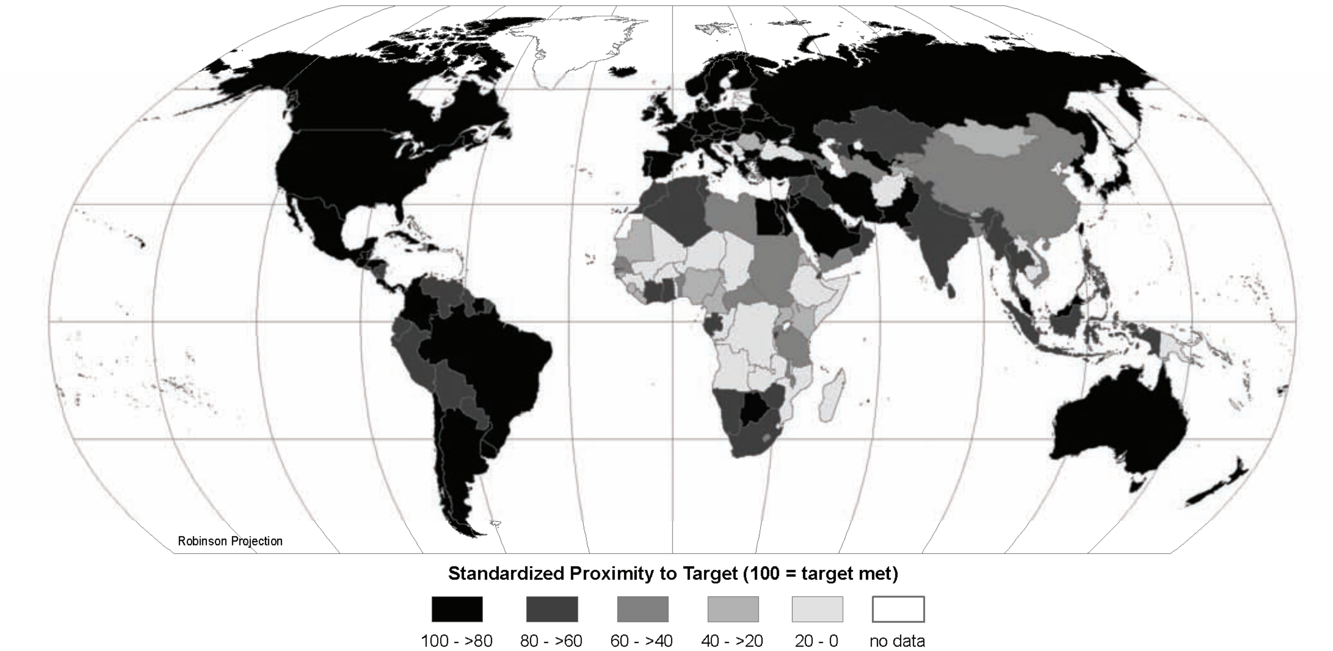


Standardized Proximity to Target (100 = target met)

100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

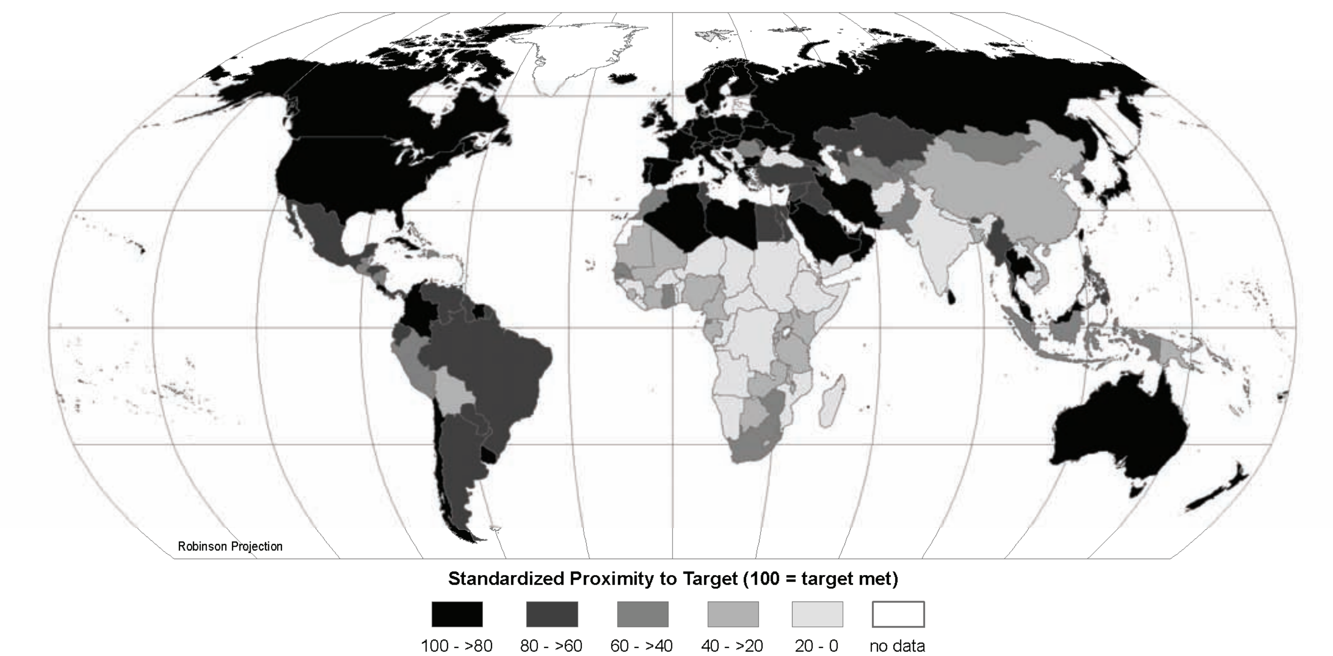
Pilot 2006 Environmental Performance Index

Indicator: WATSUP

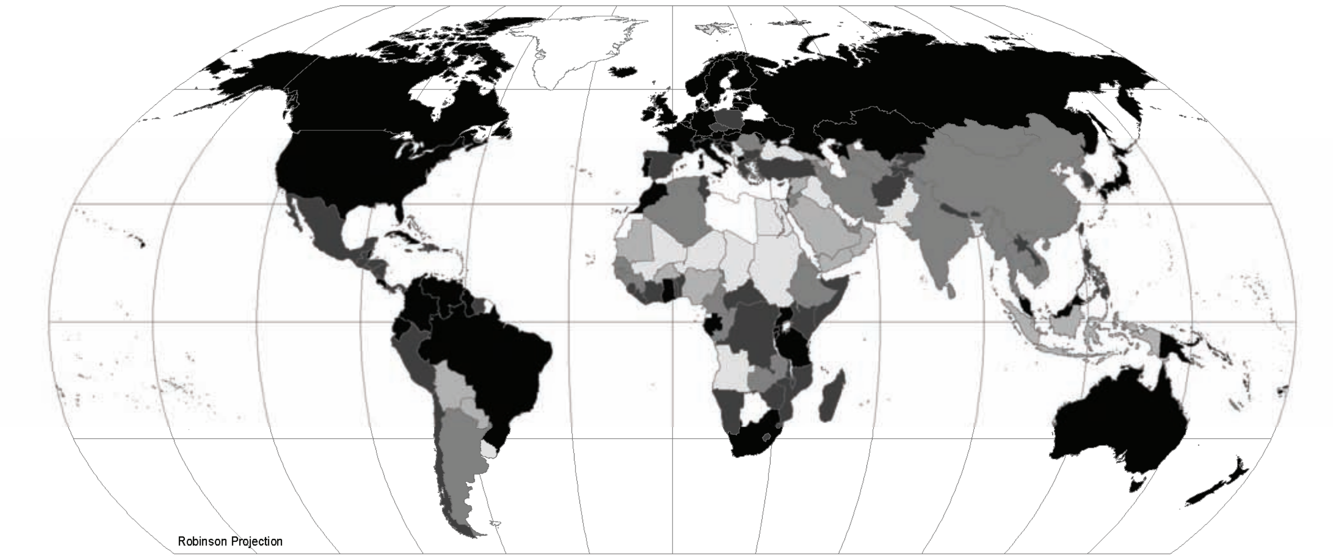


Pilot 2006 Environmental Performance Index

Indicator: ACSAT



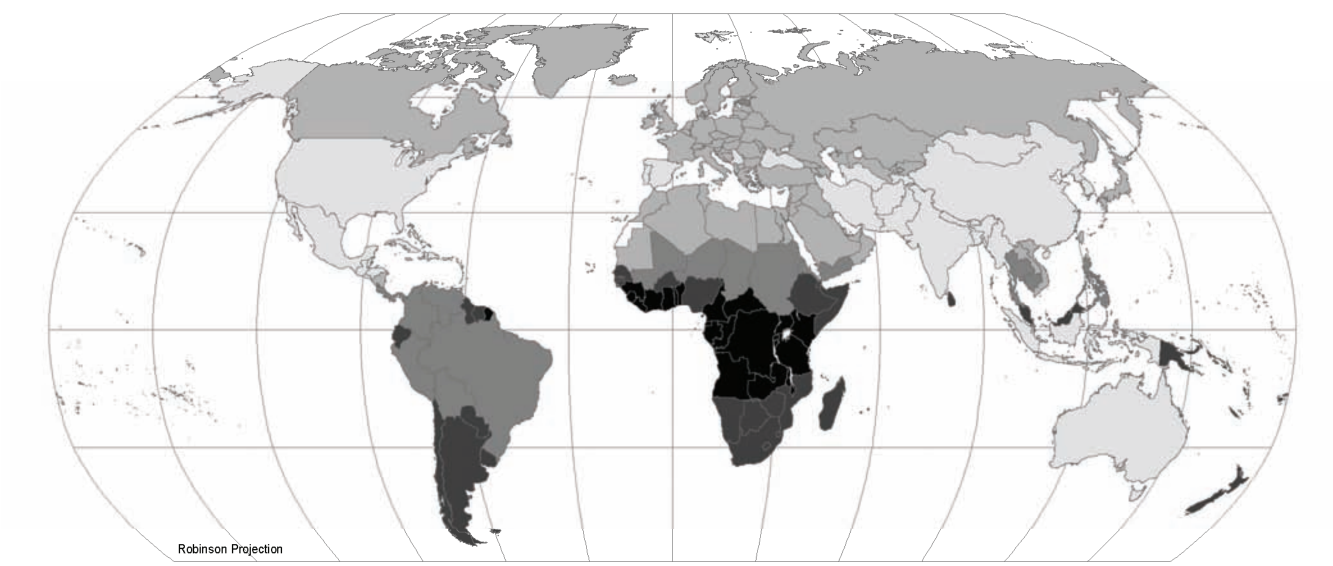
Pilot 2006 Environmental Performance Index
Indicator: PM10



Standardized Proximity to Target (100 = target met)

100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

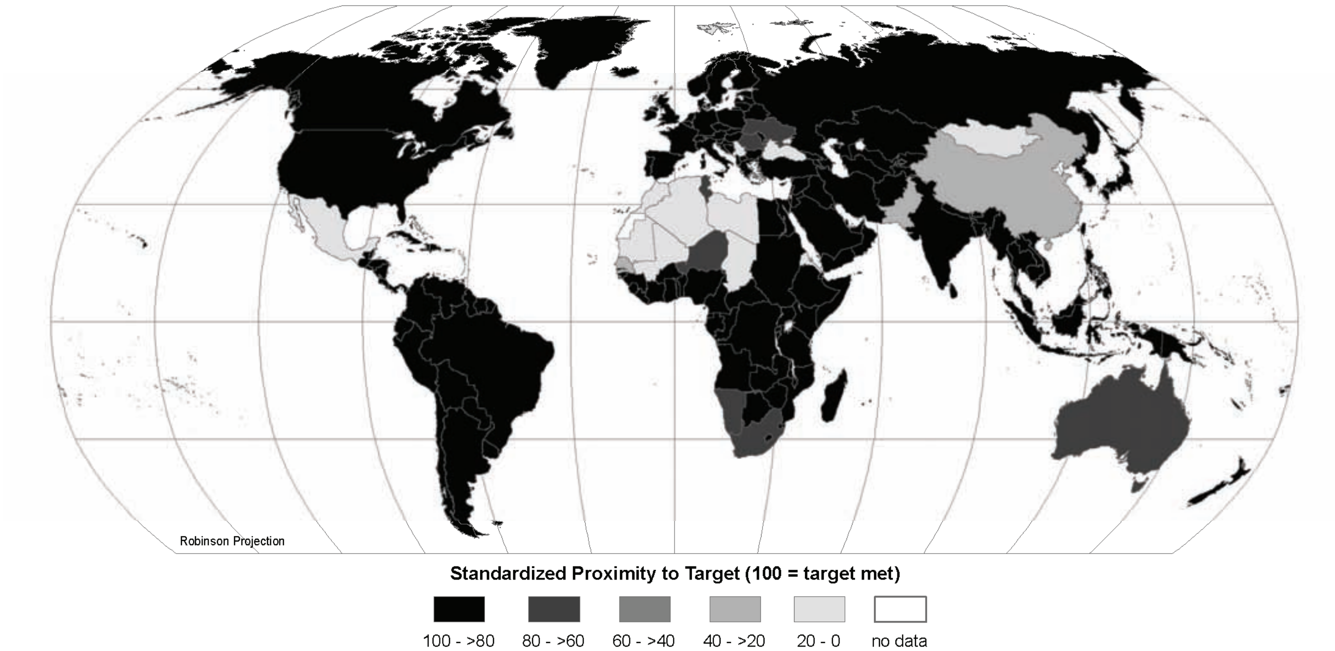
Pilot 2006 Environmental Performance Index
Indicator: OZONE



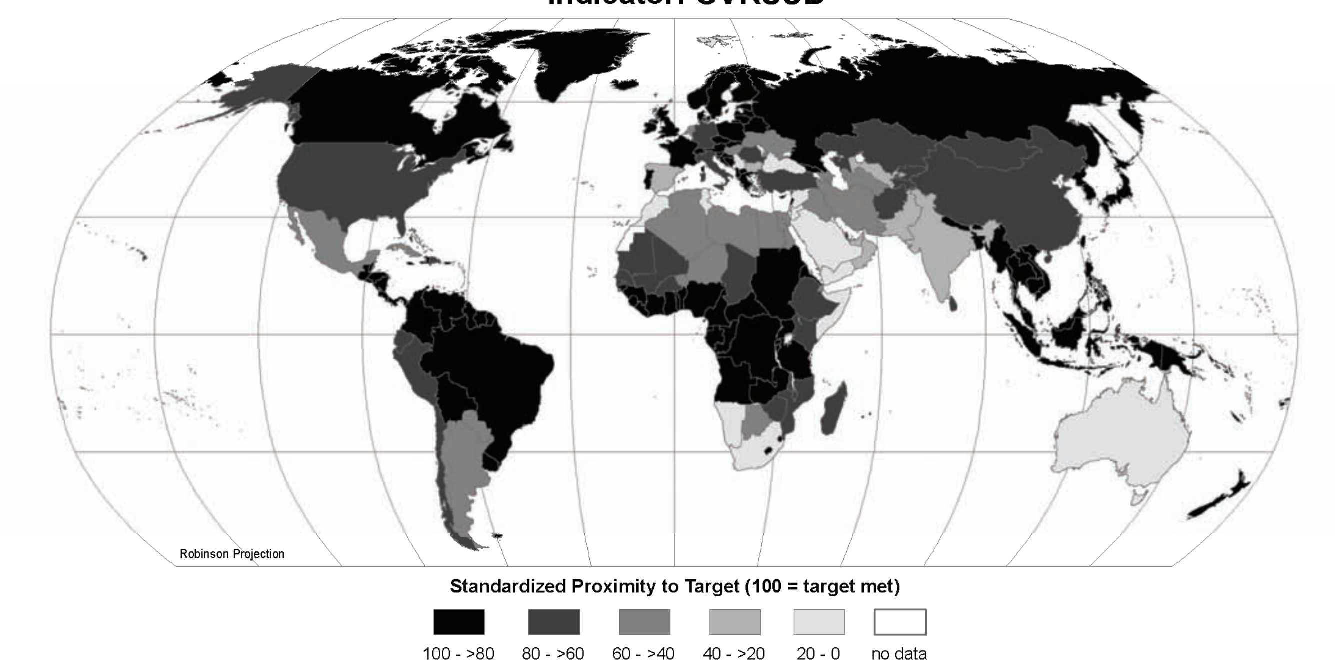
Standardized Proximity to Target (100 = target met)

100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

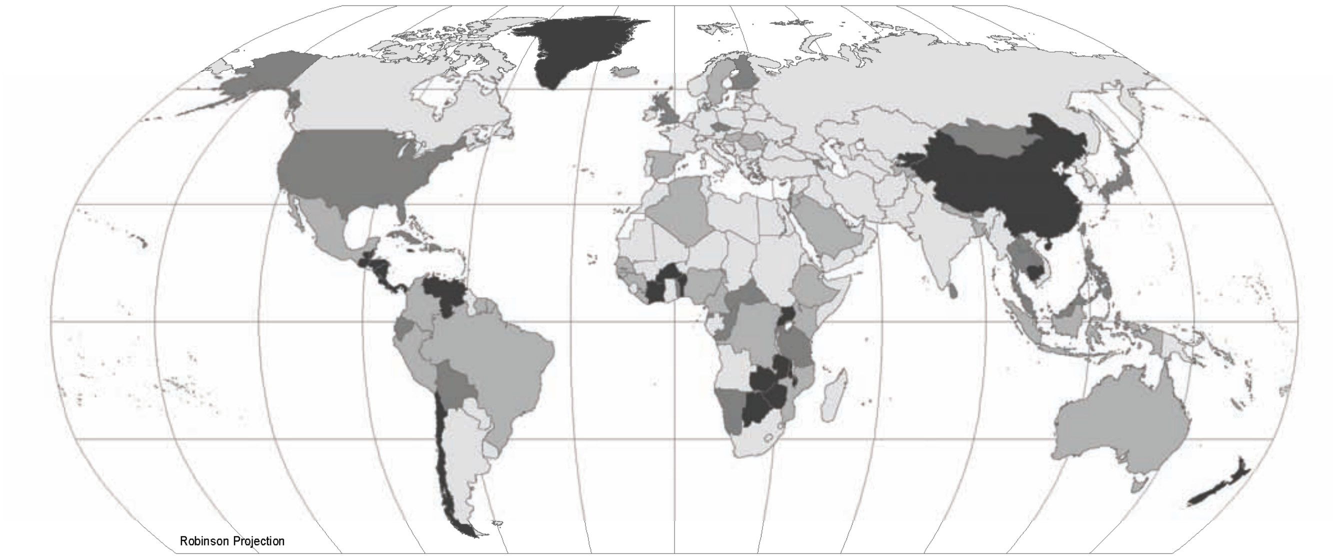
Pilot 2006 Environmental Performance Index
Indicator: NLOAD



Pilot 2006 Environmental Performance Index
Indicator: OVRSUB



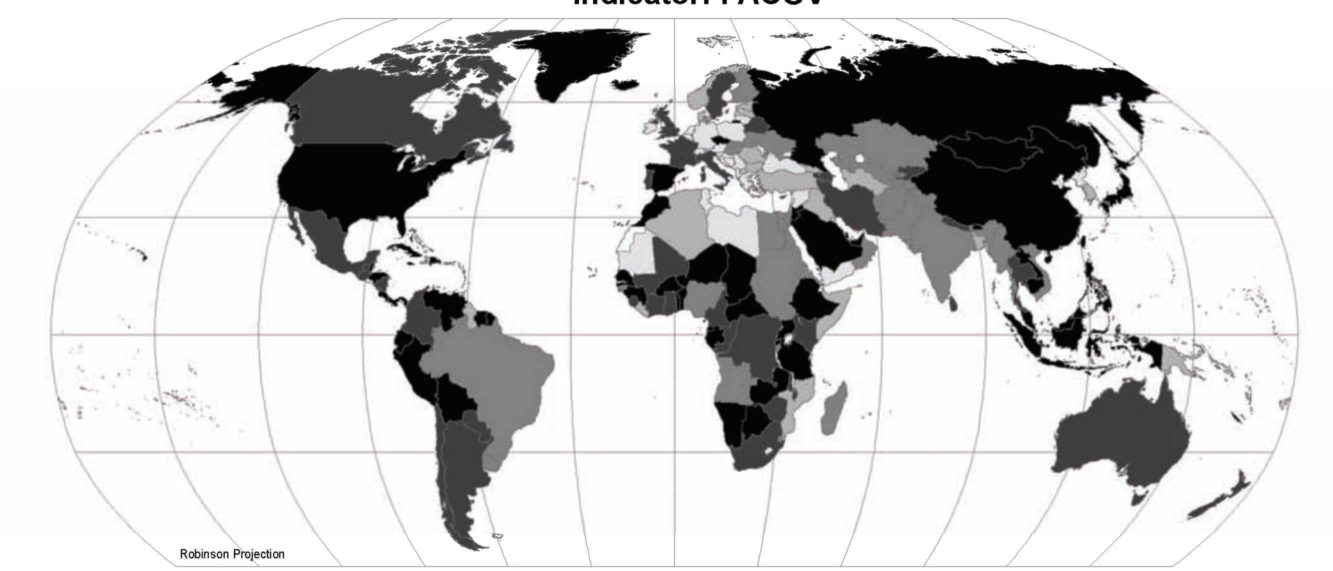
Pilot 2006 Environmental Performance Index
Indicator: PWI



Standardized Proximity to Target (100 = target met)

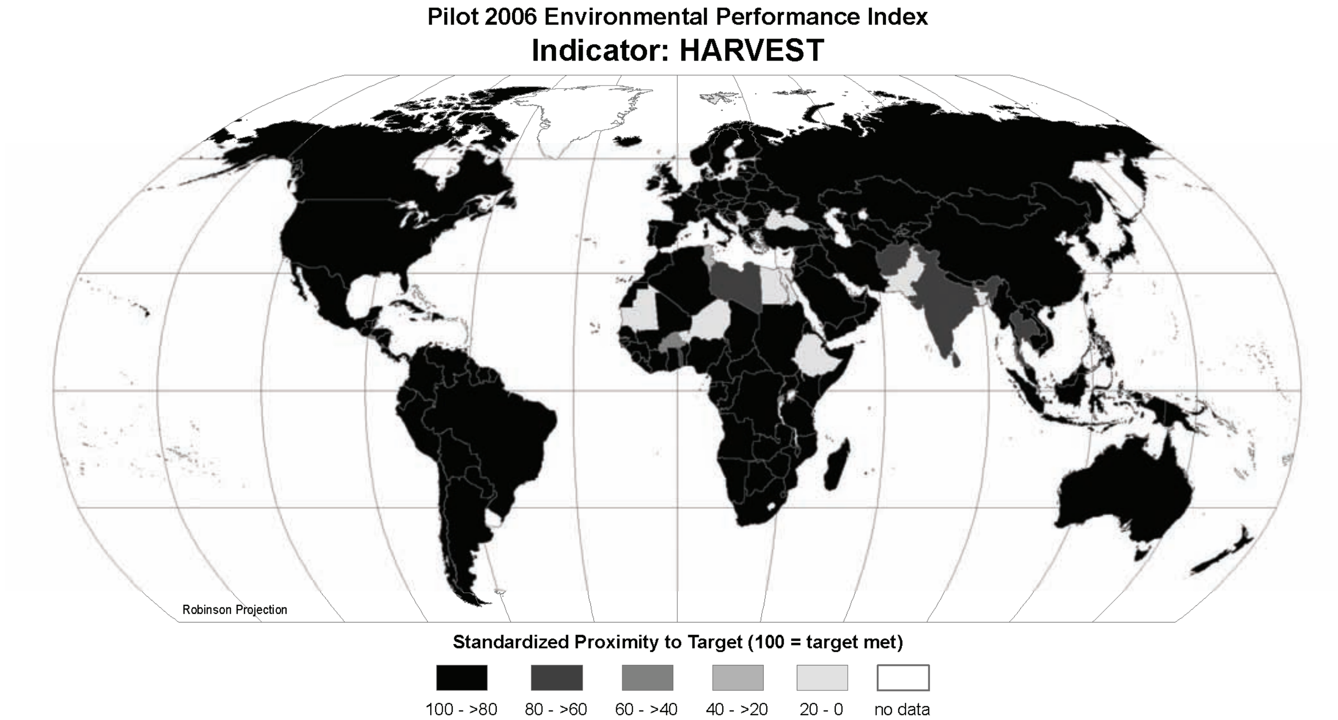
100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data

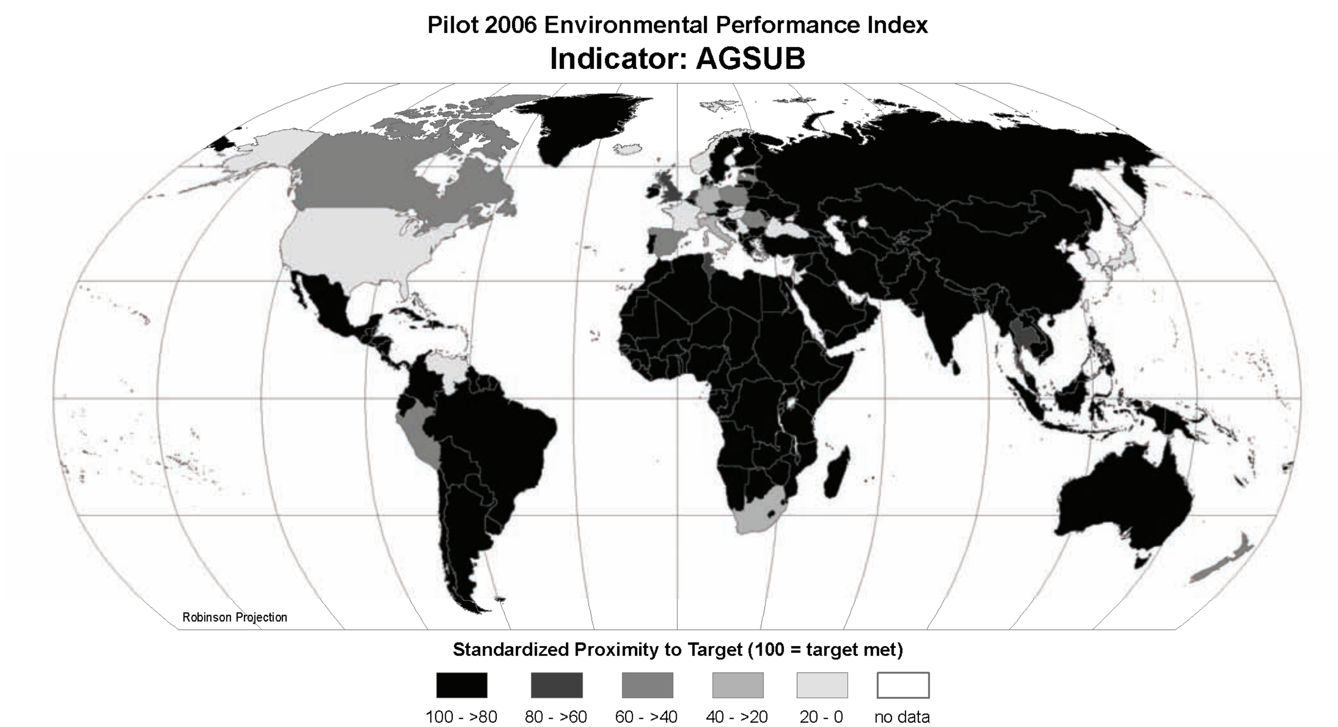
Pilot 2006 Environmental Performance Index
Indicator: PACOV



Standardized Proximity to Target (100 = target met)

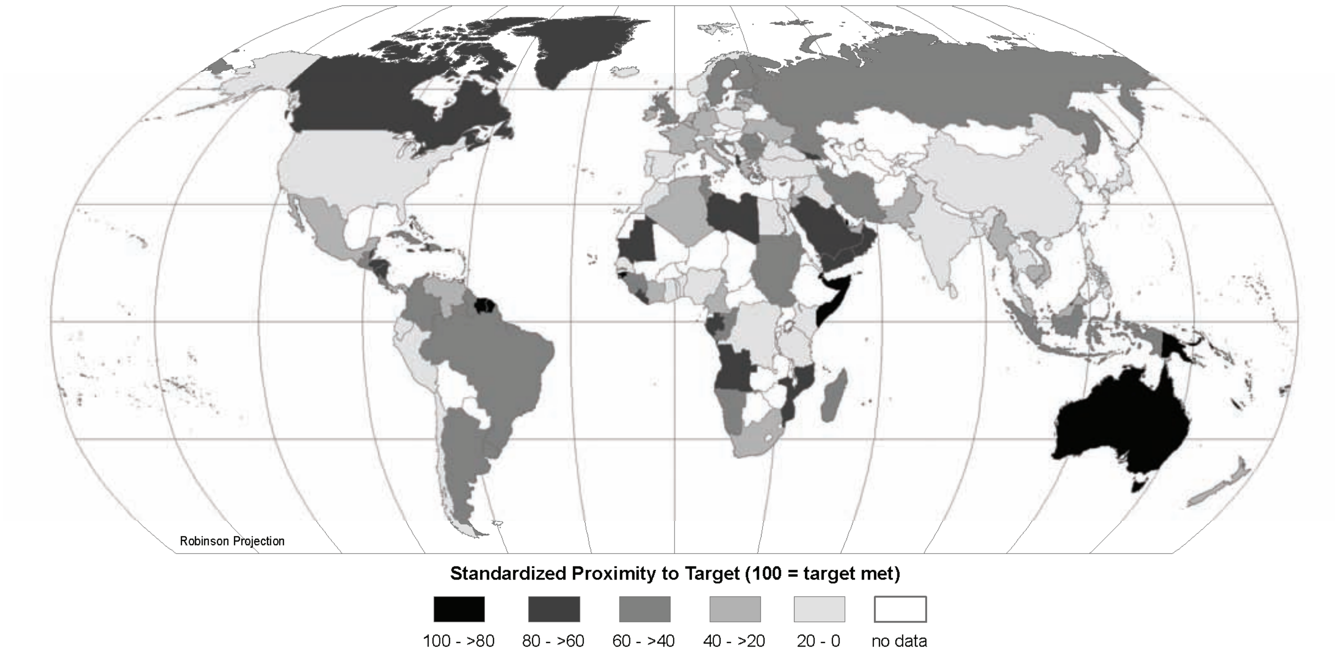
100 - >80 | 80 - >60 | 60 - >40 | 40 - >20 | 20 - 0 | no data


Pilot 2006 Environmental Performance Index
Indicator: HARVEST
Robinson Projection
Standardized Proximity to Target (100 = target met)
100 - >80
80 - >60
60 - >40
40 - >20
20 - 0
no data


Pilot 2006 Environmental Performance Index
Indicator: AGSUB
Robinson Projection
Standardized Proximity to Target (100 = target met)
100 - >80
80 - >60
60 - >40
40 - >20
20 - 0
no data

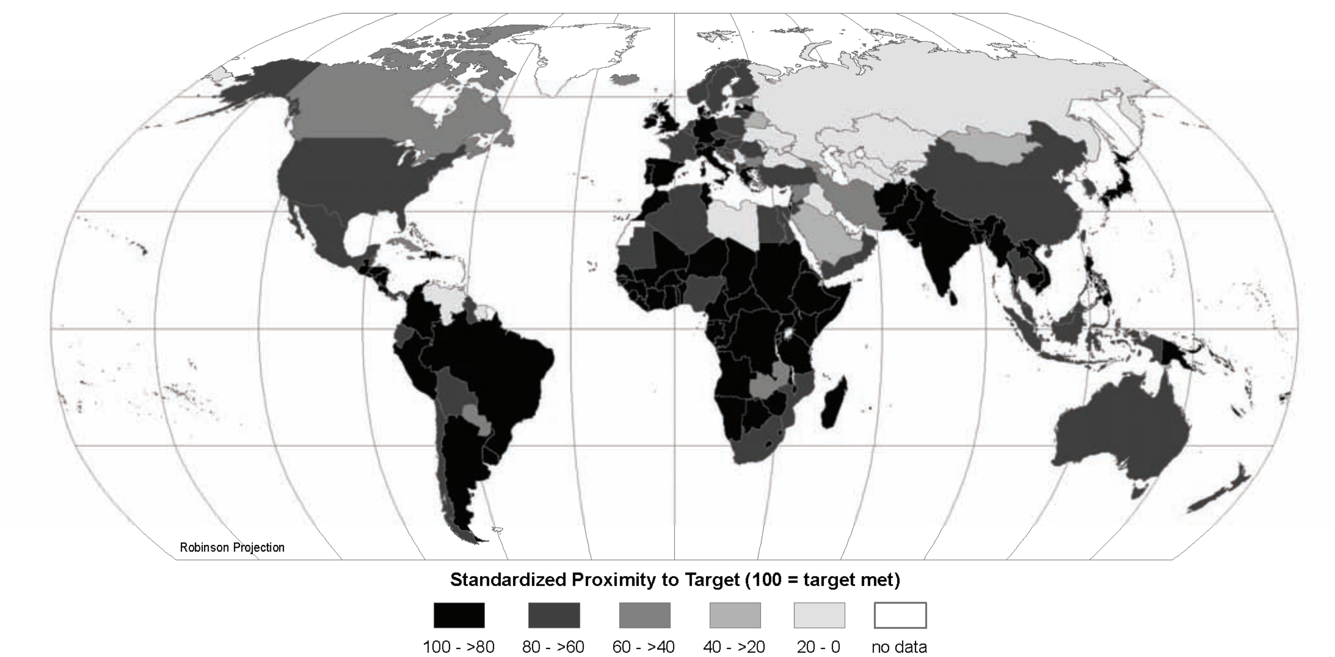
Pilot 2006 Environmental Performance Index

Indicator: OVRFSH

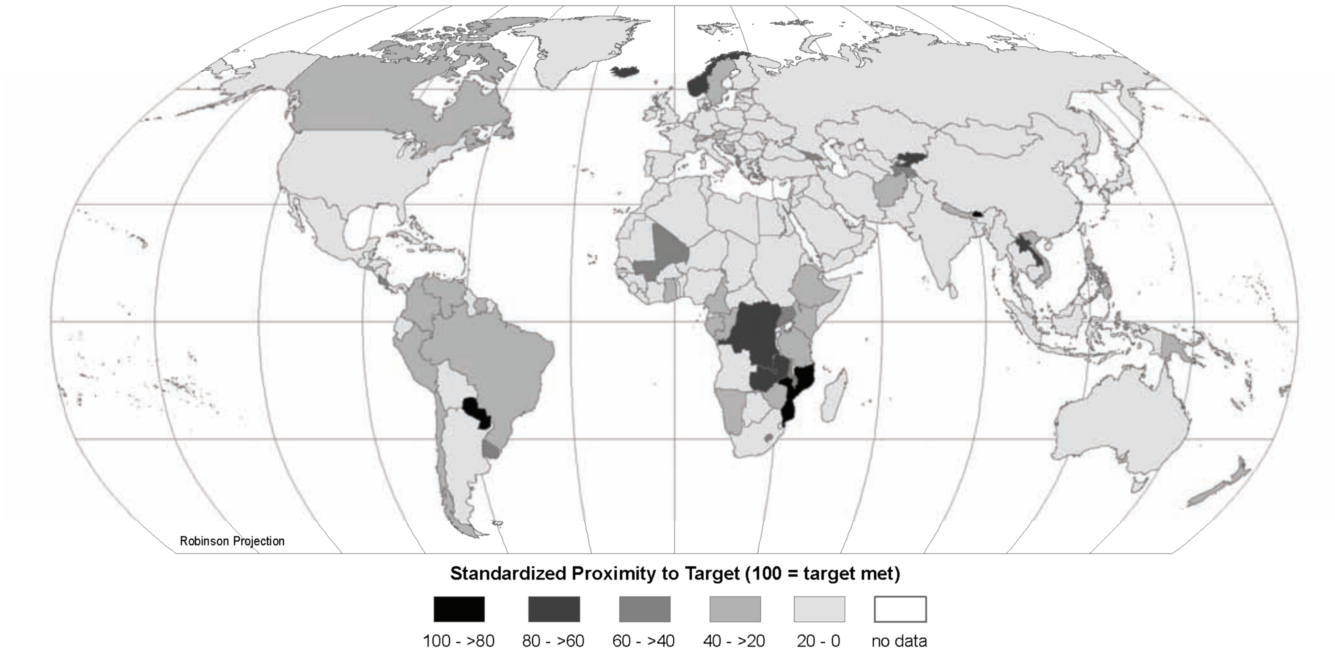


Pilot 2006 Environmental Performance Index

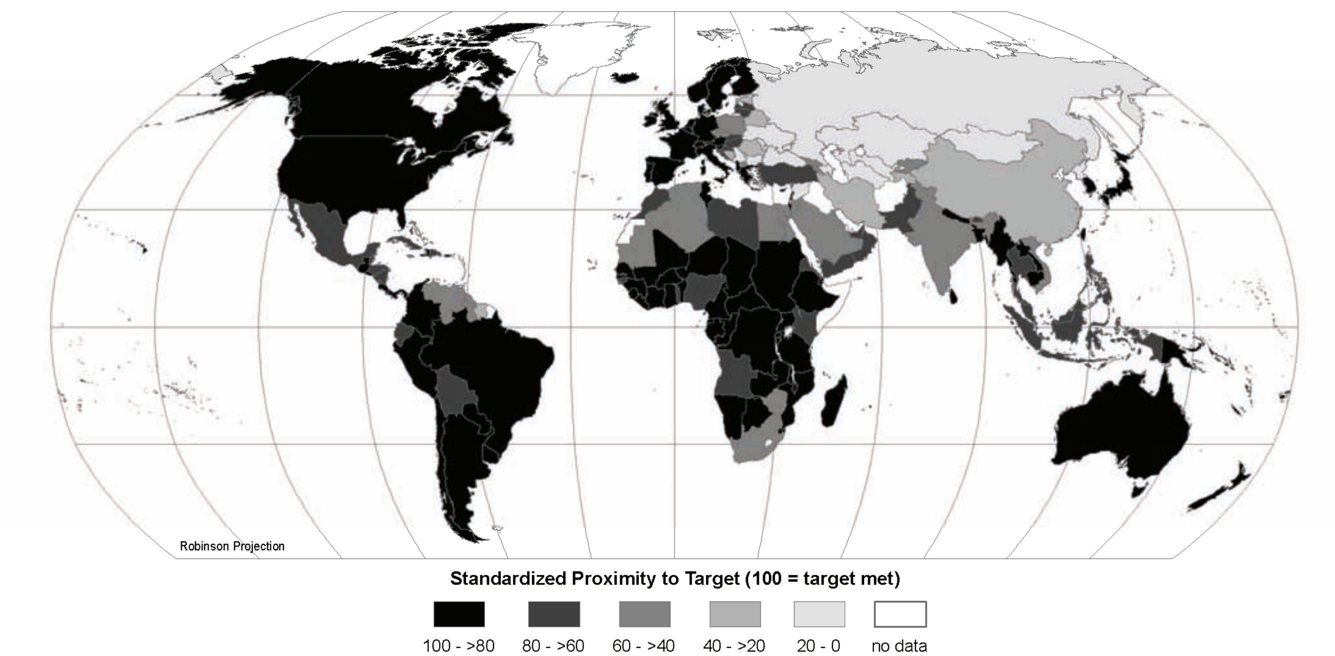
Indicator: ENEFF



Pilot 2006 Environmental Performance Index
Indicator: RENPC



Pilot 2006 Environmental Performance Index
Indicator: CO2GDP



Pilot 2006 Environmental Performance Index

Appendix C: Country Profiles

Albania

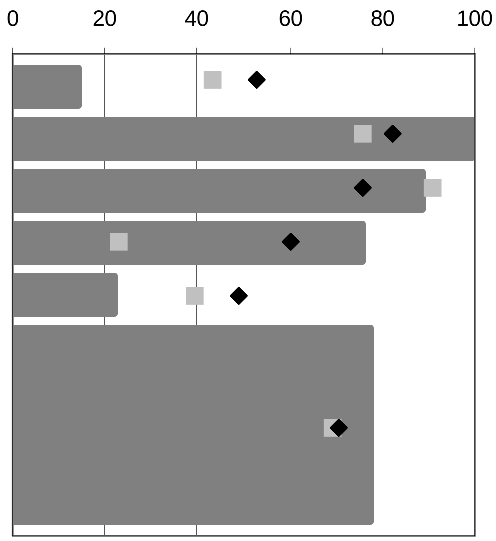
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $4,900

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	57
Score:	68.9
Income Group Avg.	67.2
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	14.4	52.9	43.2
Water Resources	99.8	82.1	75.6
Prod. Nat. Resources	88.9	75.8	90.9
Sustainable Energy	75.6	60.3	23.1
Biodiv. and Habitat	22.2	48.9	39.5
Environmental Health	77.7	70.4	69.1

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.3	*0*	91.0
INDOOR	Indoor Air Pollution (%)	15	*0*	85.0
WATSUP	Drinking Water (%)	97.0	*100*	94.6
ACSAT	Adequate Sanitation (%)	89.0	*100*	86.6
PM10	Urban Particulates (µg/m^3)	150.7	*10*	0.0
OZONE	Regional Ozone (ppb)	45.3	*15*	28.8
NLOAD	Nitrogen Loading (mg/L)	27.1	*1*	99.5
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	0.3	*90*	0.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	0.7
HARVEST	Timber Harvest Rate (%)	0.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,751	*1,650*	78.7
RENPC	Renewable Energy (%)	41.0	*100*	41.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	225	*0*	80.4

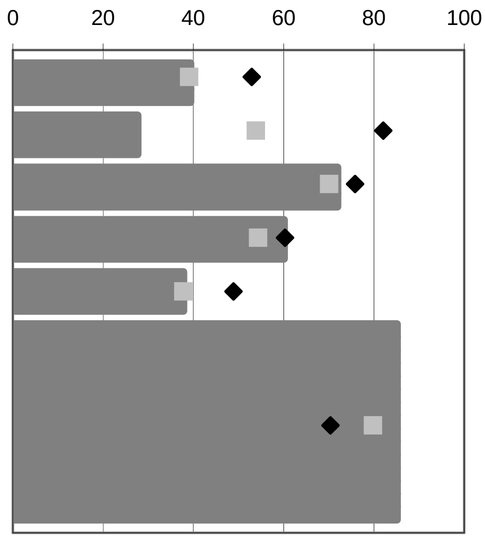
Algeria

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $6,600

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	63
Score:	66.2
Income Group Avg.	67.2
Geographic Group Avg.	65.4

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	39.3	52.9	39.1
Water Resources	27.7	82.1	53.9
Prod. Nat. Resources	71.9	75.8	70.0
Sustainable Energy	60.1	60.3	54.3
Biodiv. and Habitat	37.8	48.9	37.8
Environmental Health	85.1	70.4	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.8	*0*	96.7
INDOOR	Indoor Air Pollution (%)	4	*0*	96.0
WATSUP	Drinking Water (%)	87.0	*100*	76.5
ACSAT	Adequate Sanitation (%)	92.0	*100*	90.3
PM10	Urban Particulates (µg/m^3)	75.6	*10*	53.3
OZONE	Regional Ozone (ppb)	46.8	*15*	25.3
NLOAD	Nitrogen Loading (mg/L)	660,00 0.0	*1*	0.0
OVRSUB	Water Consumption (%)	24.5	*0*	55.3
PWI	Wilderness Protection (%)	14.4	*90*	16.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	39.5
HARVEST	Timber Harvest Rate (%)	8.1	*3*	82.3
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,797	*1,650*	78.5
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	500	*0*	56.3

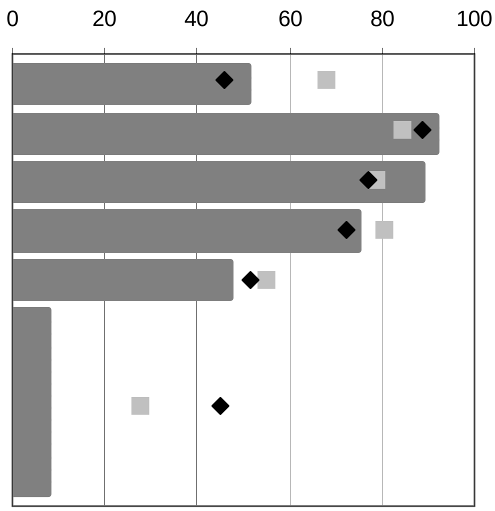
Angola

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $2,100

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	128
Score:	39.3
Income Group Avg.	56.0
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	51.2	45.7	67.8
Water Resources	92.0	88.8	84.3
Prod. Nat. Resources	88.9	77.1	78.9
Sustainable Energy	74.9	72.3	80.3
Biodiv. and Habitat	47.3	51.5	54.9
Environmental Health	7.8	44.8	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	33.6	*0*	0.0
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	50.0	*100*	9.7
ACSAT	Adequate Sanitation (%)	30.0	*100*	14.9
PM10	Urban Particulates (µg/m^3)	124.8	*10*	18.3
OZONE	Regional Ozone (ppb)	21.8	*15*	84.1
NLOAD	Nitrogen Loading (mg/L)	318.3	*1*	94.0
OVRSUB	Water Consumption (%)	5.5	*0*	90.0
PWI	Wilderness Protection (%)	9.5	*90*	10.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	56.8
HARVEST	Timber Harvest Rate (%)	0.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,668	*1,650*	87.4
RENPC	Renewable Energy (%)	9.7	*100*	9.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	254	*0*	77.8

Argentina

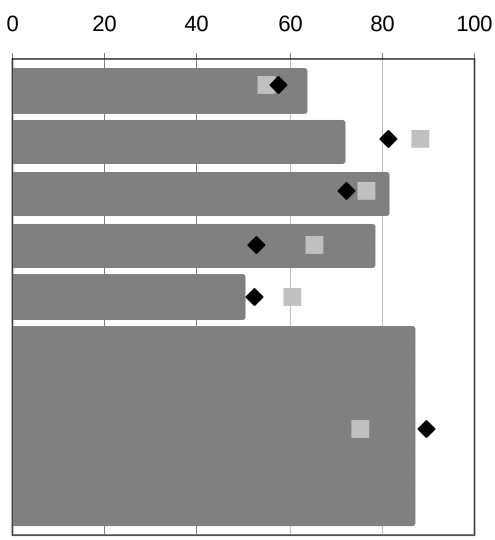
AMERICAS

GDP/capita 2004 est. (PPP) $12,400

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	30
Score:	77.7
Income Group Avg.	76.4
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	63.1	57.4	54.9
Water Resources	71.4	81.5	88.4
Prod. Nat. Resources	81.0	72.5	76.6
Sustainable Energy	77.8	52.8	65.4
Biodiv. and Habitat	49.8	52.3	60.8
Environmental Health	86.7	89.6	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.6	*0*	97.7
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	94.0	*100*	89.2
ACSAT	Adequate Sanitation (%)	82.0	*100*	78.1
PM10	Urban Particulates (µg/m^3)	71.0	*10*	56.6
OZONE	Regional Ozone (ppb)	27.9	*15*	69.6
NLOAD	Nitrogen Loading (mg/L)	692.3	*1*	86.9
OVRSUB	Water Consumption (%)	24.1	*0*	55.9
PWI	Wilderness Protection (%)	9.0	*90*	10.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	69.4
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.6	*0*	93.1
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,120	*1,650*	81.3
RENPC	Renewable Energy (%)	13.8	*100*	13.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	129	*0*	88.7

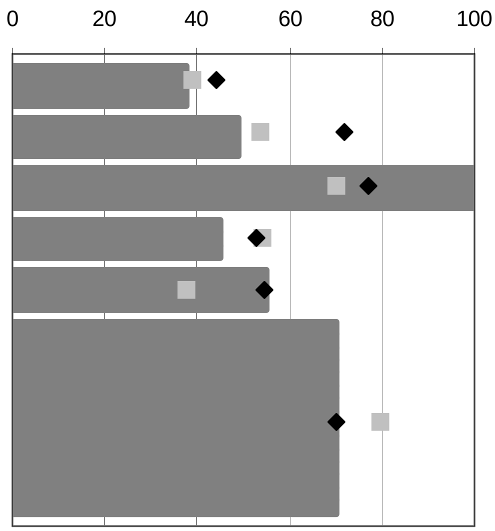
Armenia

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $4,600

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	69
Score:	63.8
Income Group Avg.	65.1
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	37.8	44.3	39.1
Water Resources	49.0	71.9	53.9
Prod. Nat. Resources	100.0	77.2	70.0
Sustainable Energy	45.2	53.0	54.3
Biodiv. and Habitat	55.0	54.6	37.8
Environmental Health	70.2	70.0	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.3	*0*	95.1
INDOOR	Indoor Air Pollution (%)	66	*0*	34.0
WATSUP	Drinking Water (%)	92.0	*100*	85.6
ACSAT	Adequate Sanitation (%)	84.0	*100*	80.5
PM10	Urban Particulates (µg/m^3)	84.9	*10*	46.7
OZONE	Regional Ozone (ppb)	45.3	*15*	28.8
NLOAD	Nitrogen Loading (mg/L)	107.6	*1*	98.0
OVRSUB	Water Consumption (%)	68.6	*0*	0.0
PWI	Wilderness Protection (%)	24.4	*90*	27.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	75.0
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	15,417	*1,650*	42.4
RENPC	Renewable Energy (%)	9.7	*100*	9.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	508	*0*	55.6

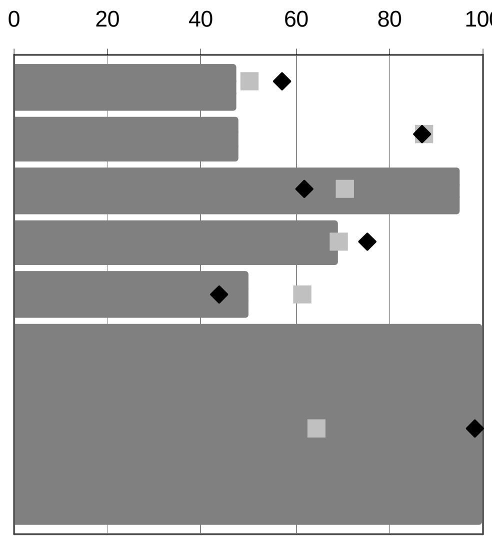
Australia

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $30,700

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	20
Score:	80.1
Income Group Avg.	81.6
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	46.9	57.0	50.1
Water Resources	47.3	87.0	87.6
Prod. Nat. Resources	94.4	62.0	70.4
Sustainable Energy	68.4	75.5	69.3
Biodiv. and Habitat	49.5	43.7	61.6
Environmental Health	99.0	98.2	64.6

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.8
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	18.6	*10*	93.9
OZONE	Regional Ozone (ppb)	60.6	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	1,159.3	*1*	78.0
OVRSUB	Water Consumption (%)	45.7	*0*	16.6
PWI	Wilderness Protection (%)	12.6	*90*	14.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	71.5
HARVEST	Timber Harvest Rate (%)	0.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	- 0.8	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	2	*1*	83.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,961	*1,650*	69.4
RENPC	Renewable Energy (%)	3.7	*100*	3.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	209	*0*	81.7

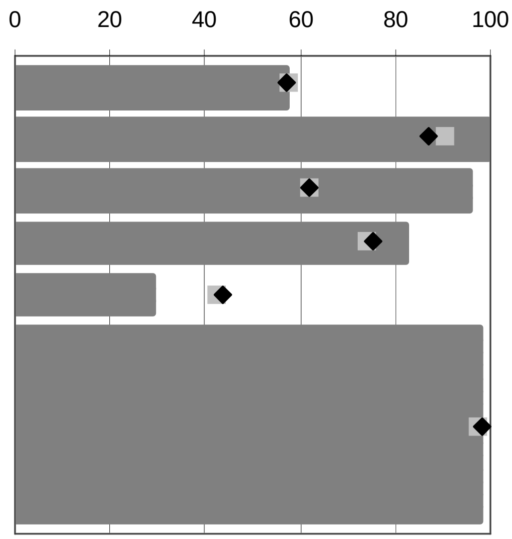
Austria

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $31,300

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	6
Score:	85.2
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	57.2	57.0	57.7
Water Resources	99.4	87.0	90.6
Prod. Nat. Resources	95.7	62.0	61.9
Sustainable Energy	82.2	75.5	74.1
Biodiv. and Habitat	28.8	43.7	42.6
Environmental Health	97.7	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.1
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	32.7	*10*	83.8
OZONE	Regional Ozone (ppb)	44.5	*15*	30.7
NLOAD	Nitrogen Loading (mg/L)	60.2	*1*	98.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	5.5	*90*	6.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	11.9
HARVEST	Timber Harvest Rate (%)	1.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.8	*0*	91.5
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,833	*1,650*	82.5
RENPC	Renewable Energy (%)	24.8	*100*	24.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	62	*0*	94.6

Azerbaijan

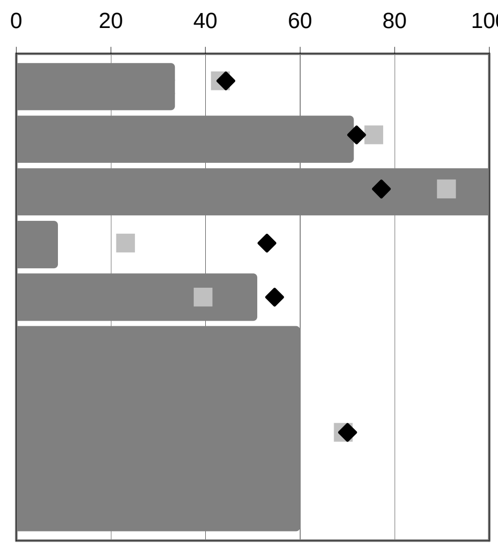
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $3,800

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	95
Score:	55.7
Income Group Avg.	65.1
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	32.7	44.3	43.2
Water Resources	70.5	71.9	75.6
Prod. Nat. Resources	100.0	77.2	90.9
Sustainable Energy	8.0	53.0	23.1
Biodiv. and Habitat	50.1	54.6	39.5
Environmental Health	59.2	70.0	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.1	*0*	84.1
INDOOR	Indoor Air Pollution (%)	37	*0*	63.0
WATSUP	Drinking Water (%)	77.0	*100*	58.5
ACSAT	Adequate Sanitation (%)	55.0	*100*	45.3
PM10	Urban Particulates (µg/m^3)	99.3	*10*	36.4
OZONE	Regional Ozone (ppb)	45.2	*15*	29.0
NLOAD	Nitrogen Loading (mg/L)	88.6	*1*	98.3
OVRSUB	Water Consumption (%)	31.4	*0*	42.7
PWI	Wilderness Protection (%)	10.6	*90*	11.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	70.8
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	21,371	*1,650*	17.6
RENPC	Renewable Energy (%)	3.9	*100*	3.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,846	*0*	0.0

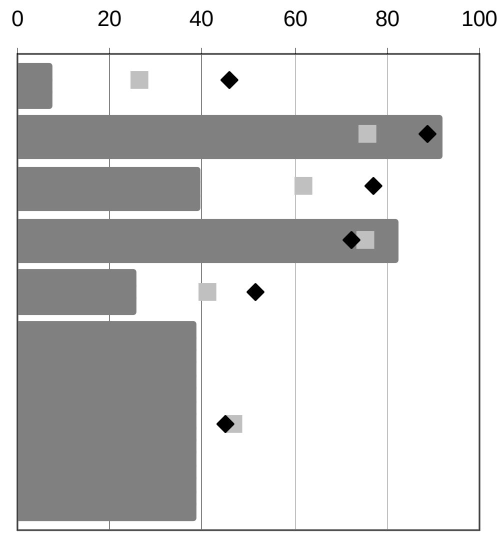
Bangladesh

SOUTH ASIA
GDP/capita 2004 est. (PPP) $2,000

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	125
Score:	43.5
Income Group Avg.	56.0
Geographic Group Avg.	51.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	6.9	45.7	26.4
Water Resources	91.3	88.8	75.8
Prod. Nat. Resources	38.9	77.1	61.8
Sustainable Energy	81.7	72.3	75.4
Biodiv. and Habitat	25.3	51.5	41.0
Environmental Health	38.2	44.8	46.7

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	5.5	*0*	78.8
INDOOR	Indoor Air Pollution (%)	96	*0*	4.0
WATSUP	Drinking Water (%)	75.0	*100*	54.9
ACSAT	Adequate Sanitation (%)	48.0	*100*	36.8
PM10	Urban Particulates (µg/m^3)	147.0	*10*	2.5
OZONE	Regional Ozone (ppb)	52.7	*15*	11.4
NLOAD	Nitrogen Loading (mg/L)	64.9	*1*	98.8
OVRSUB	Water Consumption (%)	8.8	*0*	83.9
PWI	Wilderness Protection (%)	12.7	*90*	14.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	36.6
HARVEST	Timber Harvest Rate (%)	90.2	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,524	*1,650*	96.3
RENPC	Renewable Energy (%)	1.8	*100*	1.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	163	*0*	85.7

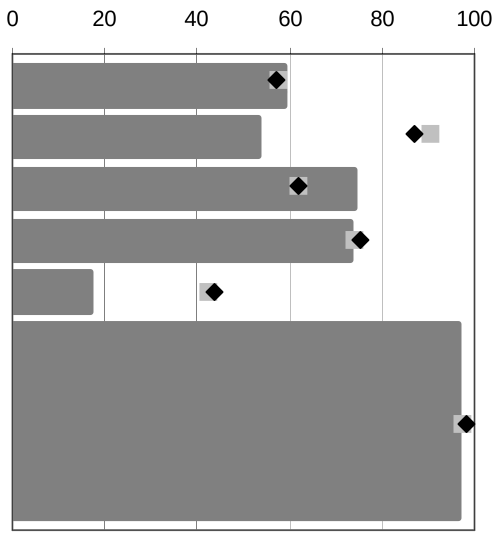
Belgium

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $30,600

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	39
Score:	75.9
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	59.0	57.0	57.7
Water Resources	53.2	87.0	90.6
Prod. Nat. Resources	74.0	62.0	61.9
Sustainable Energy	73.2	75.5	74.1
Biodiv. and Habitat	16.7	43.7	42.6
Environmental Health	96.6	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.3
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	96.5	*100*	93.6
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	28.2	*10*	87.1
OZONE	Regional Ozone (ppb)	44.4	*15*	31.0
NLOAD	Nitrogen Loading (mg/L)	134.0	*1*	97.5
OVRSUB	Water Consumption (%)	49.8	*0*	9.0
PWI	Wilderness Protection (%)	0.3	*90*	0.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	2.0
HARVEST	Timber Harvest Rate (%)	3.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.0	*0*	88.6
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,838	*1,650*	70.0
RENPC	Renewable Energy (%)	0.7	*100*	0.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	88	*0*	92.3

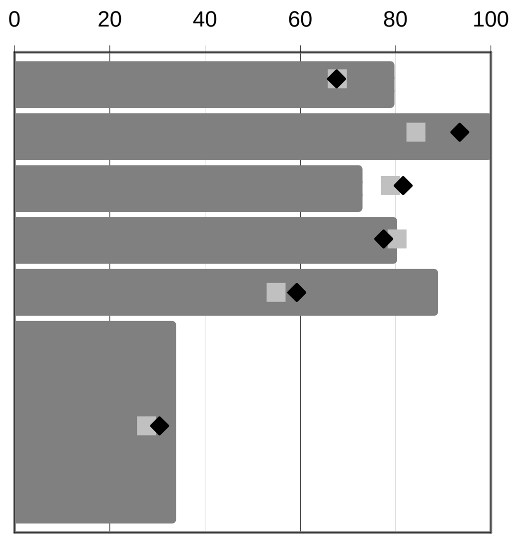
Benin

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,200

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	84
Score:	58.4
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	78.9	67.6	67.8
Water Resources	99.4	93.5	84.3
Prod. Nat. Resources	72.2	81.6	78.9
Sustainable Energy	79.5	77.5	80.3
Biodiv. and Habitat	88.1	59.2	54.9
Environmental Health	33.1	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	16.4	*0*	36.6
INDOOR	Indoor Air Pollution (%)	88	*0*	12.0
WATSUP	Drinking Water (%)	68.0	*100*	42.2
ACSAT	Adequate Sanitation (%)	32.0	*100*	17.3
PM10	Urban Particulates (µg/m^3)	47.0	*10*	73.7
OZONE	Regional Ozone (ppb)	21.7	*15*	84.2
NLOAD	Nitrogen Loading (mg/L)	61.8	*1*	98.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	62.8	*90*	69.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,480	*1,650*	92.4
RENPC	Renewable Energy (%)	0.1	*100*	0.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	170	*0*	85.2

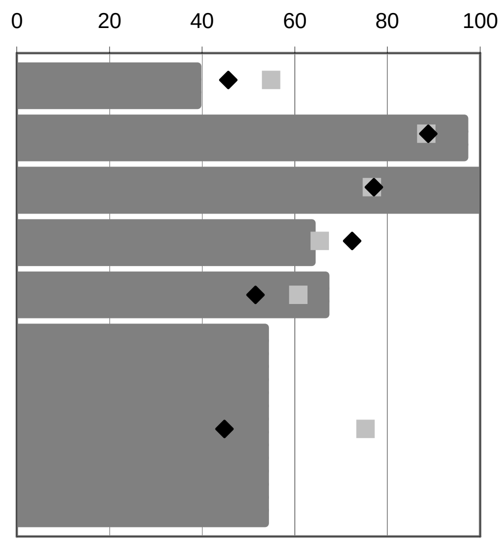
Bolivia

AMERICAS
GDP/capita 2004 est. (PPP) $2,600

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	71
Score:	63.4
Income Group Avg.	56.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	39.0	45.7	54.9
Water Resources	96.6	88.8	88.4
Prod. Nat. Resources	100.0	77.1	76.6
Sustainable Energy	63.7	72.3	65.4
Biodiv. and Habitat	66.6	51.5	60.8
Environmental Health	53.6	44.8	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.5	*0*	82.8
INDOOR	Indoor Air Pollution (%)	61	*0*	39.0
WATSUP	Drinking Water (%)	85.0	*100*	72.9
ACSAT	Adequate Sanitation (%)	45.0	*100*	33.1
PM10	Urban Particulates (µg/m^3)	105.9	*10*	31.7
OZONE	Regional Ozone (ppb)	37.8	*15*	46.4
NLOAD	Nitrogen Loading (mg/L)	154.4	*1*	97.1
OVRSUB	Water Consumption (%)	2.1	*0*	96.1
PWI	Wilderness Protection (%)	20.3	*90*	22.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	93.3
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,241	*1,650*	72.4
RENPC	Renewable Energy (%)	13.1	*100*	13.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	381	*0*	66.7

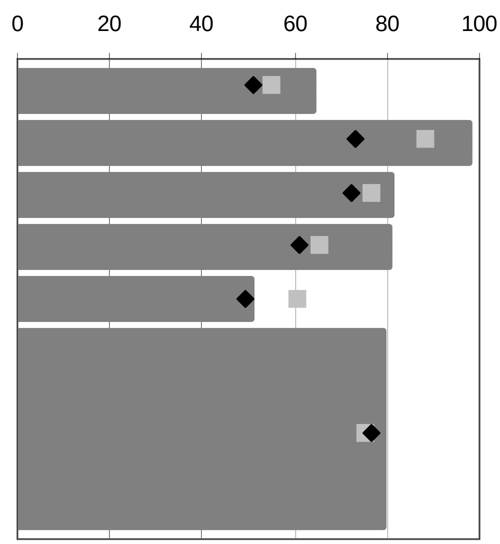
Brazil

AMERICAS
GDP/capita 2004 est. (PPP) $8,100

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	34
Score:	77.0
Income Group Avg.	69.0
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	64.0	51.1	54.9
Water Resources	97.7	73.3	88.4
Prod. Nat. Resources	80.9	72.2	76.6
Sustainable Energy	80.6	61.1	65.4
Biodiv. and Habitat	50.5	49.5	60.8
Environmental Health	79.3	76.5	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.1	*0*	91.9
INDOOR	Indoor Air Pollution (%)	27	*0*	73.0
WATSUP	Drinking Water (%)	89.0	*100*	80.1
ACSAT	Adequate Sanitation (%)	75.0	*100*	69.6
PM10	Urban Particulates (µg/m^3)	33.0	*10*	83.7
OZONE	Regional Ozone (ppb)	38.7	*15*	44.3
NLOAD	Nitrogen Loading (mg/L)	19.7	*1*	99.6
OVRSUB	Water Consumption (%)	2.3	*0*	95.8
PWI	Wilderness Protection (%)	14.1	*90*	15.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	58.7
HARVEST	Timber Harvest Rate (%)	0.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.7	*0*	92.8
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,402	*1,650*	80.1
RENPC	Renewable Energy (%)	37.0	*100*	37.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	107	*0*	90.7

Bulgaria

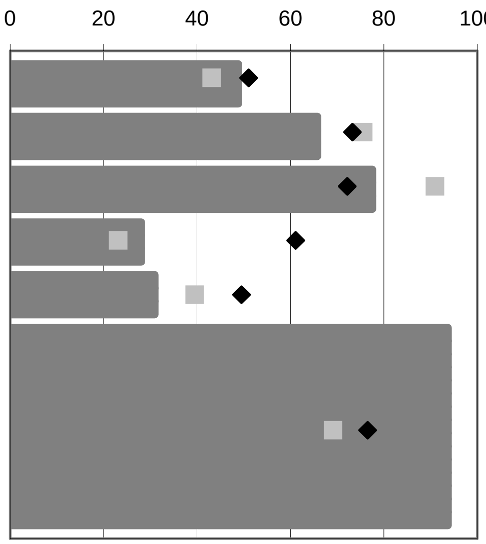
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $8,200

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	50
Score:	72.0
Income Group Avg.	69.0
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	48.8	51.1	43.2
Water Resources	65.8	73.3	75.6
Prod. Nat. Resources	77.5	72.2	90.9
Sustainable Energy	28.1	61.1	23.1
Biodiv. and Habitat	30.9	49.5	39.5
Environmental Health	93.7	76.5	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.9	*0*	96.6
INDOOR	Indoor Air Pollution (%)	6	*0*	94.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	55.7	*10*	67.5
OZONE	Regional Ozone (ppb)	44.7	*15*	30.2
NLOAD	Nitrogen Loading (mg/L)	95.4	*1*	98.2
OVRSUB	Water Consumption (%)	36.5	*0*	33.3
PWI	Wilderness Protection (%)	6.8	*90*	7.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	27.2
HARVEST	Timber Harvest Rate (%)	1.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.6	*0*	82.6
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	15,195	*1,650*	43.4
RENPC	Renewable Energy (%)	2.5	*100*	2.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	919	*0*	19.6

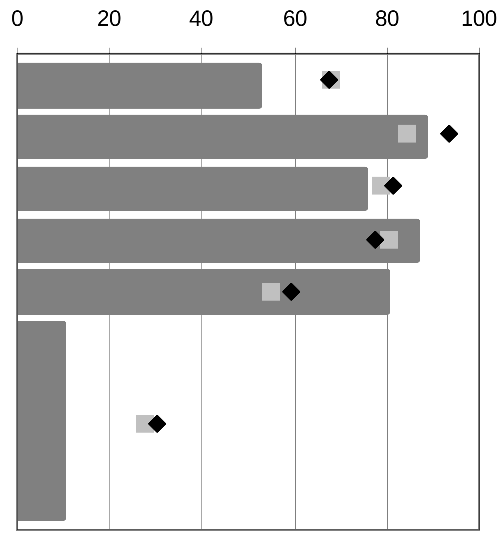
Burkina Faso

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,200

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	126
Score:	43.2
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	52.4	67.6	67.8
Water Resources	88.3	93.5	84.3
Prod. Nat. Resources	75.1	81.6	78.9
Sustainable Energy	86.5	77.5	80.3
Biodiv. and Habitat	80.0	59.2	54.9
Environmental Health	9.9	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	22.6	*0*	13.0
INDOOR	Indoor Air Pollution (%)	97	*0*	3.0
WATSUP	Drinking Water (%)	51.0	*100*	11.6
ACSAT	Adequate Sanitation (%)	12.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	108.2	*10*	30.1
OZONE	Regional Ozone (ppb)	25.8	*15*	74.6
NLOAD	Nitrogen Loading (mg/L)	68.1	*1*	98.7
OVRSUB	Water Consumption (%)	12.2	*0*	77.8
PWI	Wilderness Protection (%)	64.9	*90*	72.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	17.4	*3*	50.2
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,261	*1,650*	100.0
RENPC	Renewable Energy (%)	6.7	*100*	6.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	95	*0*	91.7

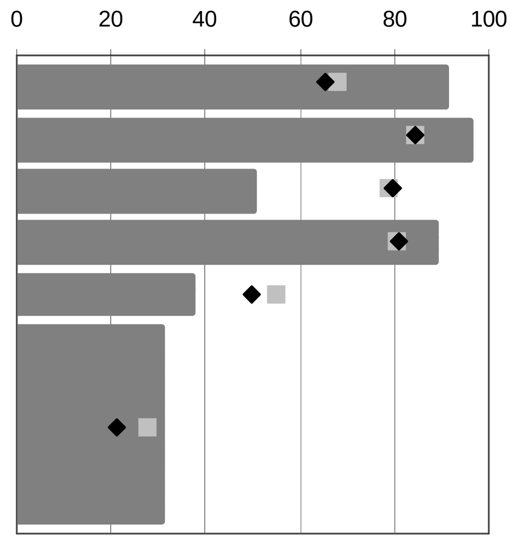
Burundi

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 600

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	108
Score:	51.6
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	90.9	65.6	67.8
Water Resources	96.1	84.6	84.3
Prod. Nat. Resources	50.0	79.5	78.9
Sustainable Energy	88.8	81.1	80.3
Biodiv. and Habitat	37.2	49.8	54.9
Environmental Health	30.6	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	24.1	*0*	6.9
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	79.0	*100*	62.1
ACSAT	Adequate Sanitation (%)	36.0	*100*	22.2
PM10	Urban Particulates (µg/m^3)	35.6	*10*	81.7
OZONE	Regional Ozone (ppb)	14.7	*15*	100.0
NLOAD	Nitrogen Loading (mg/L)	410.3	*1*	92.2
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	17.9	*90*	19.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	58.6
HARVEST	Timber Harvest Rate (%)	87.2	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,650	*1,650*	100.0
RENPC	Renewable Energy (%)	18.6	*100*	18.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	70	*0*	93.9

Cambodia

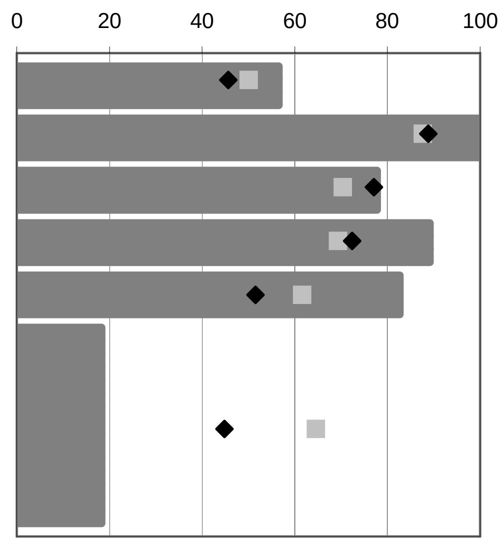
EAST ASIA AND THE PACIFIC

GDP/capita 2004 est. (PPP) $2,000

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	110
Score:	49.7
Income Group Avg.	56.0
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	56.6	45.7	50.1
Water Resources	99.9	88.8	87.6
Prod. Nat. Resources	77.8	77.1	70.4
Sustainable Energy	89.1	72.3	69.3
Biodiv. and Habitat	82.7	51.5	61.6
Environmental Health	18.3	44.8	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	13.0	*0*	49.9
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	34.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	16.0	*100*	0.0
PM10	Urban Particulates ($\mu g/m^3$)	68.6	*10*	58.3
OZONE	Regional Ozone (ppb)	34.2	*15*	54.8
NLOAD	Nitrogen Loading (mg/L)	11.2	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	50.5	*90*	56.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	2.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	291	*1,650*	100.0
RENPC	Renewable Energy (%)	6.8	*100*	6.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	31	*0*	97.3

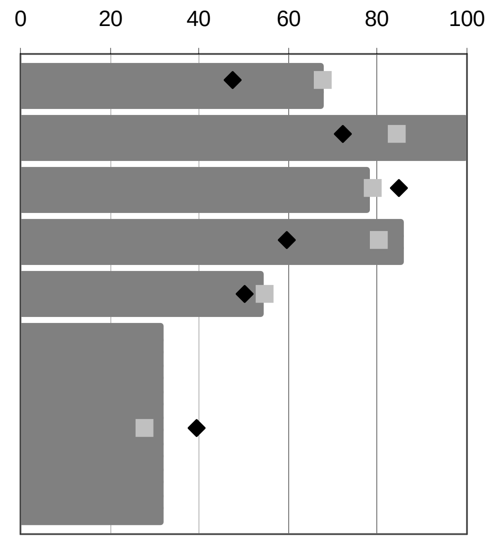
Cameroon

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	100
Score:	54.1
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	67.5	47.4	67.8
Water Resources	99.6	72.0	84.3
Prod. Nat. Resources	77.8	84.9	78.9
Sustainable Energy	85.3	59.5	80.3
Biodiv. and Habitat	54.0	50.0	54.9
Environmental Health	31.4	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	19.9	*0*	23.4
INDOOR	Indoor Air Pollution (%)	77	*0*	23.0
WATSUP	Drinking Water (%)	63.0	*100*	33.2
ACSAT	Adequate Sanitation (%)	48.0	*100*	36.8
PM10	Urban Particulates (µg/m^3)	84.6	*10*	46.9
OZONE	Regional Ozone (ppb)	20.1	*15*	88.0
NLOAD	Nitrogen Loading (mg/L)	41.3	*1*	99.2
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	18.8	*90*	20.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	61.8
HARVEST	Timber Harvest Rate (%)	0.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,300	*1,650*	97.3
RENPC	Renewable Energy (%)	38.6	*100*	38.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	178	*0*	84.4

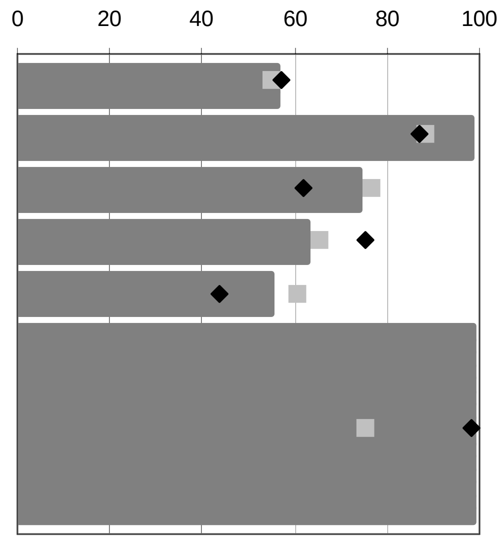
Canada

AMERICAS
GDP/capita 2004 est. (PPP) $31,500

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	8
Score:	84.0
Income Group Avg.	81.6
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	56.2	57.0	54.9
Water Resources	98.4	87.0	88.4
Prod. Nat. Resources	73.9	62.0	76.6
Sustainable Energy	62.8	75.5	65.4
Biodiv. and Habitat	55.2	43.7	60.8
Environmental Health	98.6	98.2	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	22.4	*10*	91.2
OZONE	Regional Ozone (ppb)	48.5	*15*	21.2
NLOAD	Nitrogen Loading (mg/L)	13.2	*1*	99.8
OVRSUB	Water Consumption (%)	1.7	*0*	97.0
PWI	Wilderness Protection (%)	8.9	*90*	9.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	76.5
HARVEST	Timber Harvest Rate (%)	0.7	*3*	100.0
AGSUB	Agricultural Subsidies (%)	4.1	*0*	55.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	14,227	*1,650*	47.4
RENPC	Renewable Energy (%)	25.9	*100*	25.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	168	*0*	85.3

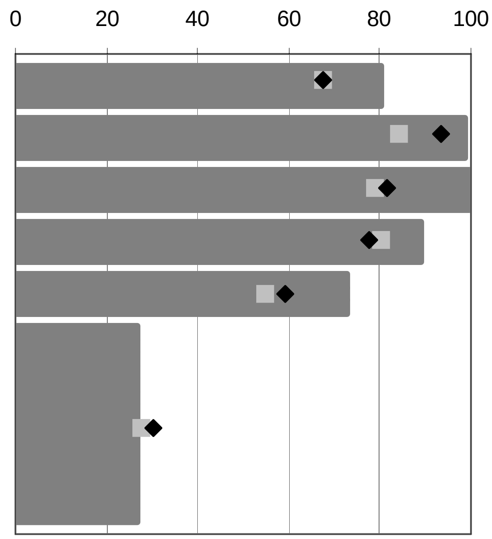
Central Afr. Rep.

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,100

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	87
Score:	57.3
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	80.1	67.6	67.8
Water Resources	98.5	93.5	84.3
Prod. Nat. Resources	100.0	81.6	78.9
Sustainable Energy	88.8	77.5	80.3
Biodiv. and Habitat	72.9	59.2	54.9
Environmental Health	26.6	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	22.8	*0*	12.0
INDOOR	Indoor Air Pollution (%)	99	*0*	1.0
WATSUP	Drinking Water (%)	75.0	*100*	54.9
ACSAT	Adequate Sanitation (%)	27.0	*100*	11.2
PM10	Urban Particulates (µg/m^3)	49.5	*10*	71.9
OZONE	Regional Ozone (ppb)	20.0	*15*	88.2
NLOAD	Nitrogen Loading (mg/L)	112.1	*1*	97.9
OVRSUB	Water Consumption (%)	0.5	*0*	99.1
PWI	Wilderness Protection (%)	28.2	*90*	31.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,362	*1,650*	100.0
RENPC	Renewable Energy (%)	14.9	*100*	14.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	59	*0*	94.9

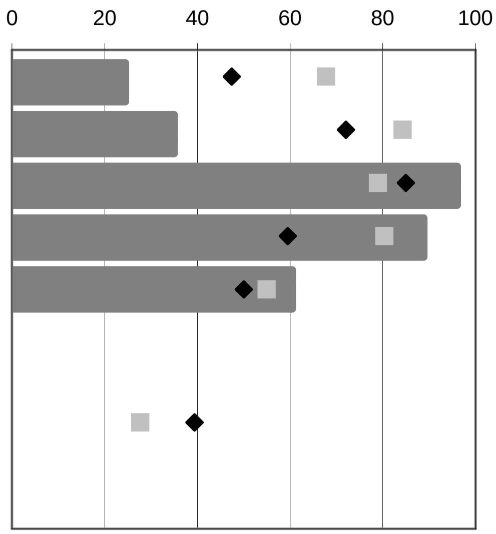
Chad

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,600

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	132
Score:	30.5
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	24.4	47.4	67.8
Water Resources	35.0	72.0	84.3
Prod. Nat. Resources	96.0	84.9	78.9
Sustainable Energy	88.8	59.5	80.3
Biodiv. and Habitat	60.5	50.0	54.9
Environmental Health	0.0	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	26.4	*0*	0.0
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	34.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	8.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	160.6	*10*	0.0
OZONE	Regional Ozone (ppb)	36.8	*15*	48.8
NLOAD	Nitrogen Loading (mg/L)	9,071.1	*1*	0.0
OVRSUB	Water Consumption (%)	16.4	*0*	70.0
PWI	Wilderness Protection (%)	7.0	*90*	7.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	5.3	*3*	92.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	288	*1,650*	100.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	21	*0*	98.1

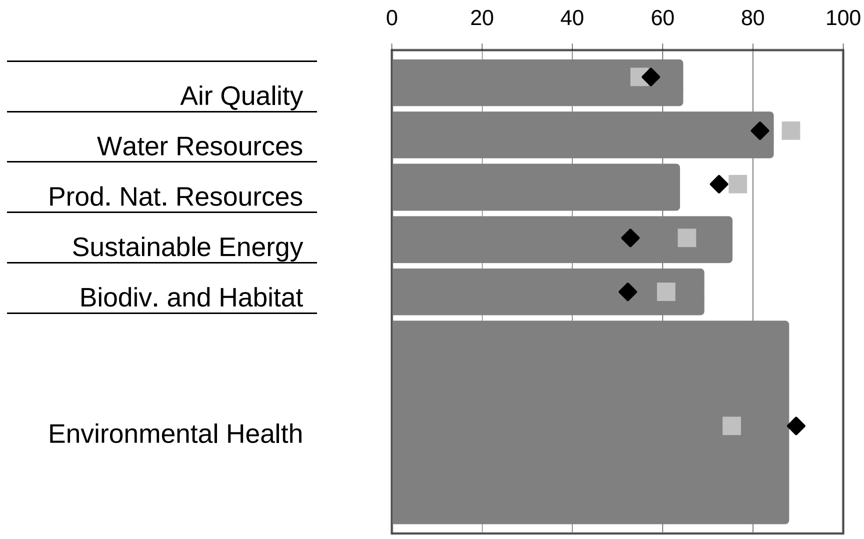
Chile

AMERICAS
GDP/capita 2004 est. (PPP) $10,700

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	26
Score:	78.9
Income Group Avg.	76.4
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	63.7	57.4	54.9
Water Resources	83.7	81.5	88.4
Prod. Nat. Resources	63.0	72.5	76.6
Sustainable Energy	74.6	52.8	65.4
Biodiv. and Habitat	68.4	52.3	60.8
Environmental Health	87.2	89.6	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.3
INDOOR	Indoor Air Pollution (%)	15	*0*	85.0
WATSUP	Drinking Water (%)	95.0	*100*	91.0
ACSAT	Adequate Sanitation (%)	92.0	*100*	90.3
PM10	Urban Particulates (µg/m^3)	65.2	*10*	60.7
OZONE	Regional Ozone (ppb)	29.2	*15*	66.7
NLOAD	Nitrogen Loading (mg/L)	128.4	*1*	97.6
OVRSUB	Water Consumption (%)	16.5	*0*	69.9
PWI	Wilderness Protection (%)	42.8	*90*	47.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	76.9
HARVEST	Timber Harvest Rate (%)	1.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.0	*0*	88.9
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,832	*1,650*	78.3
RENPC	Renewable Energy (%)	23.8	*100*	23.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	201	*0*	82.4

China

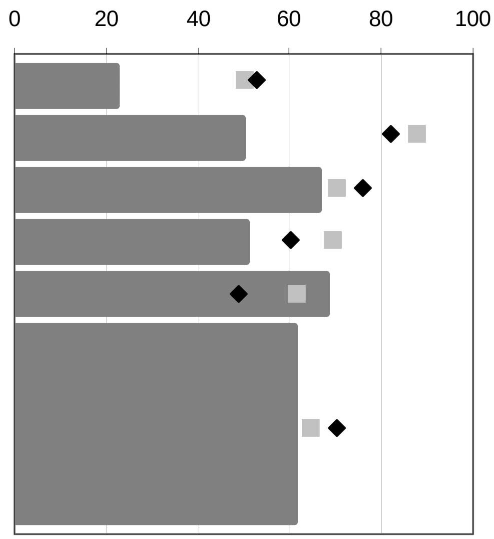
EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $5,600

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI

Rank:	94
Score:	56.2
Income Group Avg.	67.2
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	22.3	52.9	50.1
Water Resources	49.6	82.1	87.6
Prod. Nat. Resources	66.2	75.8	70.4
Sustainable Energy	50.8	60.3	69.3
Biodiv. and Habitat	68.1	48.9	61.6
Environmental Health	61.0	70.4	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.5	*0*	94.1
INDOOR	Indoor Air Pollution (%)	30	*0*	70.0
WATSUP	Drinking Water (%)	77.0	*100*	58.5
ACSAT	Adequate Sanitation (%)	44.0	*100*	31.9
PM10	Urban Particulates (µg/m^3)	87.8	*10*	44.7
OZONE	Regional Ozone (ppb)	63.4	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	3,429.8	*1*	35.0
OVRSUB	Water Consumption (%)	19.6	*0*	64.3
PWI	Wilderness Protection (%)	37.1	*90*	41.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	84.3
HARVEST	Timber Harvest Rate (%)	3.4	*3*	98.7
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	7,079	*1,650*	77.3
RENPC	Renewable Energy (%)	6.3	*100*	6.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	731	*0*	36.0

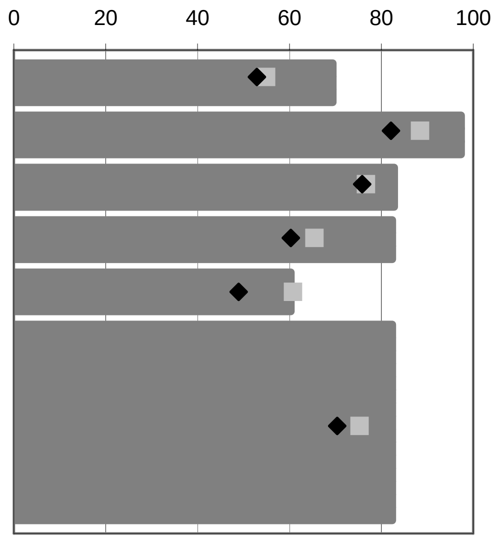
Colombia

AMERICAS
GDP/capita 2004 est. (PPP) $6,600

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	17
Score:	80.4
Income Group Avg.	67.2
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	69.4	52.9	54.9
Water Resources	97.4	82.1	88.4
Prod. Nat. Resources	82.8	75.8	76.6
Sustainable Energy	82.4	60.3	65.4
Biodiv. and Habitat	60.3	48.9	60.8
Environmental Health	82.4	70.4	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.9	*0*	92.8
INDOOR	Indoor Air Pollution (%)	36	*0*	64.0
WATSUP	Drinking Water (%)	92.0	*100*	85.6
ACSAT	Adequate Sanitation (%)	86.0	*100*	83.0
PM10	Urban Particulates (µg/m^3)	24.9	*10*	89.4
OZONE	Regional Ozone (ppb)	36.5	*15*	49.4
NLOAD	Nitrogen Loading (mg/L)	8.2	*1*	99.9
OVRSUB	Water Consumption (%)	2.8	*0*	94.8
PWI	Wilderness Protection (%)	19.2	*90*	21.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	78.4
HARVEST	Timber Harvest Rate (%)	0.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.1	*0*	98.4
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,805	*1,650*	91.0
RENPC	Renewable Energy (%)	32.1	*100*	32.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	165	*0*	85.6

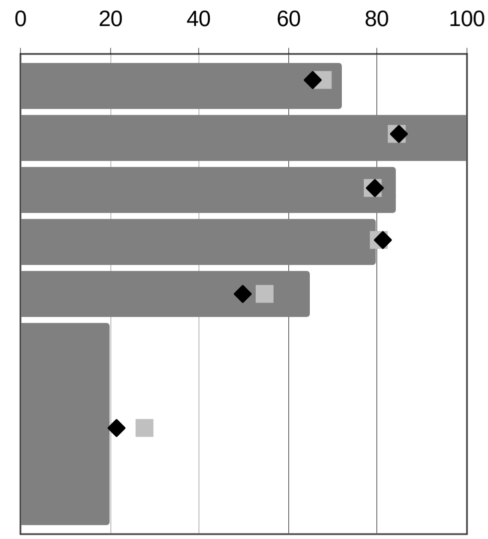
Congo

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 800

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	112
Score:	49.4
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	71.4	65.6	67.8
Water Resources	99.8	84.6	84.3
Prod. Nat. Resources	83.3	79.5	78.9
Sustainable Energy	79.0	81.1	80.3
Biodiv. and Habitat	64.1	49.8	54.9
Environmental Health	19.4	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	9.9	*0*	61.7
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	46.0	*100*	2.5
ACSAT	Adequate Sanitation (%)	9.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	90.4	*10*	42.8
OZONE	Regional Ozone (ppb)	12.6	*15*	100.0
NLOAD	Nitrogen Loading (mg/L)	19.2	*1*	99.7
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	25.9	*90*	28.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	79.9
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,238	*1,650*	89.2
RENPC	Renewable Energy (%)	22.9	*100*	22.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	207	*0*	81.9

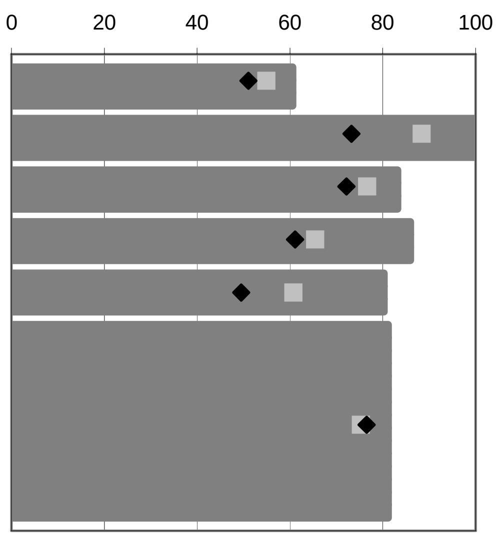
Costa Rica

AMERICAS
GDP/capita 2004 est. (PPP) $9,600

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	15
Score:	81.6
Income Group Avg.	69.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	60.6	51.1	54.9
Water Resources	100.0	73.3	88.4
Prod. Nat. Resources	83.1	72.2	76.6
Sustainable Energy	86.0	61.1	65.4
Biodiv. and Habitat	80.3	49.5	60.8
Environmental Health	81.1	76.5	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.3
INDOOR	Indoor Air Pollution (%)	58	*0*	42.0
WATSUP	Drinking Water (%)	97.0	*100*	94.6
ACSAT	Adequate Sanitation (%)	92.0	*100*	90.3
PM10	Urban Particulates (µg/m^3)	37.8	*10*	80.2
OZONE	Regional Ozone (ppb)	40.1	*15*	41.0
NLOAD	Nitrogen Loading (mg/L)	4.9	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	45.0	*90*	50.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.1	*0*	99.4
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,462	*1,650*	88.2
RENPC	Renewable Energy (%)	52.2	*100*	52.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	99	*0*	91.3

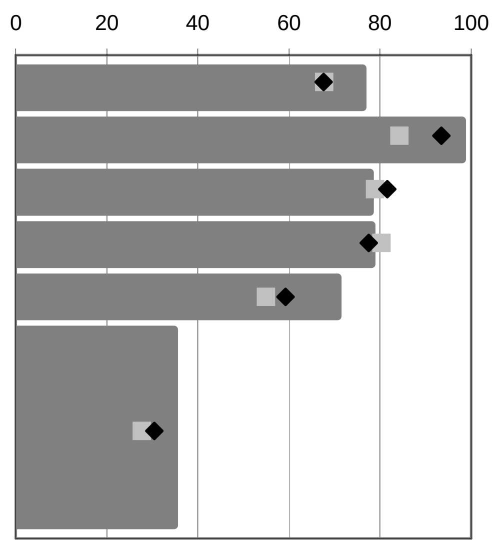
Côte d'Ivoire

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,500

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	86
Score:	57.5
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	76.2	67.6	67.8
Water Resources	98.0	93.5	84.3
Prod. Nat. Resources	77.8	81.6	78.9
Sustainable Energy	78.2	77.5	80.3
Biodiv. and Habitat	70.7	59.2	54.9
Environmental Health	34.8	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	21.3	*0*	17.8
INDOOR	Indoor Air Pollution (%)	93	*0*	7.0
WATSUP	Drinking Water (%)	84.0	*100*	71.1
ACSAT	Adequate Sanitation (%)	40.0	*100*	27.1
PM10	Urban Particulates (µg/m^3)	64.3	*10*	61.4
OZONE	Regional Ozone (ppb)	18.8	*15*	91.0
NLOAD	Nitrogen Loading (mg/L)	30.9	*1*	99.4
OVRSUB	Water Consumption (%)	1.8	*0*	96.6
PWI	Wilderness Protection (%)	41.5	*90*	46.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	79.7
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,027	*1,650*	90.1
RENPC	Renewable Energy (%)	16.6	*100*	16.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	220	*0*	80.8

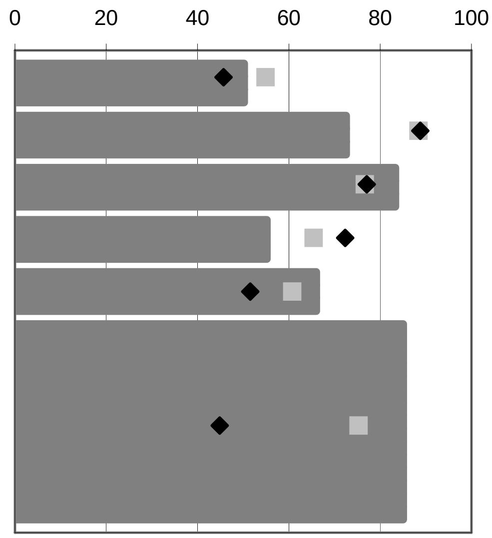
Cuba

AMERICAS
GDP/capita 2004 est. (PPP) $3,000

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	41
Score:	75.3
Income Group Avg.	56.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	50.2	45.7	54.9
Water Resources	72.6	88.8	88.4
Prod. Nat. Resources	83.3	77.1	76.6
Sustainable Energy	55.2	72.3	65.4
Biodiv. and Habitat	66.0	51.5	60.8
Environmental Health	85.1	44.8	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.5
INDOOR	Indoor Air Pollution (%)	42	*0*	58.0
WATSUP	Drinking Water (%)	91.0	*100*	83.8
ACSAT	Adequate Sanitation (%)	98.0	*100*	97.6
PM10	Urban Particulates (µg/m^3)	25.0	*10*	89.3
OZONE	Regional Ozone (ppb)	52.8	*15*	11.1
NLOAD	Nitrogen Loading (mg/L)	134.7	*1*	97.5
OVRSUB	Water Consumption (%)	28.7	*0*	47.6
PWI	Wilderness Protection (%)	29.5	*90*	32.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	89.6
HARVEST	Timber Harvest Rate (%)	2.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	14,968	*1,650*	44.3
RENPC	Renewable Energy (%)	1.8	*100*	1.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	263	*0*	77.0

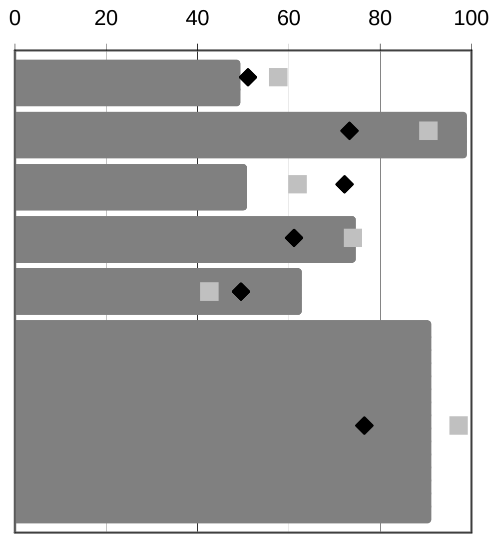
Cyprus

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $7,135

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	29
Score:	78.4
Income Group Avg.	69.0
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	48.5	51.1	57.7
Water Resources	98.2	73.3	90.6
Prod. Nat. Resources	50.0	72.2	61.9
Sustainable Energy	73.9	61.1	74.1
Biodiv. and Habitat	62.0	49.5	42.6
Environmental Health	90.4	76.5	97.2

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	24	*0*	76.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	55.2	*10*	67.8
OZONE	Regional Ozone (ppb)	45.1	*15*	29.3
NLOAD	Nitrogen Loading (mg/L)	191.3	*1*	96.4
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	21.7	*90*	24.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	79.1
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	15.2	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,728	*1,650*	78.8
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	164	*0*	85.6

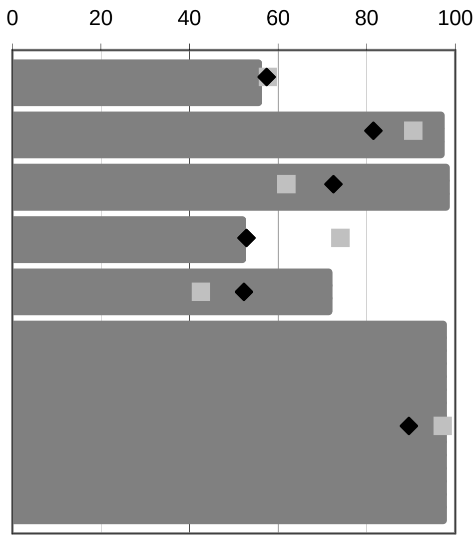
Czech Rep.

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $16,800

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	4
Score:	86.0
Income Group Avg.	76.4
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	55.5	57.4	57.7
Water Resources	96.7	81.5	90.6
Prod. Nat. Resources	97.9	72.5	61.9
Sustainable Energy	51.9	52.8	74.1
Biodiv. and Habitat	71.4	52.3	42.6
Environmental Health	97.3	89.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.1	*0*	99.6
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	38.5	*10*	79.7
OZONE	Regional Ozone (ppb)	44.2	*15*	31.4
NLOAD	Nitrogen Loading (mg/L)	100.9	*1*	98.1
OVRSUB	Water Consumption (%)	2.6	*0*	95.3
PWI	Wilderness Protection (%)	25.5	*90*	28.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	2.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.4	*0*	95.9
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,418	*1,650*	67.5
RENPC	Renewable Energy (%)	1.2	*100*	1.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	586	*0*	48.7

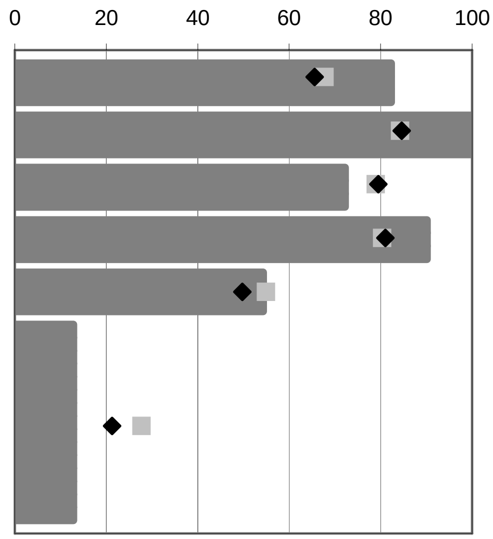
Dem. Rep. Congo

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 700

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	119
Score:	46.3
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	82.3	65.6	67.8
Water Resources	99.7	84.6	84.3
Prod. Nat. Resources	72.2	79.5	78.9
Sustainable Energy	90.1	81.1	80.3
Biodiv. and Habitat	54.3	49.8	54.9
Environmental Health	12.8	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	28.4	*0*	0.0
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	46.0	*100*	2.5
ACSAT	Adequate Sanitation (%)	29.0	*100*	13.7
PM10	Urban Particulates (µg/m^3)	51.0	*10*	70.9
OZONE	Regional Ozone (ppb)	17.7	*15*	93.8
NLOAD	Nitrogen Loading (mg/L)	35.1	*1*	99.4
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	15.8	*90*	17.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	66.0
HARVEST	Timber Harvest Rate (%)	0.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,139	*1,650*	98.0
RENPC	Renewable Energy (%)	76.6	*100*	76.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	162	*0*	85.9

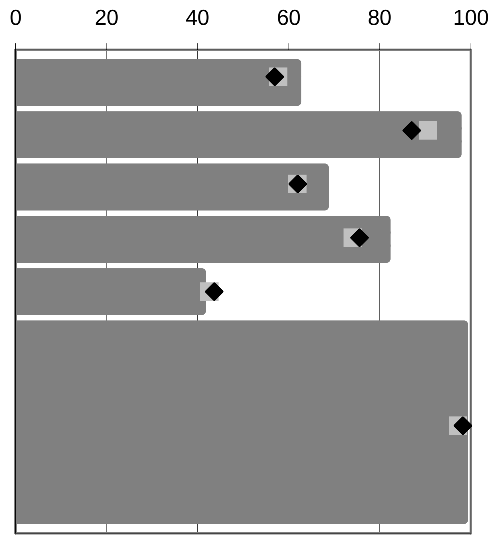
Denmark

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $32,200

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	7
Score:	84.2
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	61.9	57.0	57.7
Water Resources	97.1	87.0	90.6
Prod. Nat. Resources	67.9	62.0	61.9
Sustainable Energy	81.5	75.5	74.1
Biodiv. and Habitat	40.9	43.7	42.6
Environmental Health	98.5	98.2	97.2

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.7
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	22.7	*10*	90.9
OZONE	Regional Ozone (ppb)	43.5	*15*	32.9
NLOAD	Nitrogen Loading (mg/L)	85.2	*1*	98.4
OVRSUB	Water Consumption (%)	2.3	*0*	95.9
PWI	Wilderness Protection (%)	10.7	*90*	11.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	38.0
HARVEST	Timber Harvest Rate (%)	2.9	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.2	*0*	87.1
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,389	*1,650*	84.4
RENPC	Renewable Energy (%)	9.2	*100*	9.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	59	*0*	94.8

Dominican Rep.

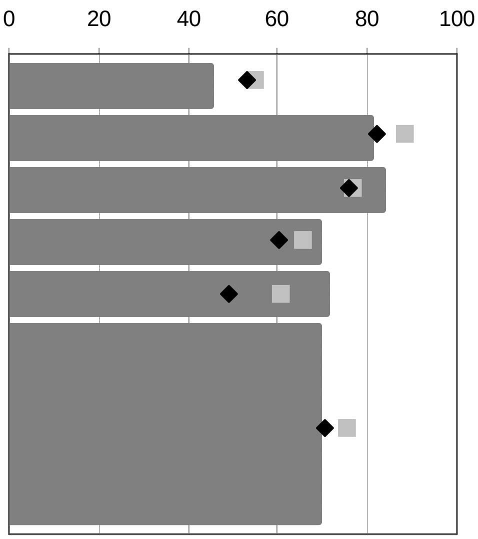
AMERICAS

GDP/capita 2004 est. (PPP) $6,300

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	54
Score:	69.5
Income Group Avg.	67.2
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	45.2	52.9	54.9
Water Resources	80.8	82.1	88.4
Prod. Nat. Resources	83.3	75.8	76.6
Sustainable Energy	69.3	60.3	65.4
Biodiv. and Habitat	70.9	48.9	60.8
Environmental Health	69.2	70.4	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.2	*0*	83.8
INDOOR	Indoor Air Pollution (%)	48	*0*	52.0
WATSUP	Drinking Water (%)	93.0	*100*	87.4
ACSAT	Adequate Sanitation (%)	57.0	*100*	47.7
PM10	Urban Particulates (µg/m^3)	39.1	*10*	79.3
OZONE	Regional Ozone (ppb)	52.8	*15*	11.0
NLOAD	Nitrogen Loading (mg/L)	57.1	*1*	98.9
OVRSUB	Water Consumption (%)	20.4	*0*	62.7
PWI	Wilderness Protection (%)	29.2	*90*	32.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	1.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,699	*1,650*	87.3
RENPC	Renewable Energy (%)	4.9	*100*	4.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	378	*0*	66.9

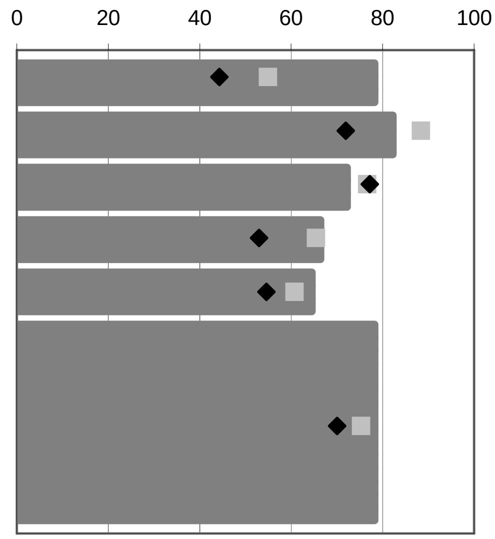
Ecuador

AMERICAS
GDP/capita 2004 est. (PPP) $3,700

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	40
Score:	75.5
Income Group Avg.	65.1
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	78.3	44.3	54.9
Water Resources	82.3	71.9	88.4
Prod. Nat. Resources	72.2	77.2	76.6
Sustainable Energy	66.4	53.0	65.4
Biodiv. and Habitat	64.5	54.6	60.8
Environmental Health	78.2	70.0	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.3	*0*	95.0
INDOOR	Indoor Air Pollution (%)	28	*0*	72.0
WATSUP	Drinking Water (%)	86.0	*100*	74.7
ACSAT	Adequate Sanitation (%)	72.0	*100*	66.0
PM10	Urban Particulates (µg/m^3)	27.9	*10*	87.3
OZONE	Regional Ozone (ppb)	28.1	*15*	69.2
NLOAD	Nitrogen Loading (mg/L)	19.4	*1*	99.7
OVRSUB	Water Consumption (%)	19.2	*0*	64.9
PWI	Wilderness Protection (%)	31.2	*90*	34.7
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	81.0
HARVEST	Timber Harvest Rate (%)	0.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,247	*1,650*	72.4
RENPC	Renewable Energy (%)	18.8	*100*	18.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	328	*0*	71.3

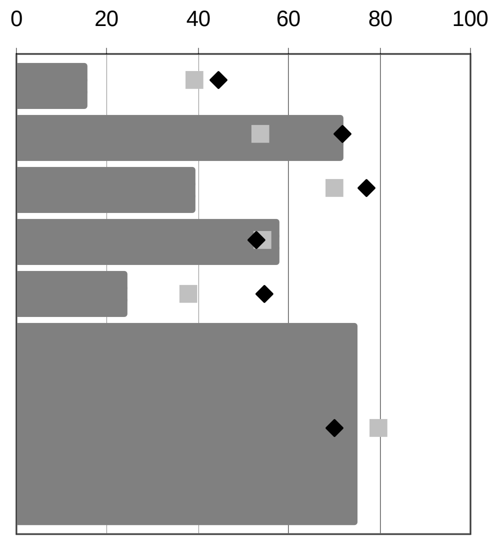
Egypt

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $4,200

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	85
Score:	57.9
Income Group Avg.	65.1
Geographic Group Avg.	65.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	14.8	44.3	39.1
Water Resources	71.5	71.9	53.9
Prod. Nat. Resources	38.9	77.2	70.0
Sustainable Energy	57.2	53.0	54.3
Biodiv. and Habitat	23.9	54.6	37.8
Environmental Health	74.6	70.0	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.6	*0*	93.7
INDOOR	Indoor Air Pollution (%)	8	*0*	92.0
WATSUP	Drinking Water (%)	98.0	*100*	96.4
ACSAT	Adequate Sanitation (%)	68.0	*100*	61.1
PM10	Urban Particulates (µg/m^3)	152.3	*10*	0.0
OZONE	Regional Ozone (ppb)	45.0	*15*	29.5
NLOAD	Nitrogen Loading (mg/L)	552.3	*1*	89.5
OVRSUB	Water Consumption (%)	25.5	*0*	53.5
PWI	Wilderness Protection (%)	5.5	*90*	6.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	46.4
HARVEST	Timber Harvest Rate (%)	125.8	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,732	*1,650*	70.4
RENPC	Renewable Energy (%)	5.7	*100*	5.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	499	*0*	56.4

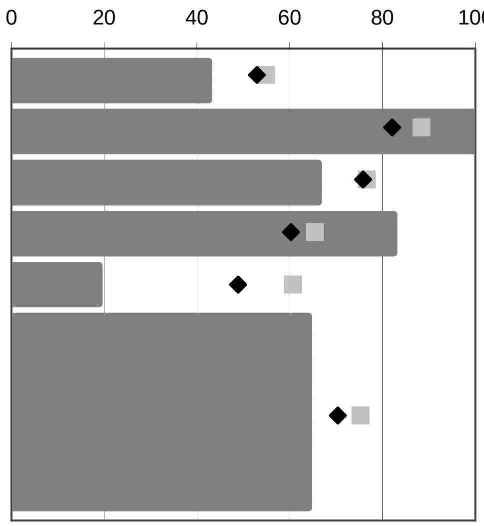
El Salvador

AMERICAS
GDP/capita 2004 est. (PPP) $4,900

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	73
Score:	63.0
Income Group Avg.	67.2
Geographic Group Avg.	72.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	42.5	52.9	54.9
Water Resources	99.8	82.1	88.4
Prod. Nat. Resources	66.1	75.8	76.6
Sustainable Energy	82.5	60.3	65.4
Biodiv. and Habitat	18.9	48.9	60.8
Environmental Health	64.1	70.4	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.1	*0*	91.7
INDOOR	Indoor Air Pollution (%)	65	*0*	35.0
WATSUP	Drinking Water (%)	82.0	*100*	67.5
ACSAT	Adequate Sanitation (%)	63.0	*100*	55.0
PM10	Urban Particulates (µg/m^3)	43.1	*10*	76.4
OZONE	Regional Ozone (ppb)	53.9	*15*	8.6
NLOAD	Nitrogen Loading (mg/L)	20.1	*1*	99.6
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	0.4	*90*	0.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	12.2
HARVEST	Timber Harvest Rate (%)	18.0	*3*	48.4
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,643	*1,650*	91.7
RENPC	Renewable Energy (%)	29.7	*100*	29.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	165	*0*	85.6

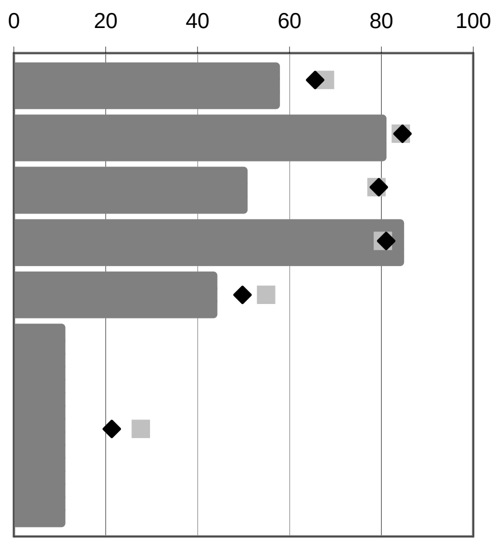
Ethiopia

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 800

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	129
Score:	36.7
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	57.0	65.6	67.8
Water Resources	80.2	84.6	84.3
Prod. Nat. Resources	50.0	79.5	78.9
Sustainable Energy	84.1	81.1	80.3
Biodiv. and Habitat	43.5	49.8	54.9
Environmental Health	10.4	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	21.2	*0*	18.3
INDOOR	Indoor Air Pollution (%)	97	*0*	3.0
WATSUP	Drinking Water (%)	22.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	6.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	88.0	*10*	44.5
OZONE	Regional Ozone (ppb)	27.9	*15*	69.6
NLOAD	Nitrogen Loading (mg/L)	335.3	*1*	93.7
OVRSUB	Water Consumption (%)	18.2	*0*	66.8
PWI	Wilderness Protection (%)	13.4	*90*	14.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	85.8
HARVEST	Timber Harvest Rate (%)	36.9	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,588	*1,650*	100.0
RENPC	Renewable Energy (%)	26.8	*100*	26.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	204	*0*	82.1

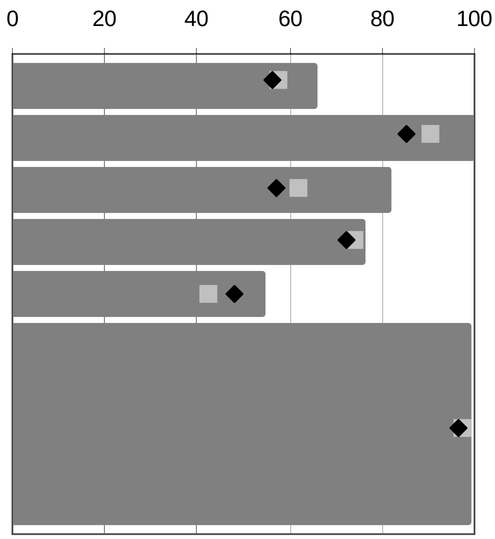
Finland

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $29,000

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	3
Score:	87.0
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group* (◆)	*Geographic Group* (■)
Air Quality	65.3	56.3	57.7
Water Resources	99.5	85.4	90.6
Prod. Nat. Resources	81.5	57.0	61.9
Sustainable Energy	75.7	72.3	74.1
Biodiv. and Habitat	54.3	48.2	42.6
Environmental Health	98.8	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.2
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	20.6	*10*	92.5
OZONE	Regional Ozone (ppb)	41.4	*15*	38.1
NLOAD	Nitrogen Loading (mg/L)	17.2	*1*	99.7
OVRSUB	Water Consumption (%)	0.4	*0*	99.2
PWI	Wilderness Protection (%)	21.7	*90*	24.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	59.4
HARVEST	Timber Harvest Rate (%)	2.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.5	*0*	94.6
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,349	*1,650*	72.0
RENPC	Renewable Energy (%)	16.3	*100*	16.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	89	*0*	92.2

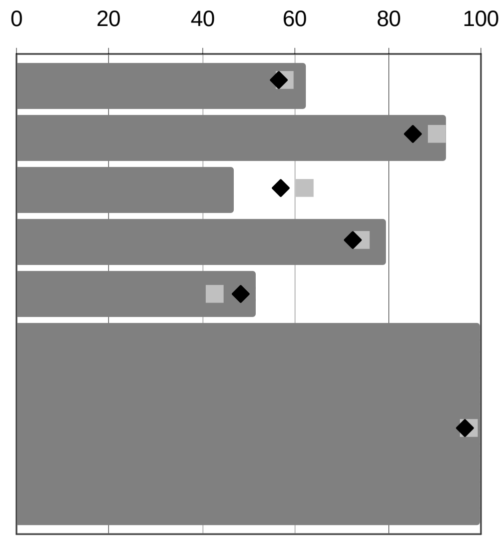
France

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $28,700

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	12
Score:	82.5
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	61.5	56.3	57.7
Water Resources	91.7	85.4	90.6
Prod. Nat. Resources	46.3	57.0	61.9
Sustainable Energy	78.9	72.3	74.1
Biodiv. and Habitat	50.9	48.2	42.6
Environmental Health	99.2	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.1
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	16.7	*10*	95.2
OZONE	Regional Ozone (ppb)	45.7	*15*	27.7
NLOAD	Nitrogen Loading (mg/L)	72.7	*1*	98.6
OVRSUB	Water Consumption (%)	8.4	*0*	84.7
PWI	Wilderness Protection (%)	6.4	*90*	7.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	70.4
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	8.7	*0*	5.5
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,685	*1,650*	79.0
RENPC	Renewable Energy (%)	5.7	*100*	5.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	56	*0*	95.1

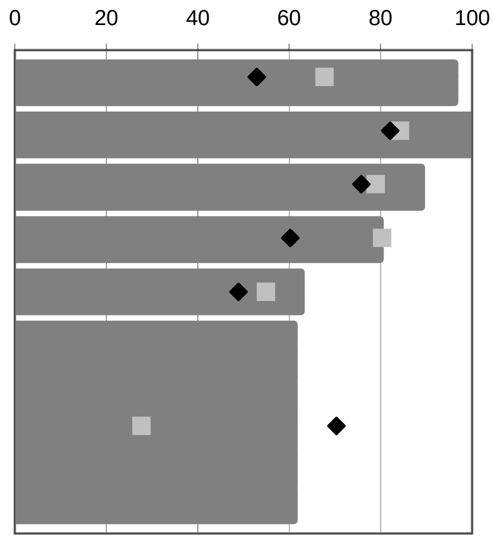
Gabon

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $5,900

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	46
Score:	73.2
Income Group Avg.	67.2
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	96.1	52.9	67.8
Water Resources	99.9	82.1	84.3
Prod. Nat. Resources	88.9	75.8	78.9
Sustainable Energy	79.8	60.3	80.3
Biodiv. and Habitat	62.5	48.9	54.9
Environmental Health	61.0	70.4	27.7

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	10.1	*0*	61.0
INDOOR	Indoor Air Pollution (%)	34	*0*	66.0
WATSUP	Drinking Water (%)	87.0	*100*	76.5
ACSAT	Adequate Sanitation (%)	36.0	*100*	22.2
PM10	Urban Particulates ($\mu g/m^3$)	20.9	*10*	92.2
OZONE	Regional Ozone (ppb)	12.3	*15*	100.0
NLOAD	Nitrogen Loading (mg/L)	8.9	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	4.5	*90*	5.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,561	*1,650*	87.8
RENPC	Renewable Energy (%)	25.4	*100*	25.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	177	*0*	84.5

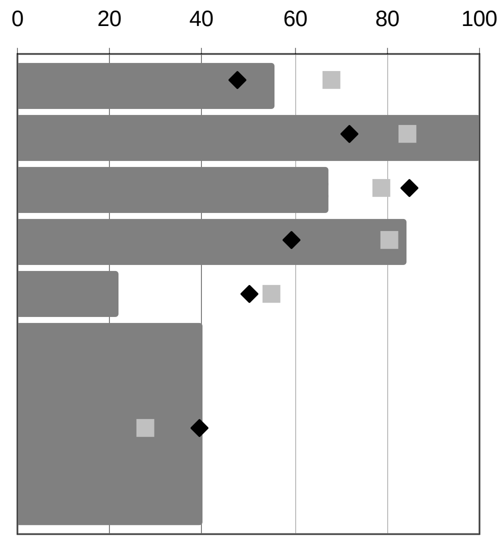
Gambia

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,800

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	106
Score:	52.3
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	54.9	47.4	67.8
Water Resources	99.6	72.0	84.3
Prod. Nat. Resources	66.9	84.9	78.9
Sustainable Energy	83.5	59.5	80.3
Biodiv. and Habitat	21.2	50.0	54.9
Environmental Health	39.3	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	14.6	*0*	43.8
INDOOR	Indoor Air Pollution (%)	98	*0*	2.0
WATSUP	Drinking Water (%)	82.0	*100*	67.5
ACSAT	Adequate Sanitation (%)	53.0	*100*	42.9
PM10	Urban Particulates (µg/m^3)	92.9	*10*	41.0
OZONE	Regional Ozone (ppb)	28.3	*15*	68.8
NLOAD	Nitrogen Loading (mg/L)	42.6	*1*	99.2
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	0.4	*90*	0.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	10.7
HARVEST	Timber Harvest Rate (%)	12.5	*3*	67.2
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,550	*1,650*	100.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	153	*0*	86.6

Georgia

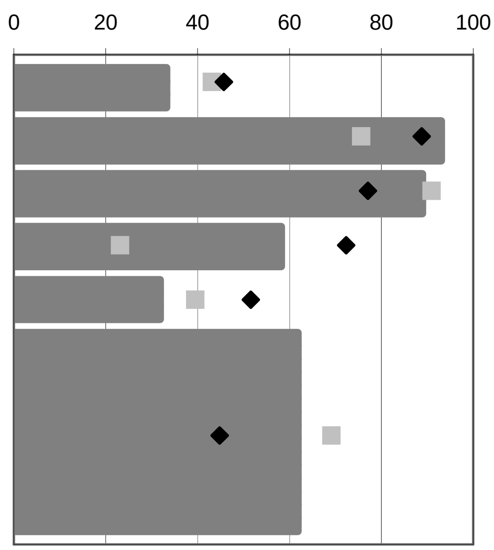
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $3,100

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	77
Score:	61.4
Income Group Avg.	56.0
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	33.2	45.7	43.2
Water Resources	93.0	88.8	75.6
Prod. Nat. Resources	88.9	77.1	90.9
Sustainable Energy	58.2	72.3	23.1
Biodiv. and Habitat	31.8	51.5	39.5
Environmental Health	61.8	44.8	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.7	*0*	97.2
INDOOR	Indoor Air Pollution (%)	71	*0*	29.0
WATSUP	Drinking Water (%)	76.0	*100*	56.7
ACSAT	Adequate Sanitation (%)	83.0	*100*	79.3
PM10	Urban Particulates (µg/m^3)	97.9	*10*	37.4
OZONE	Regional Ozone (ppb)	45.2	*15*	29.0
NLOAD	Nitrogen Loading (mg/L)	61.7	*1*	98.8
OVRSUB	Water Consumption (%)	7.0	*0*	87.2
PWI	Wilderness Protection (%)	3.9	*90*	4.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.20	*1*	23.6
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	11,490	*1,650*	58.9
RENPC	Renewable Energy (%)	52.7	*100*	52.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	471	*0*	58.8

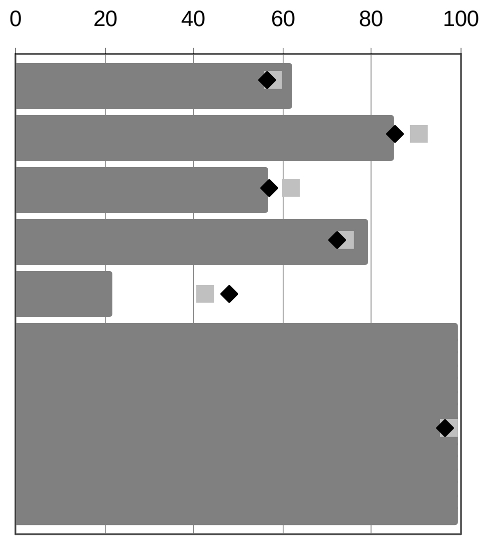
Germany

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $28,700

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	22
Score:	79.4
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	61.3	56.3	57.7
Water Resources	84.5	85.4	90.6
Prod. Nat. Resources	55.9	57.0	61.9
Sustainable Energy	78.3	72.3	74.1
Biodiv. and Habitat	21.1	48.2	42.6
Environmental Health	98.6	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	99.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	22.3	*10*	91.3
OZONE	Regional Ozone (ppb)	44.2	*15*	31.4
NLOAD	Nitrogen Loading (mg/L)	98.1	*1*	98.2
OVRSUB	Water Consumption (%)	15.9	*0*	70.9
PWI	Wilderness Protection (%)	0.9	*90*	1.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	2.2
HARVEST	Timber Harvest Rate (%)	1.9	*3*	100.0
AGSUB	Agricultural Subsidies (%)	6.0	*0*	34.2
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,382	*1,650*	80.2
RENPC	Renewable Energy (%)	3.8	*100*	3.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	80	*0*	93.0

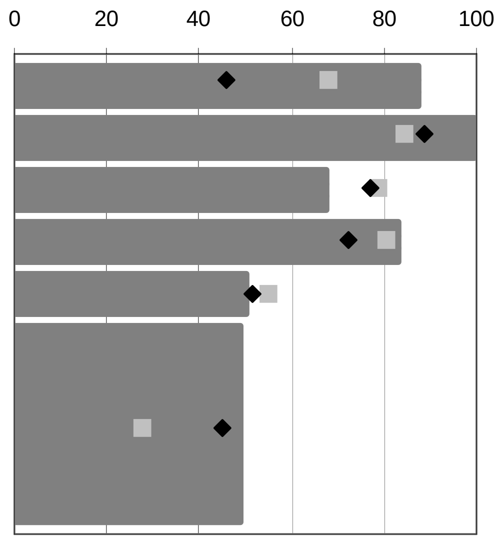
Ghana

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $2,300

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	72
Score:	63.1
Income Group Avg.	56.0
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	87.3	45.7	67.8
Water Resources	99.4	88.8	84.3
Prod. Nat. Resources	67.5	77.1	78.9
Sustainable Energy	83.3	72.3	80.3
Biodiv. and Habitat	50.1	51.5	54.9
Environmental Health	48.8	44.8	27.7

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	10.8	*0*	58.3
INDOOR	Indoor Air Pollution (%)	95	*0*	5.0
WATSUP	Drinking Water (%)	79.0	*100*	62.1
ACSAT	Adequate Sanitation (%)	58.0	*100*	48.9
PM10	Urban Particulates (µg/m^3)	33.3	*10*	83.4
OZONE	Regional Ozone (ppb)	18.8	*15*	91.1
NLOAD	Nitrogen Loading (mg/L)	61.5	*1*	98.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	7.7	*90*	8.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	69.9
HARVEST	Timber Harvest Rate (%)	7.1	*3*	85.9
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,762	*1,650*	95.4
RENPC	Renewable Energy (%)	36.7	*100*	36.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	202	*0*	82.4

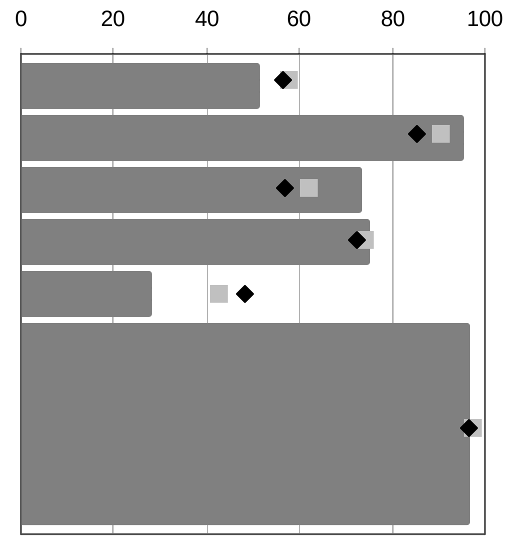
Greece

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $21,300

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	19
Score:	80.2
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	50.9	56.3	57.7
Water Resources	94.9	85.4	90.6
Prod. Nat. Resources	72.9	57.0	61.9
Sustainable Energy	74.7	72.3	74.1
Biodiv. and Habitat	27.4	48.2	42.6
Environmental Health	96.3	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.8
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	47.4	*10*	73.4
OZONE	Regional Ozone (ppb)	45.4	*15*	28.4
NLOAD	Nitrogen Loading (mg/L)	114.1	*1*	97.9
OVRSUB	Water Consumption (%)	4.4	*0*	91.9
PWI	Wilderness Protection (%)	3.7	*90*	4.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	11.5
HARVEST	Timber Harvest Rate (%)	1.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.4	*0*	85.3
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,215	*1,650*	80.9
RENPC	Renewable Energy (%)	4.3	*100*	4.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	176	*0*	84.6

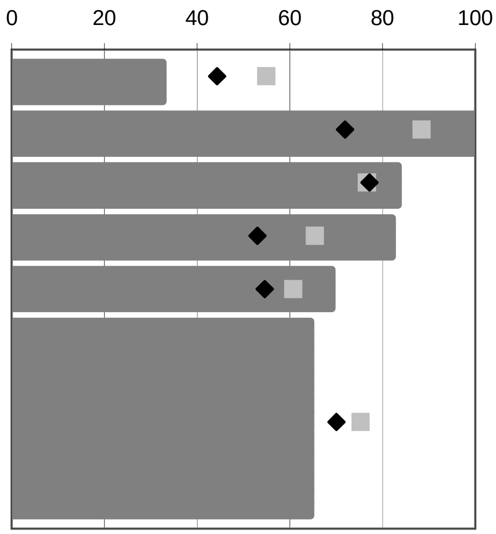
Guatemala

AMERICAS
GDP/capita 2004 est. (PPP) $4,200

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	58
Score:	68.9
Income Group Avg.	65.1
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	32.6	44.3	54.9
Water Resources	99.9	71.9	88.4
Prod. Nat. Resources	83.3	77.2	76.6
Sustainable Energy	82.1	53.0	65.4
Biodiv. and Habitat	69.1	54.6	60.8
Environmental Health	64.4	70.0	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	3.4	*0*	86.9
INDOOR	Indoor Air Pollution (%)	73	*0*	27.0
WATSUP	Drinking Water (%)	95.0	*100*	91.0
ACSAT	Adequate Sanitation (%)	61.0	*100*	52.6
PM10	Urban Particulates (µg/m^3)	58.9	*10*	65.2
OZONE	Regional Ozone (ppb)	64.4	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	10.2	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	47.9	*90*	53.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	67.7
HARVEST	Timber Harvest Rate (%)	1.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,449	*1,650*	92.5
RENPC	Renewable Energy (%)	17.4	*100*	17.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	152	*0*	86.7

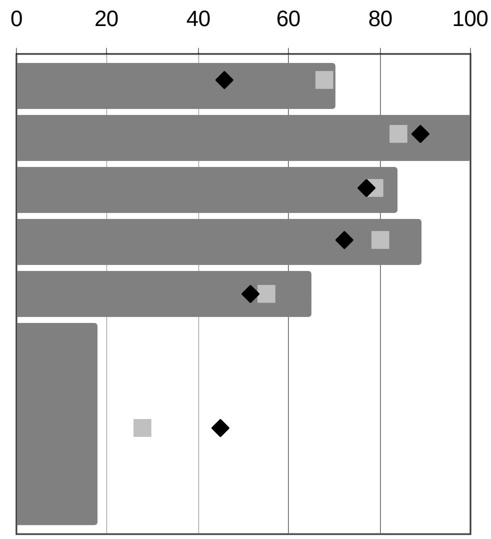
Guinea

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $2,100

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	113
Score:	49.2
Income Group Avg.	56.0
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	69.6	45.7	67.8
Water Resources	99.5	88.8	84.3
Prod. Nat. Resources	83.3	77.1	78.9
Sustainable Energy	88.6	72.3	80.3
Biodiv. and Habitat	64.3	51.5	54.9
Environmental Health	17.2	44.8	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	17.6	*0*	32.3
INDOOR	Indoor Air Pollution (%)	99	*0*	1.0
WATSUP	Drinking Water (%)	51.0	*100*	11.6
ACSAT	Adequate Sanitation (%)	13.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	68.7	*10*	58.2
OZONE	Regional Ozone (ppb)	23.1	*15*	81.0
NLOAD	Nitrogen Loading (mg/L)	52.1	*1*	99.0
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	12.4	*90*	13.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	95.6
HARVEST	Timber Harvest Rate (%)	1.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,357	*1,650*	100.0
RENPC	Renewable Energy (%)	19.9	*100*	19.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	78	*0*	93.2

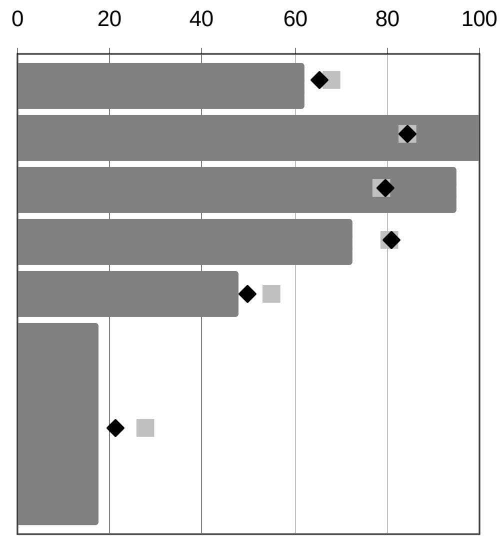
Guinea-Bissau

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 700

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	120
Score:	46.1
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	61.6	65.6	67.8
Water Resources	99.9	84.6	84.3
Prod. Nat. Resources	94.4	79.5	78.9
Sustainable Energy	72.1	81.1	80.3
Biodiv. and Habitat	47.3	49.8	54.9
Environmental Health	17.1	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	27.9	*0*	0.0
INDOOR	Indoor Air Pollution (%)	95	*0*	5.0
WATSUP	Drinking Water (%)	59.0	*100*	26.0
ACSAT	Adequate Sanitation (%)	34.0	*100*	19.8
PM10	Urban Particulates (µg/m^3)	86.1	*10*	45.8
OZONE	Regional Ozone (ppb)	24.6	*15*	77.5
NLOAD	Nitrogen Loading (mg/L)	9.2	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	19.3	*90*	21.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	44.0
HARVEST	Timber Harvest Rate (%)	1.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	2	*1*	83.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,960	*1,650*	86.2
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	286	*0*	75.0

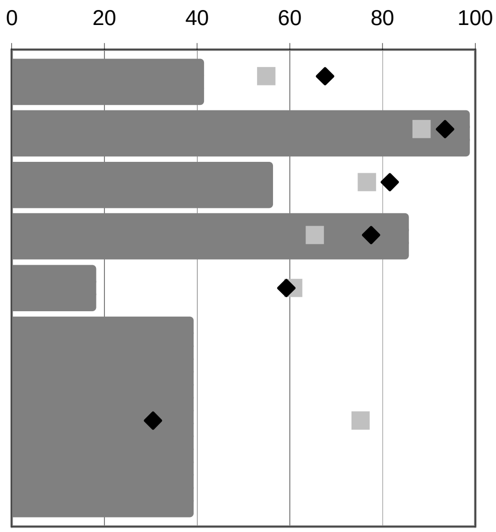
Haiti

AMERICAS
GDP/capita 2004 est. (PPP) $1,500

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	114
Score:	48.9
Income Group Avg.	53.2
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	40.7	67.6	54.9
Water Resources	98.0	93.5	88.4
Prod. Nat. Resources	55.6	81.6	76.6
Sustainable Energy	84.8	77.5	65.4
Biodiv. and Habitat	17.4	59.2	60.8
Environmental Health	38.4	30.5	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	13.3	*0*	48.6
INDOOR	Indoor Air Pollution (%)	82	*0*	18.0
WATSUP	Drinking Water (%)	71.0	*100*	47.7
ACSAT	Adequate Sanitation (%)	34.0	*100*	19.8
PM10	Urban Particulates (µg/m^3)	49.9	*10*	71.6
OZONE	Regional Ozone (ppb)	53.4	*15*	9.7
NLOAD	Nitrogen Loading (mg/L)	59.5	*1*	98.9
OVRSUB	Water Consumption (%)	1.6	*0*	97.2
PWI	Wilderness Protection (%)	1.1	*90*	1.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	27.1
HARVEST	Timber Harvest Rate (%)	111.6	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,822	*1,650*	99.3
RENPC	Renewable Energy (%)	9.5	*100*	9.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	136	*0*	88.1

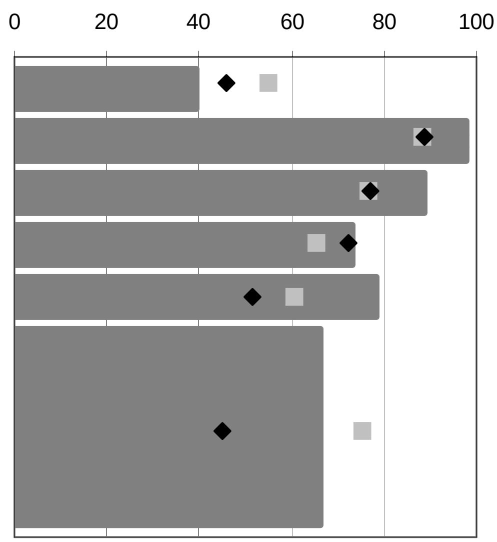
Honduras

AMERICAS
GDP/capita 2004 est. (PPP) $2,800

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	52
Score:	70.8
Income Group Avg.	56.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	39.5	45.7	54.9
Water Resources	97.8	88.8	88.4
Prod. Nat. Resources	88.8	77.1	76.6
Sustainable Energy	73.2	72.3	65.4
Biodiv. and Habitat	78.1	51.5	60.8
Environmental Health	66.1	44.8	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.3	*0*	83.5
INDOOR	Indoor Air Pollution (%)	66	*0*	34.0
WATSUP	Drinking Water (%)	90.0	*100*	81.9
ACSAT	Adequate Sanitation (%)	68.0	*100*	61.1
PM10	Urban Particulates ($\mu g/m^3$)	48.5	*10*	72.6
OZONE	Regional Ozone (ppb)	54.8	*15*	6.3
NLOAD	Nitrogen Loading (mg/L)	13.0	*1*	99.8
OVRSUB	Water Consumption (%)	2.3	*0*	95.8
PWI	Wilderness Protection (%)	40.8	*90*	45.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	3.1	*3*	99.8
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,355	*1,650*	84.5
RENPC	Renewable Energy (%)	17.5	*100*	17.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	284	*0*	75.1

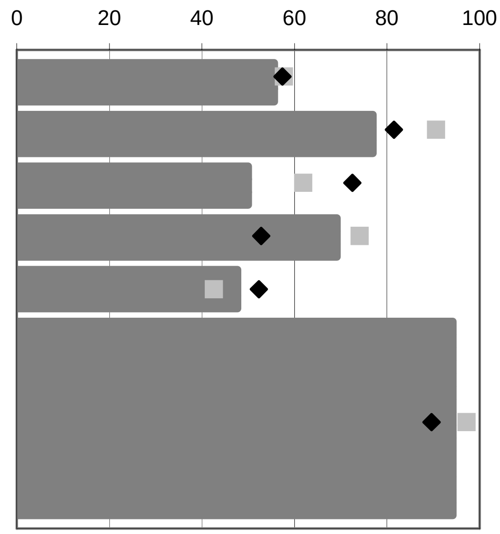
Hungary

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $14,900

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	33
Score:	77.0
Income Group Avg.	76.4
Geographic Group Avg.	81.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	55.6	57.4	57.7
Water Resources	76.9	81.5	90.6
Prod. Nat. Resources	50.0	72.5	61.9
Sustainable Energy	69.2	52.8	74.1
Biodiv. and Habitat	47.7	52.3	42.6
Environmental Health	94.2	89.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.6	*0*	97.8
INDOOR	Indoor Air Pollution (%)	5	*0*	95.0
WATSUP	Drinking Water (%)	99.0	*100*	98.2
ACSAT	Adequate Sanitation (%)	95.0	*100*	93.9
PM10	Urban Particulates ($\mu g/m^3$)	37.0	*10*	80.8
OZONE	Regional Ozone (ppb)	44.6	*15*	30.4
NLOAD	Nitrogen Loading (mg/L)	68.5	*1*	98.7
OVRSUB	Water Consumption (%)	24.5	*0*	55.2
PWI	Wilderness Protection (%)	19.3	*90*	21.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	52.6
HARVEST	Timber Harvest Rate (%)	1.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	17.4	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,910	*1,650*	78.0
RENPC	Renewable Energy (%)	0.2	*100*	0.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	272	*0*	76.2

Iceland

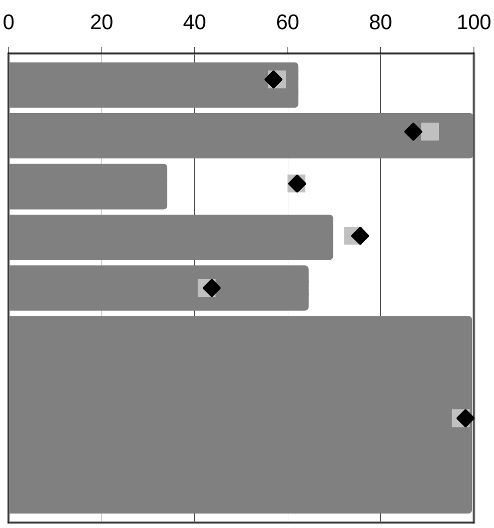
EUROPEAN UNION +

GDP/capita 2004 est. (PPP) $31,900

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	13
Score:	82.1
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	61.5	57.0	57.7
Water Resources	99.1	87.0	90.6
Prod. Nat. Resources	33.3	62.0	61.9
Sustainable Energy	68.9	75.5	74.1
Biodiv. and Habitat	63.7	43.7	42.6
Environmental Health	98.8	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.1
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	20.8	*10*	92.3
OZONE	Regional Ozone (ppb)	44.5	*15*	30.7
NLOAD	Nitrogen Loading (mg/L)	2.1	*1*	100.0
OVRSUB	Water Consumption (%)	0.9	*0*	98.3
PWI	Wilderness Protection (%)	13.0	*90*	14.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	93.7
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	24.3	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	15,716	*1,650*	41.2
RENPC	Renewable Energy (%)	71.4	*100*	71.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	68	*0*	94.1

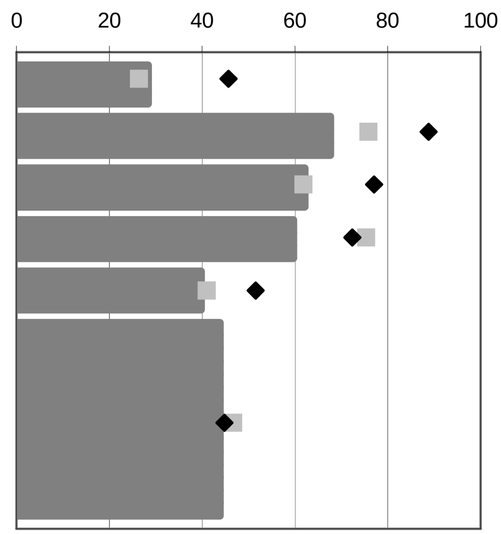
India

SOUTH ASIA
GDP/capita 2004 est. (PPP) $3,100

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	118
Score:	47.7
Income Group Avg.	56.0
Geographic Group Avg.	51.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	28.4	45.7	26.4
Water Resources	67.6	88.8	75.8
Prod. Nat. Resources	62.1	77.1	61.8
Sustainable Energy	59.7	72.3	75.4
Biodiv. and Habitat	39.8	51.5	41.0
Environmental Health	43.8	44.8	46.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	8.5	*0*	67.1
INDOOR	Indoor Air Pollution (%)	81	*0*	19.0
WATSUP	Drinking Water (%)	86.0	*100*	74.7
ACSAT	Adequate Sanitation (%)	30.0	*100*	14.9
PM10	Urban Particulates (µg/m^3)	88.8	*10*	43.9
OZONE	Regional Ozone (ppb)	52.1	*15*	12.9
NLOAD	Nitrogen Loading (mg/L)	188.0	*1*	96.5
OVRSUB	Water Consumption (%)	33.5	*0*	38.8
PWI	Wilderness Protection (%)	10.3	*90*	11.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	57.1
HARVEST	Timber Harvest Rate (%)	11.8	*3*	69.6
AGSUB	Agricultural Subsidies (%)	- 1.6	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,571	*1,650*	87.8
RENPC	Renewable Energy (%)	5.3	*100*	5.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	621	*0*	45.6

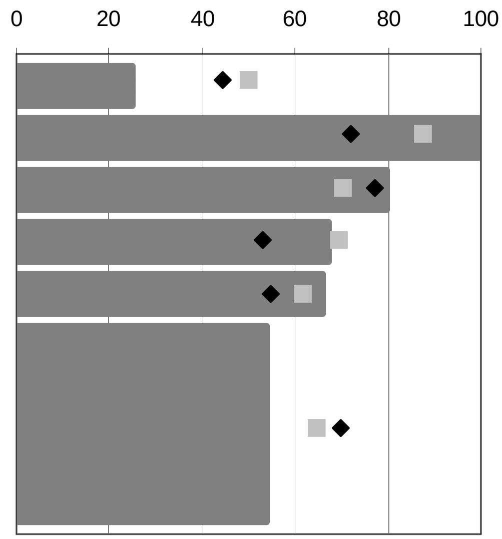
Indonesia

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $3,500

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	79
Score:	60.7
Income Group Avg.	65.1
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	25.1	44.3	50.1
Water Resources	99.8	71.9	87.6
Prod. Nat. Resources	79.9	77.2	70.4
Sustainable Energy	67.1	53.0	69.3
Biodiv. and Habitat	66.0	54.6	61.6
Environmental Health	53.9	70.0	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	3.0	*0*	88.6
INDOOR	Indoor Air Pollution (%)	63	*0*	37.0
WATSUP	Drinking Water (%)	78.0	*100*	60.3
ACSAT	Adequate Sanitation (%)	52.0	*100*	41.6
PM10	Urban Particulates (µg/m^3)	101.5	*10*	34.9
OZONE	Regional Ozone (ppb)	51.0	*15*	15.4
NLOAD	Nitrogen Loading (mg/L)	5.1	*1*	99.9
OVRSUB	Water Consumption (%)	0.2	*0*	99.6
PWI	Wilderness Protection (%)	15.1	*90*	16.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	97.1
HARVEST	Timber Harvest Rate (%)	1.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.0	*0*	89.6
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,485	*1,650*	79.8
RENPC	Renewable Energy (%)	4.6	*100*	4.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	352	*0*	69.2

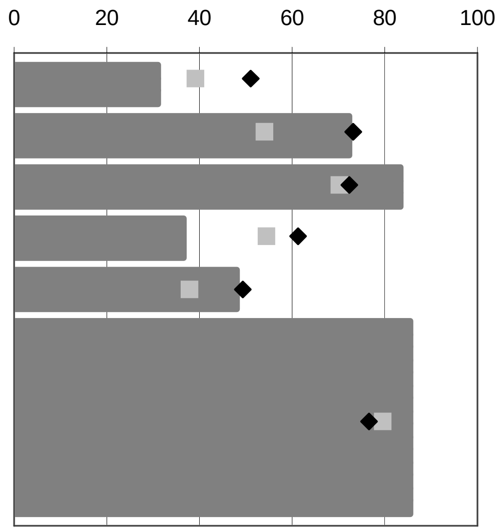
Iran

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $7,700

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	53
Score:	70.0
Income Group Avg.	69.0
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	31.1	51.1	39.1
Water Resources	72.3	73.3	53.9
Prod. Nat. Resources	83.3	72.2	70.0
Sustainable Energy	36.6	61.1	54.3
Biodiv. and Habitat	48.0	49.5	37.8
Environmental Health	85.7	76.5	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.4	*0*	94.4
INDOOR	Indoor Air Pollution (%)	2	*0*	98.0
WATSUP	Drinking Water (%)	93.0	*100*	87.4
ACSAT	Adequate Sanitation (%)	84.0	*100*	80.5
PM10	Urban Particulates (µg/m^3)	71.2	*10*	56.4
OZONE	Regional Ozone (ppb)	55.1	*15*	5.8
NLOAD	Nitrogen Loading (mg/L)	476.3	*1*	91.0
OVRSUB	Water Consumption (%)	25.3	*0*	53.7
PWI	Wilderness Protection (%)	10.7	*90*	11.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	63.3
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	13,048	*1,650*	52.4
RENPC	Renewable Energy (%)	1.7	*100*	1.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	802	*0*	29.8

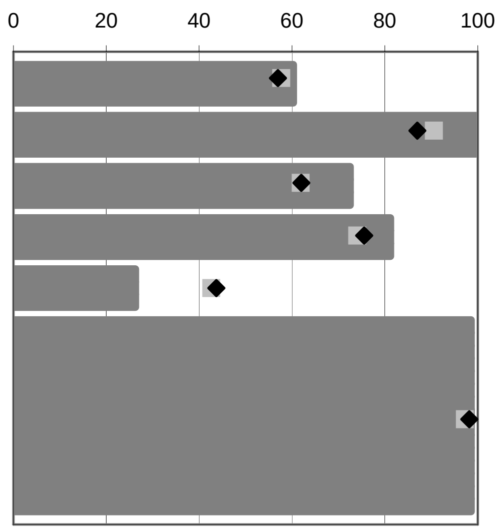
Ireland

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $31,900

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	10
Score:	83.3
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	60.3	57.0	57.7
Water Resources	99.6	87.0	90.6
Prod. Nat. Resources	72.5	62.0	61.9
Sustainable Energy	81.2	75.5	74.1
Biodiv. and Habitat	26.2	43.7	42.6
Environmental Health	98.6	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.8
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	22.6	*10*	91.0
OZONE	Regional Ozone (ppb)	45.0	*15*	29.6
NLOAD	Nitrogen Loading (mg/L)	43.1	*1*	99.2
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	3.2	*90*	3.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	10.7
HARVEST	Timber Harvest Rate (%)	5.1	*3*	92.8
AGSUB	Agricultural Subsidies (%)	0.8	*0*	91.4
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,014	*1,650*	90.1
RENPC	Renewable Energy (%)	1.9	*100*	1.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	109	*0*	90.5

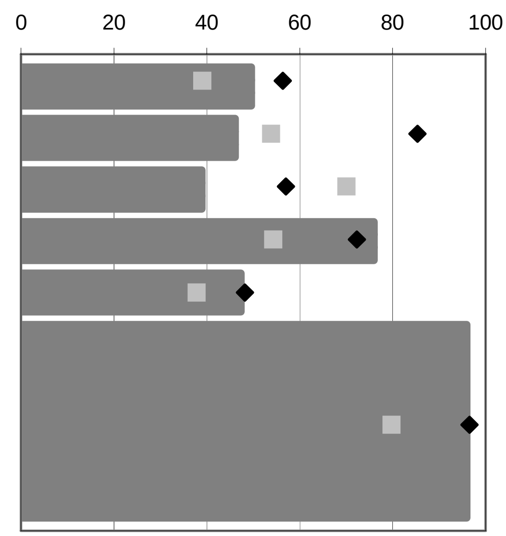
Israel

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $20,800

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	45
Score:	73.7
Income Group Avg.	80.2
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	49.5	56.3	39.1
Water Resources	46.1	85.4	53.9
Prod. Nat. Resources	38.9	57.0	70.0
Sustainable Energy	76.0	72.3	54.3
Biodiv. and Habitat	47.3	48.2	37.8
Environmental Health	95.9	96.6	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	99.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	0.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	51.8	*10*	70.2
OZONE	Regional Ozone (ppb)	45.3	*15*	28.9
NLOAD	Nitrogen Loading (mg/L)	409.6	*1*	92.2
OVRSUB	Water Consumption (%)	75.3	*0*	0.0
PWI	Wilderness Protection (%)	25.0	*90*	27.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	54.6
HARVEST	Timber Harvest Rate (%)	0.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	18.6	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,780	*1,650*	82.7
RENPC	Renewable Energy (%)	0.1	*100*	0.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	155	*0*	86.5

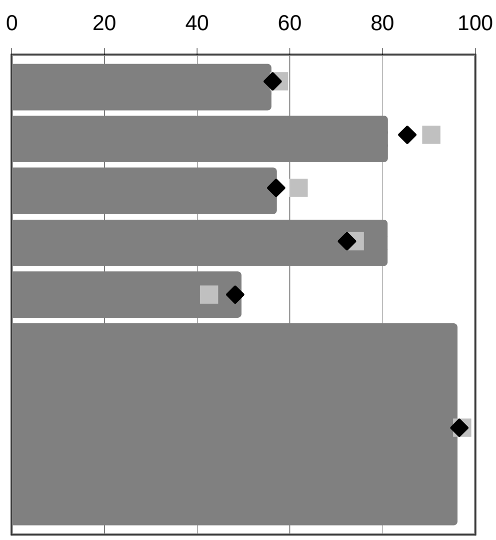
Italy

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $27,700

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	21
Score:	79.8
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	55.2	56.3	57.7
Water Resources	80.3	85.4	90.6
Prod. Nat. Resources	56.3	57.0	61.9
Sustainable Energy	80.3	72.3	74.1
Biodiv. and Habitat	48.7	48.2	42.6
Environmental Health	95.3	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	94.1	*100*	89.4
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	32.8	*10*	83.8
OZONE	Regional Ozone (ppb)	46.2	*15*	26.7
NLOAD	Nitrogen Loading (mg/L)	371.6	*1*	93.0
OVRSUB	Water Consumption (%)	17.7	*0*	67.7
PWI	Wilderness Protection (%)	11.0	*90*	12.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	62.6
HARVEST	Timber Harvest Rate (%)	0.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	5.9	*0*	35.7
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,090	*1,650*	85.6
RENPC	Renewable Energy (%)	6.8	*100*	6.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	97	*0*	91.5

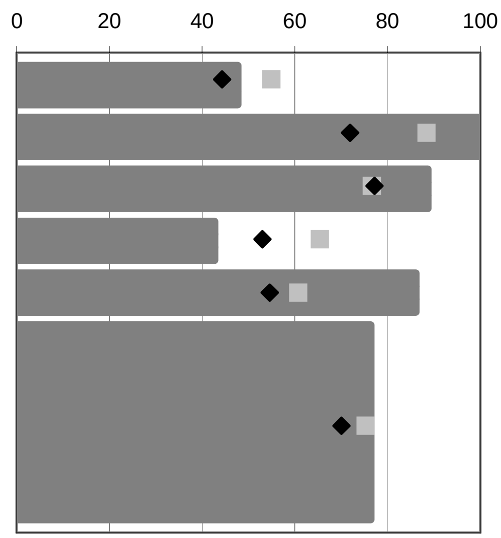
Jamaica

AMERICAS
GDP/capita 2004 est. (PPP) $4,100

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	43
Score:	74.7
Income Group Avg.	65.1
Geographic Group Avg.	72.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	47.7	44.3	54.9
Water Resources	99.9	71.9	88.4
Prod. Nat. Resources	88.7	77.2	76.6
Sustainable Energy	42.7	53.0	65.4
Biodiv. and Habitat	86.1	54.6	60.8
Environmental Health	76.4	70.0	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.5	*0*	94.3
INDOOR	Indoor Air Pollution (%)	47	*0*	53.0
WATSUP	Drinking Water (%)	93.0	*100*	87.4
ACSAT	Adequate Sanitation (%)	80.0	*100*	75.7
PM10	Urban Particulates (µg/m^3)	54.3	*10*	68.5
OZONE	Regional Ozone (ppb)	46.1	*15*	26.9
NLOAD	Nitrogen Loading (mg/L)	9.7	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	58.5	*90*	65.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	3.2	*3*	99.5
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	15,398	*1,650*	42.5
RENPC	Renewable Energy (%)	1.3	*100*	1.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	549	*0*	52.0

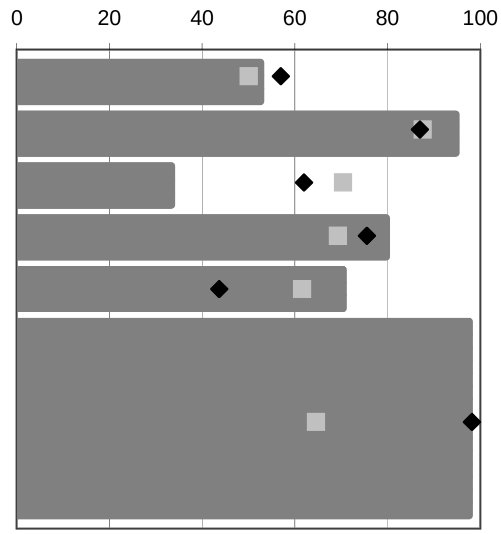
Japan

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $29,400

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	14
Score:	81.9
Income Group Avg.	81.6
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	52.6	57.0	50.1
Water Resources	94.8	87.0	87.6
Prod. Nat. Resources	33.3	62.0	70.4
Sustainable Energy	79.7	75.5	69.3
Biodiv. and Habitat	70.4	43.7	61.6
Environmental Health	97.6	98.2	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	33.2	*10*	83.5
OZONE	Regional Ozone (ppb)	48.3	*15*	21.8
NLOAD	Nitrogen Loading (mg/L)	12.8	*1*	99.8
OVRSUB	Water Consumption (%)	5.6	*0*	89.7
PWI	Wilderness Protection (%)	24.0	*90*	26.7
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	22.3	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,249	*1,650*	80.8
RENPC	Renewable Energy (%)	6.2	*100*	6.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	57	*0*	95.0

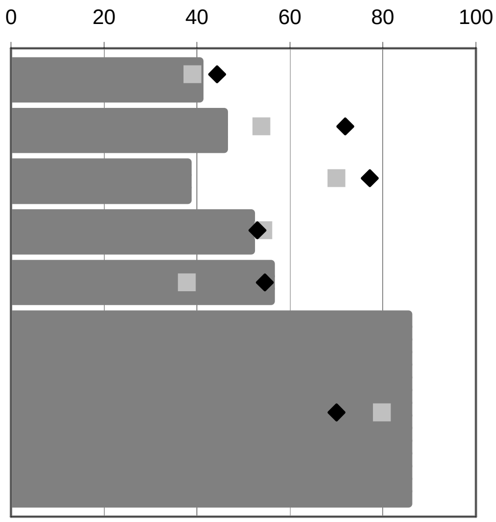
Jordan

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $4,500

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	64
Score:	66.0
Income Group Avg.	65.1
Geographic Group Avg.	65.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	40.6	44.3	39.1
Water Resources	45.8	71.9	53.9
Prod. Nat. Resources	38.0	77.2	70.0
Sustainable Energy	51.7	53.0	54.3
Biodiv. and Habitat	56.0	54.6	37.8
Environmental Health	85.5	70.0	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.8	*0*	96.9
INDOOR	Indoor Air Pollution (%)	10	*0*	90.0
WATSUP	Drinking Water (%)	91.0	*100*	83.8
ACSAT	Adequate Sanitation (%)	93.0	*100*	91.5
PM10	Urban Particulates (µg/m^3)	77.0	*10*	52.3
OZONE	Regional Ozone (ppb)	45.3	*15*	28.8
NLOAD	Nitrogen Loading (mg/L)	440.6	*1*	91.7
OVRSUB	Water Consumption (%)	75.0	*0*	0.0
PWI	Wilderness Protection (%)	14.7	*90*	16.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	96.1
HARVEST	Timber Harvest Rate (%)	8.6	*3*	80.8
AGSUB	Agricultural Subsidies (%)	17.3	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	10,528	*1,650*	62.9
RENPC	Renewable Energy (%)	0.2	*100*	0.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	541	*0*	52.7

Kazakhstan

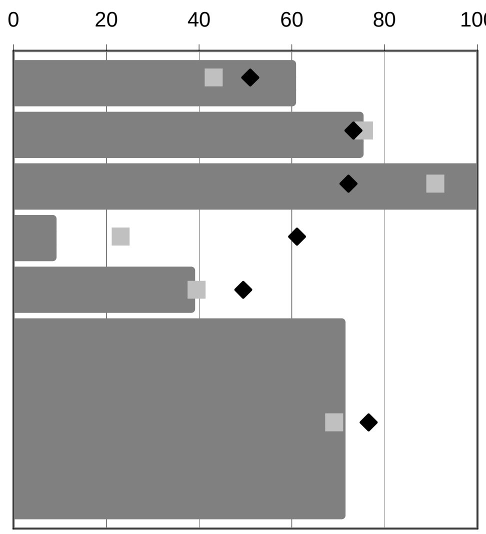
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $7,800

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	70
Score:	63.5
Income Group Avg.	69.0
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	60.1	51.1	43.2
Water Resources	74.7	73.3	75.6
Prod. Nat. Resources	100.0	72.2	90.9
Sustainable Energy	8.5	61.1	23.1
Biodiv. and Habitat	38.4	49.5	39.5
Environmental Health	70.8	76.5	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.4	*0*	83.2
INDOOR	Indoor Air Pollution (%)	51	*0*	49.0
WATSUP	Drinking Water (%)	86.0	*100*	74.7
ACSAT	Adequate Sanitation (%)	72.0	*100*	66.0
PM10	Urban Particulates (µg/m^3)	26.7	*10*	88.1
OZONE	Regional Ozone (ppb)	43.9	*15*	32.1
NLOAD	Nitrogen Loading (mg/L)	731.7	*1*	86.1
OVRSUB	Water Consumption (%)	20.1	*0*	63.2
PWI	Wilderness Protection (%)	4.3	*90*	4.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	44.1
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	21,143	*1,650*	18.5
RENPC	Renewable Energy (%)	4.6	*100*	4.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,437	*0*	0.0

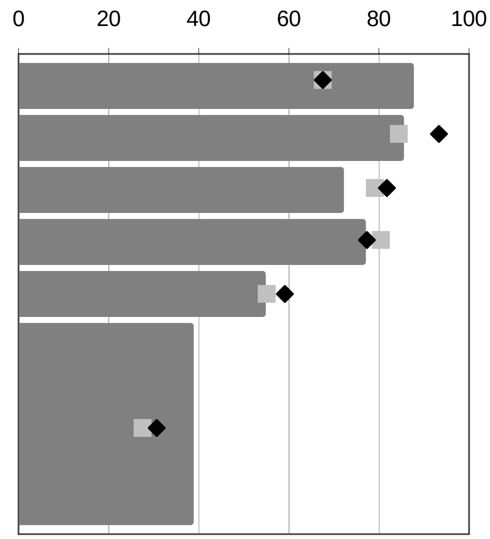
Kenya

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,100

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	93
Score:	56.4
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	87.0	67.6	67.8
Water Resources	84.8	93.5	84.3
Prod. Nat. Resources	71.4	81.6	78.9
Sustainable Energy	76.5	77.5	80.3
Biodiv. and Habitat	54.1	59.2	54.9
Environmental Health	38.0	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	13.9	*0*	46.5
INDOOR	Indoor Air Pollution (%)	85	*0*	15.0
WATSUP	Drinking Water (%)	62.0	*100*	31.4
ACSAT	Adequate Sanitation (%)	48.0	*100*	36.8
PM10	Urban Particulates (µg/m^3)	44.0	*10*	75.8
OZONE	Regional Ozone (ppb)	15.8	*15*	98.2
NLOAD	Nitrogen Loading (mg/L)	269.4	*1*	94.9
OVRSUB	Water Consumption (%)	13.9	*0*	74.7
PWI	Wilderness Protection (%)	16.6	*90*	18.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	69.9
HARVEST	Timber Harvest Rate (%)	3.7	*3*	97.4
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,642	*1,650*	87.5
RENPC	Renewable Energy (%)	26.2	*100*	26.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	258	*0*	77.4

Kyrgyzstan

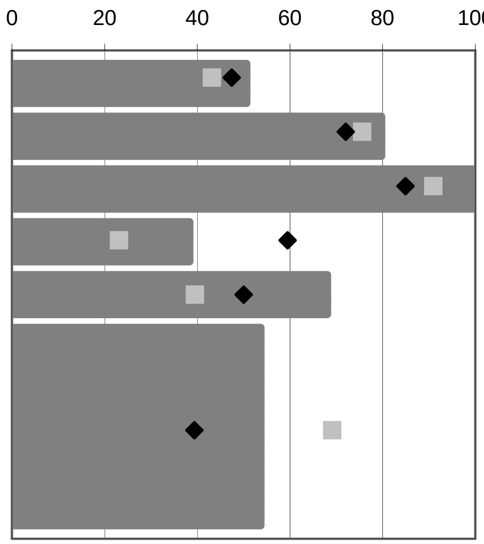
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $1,700

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	80
Score:	60.5
Income Group Avg.	51.1
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	50.6	47.4	43.2
Water Resources	79.7	72.0	75.6
Prod. Nat. Resources	100.0	84.9	90.9
Sustainable Energy	38.3	59.5	23.1
Biodiv. and Habitat	68.1	50.0	39.5
Environmental Health	53.7	39.4	69.1

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	3.0	*0*	88.5
INDOOR	Indoor Air Pollution (%)	96	*0*	4.0
WATSUP	Drinking Water (%)	76.0	*100*	56.7
ACSAT	Adequate Sanitation (%)	60.0	*100*	51.4
PM10	Urban Particulates (µg/m^3)	40.9	*10*	78.0
OZONE	Regional Ozone (ppb)	47.6	*15*	23.3
NLOAD	Nitrogen Loading (mg/L)	163.5	*1*	96.9
OVRSUB	Water Consumption (%)	20.5	*0*	62.6
PWI	Wilderness Protection (%)	40.5	*90*	45.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	79.9
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	20,967	*1,650*	19.3
RENPC	Renewable Energy (%)	68.8	*100*	68.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	580	*0*	49.2

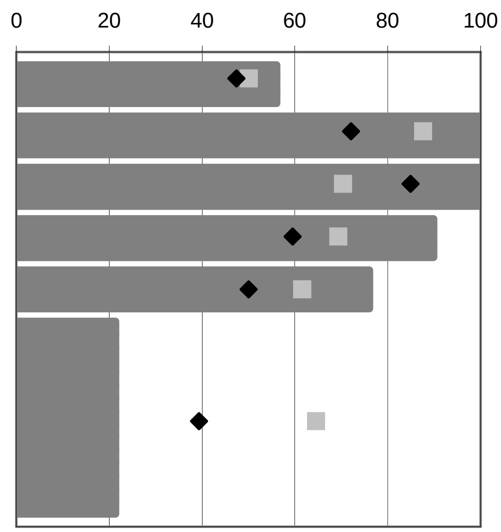
Laos

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	102
Score:	52.9
Income Group Avg.	51.1
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	56.0	47.4	50.1
Water Resources	99.9	72.0	87.6
Prod. Nat. Resources	100.0	84.9	70.4
Sustainable Energy	89.8	59.5	69.3
Biodiv. and Habitat	76.1	50.0	61.6
Environmental Health	21.3	39.4	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	15.0	*0*	42.2
INDOOR	Indoor Air Pollution (%)	95	*0*	5.0
WATSUP	Drinking Water (%)	43.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	24.0	*100*	7.6
PM10	Urban Particulates (µg/m^3)	47.4	*10*	73.4
OZONE	Regional Ozone (ppb)	41.1	*15*	38.7
NLOAD	Nitrogen Loading (mg/L)	12.9	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	35.4	*90*	39.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	1.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,833	*1,650*	86.7
RENPC	Renewable Energy (%)	75.7	*100*	75.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	48	*0*	95.8

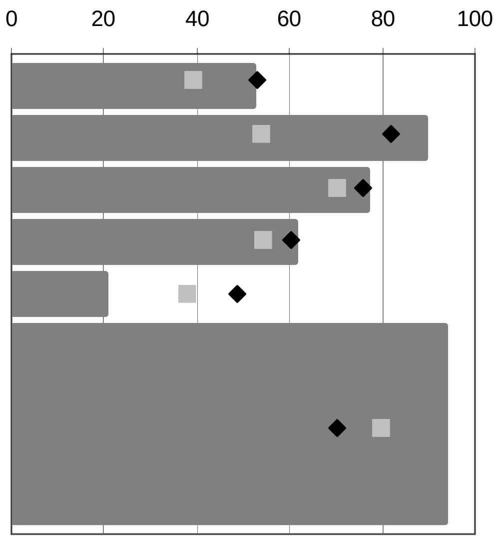
Lebanon

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $5,000

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	36
Score:	76.7
Income Group Avg.	67.2
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	52.1	52.9	39.1
Water Resources	89.3	82.1	53.9
Prod. Nat. Resources	76.6	75.8	70.0
Sustainable Energy	61.2	60.3	54.3
Biodiv. and Habitat	20.2	48.9	37.8
Environmental Health	93.4	70.4	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.0	*0*	96.0
INDOOR	Indoor Air Pollution (%)	9	*0*	91.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	98.0	*100*	97.6
PM10	Urban Particulates (µg/m^3)	44.8	*10*	75.2
OZONE	Regional Ozone (ppb)	45.2	*15*	29.0
NLOAD	Nitrogen Loading (mg/L)	168.5	*1*	96.8
OVRSUB	Water Consumption (%)	10.0	*0*	81.7
PWI	Wilderness Protection (%)	0.0	*90*	0.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	7.0
HARVEST	Timber Harvest Rate (%)	8.9	*3*	79.8
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	10,179	*1,650*	64.3
RENPC	Renewable Energy (%)	4.5	*100*	4.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	332	*0*	70.9

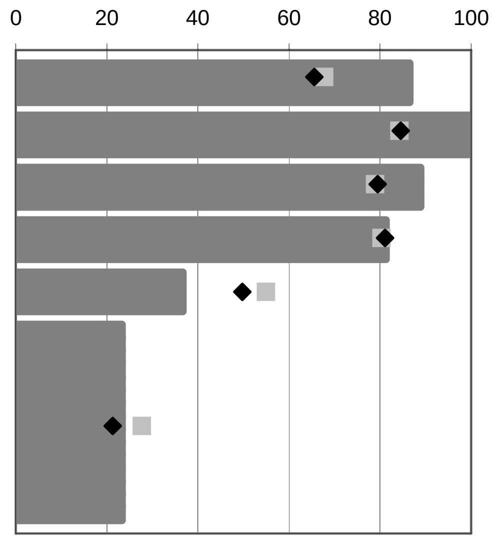
Liberia

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 900

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	109
Score:	51.0
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	86.5	65.6	67.8
Water Resources	100.0	84.6	84.3
Prod. Nat. Resources	88.9	79.5	78.9
Sustainable Energy	81.3	81.1	80.3
Biodiv. and Habitat	36.7	49.8	54.9
Environmental Health	23.3	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	25.5	*0*	1.8
INDOOR	Indoor Air Pollution (%)	83	*0*	17.0
WATSUP	Drinking Water (%)	62.0	*100*	31.4
ACSAT	Adequate Sanitation (%)	26.0	*100*	10.0
PM10	Urban Particulates (µg/m^3)	41.0	*10*	78.0
OZONE	Regional Ozone (ppb)	17.1	*15*	95.1
NLOAD	Nitrogen Loading (mg/L)	4.8	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	13.7	*90*	15.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.20	*1*	22.9
HARVEST	Timber Harvest Rate (%)	0.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,192	*1,650*	97.7
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	182	*0*	84.1

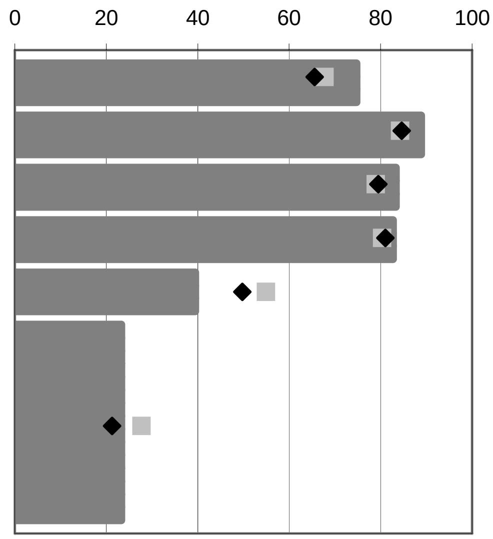
Madagascar

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 800

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	116
Score:	48.5
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	74.7	65.6	67.8
Water Resources	88.8	84.6	84.3
Prod. Nat. Resources	83.3	79.5	78.9
Sustainable Energy	82.7	81.1	80.3
Biodiv. and Habitat	39.5	49.8	54.9
Environmental Health	23.3	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	14.8	*0*	43.0
INDOOR	Indoor Air Pollution (%)	99	*0*	1.0
WATSUP	Drinking Water (%)	45.0	*100*	0.7
ACSAT	Adequate Sanitation (%)	33.0	*100*	18.5
PM10	Urban Particulates (µg/m^3)	46.7	*10*	73.9
OZONE	Regional Ozone (ppb)	25.4	*15*	75.5
NLOAD	Nitrogen Loading (mg/L)	31.3	*1*	99.4
OVRSUB	Water Consumption (%)	11.9	*0*	78.3
PWI	Wilderness Protection (%)	4.7	*90*	5.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	43.9
HARVEST	Timber Harvest Rate (%)	0.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,713	*1,650*	95.6
RENPC	Renewable Energy (%)	15.1	*100*	15.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	162	*0*	85.8

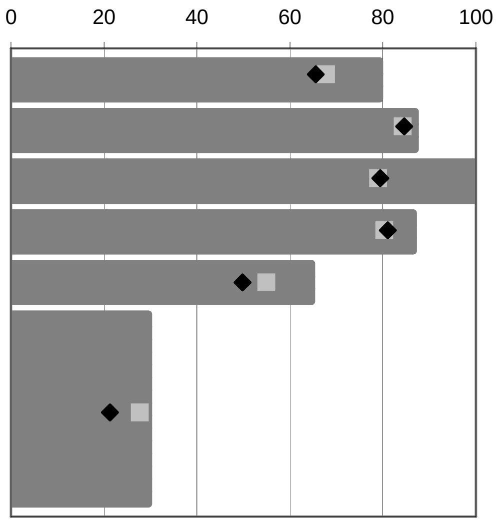
Malawi

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 600

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	91
Score:	56.5
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	79.2	65.6	67.8
Water Resources	86.9	84.6	84.3
Prod. Nat. Resources	100.0	79.5	78.9
Sustainable Energy	86.5	81.1	80.3
Biodiv. and Habitat	64.6	49.8	54.9
Environmental Health	29.6	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	21.9	*0*	15.5
INDOOR	Indoor Air Pollution (%)	99	*0*	1.0
WATSUP	Drinking Water (%)	67.0	*100*	40.4
ACSAT	Adequate Sanitation (%)	46.0	*100*	34.3
PM10	Urban Particulates (µg/m^3)	46.4	*10*	74.1
OZONE	Regional Ozone (ppb)	21.7	*15*	84.3
NLOAD	Nitrogen Loading (mg/L)	41.7	*1*	99.2
OVRSUB	Water Consumption (%)	13.9	*0*	74.6
PWI	Wilderness Protection (%)	47.7	*90*	53.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	60.8
HARVEST	Timber Harvest Rate (%)	2.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,689	*1,650*	91.5
RENPC	Renewable Energy (%)	52.9	*100*	52.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	121	*0*	89.4

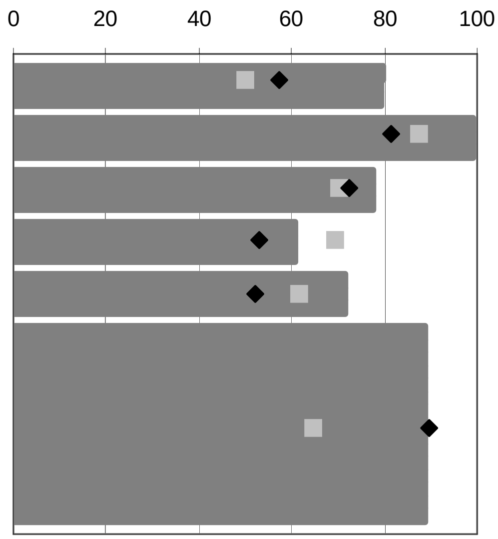
Malaysia

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $9,700

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	9
Score:	83.3
Income Group Avg.	76.4
Geographic Group Avg.	66.2

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	79.8	57.4	50.1
Water Resources	99.3	81.5	87.6
Prod. Nat. Resources	77.8	72.5	70.4
Sustainable Energy	60.8	52.8	69.3
Biodiv. and Habitat	71.5	52.3	61.6
Environmental Health	88.7	89.6	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.7	*0*	97.1
INDOOR	Indoor Air Pollution (%)	29	*0*	71.0
WATSUP	Drinking Water (%)	95.0	*100*	91.0
ACSAT	Adequate Sanitation (%)	96.0	*100*	95.1
PM10	Urban Particulates (µg/m^3)	24.0	*10*	90.0
OZONE	Regional Ozone (ppb)	27.9	*15*	69.6
NLOAD	Nitrogen Loading (mg/L)	3.3	*1*	100.0
OVRSUB	Water Consumption (%)	0.7	*0*	98.6
PWI	Wilderness Protection (%)	27.1	*90*	30.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	97.8
HARVEST	Timber Harvest Rate (%)	0.9	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,851	*1,650*	65.7
RENPC	Renewable Energy (%)	2.6	*100*	2.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	352	*0*	69.2

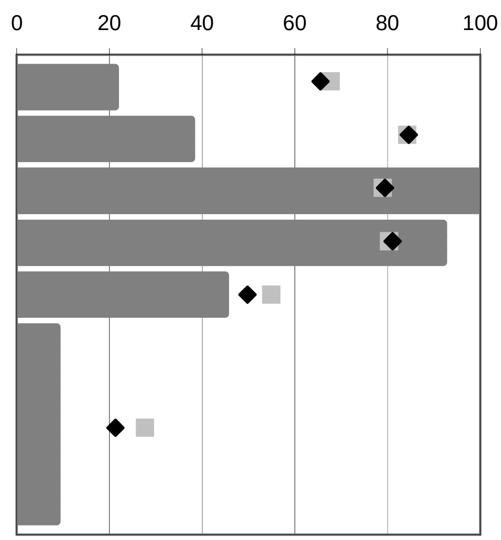
Mali

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 900

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	130
Score:	33.9
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	21.2	65.6	67.8
Water Resources	37.7	84.6	84.3
Prod. Nat. Resources	100.0	79.5	78.9
Sustainable Energy	92.1	81.1	80.3
Biodiv. and Habitat	45.0	49.8	54.9
Environmental Health	8.6	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	26.8	*0*	0.0
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	48.0	*100*	6.1
ACSAT	Adequate Sanitation (%)	45.0	*100*	33.1
PM10	Urban Particulates (µg/m^3)	194.4	*10*	0.0
OZONE	Regional Ozone (ppb)	39.5	*15*	42.4
NLOAD	Nitrogen Loading (mg/L)	660,00 0.0	*1*	0.0
OVRSUB	Water Consumption (%)	13.5	*0*	75.4
PWI	Wilderness Protection (%)	2.0	*90*	2.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	61.7
HARVEST	Timber Harvest Rate (%)	1.9	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,318	*1,650*	100.0
RENPC	Renewable Energy (%)	43.4	*100*	43.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	51	*0*	95.5

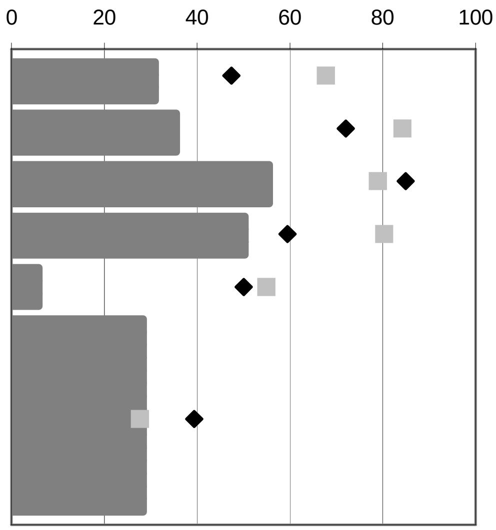
Mauritania

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,800

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	131
Score:	32.0
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	30.9	47.4	67.8
Water Resources	35.5	72.0	84.3
Prod. Nat. Resources	55.6	84.9	78.9
Sustainable Energy	50.3	59.5	80.3
Biodiv. and Habitat	5.9	50.0	54.9
Environmental Health	28.4	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	17.3	*0*	33.4
INDOOR	Indoor Air Pollution (%)	69	*0*	31.0
WATSUP	Drinking Water (%)	56.0	*100*	20.6
ACSAT	Adequate Sanitation (%)	42.0	*100*	29.5
PM10	Urban Particulates (µg/m^3)	112.8	*10*	26.8
OZONE	Regional Ozone (ppb)	42.6	*15*	35.1
NLOAD	Nitrogen Loading (mg/L)	660,00 0.0	*1*	0.0
OVRSUB	Water Consumption (%)	15.8	*0*	71.1
PWI	Wilderness Protection (%)	0.2	*90*	0.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	2.9
HARVEST	Timber Harvest Rate (%)	158.7	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,024	*1,650*	69.2
RENPC	Renewable Energy (%)	0.8	*100*	0.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	643	*0*	43.8

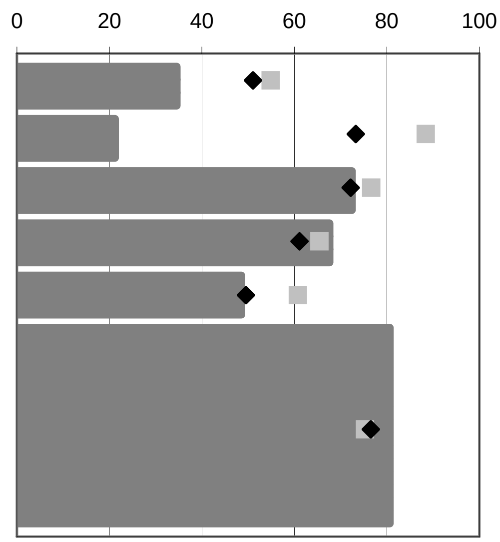
Mexico

AMERICAS
GDP/capita 2004 est. (PPP) $9,600

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	66
Score:	64.8
Income Group Avg.	69.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	34.6	51.1	54.9
Water Resources	21.2	73.3	88.4
Prod. Nat. Resources	72.4	72.2	76.6
Sustainable Energy	67.6	61.1	65.4
Biodiv. and Habitat	48.5	49.5	60.8
Environmental Health	80.6	76.5	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.1	*0*	95.9
INDOOR	Indoor Air Pollution (%)	22	*0*	78.0
WATSUP	Drinking Water (%)	91.0	*100*	83.8
ACSAT	Adequate Sanitation (%)	77.0	*100*	72.0
PM10	Urban Particulates (µg/m^3)	53.4	*10*	69.1
OZONE	Regional Ozone (ppb)	64.2	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	8,222.4	*1*	0.0
OVRSUB	Water Consumption (%)	31.5	*0*	42.4
PWI	Wilderness Protection (%)	12.5	*90*	13.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	64.6
HARVEST	Timber Harvest Rate (%)	1.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.5	*0*	84.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	7,153	*1,650*	77.0
RENPC	Renewable Energy (%)	4.8	*100*	4.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	311	*0*	72.8

Moldova

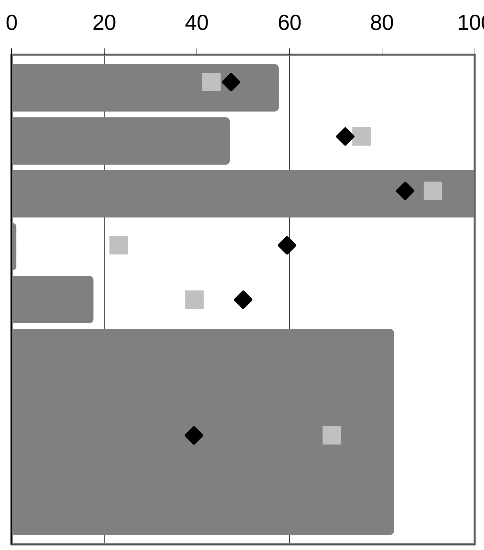
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	75
Score:	62.9
Income Group Avg.	51.1
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	56.9	47.4	43.2
Water Resources	46.3	72.0	75.6
Prod. Nat. Resources	100.0	84.9	90.9
Sustainable Energy	0.2	59.5	23.1
Biodiv. and Habitat	16.9	50.0	39.5
Environmental Health	81.7	39.4	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.5	*0*	94.3
INDOOR	Indoor Air Pollution (%)	14	*0*	86.0
WATSUP	Drinking Water (%)	92.0	*100*	85.6
ACSAT	Adequate Sanitation (%)	68.0	*100*	61.1
PM10	Urban Particulates ($\mu g/m^3$)	35.0	*10*	82.2
OZONE	Regional Ozone (ppb)	44.1	*15*	31.5
NLOAD	Nitrogen Loading (mg/L)	399.9	*1*	92.4
OVRSUB	Water Consumption (%)	54.7	*0*	0.1
PWI	Wilderness Protection (%)	1.1	*90*	1.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	2.9
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	27,180	*1,650*	0.0
RENPC	Renewable Energy (%)	2.1	*100*	2.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,159	*0*	0.0

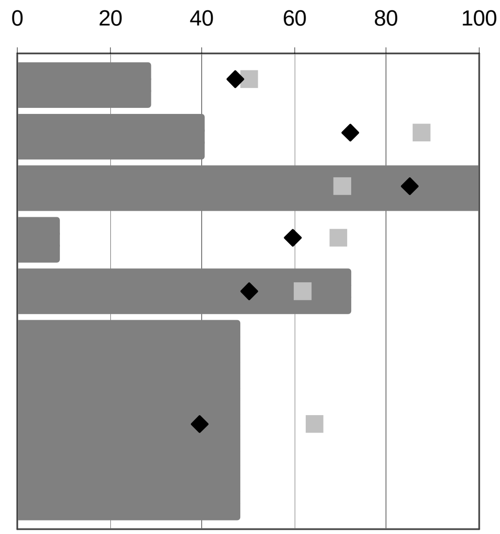
Mongolia

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	115
Score:	48.8
Income Group Avg.	51.1
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	28.5	47.4	50.1
Water Resources	39.7	72.0	87.6
Prod. Nat. Resources	100.0	84.9	70.4
Sustainable Energy	8.7	59.5	69.3
Biodiv. and Habitat	71.7	50.0	61.6
Environmental Health	47.8	39.4	64.6

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	7.4	*0*	71.6
INDOOR	Indoor Air Pollution (%)	67	*0*	33.0
WATSUP	Drinking Water (%)	62.0	*100*	31.4
ACSAT	Adequate Sanitation (%)	59.0	*100*	50.2
PM10	Urban Particulates (µg/m^3)	70.5	*10*	56.9
OZONE	Regional Ozone (ppb)	60.9	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	6,752.8	*1*	0.0
OVRSUB	Water Consumption (%)	11.3	*0*	79.4
PWI	Wilderness Protection (%)	35.1	*90*	39.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	92.6
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	20,733	*1,650*	20.2
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,992	*0*	0.0

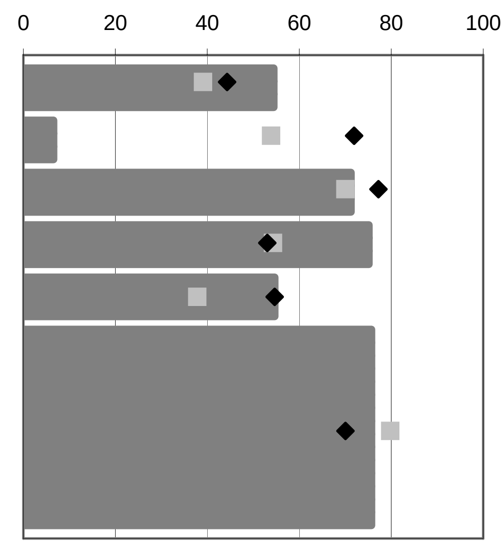
Morocco

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $4,200

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	68
Score:	64.1
Income Group Avg.	65.1
Geographic Group Avg.	65.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	54.4	44.3	39.1
Water Resources	6.5	71.9	53.9
Prod. Nat. Resources	71.2	77.2	70.0
Sustainable Energy	75.1	53.0	54.3
Biodiv. and Habitat	54.7	54.6	37.8
Environmental Health	75.7	70.0	79.8

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.2	*0*	91.5
INDOOR	Indoor Air Pollution (%)	11	*0*	89.0
WATSUP	Drinking Water (%)	80.0	*100*	63.9
ACSAT	Adequate Sanitation (%)	61.0	*100*	52.6
PM10	Urban Particulates (µg/m^3)	29.3	*10*	86.3
OZONE	Regional Ozone (ppb)	47.9	*15*	22.6
NLOAD	Nitrogen Loading (mg/L)	660,00 0.0	*1*	0.0
OVRSUB	Water Consumption (%)	47.6	*0*	13.1
PWI	Wilderness Protection (%)	2.1	*90*	2.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	97.2
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.3	*0*	97.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,117	*1,650*	89.7
RENPC	Renewable Energy (%)	2.1	*100*	2.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	254	*0*	77.8

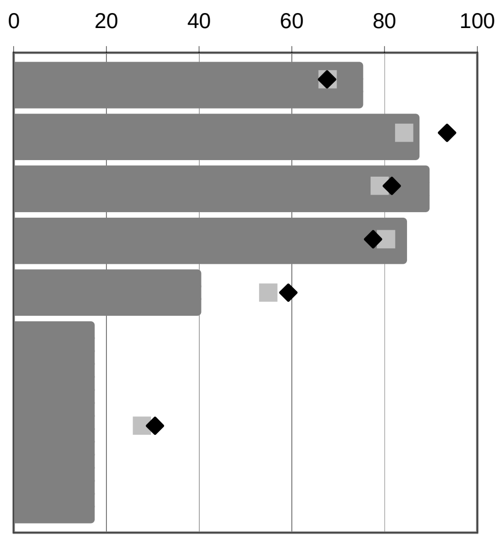
Mozambique

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,200

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	121
Score:	45.7
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	74.6	67.6	67.8
Water Resources	86.7	93.5	84.3
Prod. Nat. Resources	88.9	81.6	78.9
Sustainable Energy	84.0	77.5	80.3
Biodiv. and Habitat	39.7	59.2	54.9
Environmental Health	16.7	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	23.8	*0*	8.1
INDOOR	Indoor Air Pollution (%)	87	*0*	13.0
WATSUP	Drinking Water (%)	42.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	27.0	*100*	11.2
PM10	Urban Particulates (µg/m^3)	46.3	*10*	74.2
OZONE	Regional Ozone (ppb)	25.6	*15*	75.1
NLOAD	Nitrogen Loading (mg/L)	107.7	*1*	98.0
OVRSUB	Water Consumption (%)	13.4	*0*	75.4
PWI	Wilderness Protection (%)	12.3	*90*	13.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	36.4
HARVEST	Timber Harvest Rate (%)	2.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	7,931	*1,650*	73.7
RENPC	Renewable Energy (%)	92.3	*100*	92.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	95	*0*	91.7

Myanmar

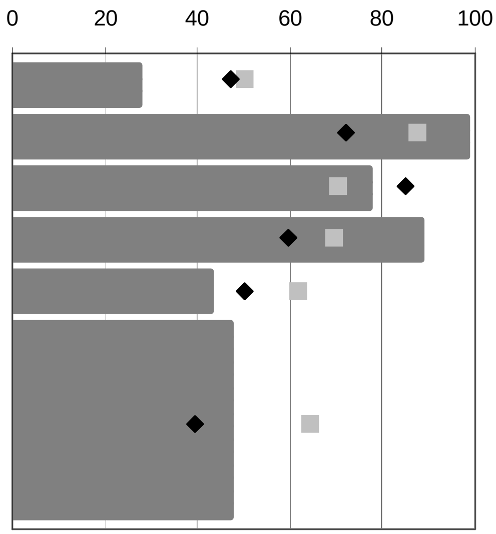
EAST ASIA AND THE PACIFIC

GDP/capita 2004 est. (PPP) $1,700

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	88
Score:	57.0
Income Group Avg.	51.1
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	27.4	47.4	50.1
Water Resources	98.2	72.0	87.6
Prod. Nat. Resources	77.2	84.9	70.4
Sustainable Energy	88.3	59.5	69.3
Biodiv. and Habitat	42.7	50.0	61.6
Environmental Health	47.3	39.4	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	10.3	*0*	60.2
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	80.0	*100*	63.9
ACSAT	Adequate Sanitation (%)	73.0	*100*	67.2
PM10	Urban Particulates ($\mu g/m^3$)	89.2	*10*	43.6
OZONE	Regional Ozone (ppb)	52.8	*15*	11.2
NLOAD	Nitrogen Loading (mg/L)	9.0	*1*	99.8
OVRSUB	Water Consumption (%)	1.9	*0*	96.5
PWI	Wilderness Protection (%)	10.7	*90*	11.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	43.2
HARVEST	Timber Harvest Rate (%)	3.5	*3*	98.3
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,332	*1,650*	97.2
RENPC	Renewable Energy (%)	15.1	*100*	15.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	43	*0*	96.3

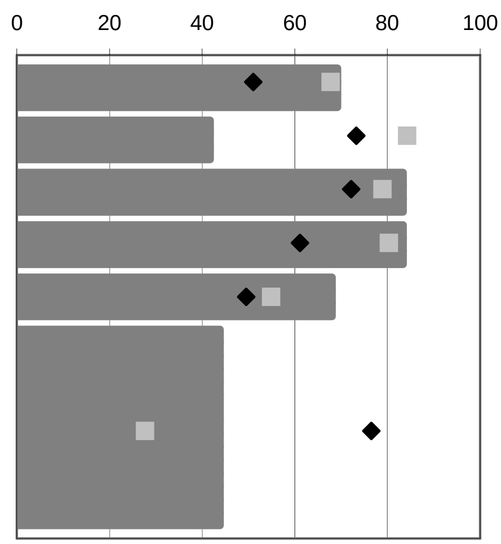
Namibia

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $7,300

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	92
Score:	56.5
Income Group Avg.	69.0
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	69.2	51.1	67.8
Water Resources	41.7	73.3	84.3
Prod. Nat. Resources	83.3	72.2	78.9
Sustainable Energy	83.4	61.1	80.3
Biodiv. and Habitat	68.0	49.5	54.9
Environmental Health	43.9	76.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	9.1	*0*	64.9
INDOOR	Indoor Air Pollution (%)	83	*0*	17.0
WATSUP	Drinking Water (%)	80.0	*100*	63.9
ACSAT	Adequate Sanitation (%)	30.0	*100*	14.9
PM10	Urban Particulates (µg/m^3)	53.2	*10*	69.2
OZONE	Regional Ozone (ppb)	28.1	*15*	69.1
NLOAD	Nitrogen Loading (mg/L)	1,138.2	*1*	78.4
OVRSUB	Water Consumption (%)	52.0	*0*	5.0
PWI	Wilderness Protection (%)	32.0	*90*	35.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	99.3
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,102	*1,650*	89.7
RENPC	Renewable Energy (%)	28.8	*100*	28.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	120	*0*	89.5

Nepal

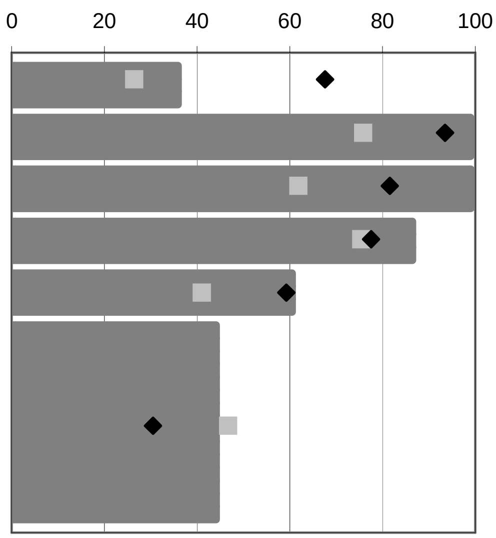
SOUTH ASIA

GDP/capita 2004 est. (PPP) $1,500

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	81
Score:	60.2
Income Group Avg.	53.2
Geographic Group Avg.	51.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	35.9	67.6	26.4
Water Resources	99.0	93.5	75.8
Prod. Nat. Resources	99.0	81.6	61.8
Sustainable Energy	86.4	77.5	75.4
Biodiv. and Habitat	60.5	59.2	41.0
Environmental Health	44.1	30.5	46.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	6.4	*0*	75.2
INDOOR	Indoor Air Pollution (%)	97	*0*	3.0
WATSUP	Drinking Water (%)	84.0	*100*	71.1
ACSAT	Adequate Sanitation (%)	27.0	*100*	11.2
PM10	Urban Particulates (µg/m^3)	49.6	*10*	71.8
OZONE	Regional Ozone (ppb)	58.6	*15*	0.0
NLOAD	Nitrogen Loading (mg/L)	17.7	*1*	99.7
OVRSUB	Water Consumption (%)	0.9	*0*	98.3
PWI	Wilderness Protection (%)	19.8	*90*	22.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	78.6
HARVEST	Timber Harvest Rate (%)	3.6	*3*	98.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,781	*1,650*	99.5
RENPC	Renewable Energy (%)	36.5	*100*	36.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	167	*0*	85.4

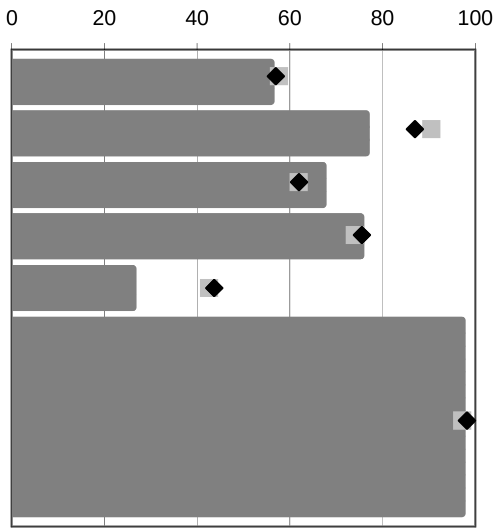
Netherlands

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $29,500

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	27
Score:	78.7
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	55.9	57.0	57.7
Water Resources	76.5	87.0	90.6
Prod. Nat. Resources	67.2	62.0	61.9
Sustainable Energy	75.3	75.5	74.1
Biodiv. and Habitat	26.1	43.7	42.6
Environmental Health	97.1	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.3
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	36.9	*10*	80.8
OZONE	Regional Ozone (ppb)	44.4	*15*	31.0
NLOAD	Nitrogen Loading (mg/L)	157.8	*1*	97.0
OVRSUB	Water Consumption (%)	24.1	*0*	55.9
PWI	Wilderness Protection (%)	3.8	*90*	4.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	14.2
HARVEST	Timber Harvest Rate (%)	1.7	*3*	100.0
AGSUB	Agricultural Subsidies (%)	2.9	*0*	68.1
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,000	*1,650*	73.5
RENPC	Renewable Energy (%)	1.3	*100*	1.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	76	*0*	93.3

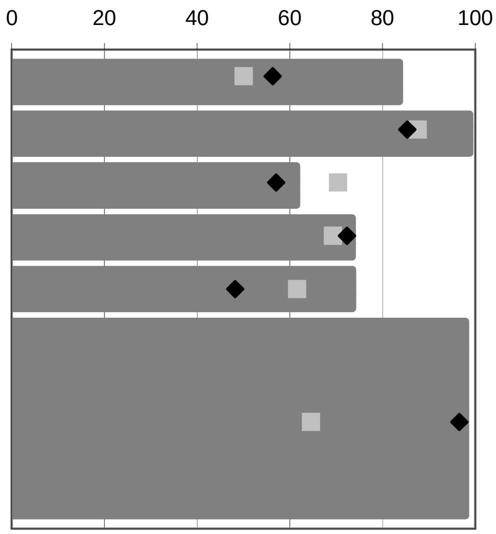
New Zealand

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $23,200

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	1
Score:	88.0
Income Group Avg.	80.2
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	83.7	56.3	50.1
Water Resources	98.8	85.4	87.6
Prod. Nat. Resources	61.4	57.0	70.4
Sustainable Energy	73.4	72.3	69.3
Biodiv. and Habitat	73.5	48.2	61.6
Environmental Health	97.9	96.6	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.6
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	97.0	*100*	94.6
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	16.9	*10*	95.1
OZONE	Regional Ozone (ppb)	26.8	*15*	72.2
NLOAD	Nitrogen Loading (mg/L)	17.5	*1*	99.7
OVRSUB	Water Consumption (%)	1.2	*0*	97.9
PWI	Wilderness Protection (%)	49.2	*90*	54.7
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	78.0
HARVEST	Timber Harvest Rate (%)	2.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	4.5	*0*	51.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,838	*1,650*	65.8
RENPC	Renewable Energy (%)	35.3	*100*	35.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	127	*0*	88.9

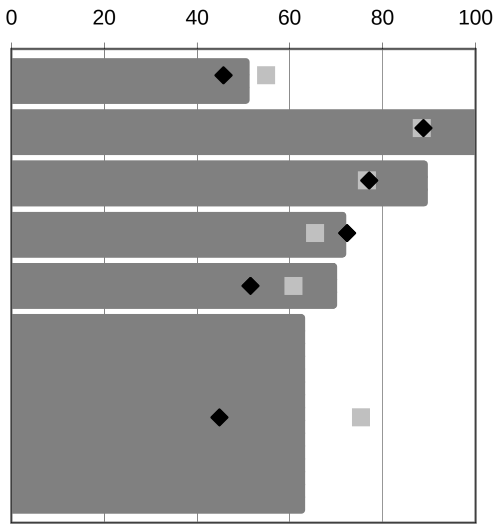
Nicaragua

AMERICAS
GDP/capita 2004 est. (PPP) $2,300

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	56
Score:	69.2
Income Group Avg.	56.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	50.5	45.7	54.9
Water Resources	99.9	88.8	88.4
Prod. Nat. Resources	88.9	77.1	76.6
Sustainable Energy	71.3	72.3	65.4
Biodiv. and Habitat	69.4	51.5	60.8
Environmental Health	62.5	44.8	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.6	*0*	89.9
INDOOR	Indoor Air Pollution (%)	73	*0*	27.0
WATSUP	Drinking Water (%)	81.0	*100*	65.7
ACSAT	Adequate Sanitation (%)	66.0	*100*	58.7
PM10	Urban Particulates (µg/m^3)	41.7	*10*	77.5
OZONE	Regional Ozone (ppb)	47.5	*15*	23.5
NLOAD	Nitrogen Loading (mg/L)	6.8	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	42.2	*90*	46.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	75.0
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,584	*1,650*	91.9
RENPC	Renewable Energy (%)	14.0	*100*	14.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	400	*0*	65.0

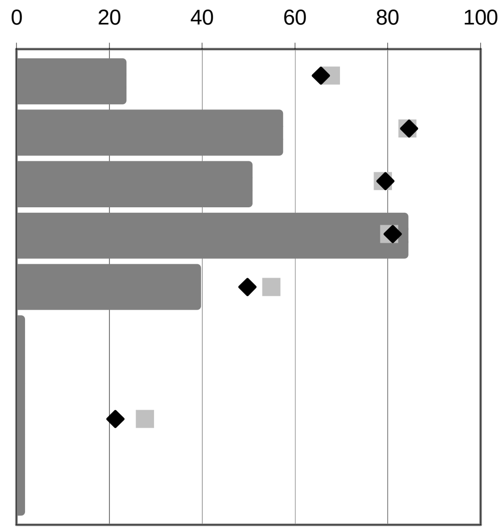
Niger

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 900

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	133
Score:	25.7
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	22.9	65.6	67.8
Water Resources	56.6	84.6	84.3
Prod. Nat. Resources	50.0	79.5	78.9
Sustainable Energy	83.6	81.1	80.3
Biodiv. and Habitat	39.0	49.8	54.9
Environmental Health	1.0	21.3	27.7

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	35.9	*0*	0.0
INDOOR	Indoor Air Pollution (%)	98	*0*	2.0
WATSUP	Drinking Water (%)	46.0	*100*	2.5
ACSAT	Adequate Sanitation (%)	12.0	*100*	0.0
PM10	Urban Particulates (µg/m^3)	163.7	*10*	0.0
OZONE	Regional Ozone (ppb)	38.1	*15*	45.7
NLOAD	Nitrogen Loading (mg/L)	1,814.2	*1*	65.6
OVRSUB	Water Consumption (%)	28.7	*0*	47.6
PWI	Wilderness Protection (%)	3.0	*90*	3.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	89.0
HARVEST	Timber Harvest Rate (%)	225.2	*3*	0.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,622	*1,650*	100.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	149	*0*	86.9

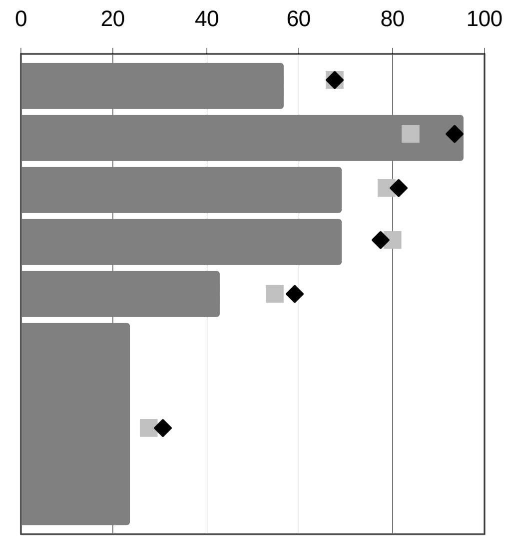
Nigeria

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,000

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	123
Score:	44.5
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	55.9	67.6	67.8
Water Resources	94.8	93.5	84.3
Prod. Nat. Resources	68.4	81.6	78.9
Sustainable Energy	68.6	77.5	80.3
Biodiv. and Habitat	42.0	59.2	54.9
Environmental Health	23.0	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	26.0	*0*	0.0
INDOOR	Indoor Air Pollution (%)	67	*0*	33.0
WATSUP	Drinking Water (%)	60.0	*100*	27.8
ACSAT	Adequate Sanitation (%)	38.0	*100*	24.6
PM10	Urban Particulates (µg/m^3)	103.9	*10*	33.2
OZONE	Regional Ozone (ppb)	24.1	*15*	78.7
NLOAD	Nitrogen Loading (mg/L)	98.2	*1*	98.2
OVRSUB	Water Consumption (%)	4.7	*0*	91.5
PWI	Wilderness Protection (%)	14.2	*90*	15.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	42.0
HARVEST	Timber Harvest Rate (%)	6.3	*3*	88.6
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,931	*1,650*	77.9
RENPC	Renewable Energy (%)	8.4	*100*	8.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	305	*0*	73.3

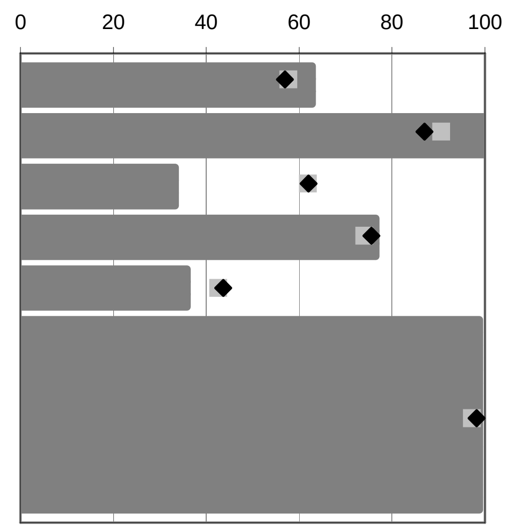
Norway

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $40,000

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	18
Score:	80.2
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	62.8	57.0	57.7
Water Resources	100.0	87.0	90.6
Prod. Nat. Resources	33.3	62.0	61.9
Sustainable Energy	76.5	75.5	74.1
Biodiv. and Habitat	35.8	43.7	42.6
Environmental Health	98.8	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	20.7	*10*	92.4
OZONE	Regional Ozone (ppb)	43.4	*15*	33.2
NLOAD	Nitrogen Loading (mg/L)	6.2	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	7.2	*90*	8.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	28.0
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	40.1	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	10,689	*1,650*	62.2
RENPC	Renewable Energy (%)	60.4	*100*	60.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	77	*0*	93.3

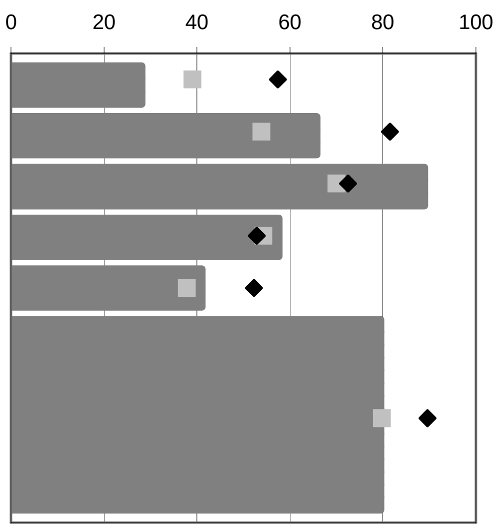
Oman

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $13,100

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	60
Score:	67.9
Income Group Avg.	76.4
Geographic Group Avg.	65.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	28.1	57.4	39.1
Water Resources	65.7	81.5	53.9
Prod. Nat. Resources	88.9	72.5	70.0
Sustainable Energy	57.6	52.8	54.3
Biodiv. and Habitat	41.0	52.3	37.8
Environmental Health	79.5	89.6	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.6	*0*	97.8
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	79.0	*100*	62.1
ACSAT	Adequate Sanitation (%)	89.0	*100*	86.6
PM10	Urban Particulates (µg/m^3)	105.3	*10*	32.2
OZONE	Regional Ozone (ppb)	47.3	*15*	24.1
NLOAD	Nitrogen Loading (mg/L)	0.0	*1*	100.0
OVRSUB	Water Consumption (%)	37.5	*0*	31.5
PWI	Wilderness Protection (%)	10.0	*90*	11.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	50.0
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	10,917	*1,650*	61.3
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	378	*0*	66.9

Pakistan

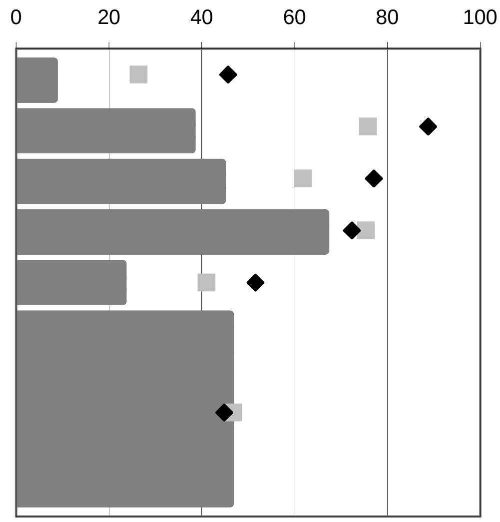
SOUTH ASIA

GDP/capita 2004 est. (PPP) $2,200

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	127
Score:	41.1
Income Group Avg.	56.0
Geographic Group Avg.	51.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	8.2	45.7	26.4
Water Resources	37.9	88.8	75.8
Prod. Nat. Resources	44.4	77.1	61.8
Sustainable Energy	66.6	72.3	75.4
Biodiv. and Habitat	23.0	51.5	41.0
Environmental Health	46.1	44.8	46.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	9.8	*0*	62.1
INDOOR	Indoor Air Pollution (%)	76	*0*	24.0
WATSUP	Drinking Water (%)	90.0	*100*	81.9
ACSAT	Adequate Sanitation (%)	54.0	*100*	44.1
PM10	Urban Particulates (µg/m^3)	180.1	*10*	0.0
OZONE	Regional Ozone (ppb)	50.6	*15*	16.4
NLOAD	Nitrogen Loading (mg/L)	3,336.8	*1*	36.7
OVRSUB	Water Consumption (%)	33.4	*0*	39.1
PWI	Wilderness Protection (%)	5.4	*90*	6.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	46.5
HARVEST	Timber Harvest Rate (%)	53.4	*3*	0.0
AGSUB	Agricultural Subsidies (%)	- 1.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,160	*1,650*	81.1
RENPC	Renewable Energy (%)	14.0	*100*	14.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	402	*0*	64.9

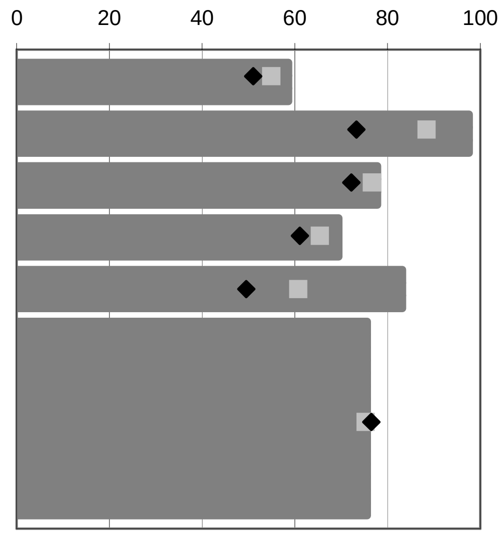
Panama

AMERICAS
GDP/capita 2004 est. (PPP) $6,900

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	37
Score:	76.5
Income Group Avg.	69.0
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	58.6	51.1	54.9
Water Resources	97.6	73.3	88.4
Prod. Nat. Resources	77.8	72.2	76.6
Sustainable Energy	69.5	61.1	65.4
Biodiv. and Habitat	83.2	49.5	60.8
Environmental Health	75.6	76.5	75.3

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.6	*0*	93.8
INDOOR	Indoor Air Pollution (%)	37	*0*	63.0
WATSUP	Drinking Water (%)	91.0	*100*	83.8
ACSAT	Adequate Sanitation (%)	72.0	*100*	66.0
PM10	Urban Particulates (µg/m^3)	53.3	*10*	69.2
OZONE	Regional Ozone (ppb)	37.1	*15*	48.0
NLOAD	Nitrogen Loading (mg/L)	6.9	*1*	99.9
OVRSUB	Water Consumption (%)	2.5	*0*	95.3
PWI	Wilderness Protection (%)	52.3	*90*	58.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,763	*1,650*	66.1
RENPC	Renewable Energy (%)	14.4	*100*	14.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	174	*0*	84.8

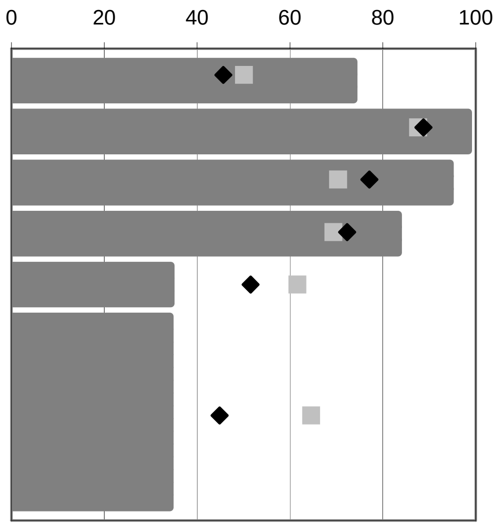
Papua New Guinea

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $2,200

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	96
Score:	55.5
Income Group Avg.	56.0
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	73.7	45.7	50.1
Water Resources	98.4	88.8	87.6
Prod. Nat. Resources	94.4	77.1	70.4
Sustainable Energy	83.3	72.3	69.3
Biodiv. and Habitat	34.3	51.5	61.6
Environmental Health	34.1	44.8	64.6

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	7.6	*0*	70.8
INDOOR	Indoor Air Pollution (%)	97	*0*	3.0
WATSUP	Drinking Water (%)	39.0	*100*	0.0
ACSAT	Adequate Sanitation (%)	45.0	*100*	33.1
PM10	Urban Particulates (µg/m^3)	31.2	*10*	84.9
OZONE	Regional Ozone (ppb)	30.9	*15*	62.6
NLOAD	Nitrogen Loading (mg/L)	3.6	*1*	100.0
OVRSUB	Water Consumption (%)	1.8	*0*	96.8
PWI	Wilderness Protection (%)	1.8	*90*	2.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	30.8
HARVEST	Timber Harvest Rate (%)	0.7	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	2	*1*	83.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,290	*1,650*	93.1
RENPC	Renewable Energy (%)	20.4	*100*	20.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	136	*0*	88.1

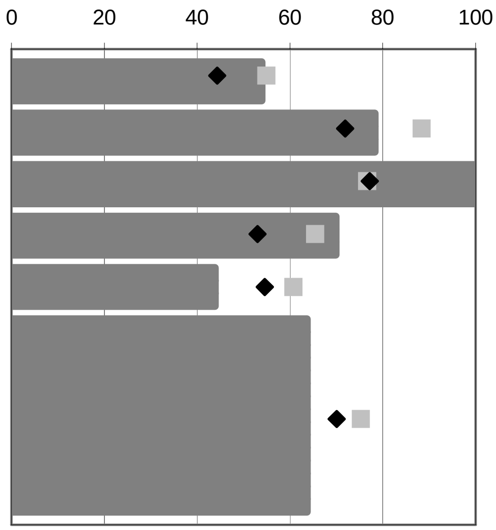
Paraguay

AMERICAS
GDP/capita 2004 est. (PPP) $4,800

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	62
Score:	66.4
Income Group Avg.	65.1
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	53.9	44.3	54.9
Water Resources	78.3	71.9	88.4
Prod. Nat. Resources	100.0	77.2	76.6
Sustainable Energy	69.9	53.0	65.4
Biodiv. and Habitat	43.8	54.6	60.8
Environmental Health	63.7	70.0	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.1	*0*	91.8
INDOOR	Indoor Air Pollution (%)	64	*0*	36.0
WATSUP	Drinking Water (%)	83.0	*100*	69.3
ACSAT	Adequate Sanitation (%)	78.0	*100*	73.3
PM10	Urban Particulates (µg/m^3)	97.0	*10*	38.1
OZONE	Regional Ozone (ppb)	27.9	*15*	69.8
NLOAD	Nitrogen Loading (mg/L)	30.8	*1*	99.4
OVRSUB	Water Consumption (%)	23.5	*0*	57.1
PWI	Wilderness Protection (%)	2.1	*90*	2.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	61.7
HARVEST	Timber Harvest Rate (%)	1.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	15,943	*1,650*	40.3
RENPC	Renewable Energy (%)	123.4	*100*	123.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	107	*0*	90.6

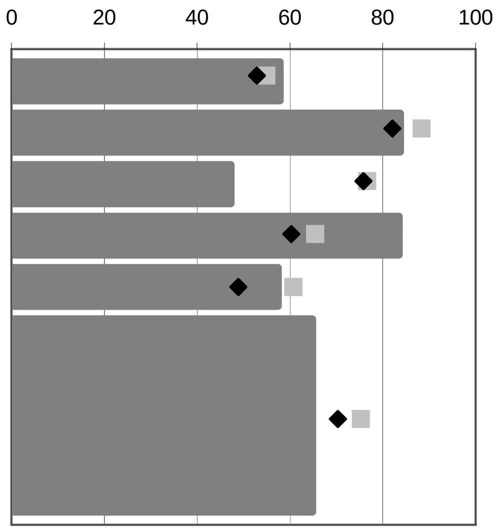
Peru

AMERICAS
GDP/capita 2004 est. (PPP) $5,600

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	65
Score:	65.4
Income Group Avg.	67.2
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	57.8	52.9	54.9
Water Resources	83.8	82.1	88.4
Prod. Nat. Resources	47.3	75.8	76.6
Sustainable Energy	83.5	60.3	65.4
Biodiv. and Habitat	57.4	48.9	60.8
Environmental Health	64.8	70.4	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	4.9	*0*	81.1
INDOOR	Indoor Air Pollution (%)	40	*0*	60.0
WATSUP	Drinking Water (%)	81.0	*100*	65.7
ACSAT	Adequate Sanitation (%)	62.0	*100*	53.8
PM10	Urban Particulates (µg/m^3)	61.8	*10*	63.2
OZONE	Regional Ozone (ppb)	35.2	*15*	52.5
NLOAD	Nitrogen Loading (mg/L)	106.2	*1*	98.0
OVRSUB	Water Consumption (%)	16.7	*0*	69.6
PWI	Wilderness Protection (%)	14.9	*90*	16.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	80.2
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	5.4	*0*	41.8
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,997	*1,650*	90.2
RENPC	Renewable Energy (%)	33.4	*100*	33.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	133	*0*	88.3

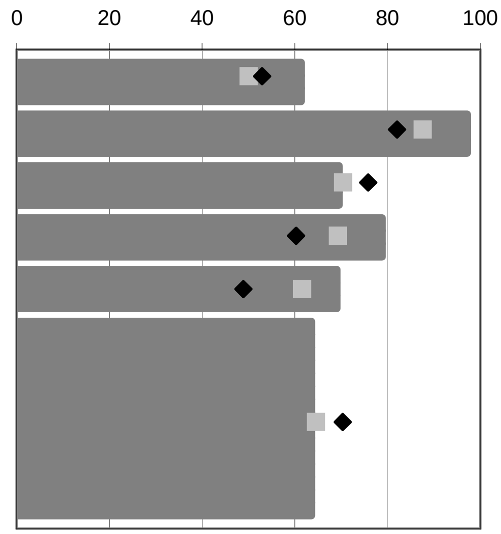
Philippines

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $5,000

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	55
Score:	69.4
Income Group Avg.	67.2
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	61.4	52.9	50.1
Water Resources	97.2	82.1	87.6
Prod. Nat. Resources	69.5	75.8	70.4
Sustainable Energy	78.9	60.3	69.3
Biodiv. and Habitat	69.0	48.9	61.6
Environmental Health	63.5	70.4	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.5	*0*	94.4
INDOOR	Indoor Air Pollution (%)	85	*0*	15.0
WATSUP	Drinking Water (%)	85.0	*100*	72.9
ACSAT	Adequate Sanitation (%)	73.0	*100*	67.2
PM10	Urban Particulates (µg/m^3)	49.3	*10*	72.0
OZONE	Regional Ozone (ppb)	35.9	*15*	50.8
NLOAD	Nitrogen Loading (mg/L)	7.3	*1*	99.9
OVRSUB	Water Consumption (%)	3.0	*0*	94.5
PWI	Wilderness Protection (%)	21.5	*90*	23.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	4.1	*3*	96.1
AGSUB	Agricultural Subsidies (%)	0.4	*0*	95.7
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,603	*1,650*	91.8
RENPC	Renewable Energy (%)	22.0	*100*	22.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	235	*0*	79.4

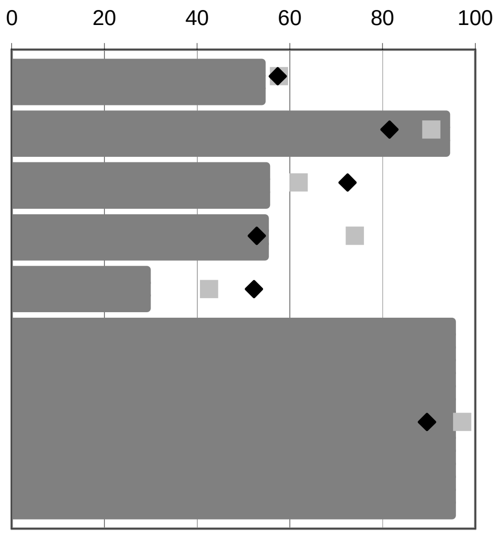
Poland

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $12,000

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	38
Score:	76.2
Income Group Avg.	76.4
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	53.9	57.4	57.7
Water Resources	93.7	81.5	90.6
Prod. Nat. Resources	54.9	72.5	61.9
Sustainable Energy	54.7	52.8	74.1
Biodiv. and Habitat	29.2	52.3	42.6
Environmental Health	95.0	89.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.4
INDOOR	Indoor Air Pollution (%)	7	*0*	93.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	43.6	*10*	76.1
OZONE	Regional Ozone (ppb)	44.0	*15*	31.8
NLOAD	Nitrogen Loading (mg/L)	125.1	*1*	97.6
OVRSUB	Water Consumption (%)	5.6	*0*	89.8
PWI	Wilderness Protection (%)	1.8	*90*	2.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.20	*1*	18.6
HARVEST	Timber Harvest Rate (%)	1.7	*3*	100.0
AGSUB	Agricultural Subsidies (%)	4.8	*0*	48.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,036	*1,650*	73.3
RENPC	Renewable Energy (%)	0.7	*100*	0.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	579	*0*	49.4

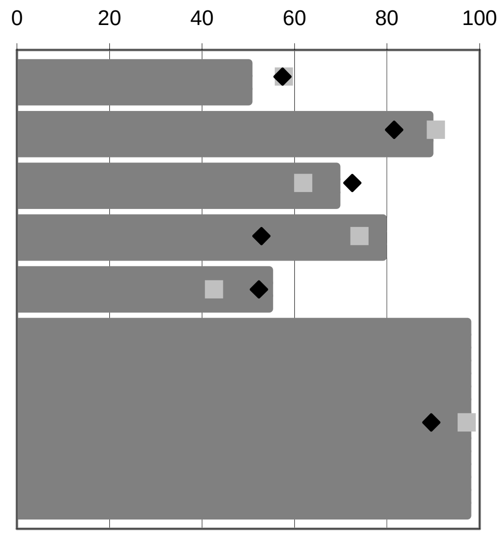
Portugal

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $17,900

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	11
Score:	82.9
Income Group Avg.	76.4
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	50.1	57.4	57.7
Water Resources	89.2	81.5	90.6
Prod. Nat. Resources	69.1	72.5	61.9
Sustainable Energy	79.1	52.8	74.1
Biodiv. and Habitat	54.6	52.3	42.6
Environmental Health	97.4	89.6	97.2

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.5	*0*	98.2
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	34.0	*10*	83.0
OZONE	Regional Ozone (ppb)	50.2	*15*	17.2
NLOAD	Nitrogen Loading (mg/L)	179.6	*1*	96.6
OVRSUB	Water Consumption (%)	10.0	*0*	81.8
PWI	Wilderness Protection (%)	10.5	*90*	11.7
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	76.0
HARVEST	Timber Harvest Rate (%)	3.2	*3*	99.2
AGSUB	Agricultural Subsidies (%)	0.8	*0*	91.4
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,618	*1,650*	83.4
RENPC	Renewable Energy (%)	16.4	*100*	16.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	126	*0*	89.0

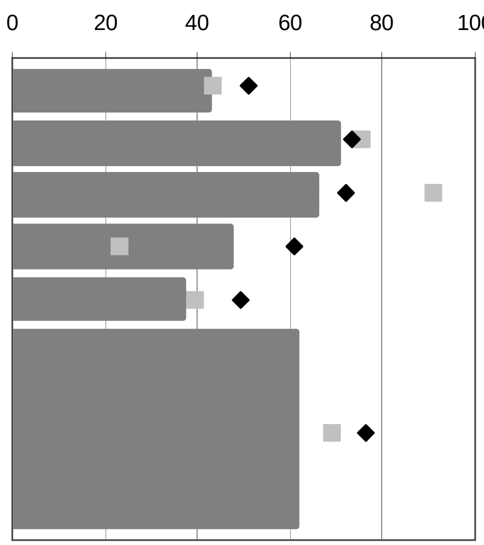
Romania

OTHER EASTERN EUROPE AND CENTRAL ASIA
GDP/capita 2004 est. (PPP) $7,700

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	90
Score:	56.9
Income Group Avg.	69.0
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	42.5	51.1	43.2
Water Resources	70.6	73.3	75.6
Prod. Nat. Resources	65.9	72.2	90.9
Sustainable Energy	47.3	61.1	23.1
Biodiv. and Habitat	36.9	49.5	39.5
Environmental Health	61.2	76.5	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.1	*0*	95.9
INDOOR	Indoor Air Pollution (%)	9	*0*	91.0
WATSUP	Drinking Water (%)	57.0	*100*	22.4
ACSAT	Adequate Sanitation (%)	51.0	*100*	40.4
PM10	Urban Particulates (µg/m^3)	73.8	*10*	54.6
OZONE	Regional Ozone (ppb)	44.6	*15*	30.5
NLOAD	Nitrogen Loading (mg/L)	1,445.1	*1*	72.6
OVRSUB	Water Consumption (%)	17.2	*0*	68.5
PWI	Wilderness Protection (%)	16.8	*90*	18.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	25.2
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	4.8	*0*	47.6
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,464	*1,650*	67.3
RENPC	Renewable Energy (%)	9.7	*100*	9.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	718	*0*	37.2

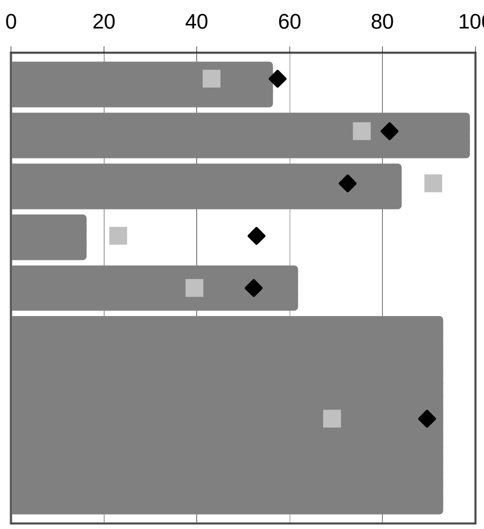
Russia

OTHER EASTERN EUROPE AND CENTRAL ASIA
GDP/capita 2004 est. (PPP) $9,800

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	32
Score:	77.5
Income Group Avg.	76.4
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	55.6	57.4	43.2
Water Resources	98.0	81.5	75.6
Prod. Nat. Resources	83.3	72.5	90.9
Sustainable Energy	15.5	52.8	23.1
Biodiv. and Habitat	61.0	52.3	39.5
Environmental Health	92.3	89.6	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.2	*0*	95.3
INDOOR	Indoor Air Pollution (%)	1	*0*	99.0
WATSUP	Drinking Water (%)	96.0	*100*	92.8
ACSAT	Adequate Sanitation (%)	87.0	*100*	84.2
PM10	Urban Particulates ($\mu g/m^3$)	25.8	*10*	88.8
OZONE	Regional Ozone (ppb)	48.0	*15*	22.4
NLOAD	Nitrogen Loading (mg/L)	16.4	*1*	99.7
OVRSUB	Water Consumption (%)	2.1	*0*	96.2
PWI	Wilderness Protection (%)	9.6	*90*	10.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	90.9
HARVEST	Timber Harvest Rate (%)	0.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	22,507	*1,650*	12.8
RENPC	Renewable Energy (%)	6.1	*100*	6.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	914	*0*	20.0

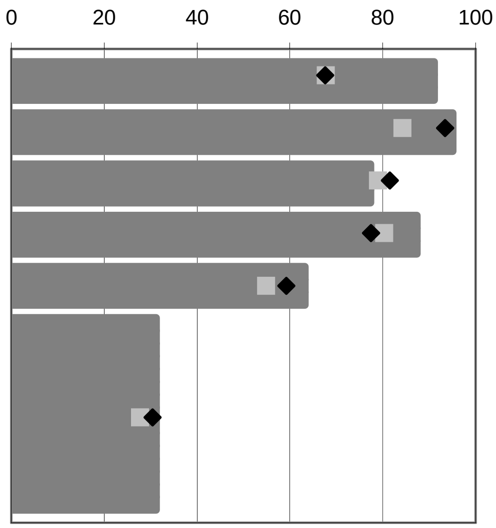
Rwanda

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,300

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	89
Score:	57.0
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	91.1	67.6	67.8
Water Resources	95.0	93.5	84.3
Prod. Nat. Resources	77.3	81.6	78.9
Sustainable Energy	87.3	77.5	80.3
Biodiv. and Habitat	63.2	59.2	54.9
Environmental Health	31.1	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	22.3	*0*	14.2
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	73.0	*100*	51.3
ACSAT	Adequate Sanitation (%)	41.0	*100*	28.3
PM10	Urban Particulates (µg/m^3)	35.1	*10*	82.1
OZONE	Regional Ozone (ppb)	14.1	*15*	100.0
NLOAD	Nitrogen Loading (mg/L)	524.7	*1*	90.1
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	21.8	*90*	24.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	16.2	*3*	54.7
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,298	*1,650*	100.0
RENPC	Renewable Energy (%)	7.1	*100*	7.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	76	*0*	93.4

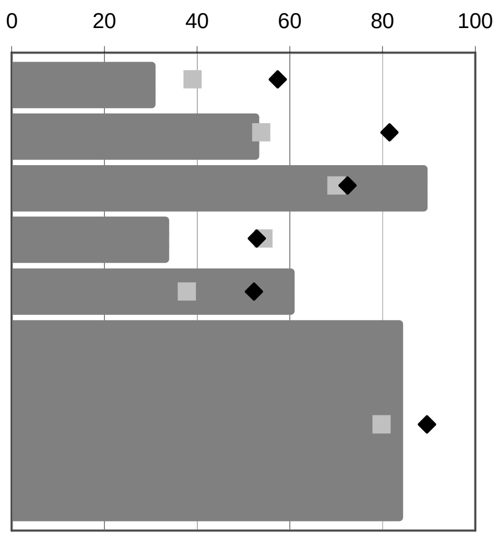
Saudi Arabia

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $12,000

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	59
Score:	68.3
Income Group Avg.	76.4
Geographic Group Avg.	65.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	30.2	57.4	39.1
Water Resources	52.6	81.5	53.9
Prod. Nat. Resources	88.9	72.5	70.0
Sustainable Energy	33.1	52.8	54.3
Biodiv. and Habitat	60.2	52.3	37.8
Environmental Health	83.6	89.6	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.0	*0*	96.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	90.0	*100*	81.9
ACSAT	Adequate Sanitation (%)	0.0	*100*	87.8
PM10	Urban Particulates (µg/m^3)	105.9	*10*	31.7
OZONE	Regional Ozone (ppb)	45.3	*15*	28.7
NLOAD	Nitrogen Loading (mg/L)	27.3	*1*	99.5
OVRSUB	Water Consumption (%)	51.6	*0*	5.7
PWI	Wilderness Protection (%)	13.4	*90*	14.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	18,749	*1,650*	28.5
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	632	*0*	44.7

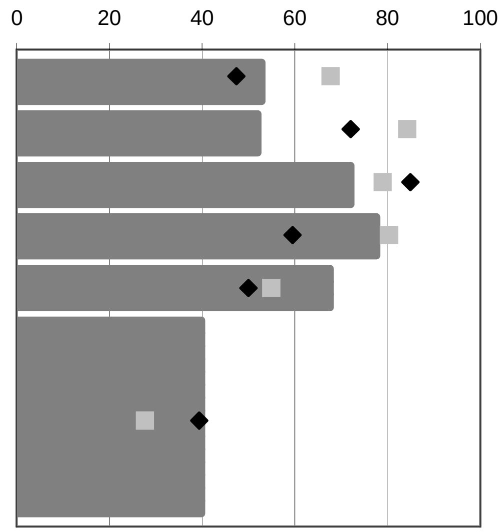
Senegal

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,700

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	107
Score:	52.1
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	52.9	47.4	67.8
Water Resources	52.0	72.0	84.3
Prod. Nat. Resources	72.1	84.9	78.9
Sustainable Energy	77.6	59.5	80.3
Biodiv. and Habitat	67.6	50.0	54.9
Environmental Health	39.9	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	13.9	*0*	46.5
INDOOR	Indoor Air Pollution (%)	79	*0*	21.0
WATSUP	Drinking Water (%)	72.0	*100*	49.5
ACSAT	Adequate Sanitation (%)	52.0	*100*	41.6
PM10	Urban Particulates (µg/m^3)	92.3	*10*	41.5
OZONE	Regional Ozone (ppb)	30.2	*15*	64.3
NLOAD	Nitrogen Loading (mg/L)	3,779.7	*1*	28.3
OVRSUB	Water Consumption (%)	13.3	*0*	75.6
PWI	Wilderness Protection (%)	19.8	*90*	22.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	3.1	*3*	99.5
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,905	*1,650*	90.6
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	197	*0*	82.8

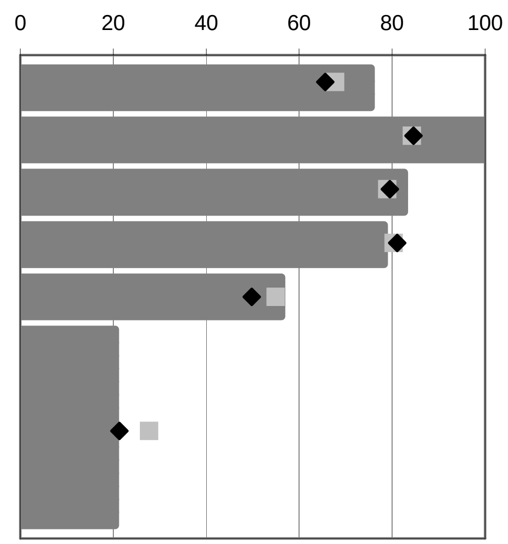
Sierra Leone

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 600

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	111
Score:	49.5
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	75.5	65.6	67.8
Water Resources	100.0	84.6	84.3
Prod. Nat. Resources	82.6	79.5	78.9
Sustainable Energy	78.3	81.1	80.3
Biodiv. and Habitat	56.2	49.8	54.9
Environmental Health	20.4	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	41.6	*0*	0.0
INDOOR	Indoor Air Pollution (%)	92	*0*	8.0
WATSUP	Drinking Water (%)	57.0	*100*	22.4
ACSAT	Adequate Sanitation (%)	39.0	*100*	25.8
PM10	Urban Particulates (µg/m^3)	62.7	*10*	62.5
OZONE	Regional Ozone (ppb)	19.9	*15*	88.4
NLOAD	Nitrogen Loading (mg/L)	3.8	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	10.4	*90*	11.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	77.9
HARVEST	Timber Harvest Rate (%)	3.7	*3*	97.7
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,451	*1,650*	92.5
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	200	*0*	82.5

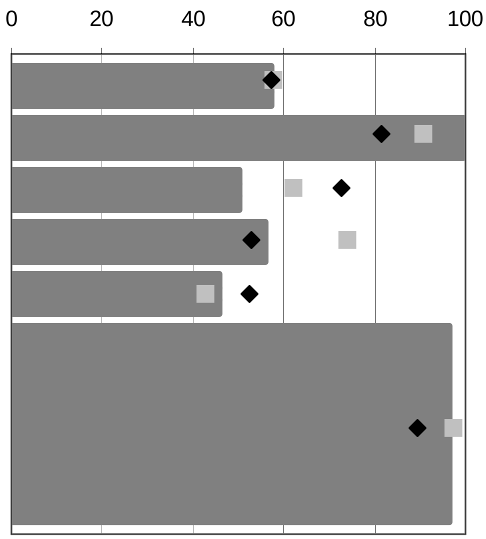
Slovakia

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $14,500

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	25
Score:	79.1
Income Group Avg.	76.4
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	57.4	57.4	57.7
Water Resources	99.4	81.5	90.6
Prod. Nat. Resources	50.0	72.5	61.9
Sustainable Energy	56.0	52.8	74.1
Biodiv. and Habitat	45.8	52.3	42.6
Environmental Health	96.4	89.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.5	*0*	98.0
INDOOR	Indoor Air Pollution (%)	5	*0*	95.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	32.4	*10*	84.0
OZONE	Regional Ozone (ppb)	44.4	*15*	30.8
NLOAD	Nitrogen Loading (mg/L)	62.6	*1*	98.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	4.4	*90*	4.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.60	*1*	56.9
HARVEST	Timber Harvest Rate (%)	1.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	20.4	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	11,138	*1,650*	60.3
RENPC	Renewable Energy (%)	4.4	*100*	4.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	419	*0*	63.3

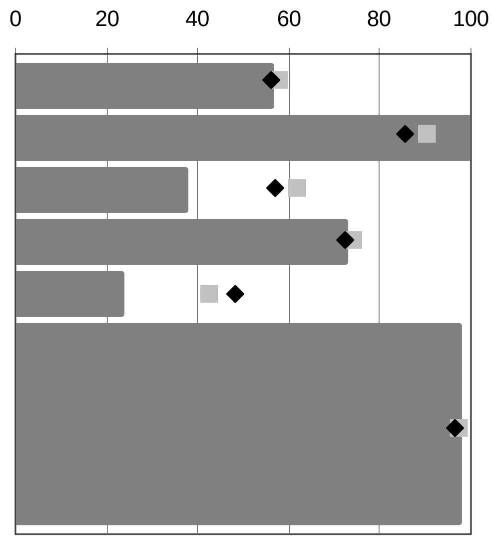
Slovenia

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $19,600

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	31
Score:	77.5
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	56.1	56.3	57.7
Water Resources	99.5	85.4	90.6
Prod. Nat. Resources	37.2	57.0	61.9
Sustainable Energy	72.6	72.3	74.1
Biodiv. and Habitat	23.5	48.2	42.6
Environmental Health	97.3	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.5	*0*	98.2
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	35.5	*10*	81.9
OZONE	Regional Ozone (ppb)	44.6	*15*	30.4
NLOAD	Nitrogen Loading (mg/L)	53.6	*1*	99.0
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	0.0	*90*	0.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	4.3
HARVEST	Timber Harvest Rate (%)	0.8	*3*	100.0
AGSUB	Agricultural Subsidies (%)	8.1	*0*	11.5
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	7,898	*1,650*	73.9
RENPC	Renewable Energy (%)	10.8	*100*	10.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	172	*0*	85.0

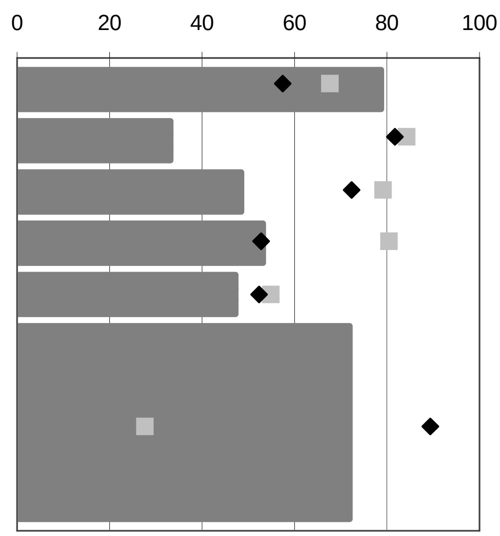
South Africa

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $11,100

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	76
Score:	62.0
Income Group Avg.	76.4
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	78.6	57.4	67.8
Water Resources	33.3	81.5	84.3
Prod. Nat. Resources	48.4	72.5	78.9
Sustainable Energy	53.3	52.8	80.3
Biodiv. and Habitat	47.2	52.3	54.9
Environmental Health	71.8	89.6	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	8.3	*0*	68.1
INDOOR	Indoor Air Pollution (%)	28	*0*	72.0
WATSUP	Drinking Water (%)	87.0	*100*	76.5
ACSAT	Adequate Sanitation (%)	67.0	*100*	59.9
PM10	Urban Particulates (µg/m^3)	24.1	*10*	89.9
OZONE	Regional Ozone (ppb)	28.9	*15*	67.3
NLOAD	Nitrogen Loading (mg/L)	1,766.1	*1*	66.5
OVRSUB	Water Consumption (%)	54.8	*0*	0.0
PWI	Wilderness Protection (%)	10.4	*90*	11.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	76.9
HARVEST	Timber Harvest Rate (%)	7.6	*3*	84.2
AGSUB	Agricultural Subsidies (%)	6.7	*0*	27.6
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	10,129	*1,650*	64.6
RENPC	Renewable Energy (%)	0.2	*100*	0.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	519	*0*	54.6

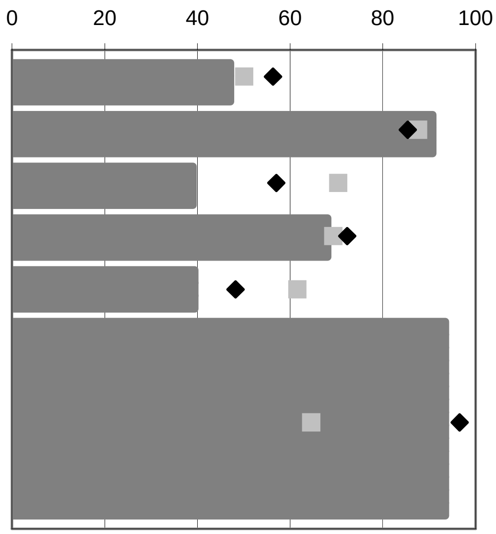
South Korea

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $19,200

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	42
Score:	75.2
Income Group Avg.	80.2
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	47.1	56.3	50.1
Water Resources	90.7	85.4	87.6
Prod. Nat. Resources	39.0	57.0	70.4
Sustainable Energy	68.1	72.3	69.3
Biodiv. and Habitat	39.4	48.2	61.6
Environmental Health	93.5	96.6	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.4
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	92.0	*100*	85.6
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	42.5	*10*	76.8
OZONE	Regional Ozone (ppb)	50.1	*15*	17.4
NLOAD	Nitrogen Loading (mg/L)	42.1	*1*	99.2
OVRSUB	Water Consumption (%)	9.7	*0*	82.3
PWI	Wilderness Protection (%)	7.9	*90*	8.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.40	*1*	39.5
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	9.2	*0*	0.4
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,432	*1,650*	67.5
RENPC	Renewable Energy (%)	0.7	*100*	0.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	188	*0*	83.6

Spain

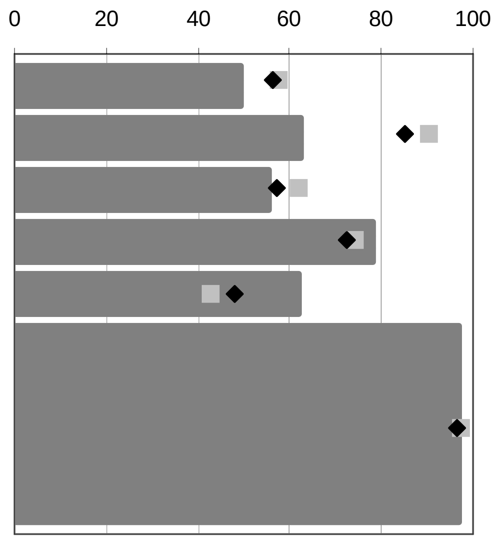
EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $23,300

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI

Rank:	23
Score:	79.2
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	49.2	56.3	57.7
Water Resources	62.4	85.4	90.6
Prod. Nat. Resources	55.3	57.0	61.9
Sustainable Energy	78.0	72.3	74.1
Biodiv. and Habitat	62.1	48.2	42.6
Environmental Health	97.0	96.6	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	99.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	40.4	*10*	78.4
OZONE	Regional Ozone (ppb)	49.0	*15*	20.0
NLOAD	Nitrogen Loading (mg/L)	400.1	*1*	92.4
OVRSUB	Water Consumption (%)	37.1	*0*	32.3
PWI	Wilderness Protection (%)	16.7	*90*	18.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	96.5
HARVEST	Timber Harvest Rate (%)	2.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	4.7	*0*	49.2
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,229	*1,650*	80.9
RENPC	Renewable Energy (%)	9.4	*100*	9.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	110	*0*	90.4

Sri Lanka

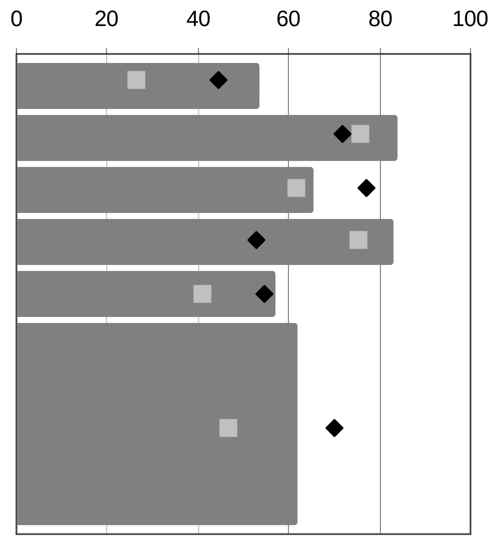
SOUTH ASIA

GDP/capita 2004 est. (PPP) $4,000

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	67
Score:	64.6
Income Group Avg.	65.1
Geographic Group Avg.	51.4

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	52.7	44.3	26.4
Water Resources	83.2	71.9	75.8
Prod. Nat. Resources	64.6	77.2	61.8
Sustainable Energy	82.5	53.0	75.4
Biodiv. and Habitat	56.6	54.6	41.0
Environmental Health	61.3	70.0	46.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.7	*0*	97.4
INDOOR	Indoor Air Pollution (%)	89	*0*	11.0
WATSUP	Drinking Water (%)	78.0	*100*	60.3
ACSAT	Adequate Sanitation (%)	91.0	*100*	89.1
PM10	Urban Particulates (µg/m^3)	93.8	*10*	40.4
OZONE	Regional Ozone (ppb)	29.9	*15*	64.9
NLOAD	Nitrogen Loading (mg/L)	178.1	*1*	96.6
OVRSUB	Water Consumption (%)	16.5	*0*	69.8
PWI	Wilderness Protection (%)	29.2	*90*	32.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	70.7
HARVEST	Timber Harvest Rate (%)	9.6	*3*	77.2
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,724	*1,650*	95.5
RENPC	Renewable Energy (%)	15.4	*100*	15.4
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	167	*0*	85.4

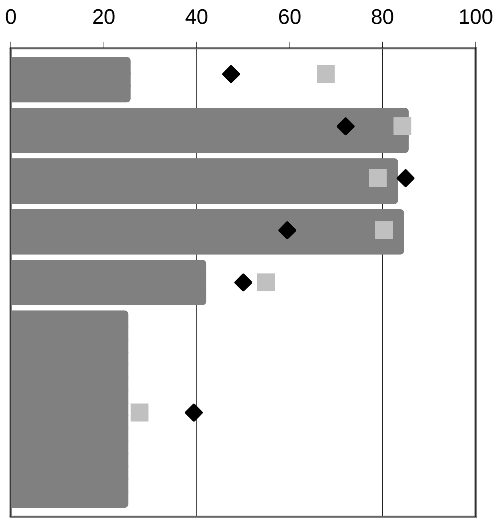
Sudan

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	124
Score:	44.0
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	24.9	47.4	67.8
Water Resources	84.8	72.0	84.3
Prod. Nat. Resources	82.5	84.9	78.9
Sustainable Energy	83.8	59.5	80.3
Biodiv. and Habitat	41.3	50.0	54.9
Environmental Health	24.5	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	13.2	*0*	49.2
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	69.0	*100*	44.0
ACSAT	Adequate Sanitation (%)	34.0	*100*	19.8
PM10	Urban Particulates (µg/m^3)	246.4	*10*	0.0
OZONE	Regional Ozone (ppb)	36.3	*15*	49.9
NLOAD	Nitrogen Loading (mg/L)	576.0	*1*	89.1
OVRSUB	Water Consumption (%)	10.7	*0*	80.5
PWI	Wilderness Protection (%)	5.4	*90*	6.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	48.4
HARVEST	Timber Harvest Rate (%)	3.7	*3*	97.6
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,156	*1,650*	97.9
RENPC	Renewable Energy (%)	9.8	*100*	9.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	148	*0*	87.1

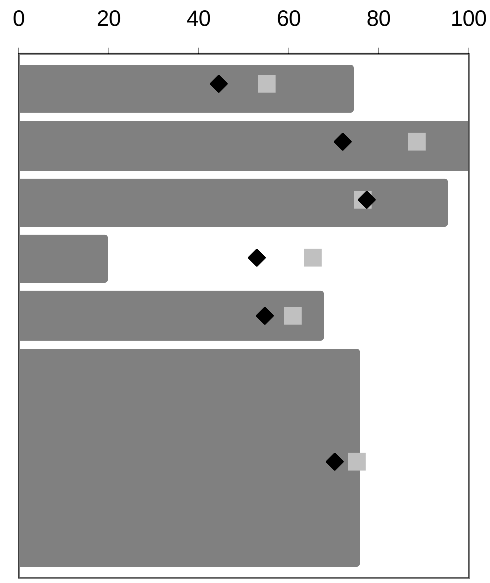
Suriname

AMERICAS
GDP/capita 2004 est. (PPP) $4,300

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	48
Score:	72.9
Income Group Avg.	65.1
Geographic Group Avg.	72.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	73.7	44.3	54.9
Water Resources	99.9	71.9	88.4
Prod. Nat. Resources	94.4	77.2	76.6
Sustainable Energy	19.1	53.0	65.4
Biodiv. and Habitat	66.9	54.6	60.8
Environmental Health	75.1	70.0	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.4	*0*	94.7
INDOOR	Indoor Air Pollution (%)	69	*0*	31.0
WATSUP	Drinking Water (%)	92.0	*100*	85.6
ACSAT	Adequate Sanitation (%)	93.0	*100*	91.5
PM10	Urban Particulates (µg/m^3)	50.7	*10*	71.0
OZONE	Regional Ozone (ppb)	25.1	*15*	76.4
NLOAD	Nitrogen Loading (mg/L)	6.5	*1*	99.9
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	14.5	*90*	16.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	2	*1*	83.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	25,730	*1,650*	0.0
RENPC	Renewable Energy (%)	39.3	*100*	39.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	774	*0*	32.3

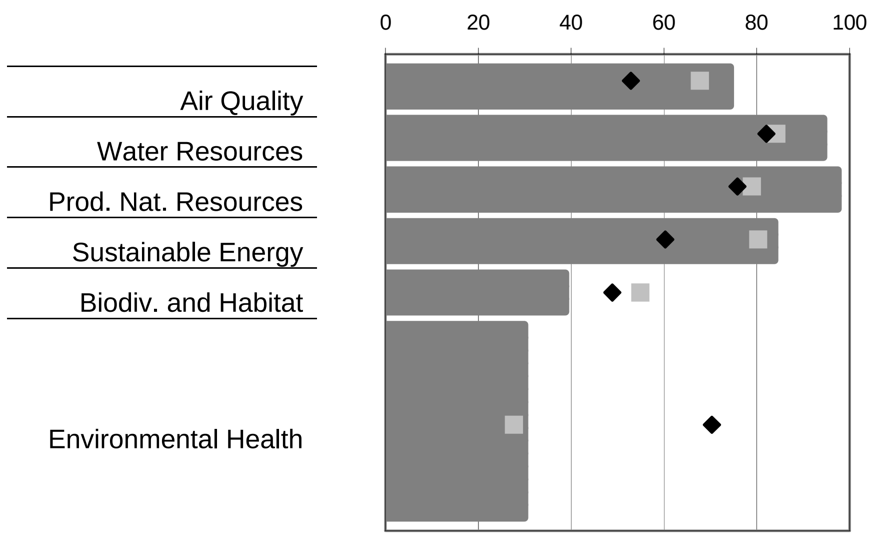
Swaziland

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $5,100

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	101
Score:	53.9
Income Group Avg.	67.2
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	74.3	52.9	67.8
Water Resources	94.4	82.1	84.3
Prod. Nat. Resources	97.5	75.8	78.9
Sustainable Energy	83.9	60.3	80.3
Biodiv. and Habitat	38.8	48.9	54.9
Environmental Health	29.9	70.4	27.7

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	19.9	*0*	23.3
INDOOR	Indoor Air Pollution (%)	88	*0*	12.0
WATSUP	Drinking Water (%)	52.0	*100*	13.4
ACSAT	Adequate Sanitation (%)	52.0	*100*	41.6
PM10	Urban Particulates (µg/m^3)	39.6	*10*	79.0
OZONE	Regional Ozone (ppb)	28.0	*15*	69.5
NLOAD	Nitrogen Loading (mg/L)	206.5	*1*	96.1
OVRSUB	Water Consumption (%)	4.0	*0*	92.7
PWI	Wilderness Protection (%)	0.7	*90*	0.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	46.2
HARVEST	Timber Harvest Rate (%)	4.5	*3*	95.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,948	*1,650*	90.4
RENPC	Renewable Energy (%)	9.2	*100*	9.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	65	*0*	94.3

Sweden

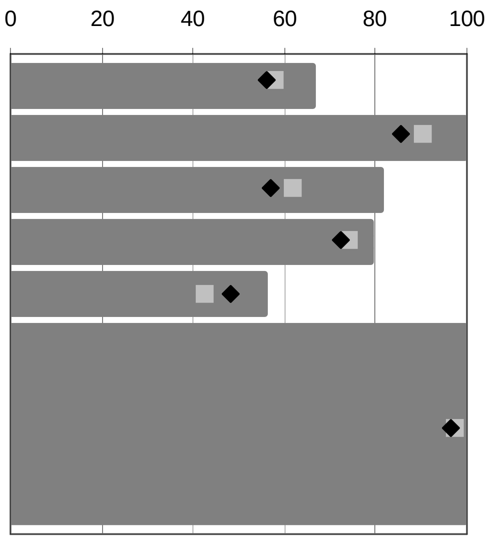
EUROPEAN UNION +

GDP/capita 2004 est. (PPP) $28,400

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	2
Score:	87.8
Income Group Avg.	80.2
Geographic Group Avg.	81.3

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	66.4	56.3	57.7
Water Resources	99.5	85.4	90.6
Prod. Nat. Resources	81.0	57.0	61.9
Sustainable Energy	78.9	72.3	74.1
Biodiv. and Habitat	55.6	48.2	42.6
Environmental Health	99.4	96.6	97.2

Indicator Data

		Value	Target	Standardized Proximity to Target (100=target met)
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.3
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	15.3	*10*	96.2
OZONE	Regional Ozone (ppb)	42.0	*15*	36.6
NLOAD	Nitrogen Loading (mg/L)	18.5	*1*	99.7
OVRSUB	Water Consumption (%)	0.4	*0*	99.4
PWI	Wilderness Protection (%)	12.8	*90*	14.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	72.7
HARVEST	Timber Harvest Rate (%)	2.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.6	*0*	93.0
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	8,238	*1,650*	72.5
RENPC	Renewable Energy (%)	28.1	*100*	28.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	44	*0*	96.2

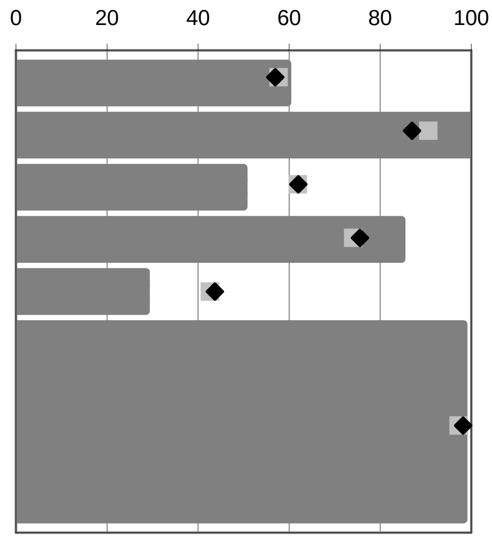
Switzerland

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $33,800

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	16
Score:	81.4
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	59.6	57.0	57.7
Water Resources	99.6	87.0	90.6
Prod. Nat. Resources	50.0	62.0	61.9
Sustainable Energy	84.7	75.5	74.1
Biodiv. and Habitat	28.6	43.7	42.6
Environmental Health	98.3	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	99.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	25.8	*10*	88.8
OZONE	Regional Ozone (ppb)	44.6	*15*	30.4
NLOAD	Nitrogen Loading (mg/L)	40.0	*1*	99.3
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	2.7	*90*	3.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.10	*1*	14.3
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	56.1	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,361	*1,650*	84.5
RENPC	Renewable Energy (%)	29.1	*100*	29.1
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	32	*0*	97.2

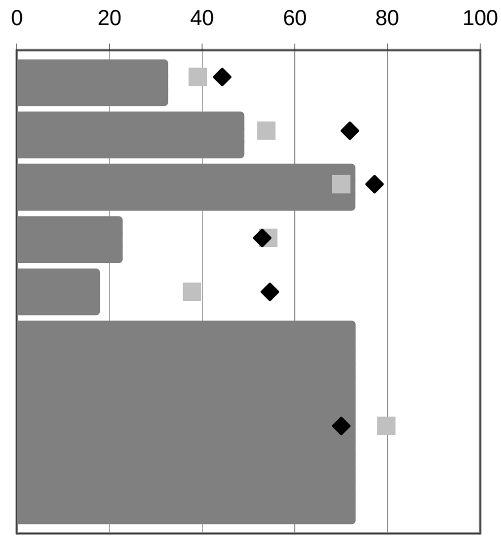
Syria

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $3,400

Income Decile 6 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	97
Score:	55.3
Income Group Avg.	65.1
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	31.8	44.3	39.1
Water Resources	48.3	71.9	53.9
Prod. Nat. Resources	72.2	77.2	70.0
Sustainable Energy	22.0	53.0	54.3
Biodiv. and Habitat	17.1	54.6	37.8
Environmental Health	72.3	70.0	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.7	*0*	97.2
INDOOR	Indoor Air Pollution (%)	19	*0*	81.0
WATSUP	Drinking Water (%)	79.0	*100*	62.1
ACSAT	Adequate Sanitation (%)	77.0	*100*	72.0
PM10	Urban Particulates (µg/m^3)	102.1	*10*	34.5
OZONE	Regional Ozone (ppb)	45.1	*15*	29.1
NLOAD	Nitrogen Loading (mg/L)	184.2	*1*	96.5
OVRSUB	Water Consumption (%)	55.6	*0*	0.0
PWI	Wilderness Protection (%)	1.4	*90*	1.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	3.2
HARVEST	Timber Harvest Rate (%)	0.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	14,076	*1,650*	48.1
RENPC	Renewable Energy (%)	12.6	*100*	12.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,152	*0*	0.0

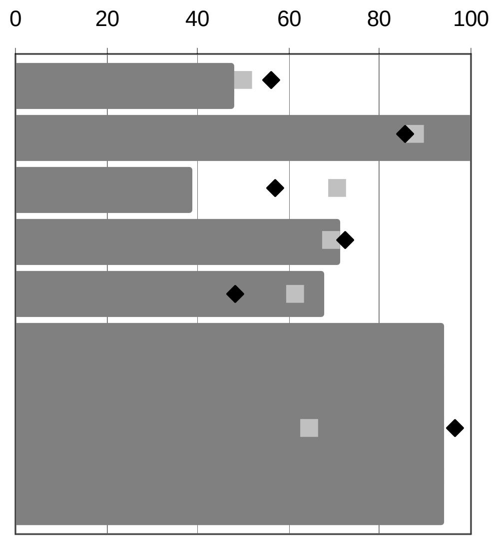
Taiwan

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $25,300

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	24
Score:	79.1
Income Group Avg.	80.2
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	47.4	56.3	50.1
Water Resources	99.8	85.4	87.6
Prod. Nat. Resources	38.0	57.0	70.4
Sustainable Energy	70.7	72.3	69.3
Biodiv. and Habitat	67.3	48.2	61.6
Environmental Health	93.5	96.6	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.0	*0*	92.2
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	0.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	61.8	*10*	63.1
OZONE	Regional Ozone (ppb)	44.1	*15*	31.6
NLOAD	Nitrogen Loading (mg/L)	19.9	*1*	99.6
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	26.9	*90*	29.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	86.9
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	7.9	*0*	14.1
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	7,490	*1,650*	75.6
RENPC	Renewable Energy (%)	1.8	*100*	1.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	212	*0*	81.5

Tajikistan

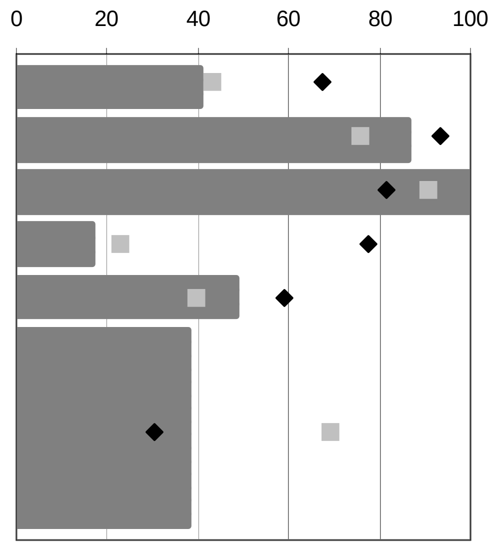
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $1,100

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	117
Score:	48.2
Income Group Avg.	53.2
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	40.7	67.6	43.2
Water Resources	86.2	93.5	75.6
Prod. Nat. Resources	100.0	81.6	90.9
Sustainable Energy	16.9	77.5	23.1
Biodiv. and Habitat	48.6	59.2	39.5
Environmental Health	38.0	30.5	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	7.5	*0*	71.1
INDOOR	Indoor Air Pollution (%)	100	*0*	0.0
WATSUP	Drinking Water (%)	58.0	*100*	24.2
ACSAT	Adequate Sanitation (%)	53.0	*100*	42.9
PM10	Urban Particulates (µg/m^3)	63.6	*10*	61.9
OZONE	Regional Ozone (ppb)	49.2	*15*	19.5
NLOAD	Nitrogen Loading (mg/L)	108.3	*1*	98.0
OVRSUB	Water Consumption (%)	14.0	*0*	74.4
PWI	Wilderness Protection (%)	17.2	*90*	19.1
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	54.2
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	37,289	*1,650*	0.0
RENPC	Renewable Energy (%)	59.8	*100*	59.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	879	*0*	23.1

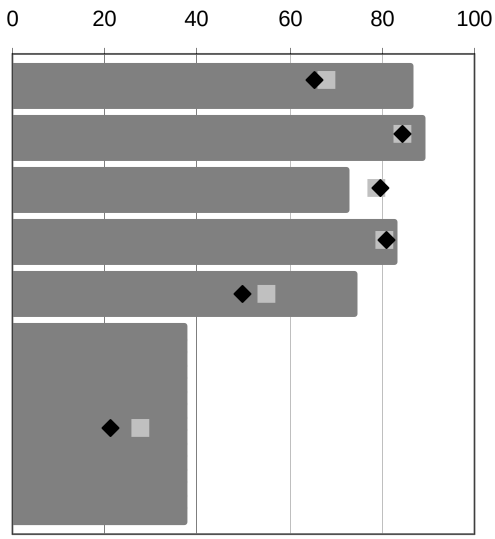
Tanzania

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 700

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	83
Score:	59.0
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	86.2	65.6	67.8
Water Resources	88.6	84.6	84.3
Prod. Nat. Resources	72.2	79.5	78.9
Sustainable Energy	82.9	81.1	80.3
Biodiv. and Habitat	74.1	49.8	54.9
Environmental Health	37.3	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	17.3	*0*	33.4
INDOOR	Indoor Air Pollution (%)	96	*0*	4.0
WATSUP	Drinking Water (%)	73.0	*100*	51.3
ACSAT	Adequate Sanitation (%)	46.0	*100*	34.3
PM10	Urban Particulates ($\mu g/m^3$)	37.3	*10*	80.6
OZONE	Regional Ozone (ppb)	18.5	*15*	91.9
NLOAD	Nitrogen Loading (mg/L)	160.2	*1*	97.0
OVRSUB	Water Consumption (%)	10.8	*0*	80.2
PWI	Wilderness Protection (%)	34.4	*90*	38.2
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	99.4
HARVEST	Timber Harvest Rate (%)	1.4	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	3,493	*1,650*	92.3
RENPC	Renewable Energy (%)	37.9	*100*	37.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	182	*0*	84.1

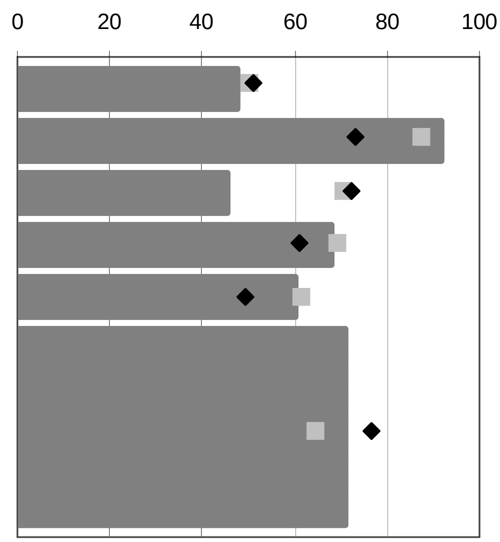
Thailand

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $8,100

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	61
Score:	66.8
Income Group Avg.	69.0
Geographic Group Avg.	66.2

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	47.5	51.1	50.1
Water Resources	91.8	73.3	87.6
Prod. Nat. Resources	45.6	72.2	70.4
Sustainable Energy	68.1	61.1	69.3
Biodiv. and Habitat	60.2	49.5	61.6
Environmental Health	71.0	76.5	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.3	*0*	95.0
INDOOR	Indoor Air Pollution (%)	72	*0*	28.0
WATSUP	Drinking Water (%)	85.0	*100*	72.9
ACSAT	Adequate Sanitation (%)	99.0	*100*	98.8
PM10	Urban Particulates (µg/m^3)	76.1	*10*	53.0
OZONE	Regional Ozone (ppb)	39.6	*15*	42.1
NLOAD	Nitrogen Loading (mg/L)	24.7	*1*	99.6
OVRSUB	Water Consumption (%)	8.8	*0*	84.0
PWI	Wilderness Protection (%)	31.3	*90*	34.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	77.2
HARVEST	Timber Harvest Rate (%)	11.0	*3*	72.4
AGSUB	Agricultural Subsidies (%)	3.3	*0*	64.5
OVRFSH	Overfishing (scale 1-7)	7	*1*	0.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,654	*1,650*	79.1
RENPC	Renewable Energy (%)	3.2	*100*	3.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	316	*0*	72.4

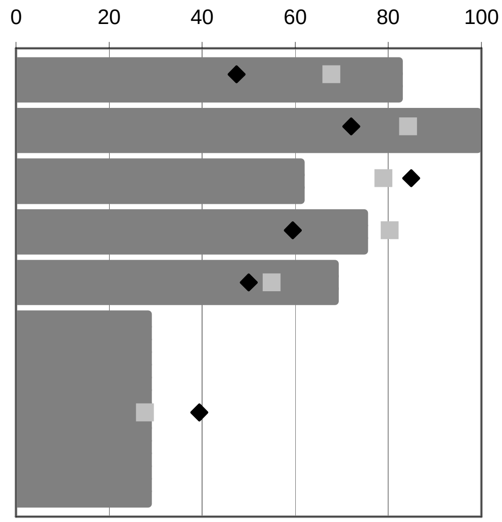
Togo

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,600

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	103
Score:	52.8
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	82.3	47.4	67.8
Water Resources	99.2	72.0	84.3
Prod. Nat. Resources	61.2	84.9	78.9
Sustainable Energy	74.8	59.5	80.3
Biodiv. and Habitat	68.5	50.0	54.9
Environmental Health	28.3	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	12.7	*0*	51.0
INDOOR	Indoor Air Pollution (%)	96	*0*	4.0
WATSUP	Drinking Water (%)	51.0	*100*	11.6
ACSAT	Adequate Sanitation (%)	34.0	*100*	19.8
PM10	Urban Particulates (µg/m^3)	46.0	*10*	74.4
OZONE	Regional Ozone (ppb)	19.1	*15*	90.3
NLOAD	Nitrogen Loading (mg/L)	82.9	*1*	98.4
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	29.6	*90*	32.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	12.6	*3*	67.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	2,316	*1,650*	97.2
RENPC	Renewable Energy (%)	0.2	*100*	0.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	336	*0*	70.6

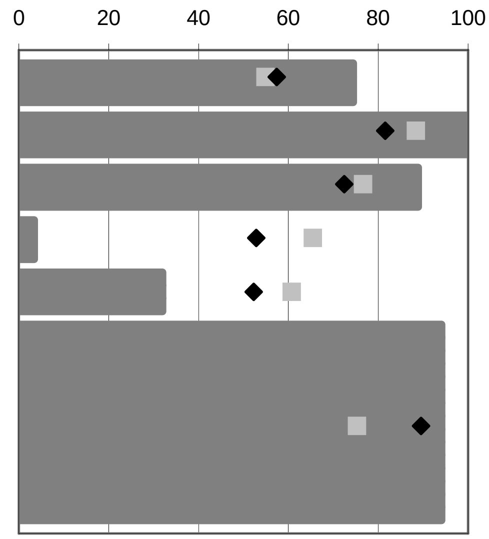
Trinidad & Tobago

AMERICAS
GDP/capita 2004 est. (PPP) $10,500

Income Decile 3 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	35
Score:	76.9
Income Group Avg.	76.4
Geographic Group Avg.	72.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	74.4	57.4	54.9
Water Resources	99.9	81.5	88.4
Prod. Nat. Resources	88.9	72.5	76.6
Sustainable Energy	3.4	52.8	65.4
Biodiv. and Habitat	32.0	52.3	60.8
Environmental Health	94.1	89.6	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	1.3	*0*	95.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	91.0	*100*	83.8
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	24.1	*10*	89.9
OZONE	Regional Ozone (ppb)	32.5	*15*	58.9
NLOAD	Nitrogen Loading (mg/L)	10.5	*1*	99.8
OVRSUB	Water Consumption (%)	0.0	*0*	100.0
PWI	Wilderness Protection (%)	6.7	*90*	7.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.20	*1*	18.7
HARVEST	Timber Harvest Rate (%)	0.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	37,706	*1,650*	0.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	1,059	*0*	7.3

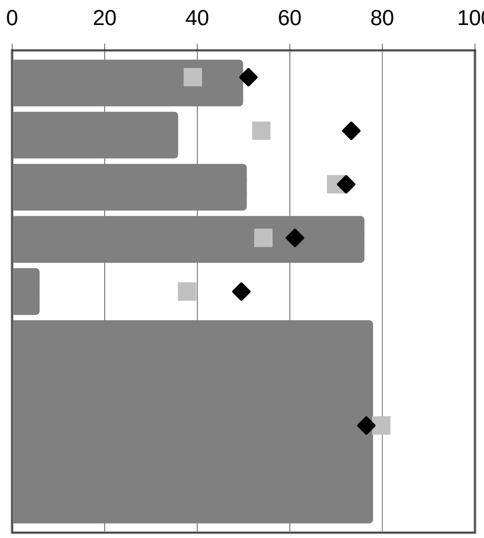
Tunisia

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $7,100

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	82
Score:	60.0
Income Group Avg.	69.0
Geographic Group Avg.	65.4

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	49.1	51.1	39.1
Water Resources	35.1	73.3	53.9
Prod. Nat. Resources	49.9	72.2	70.0
Sustainable Energy	75.3	61.1	54.3
Biodiv. and Habitat	5.1	49.5	37.8
Environmental Health	77.2	76.5	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.8	*0*	97.1
INDOOR	Indoor Air Pollution (%)	29	*0*	71.0
WATSUP	Drinking Water (%)	82.0	*100*	67.5
ACSAT	Adequate Sanitation (%)	80.0	*100*	75.7
PM10	Urban Particulates (µg/m^3)	47.5	*10*	73.3
OZONE	Regional Ozone (ppb)	47.0	*15*	24.8
NLOAD	Nitrogen Loading (mg/L)	1,847.4	*1*	65.0
OVRSUB	Water Consumption (%)	51.9	*0*	5.1
PWI	Wilderness Protection (%)	0.3	*90*	0.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	4.1
HARVEST	Timber Harvest Rate (%)	26.1	*3*	20.3
AGSUB	Agricultural Subsidies (%)	1.9	*0*	79.3
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,850	*1,650*	86.6
RENPC	Renewable Energy (%)	0.3	*100*	0.3
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	213	*0*	81.4

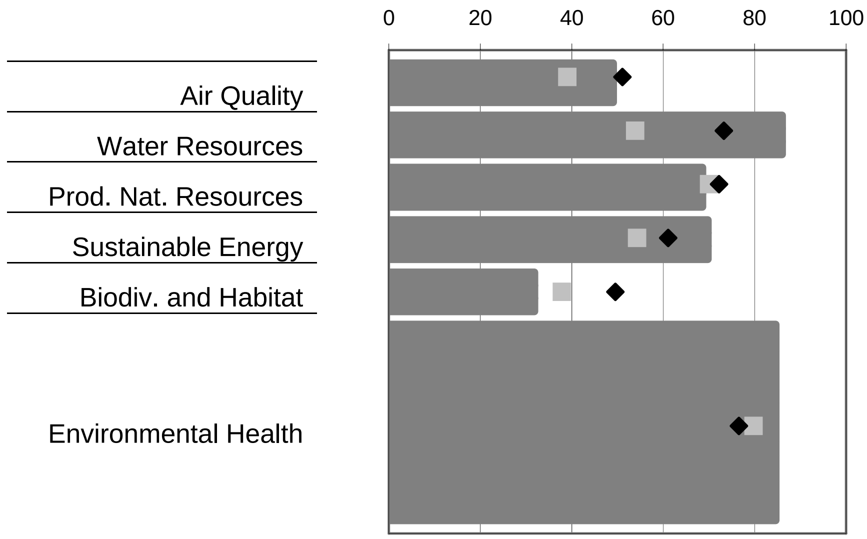
Turkey

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $7,400

Income Decile 4 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	49
Score:	72.8
Income Group Avg.	69.0
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	49.0	51.1	39.1
Water Resources	86.0	73.3	53.9
Prod. Nat. Resources	68.6	72.2	70.0
Sustainable Energy	69.7	61.1	54.3
Biodiv. and Habitat	31.8	49.5	37.8
Environmental Health	84.6	76.5	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.0	*0*	92.3
INDOOR	Indoor Air Pollution (%)	11	*0*	89.0
WATSUP	Drinking Water (%)	93.0	*100*	87.4
ACSAT	Adequate Sanitation (%)	83.0	*100*	79.3
PM10	Urban Particulates (µg/m^3)	54.1	*10*	68.6
OZONE	Regional Ozone (ppb)	45.0	*15*	29.5
NLOAD	Nitrogen Loading (mg/L)	137.2	*1*	97.4
OVRSUB	Water Consumption (%)	13.9	*0*	74.6
PWI	Wilderness Protection (%)	4.0	*90*	4.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	25.6
HARVEST	Timber Harvest Rate (%)	1.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	1.0	*0*	89.2
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,690	*1,650*	78.9
RENPC	Renewable Energy (%)	10.8	*100*	10.8
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	294	*0*	74.3

Turkmenistan

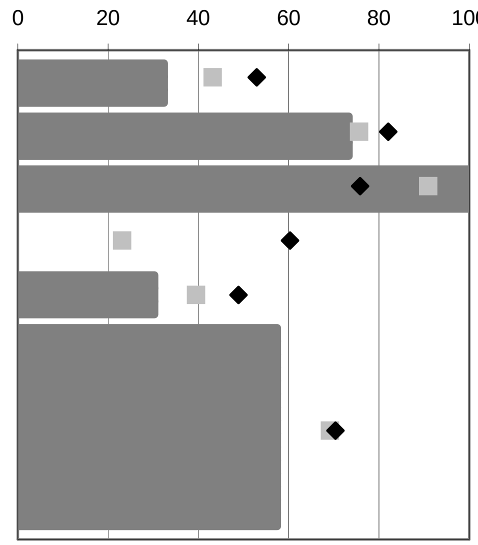
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $5,700

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	104
Score:	52.3
Income Group Avg.	67.2
Geographic Group Avg.	61.8

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	32.4	52.9	43.2
Water Resources	73.3	82.1	75.6
Prod. Nat. Resources	100.0	75.8	90.9
Sustainable Energy	0.0	60.3	23.1
Biodiv. and Habitat	30.3	48.9	39.5
Environmental Health	57.4	70.4	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	5.8	*0*	77.7
INDOOR	Indoor Air Pollution (%)	50	*0*	50.0
WATSUP	Drinking Water (%)	71.0	*100*	47.7
ACSAT	Adequate Sanitation (%)	62.0	*100*	53.8
PM10	Urban Particulates (µg/m^3)	67.7	*10*	58.9
OZONE	Regional Ozone (ppb)	55.0	*15*	5.9
NLOAD	Nitrogen Loading (mg/L)	128.3	*1*	97.6
OVRSUB	Water Consumption (%)	27.9	*0*	49.0
PWI	Wilderness Protection (%)	0.7	*90*	0.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.30	*1*	29.8
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	25,630	*1,650*	0.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	3,122	*0*	0.0

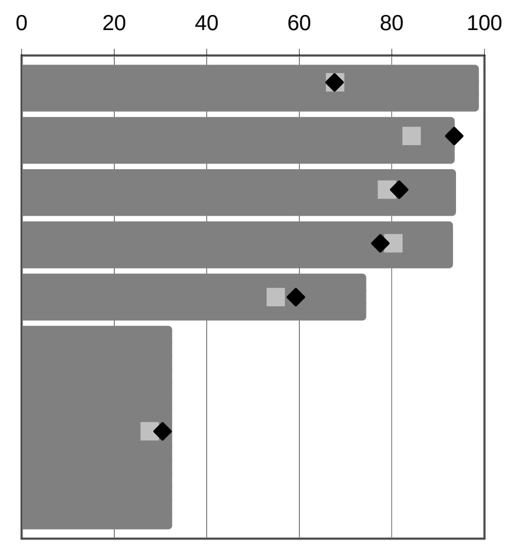
Uganda

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,500

Income Decile 9 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	78
Score:	60.8
Income Group Avg.	53.2
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	98.0	67.6	67.8
Water Resources	92.7	93.5	84.3
Prod. Nat. Resources	93.0	81.6	78.9
Sustainable Energy	92.4	77.5	80.3
Biodiv. and Habitat	73.6	59.2	54.9
Environmental Health	31.7	30.5	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	16.4	*0*	36.6
INDOOR	Indoor Air Pollution (%)	97	*0*	3.0
WATSUP	Drinking Water (%)	56.0	*100*	20.6
ACSAT	Adequate Sanitation (%)	41.0	*100*	28.3
PM10	Urban Particulates (µg/m^3)	15.7	*10*	95.9
OZONE	Regional Ozone (ppb)	14.2	*15*	100.0
NLOAD	Nitrogen Loading (mg/L)	636.3	*1*	87.9
OVRSUB	Water Consumption (%)	1.4	*0*	97.5
PWI	Wilderness Protection (%)	52.0	*90*	57.7
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	80.9
HARVEST	Timber Harvest Rate (%)	7.1	*3*	86.1
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	1,010	*1,650*	100.0
RENPC	Renewable Energy (%)	46.9	*100*	46.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	53	*0*	95.4

Ukraine

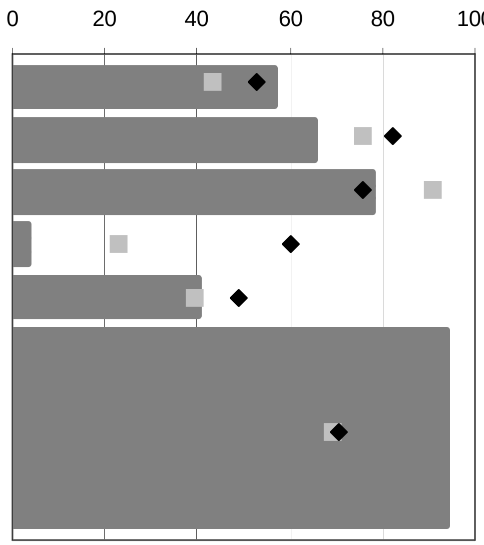
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $6,300

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	51
Score:	71.2
Income Group Avg.	67.2
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	56.6	52.9	43.2
Water Resources	65.2	82.1	75.6
Prod. Nat. Resources	77.8	75.8	90.9
Sustainable Energy	3.7	60.3	23.1
Biodiv. and Habitat	40.1	48.9	39.5
Environmental Health	93.8	70.4	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.6	*0*	97.9
INDOOR	Indoor Air Pollution (%)	11	*0*	89.0
WATSUP	Drinking Water (%)	98.0	*100*	96.4
ACSAT	Adequate Sanitation (%)	99.0	*100*	98.8
PM10	Urban Particulates (µg/m^3)	35.1	*10*	82.1
OZONE	Regional Ozone (ppb)	44.3	*15*	31.1
NLOAD	Nitrogen Loading (mg/L)	1,339.8	*1*	74.6
OVRSUB	Water Consumption (%)	24.2	*0*	55.8
PWI	Wilderness Protection (%)	6.0	*90*	6.6
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	47.8
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	23,643	*1,650*	8.1
RENPC	Renewable Energy (%)	1.7	*100*	1.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	2,148	*0*	0.0

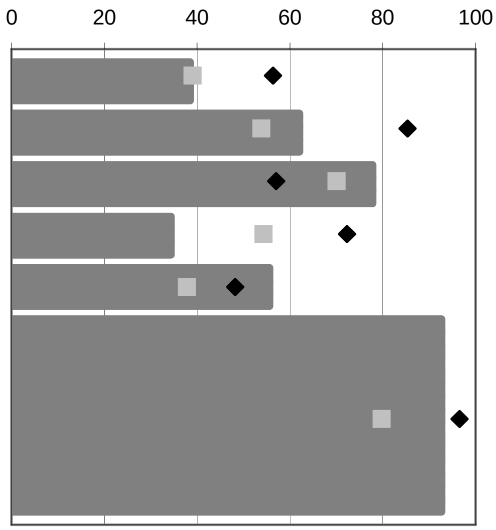
United Arab Em.

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $25,200

Income Decile 2 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	47
Score:	73.2
Income Group Avg.	80.2
Geographic Group Avg.	65.4

Policy Categories



	Country	◆ Income Group	■ Geographic Group
Air Quality	38.5	56.3	39.1
Water Resources	62.1	85.4	53.9
Prod. Nat. Resources	77.8	57.0	70.0
Sustainable Energy	34.3	72.3	54.3
Biodiv. and Habitat	55.6	48.2	37.8
Environmental Health	92.7	96.6	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.2	*0*	99.0
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	98.0	*100*	96.4
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	78.3	*10*	51.4
OZONE	Regional Ozone (ppb)	46.7	*15*	25.6
NLOAD	Nitrogen Loading (mg/L)	0.0	*1*	100.0
OVRSUB	Water Consumption (%)	41.5	*0*	24.1
PWI	Wilderness Protection (%)	0.0	*90*	0.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	30,690	*1,650*	0.0
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	301	*0*	73.7

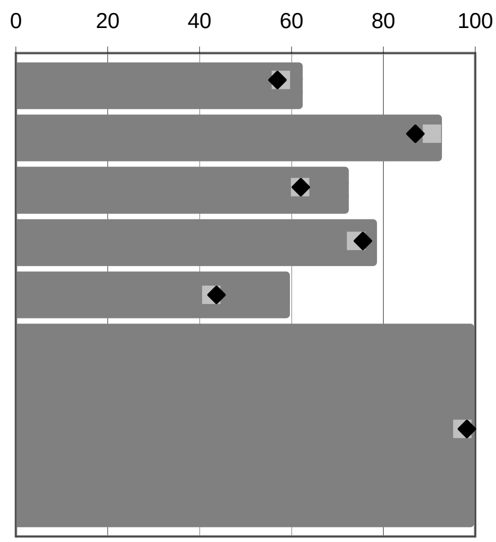
United Kingdom

EUROPEAN UNION +
GDP/capita 2004 est. (PPP) $29,600

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	5
Score:	85.6
Income Group Avg.	81.6
Geographic Group Avg.	81.3

Policy Categories



	Country	◆ *Income Group*	■ *Geographic Group*
Air Quality	61.6	57.0	57.7
Water Resources	91.9	87.0	90.6
Prod. Nat. Resources	71.6	62.0	61.9
Sustainable Energy	77.8	75.5	74.1
Biodiv. and Habitat	58.8	43.7	42.6
Environmental Health	98.9	98.2	97.2

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.3	*0*	98.9
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	19.0	*10*	93.6
OZONE	Regional Ozone (ppb)	44.9	*15*	29.6
NLOAD	Nitrogen Loading (mg/L)	45.1	*1*	99.2
OVRSUB	Water Consumption (%)	8.4	*0*	84.7
PWI	Wilderness Protection (%)	26.0	*90*	28.9
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.70	*1*	68.7
HARVEST	Timber Harvest Rate (%)	2.3	*3*	100.0
AGSUB	Agricultural Subsidies (%)	3.2	*0*	64.9
OVRFSH	Overfishing (scale 1-7)	4	*1*	50.0
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	5,668	*1,650*	83.2
RENPC	Renewable Energy (%)	1.2	*100*	1.2
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	118	*0*	89.6

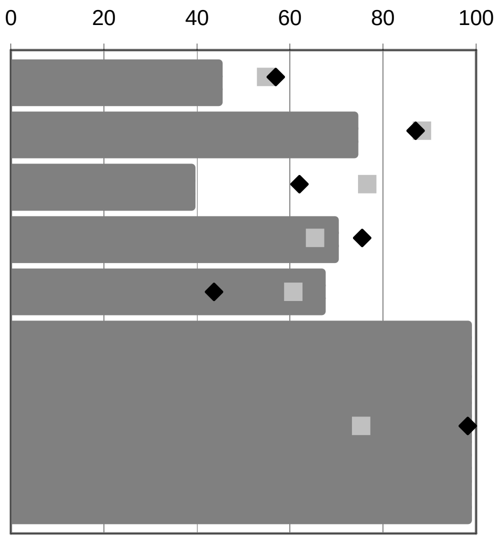
United States

AMERICAS
GDP/capita 2004 est. (PPP) $40,100

Income Decile 1 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	28
Score:	78.5
Income Group Avg.	81.6
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	44.7	57.0	54.9
Water Resources	73.9	87.0	88.4
Prod. Nat. Resources	38.9	62.0	76.6
Sustainable Energy	69.7	75.5	65.4
Biodiv. and Habitat	66.9	43.7	60.8
Environmental Health	98.3	98.2	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	0.4	*0*	98.5
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	100.0	*100*	100.0
ACSAT	Adequate Sanitation (%)	100.0	*100*	100.0
PM10	Urban Particulates (µg/m^3)	25.1	*10*	89.3
OZONE	Regional Ozone (ppb)	57.5	*15*	0.1
NLOAD	Nitrogen Loading (mg/L)	708.3	*1*	86.6
OVRSUB	Water Consumption (%)	21.3	*0*	61.1
PWI	Wilderness Protection (%)	28.6	*90*	31.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.90	*1*	90.6
HARVEST	Timber Harvest Rate (%)	1.5	*3*	100.0
AGSUB	Agricultural Subsidies (%)	10.9	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	6	*1*	16.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,112	*1,650*	68.8
RENPC	Renewable Energy (%)	4.0	*100*	4.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	171	*0*	85.1

Uzbekistan

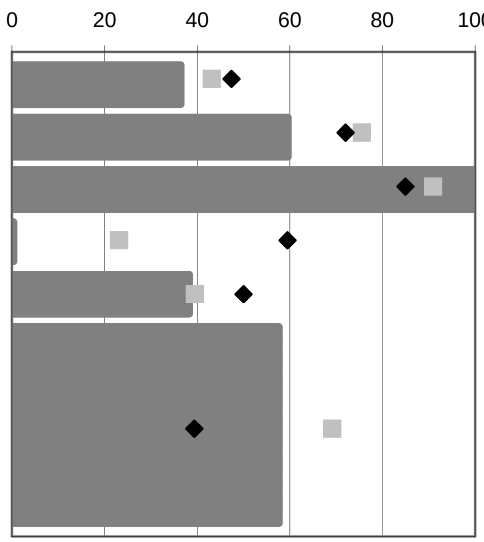
OTHER EASTERN EUROPE AND CENTRAL ASIA

GDP/capita 2004 est. (PPP) $1,800

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	105
Score:	52.3
Income Group Avg.	51.1
Geographic Group Avg.	61.8

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	36.4	47.4	43.2
Water Resources	59.6	72.0	75.6
Prod. Nat. Resources	100.0	84.9	90.9
Sustainable Energy	0.4	59.5	23.1
Biodiv. and Habitat	38.3	50.0	39.5
Environmental Health	57.7	39.4	69.1

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	3.1	*0*	87.9
INDOOR	Indoor Air Pollution (%)	79	*0*	21.0
WATSUP	Drinking Water (%)	89.0	*100*	80.1
ACSAT	Adequate Sanitation (%)	57.0	*100*	47.7
PM10	Urban Particulates (µg/m^3)	83.1	*10*	48.0
OZONE	Regional Ozone (ppb)	47.0	*15*	24.9
NLOAD	Nitrogen Loading (mg/L)	206.0	*1*	96.1
OVRSUB	Water Consumption (%)	42.1	*0*	23.1
PWI	Wilderness Protection (%)	6.7	*90*	7.4
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	48.0
HARVEST	Timber Harvest Rate (%)	0.0	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	48,332	*1,650*	0.0
RENPC	Renewable Energy (%)	3.5	*100*	3.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	2,007	*0*	0.0

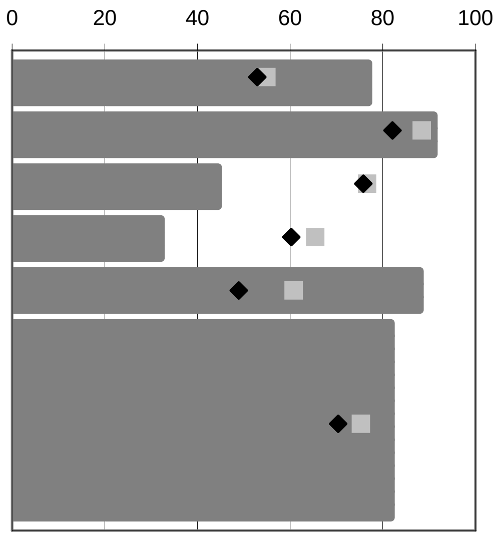
Venezuela

AMERICAS
GDP/capita 2004 est. (PPP) $5,800

Income Decile 5 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	44
Score:	74.1
Income Group Avg.	67.2
Geographic Group Avg.	72.3

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	76.9	52.9	54.9
Water Resources	91.0	82.1	88.4
Prod. Nat. Resources	44.4	75.8	76.6
Sustainable Energy	32.1	60.3	65.4
Biodiv. and Habitat	88.0	48.9	60.8
Environmental Health	81.8	70.4	75.3

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	3.0	*0*	88.5
INDOOR	Indoor Air Pollution (%)	0	*0*	100.0
WATSUP	Drinking Water (%)	83.0	*100*	69.3
ACSAT	Adequate Sanitation (%)	68.0	*100*	61.1
PM10	Urban Particulates (µg/m^3)	15.9	*10*	95.8
OZONE	Regional Ozone (ppb)	32.9	*15*	58.0
NLOAD	Nitrogen Loading (mg/L)	11.6	*1*	99.8
OVRSUB	Water Consumption (%)	9.7	*0*	82.3
PWI	Wilderness Protection (%)	65.3	*90*	72.5
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.1	*3*	100.0
AGSUB	Agricultural Subsidies (%)	10.0	*0*	0.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	22,593	*1,650*	12.5
RENPC	Renewable Energy (%)	20.9	*100*	20.9
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	540	*0*	52.8

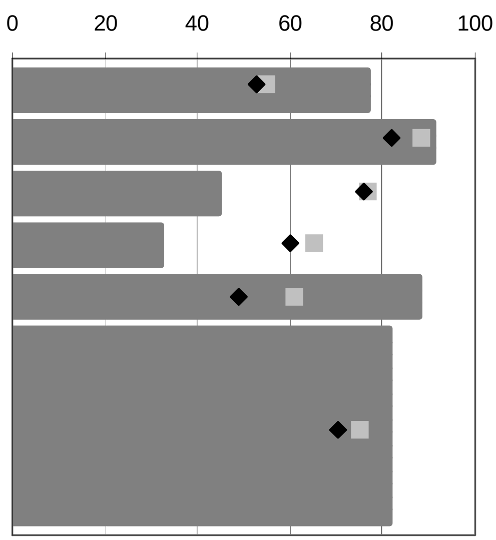
Viet Nam

EAST ASIA AND THE PACIFIC
GDP/capita 2004 est. (PPP) $2,700

Income Decile 7 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	99
Score:	54.3
Income Group Avg.	56.0
Geographic Group Avg.	66.2

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	45.3	45.7	50.1
Water Resources	97.0	88.8	87.6
Prod. Nat. Resources	71.8	77.1	70.4
Sustainable Energy	64.1	72.3	69.3
Biodiv. and Habitat	42.8	51.5	61.6
Environmental Health	44.4	44.8	64.6

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	2.2	*0*	91.4
INDOOR	Indoor Air Pollution (%)	98	*0*	2.0
WATSUP	Drinking Water (%)	73.0	*100*	51.3
ACSAT	Adequate Sanitation (%)	41.0	*100*	28.3
PM10	Urban Particulates (µg/m^3)	75.1	*10*	53.7
OZONE	Regional Ozone (ppb)	41.8	*15*	36.9
NLOAD	Nitrogen Loading (mg/L)	22.6	*1*	99.6
OVRSUB	Water Consumption (%)	3.0	*0*	94.5
PWI	Wilderness Protection (%)	10.8	*90*	12.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.50	*1*	50.1
HARVEST	Timber Harvest Rate (%)	8.2	*3*	82.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	5	*1*	33.3
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	4,880	*1,650*	86.5
RENPC	Renewable Energy (%)	21.6	*100*	21.6
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	541	*0*	52.7

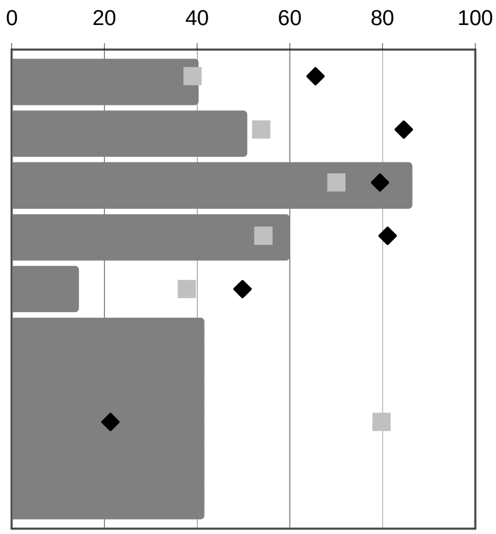
Yemen

MIDDLE EAST AND NORTH AFRICA
GDP/capita 2004 est. (PPP) $ 800

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	122
Score:	45.2
Income Group Avg.	46.7
Geographic Group Avg.	65.4

Policy Categories



	Country	*Income Group*	*Geographic Group*
Air Quality	39.5	65.6	39.1
Water Resources	50.0	84.6	53.9
Prod. Nat. Resources	85.6	79.5	70.0
Sustainable Energy	59.2	81.1	54.3
Biodiv. and Habitat	13.7	49.8	37.8
Environmental Health	40.7	21.3	79.8

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	7.1	*0*	72.5
INDOOR	Indoor Air Pollution (%)	66	*0*	34.0
WATSUP	Drinking Water (%)	69.0	*100*	44.0
ACSAT	Adequate Sanitation (%)	30.0	*100*	14.9
PM10	Urban Particulates (µg/m^3)	97.6	*10*	37.6
OZONE	Regional Ozone (ppb)	39.9	*15*	41.4
NLOAD	Nitrogen Loading (mg/L)	0.0	*1*	100.0
OVRSUB	Water Consumption (%)	55.9	*0*	0.0
PWI	Wilderness Protection (%)	0.0	*90*	0.0
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.00	*1*	0.0
HARVEST	Timber Harvest Rate (%)	5.9	*3*	90.1
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	3	*1*	66.7
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	9,360	*1,650*	67.8
RENPC	Renewable Energy (%)	0.0	*100*	0.0
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	408	*0*	64.3

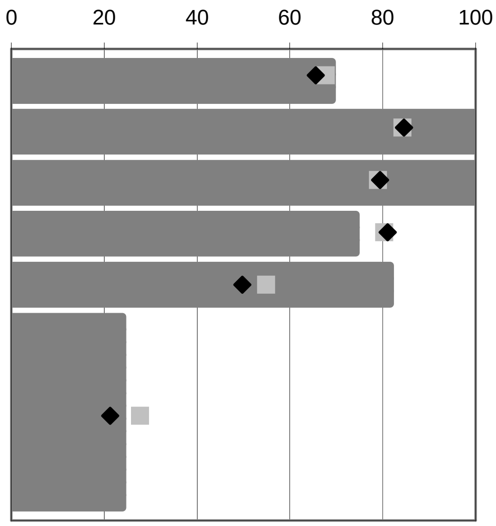
Zambia

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $ 900

Income Decile 10 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	98
Score:	54.4
Income Group Avg.	46.7
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	69.1	65.6	67.8
Water Resources	99.6	84.6	84.3
Prod. Nat. Resources	100.0	79.5	78.9
Sustainable Energy	74.2	81.1	80.3
Biodiv. and Habitat	81.6	49.8	54.9
Environmental Health	24.0	21.3	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target (100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	22.8	*0*	11.9
INDOOR	Indoor Air Pollution (%)	87	*0*	13.0
WATSUP	Drinking Water (%)	55.0	*100*	18.8
ACSAT	Adequate Sanitation (%)	45.0	*100*	33.1
PM10	Urban Particulates (µg/m^3)	72.7	*10*	55.4
OZONE	Regional Ozone (ppb)	22.3	*15*	82.9
NLOAD	Nitrogen Loading (mg/L)	33.7	*1*	99.4
OVRSUB	Water Consumption (%)	0.1	*0*	99.8
PWI	Wilderness Protection (%)	48.0	*90*	53.3
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	1.00	*1*	100.0
HARVEST	Timber Harvest Rate (%)	0.6	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	11,906	*1,650*	57.1
RENPC	Renewable Energy (%)	78.5	*100*	78.5
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	125	*0*	89.1

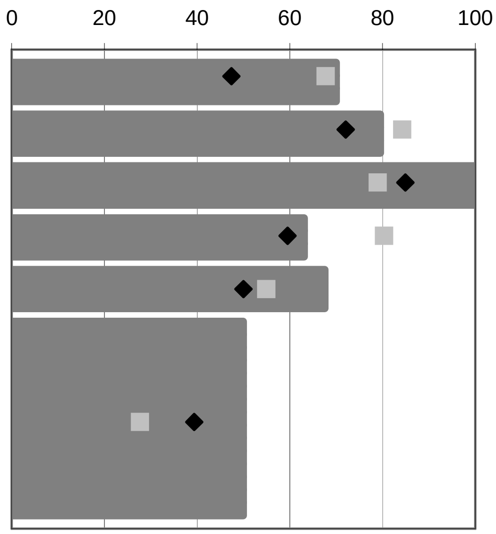
Zimbabwe

SUB-SAHARAN AFRICA
GDP/capita 2004 est. (PPP) $1,900

Income Decile 8 (1=high, 10=low)

Pilot 2006 EPI	
Rank:	74
Score:	63.0
Income Group Avg.	51.1
Geographic Group Avg.	50.5

Policy Categories



	Country	Income Group	Geographic Group
Air Quality	70.0	47.4	67.8
Water Resources	79.5	72.0	84.3
Prod. Nat. Resources	100.0	84.9	78.9
Sustainable Energy	63.0	59.5	80.3
Biodiv. and Habitat	67.6	50.0	54.9
Environmental Health	49.9	39.4	27.7

Indicator Data

		Value	Target	*Standardized Proximity to Target* *(100=target met)*
MORTALITY	Child Mortality (deaths/1000 population 1-4)	15.2	*0*	41.4
INDOOR	Indoor Air Pollution (%)	67	*0*	33.0
WATSUP	Drinking Water (%)	83.0	*100*	69.3
ACSAT	Adequate Sanitation (%)	57.0	*100*	47.7
PM10	Urban Particulates (µg/m^3)	61.4	*10*	63.4
OZONE	Regional Ozone (ppb)	24.9	*15*	76.6
NLOAD	Nitrogen Loading (mg/L)	195.1	*1*	96.3
OVRSUB	Water Consumption (%)	20.4	*0*	62.7
PWI	Wilderness Protection (%)	39.4	*90*	43.8
PACOV	Ecoregion Protection (scale 0-1, 1=10% each biome protected)	0.80	*1*	79.8
HARVEST	Timber Harvest Rate (%)	1.2	*3*	100.0
AGSUB	Agricultural Subsidies (%)	0.0	*0*	100.0
OVRFSH	Overfishing (scale 1-7)	..	*1*	..
ENEFF	Energy Efficiency (Terajoules / million GDP PPP)	6,126	*1,650*	81.3
RENPC	Renewable Energy (%)	23.7	*100*	23.7
CO2GDP	CO_2 per GDP (Tonnes / GDP PPP)	516	*0*	54.9

Pilot 2006 Environmental Performance Index

Appendix D:

Policy Category Discussion

Appendix D: Policy Category Discussion

This appendix serves as a supplement to Chapter 4 of the main report, which describes the major issues and results in each policy category. Here we provide additional information on the rationale for the specific indicators we chose in each policy category, background on the policy context for each policy category, a brief discussion of indicator-level results, and an assessment of prospects for future performance-based action. Detailed descriptions of the methods used for constructing the indicators are found at the end of Appendix F. There were several indicators that were determined to be essential measures of environmental performance that had to be left out of the report due to lack of data or difficulty in interpreting the data that does exist. Where appropriate, a discussion of these indicators is included.

Core Area:
Environmental Health

D.1. Environmental Health

Our Focus

A global study on the environmental burden of disease conducted by the World Health Organization (WHO) found that unsafe drinking water and poor sanitation accounted for the largest proportion of environmentally-related morbidity and mortality, followed by indoor air pollution, lead exposure and urban air pollution (WHO, 2002). Hence, these indicators were our focus in the EPI. We include the percent of population with access to an improved water source and the percent of population with adequate sanitation, both of which are also official indicators under MDG-7. The target for each of these measures is 100% coverage.

For indoor air pollution, the EPI utilizes the framework of the WHO, which quantifies indoor air pollution as a function of solid fuel consumed within the home, modified by the type of ventilation used. Over the long term the goal is to eliminate this sort of pollution exposure completely, therefore a level of zero has been set as the ultimate target. We also included the urban concentration of particulate matter in this policy category, which is described further in Section D.2 below. We calculated a measure of lead emissions per square kilometer based on data from Pacyna et al. (1995), but these data were from 1989 and therefore represented a snapshot of performance before most European countries had implemented stricter lead emission control policies. They have not been updated subsequently, and thus represent another globally important data gap.

Finally, the EPI sought to capture environmental health outcomes through the indicator of mortality in children ages one to four. The logic for this focus is strong, as children are environmental bellwethers. Research shows that they are more susceptible to environmental conditions than adults. Thus tracking their mortality is an important indicator of environmental conditions—but to do so, it is important to focus on mortality in the youngest non-infant age bracket, since infant mortality is heavily determined by many other non-environmental factors, key among which is access to health care. We set a target of zero, which reflects our belief that any level of child mortality is essentially undesirable and the fact that there are already a number of countries at or near this target.

The Policy Context

The provision of safe drinking water and adequate sanitation is fundamental to gains in environmental health. The goals of enhanced access to safe water and improved sanitation play a prominent role in the UN Millennium Development Goals, and in strategies to meet the established targets. MDG-7 and its Target 10 seek to reduce the proportion of humankind lacking sufficient access to clean drinking water and sanitation relative to a 1990 baseline by 2015.

The MDGs set a target for reducing under-five mortality by two thirds by 2015. There are, however, no corresponding targets for mortality in the one to four age group. Though the policy dialogue regarding this age group is limited and national statistics on this are spotty at best,[7] this age bracket is the most relevant from an environmental health perspective.

With regard to air pollutants, the depth of policy making is, in general, inversely related to the severity of the problem. Of the different types of air pollution, indoor air pollution poses by far the most severe threat, accounting for several million premature deaths per year. Yet there are no international targets or action plans, and there is very little regional or national activity. Regarding urban air pollution, policy targets, monitoring networks, and mitigation efforts are most advanced in regions where the problem is least severe. There are no international policy targets, though the WHO has set standards that some countries have adopted.

Assessment

The indicators for water and sanitation are closely correlated with income, with GDP per capita predicting approximately 60% of the variation in access to water and sanitation. In terms of results, there are few surprises for these indicators—sub-Saharan African countries score the worst, and developed countries consistently have close to 100% coverage.

There is a negative correlation between GDP per capita and mortality in the one to four age group ($R^2 = .30$, $p<.001$). Sub-Saharan African countries score particularly poorly owing to high levels of water-borne diseases and perhaps also to other factors, such as indoor air pollution and poor waste disposal and sanitation.

Indoor air pollution is also highly correlated with poverty. The 47 countries that are within five percent of the long-term target are predominantly high-income countries. There are 32 countries estimated to have 95% or more of the households burning solid fuel indoors without adequate ventilation. These are among the poorest countries of the world.

Prospects for Performance-Based Action

Clearly environmental health—and particularly water supply and sanitation—are high on the international policy making agenda as a result of the attention being given to them within the Millennium Development Goal framework. Indoor air pollution is not well tracked, and certainly is not gaining the international policy attention it deserves in light of its huge health impacts. The authors suggest increased reporting of mortality in the one to four age bracket as a metric of environmental health. In addition, air- and water-borne pollutant emissions and concentrations need to be tracked simultaneously to further develop these environmental health indicators.

As reported in the 2005 ESI (Esty, Levy et al., 2005), data coverage for key air and water pollutant concentrations is extremely poor. Iin the case of water the Global Environmental Monitoring System (GEMS/Water) network has expanded in the past few years, although the actual on-the-ground monitoring network has remained relatively stagnant.

7 Using data reported by countries in the UN Demographic Yearbook and on the WHO website, we were only able to compile statistics for 108 countries. Because of the poor reporting of mortality in this age bracket, we utilized estimates produced by the UN Population Division instead.

Core Area:
Ecosystem Vitality and Natural Resource Management

D.2. Air Quality

Our Focus

We rely on two indicators for Air Quality—Urban Particulates and Regional Ozone. As mentioned in Chapter 4, we ideally would have liked to use data on concentrations of sulfur oxides and nitrogen oxides—both acid rain precursors—but these data were not readily available on a global scale. Urban particulates is not a perfect substitute, but it does enable one to gauge the relative severity of urban air pollution problems across countries.

Although countries set targets that focus on different sizes of particulates (2.5 microns, 10 microns, or other sizes), the EPI focuses on 10 microns (PM10) as the most universally relevant measure. This is also the only urban pollutant for which quantitative measures have been estimated for a large number of cities. In the absence of an international target, the EPI proposes a target of 10 $\mu g/m^3$, which is essentially the natural background level of particulate matter in most regions of the world.[8]

Ground-level ozone provides another measure of long-range air pollution. Although acidification received greater attention in the 1970s and 1980s as a long-range air pollution transport problem, ground-level ozone has come to be recognized as a greater public health threat, and it also represents a threat to ecosystems in that it impairs photosynthesis. There are limited national targets and no international targets. In the absence of an authoritative source for a long-term target, a putative target of 15 parts per billion (ppb) was adopted based on recent epidemiological studies that suggest that there is not a "safe" level of exposure. This target is very low in view of existing conditions—only seven countries currently meet it.

Data on total carbon emissions from biomass burning were obtained, but we opted not to include them in the overall aggregation due to the focus that this would place on practices that are common largely in the developing world and the sense that this would represent double counting with the urban PM concentrations. Box D1 provides a summary of the findings on biomass burning.

The Policy Context

The Policy Context for urban particulates is discussed in Section D.1 above. In regards to regional ozone concentrations and long-range air pollution problems, these are dealt with most comprehensively in Europe, although the problems are most severe in Asia.

Understanding of the global extent of long-range air pollution dynamics has increased considerably in recent years, and there is a growing willingness to address the problem within international policy. For example, the Convention on Long-range Transboundary Air Pollution (CLRTAP) is an international policy mechanism, and its expansion over the years demonstrates countries' ability and willingness to cooperate in order to reduce the impacts of transboundary air pollution. However, developing countries are not yet represented in this convention (IUCN et al. 2005).

Assessment

Levels of urban particulates are lowest among wealthy countries and poor countries that have low levels of industrialization—Sweden and Uganda, for example, have similar PM10 levels. The levels are highest in very poor countries that burn very dirty fuels, have the oldest vehicle fleets, and suffer from high levels of natural

[8] The background level actually varies between 6 and 16 $\mu g/m^3$, but we chose a single target of $10\mu g/m^3$.

Box D1: Biomass Burning

Biomass burning is one of the most important contributors to atmospheric pollution and CO_2 emissions. Results of an analysis of data developed by Randerson et al. (2005) on total carbon emissions from vegetation fires are provided here. Data were downloaded for the period 1997-2002 and the average annual emissions for this time period was computed. This average was then divided by the total land area for each country to determine emissions per square kilometer. These are reported in the table below for the twenty worst countries (highest emissions/km^2).

Country	Carbon Emissions (g/km2)	Country	Carbon Emissions (g/km^2)
Uruguay	840.4	Bolivia	568.2
South Africa	739.3	Argentina	558.4
Namibia	660.2	Zambia	550.2
Botswana	656.8	Lesotho	546.3
Paraguay	642.1	Angola	510.4
Zimbabwe	626.2	Swaziland	473.1
Rwanda	619.2	Papua New Guinea	436.6
Madagascar	614.3	Tanzania	428.2
Australia	585.5	Congo	425.5
Mozambique	585.5	Malawi	422.4

The countries with the greatest emissions of total carbon per land area are largely tropical countries with large grassland areas and/or in which a large percentage of the population is smallholder farmers who use fire for land clearing. Australia is the one non-developing country in the group, and burning there is related to rangeland management.

Biomass burning was also considered as a potential component of land degradation, but, while largely negative in terms of land conservation, it was determined that there may be instances in which biomass burning is relatively benign from a land management perspective.

particulates resulting from dust storms—Sudan, Mali, Niger, and Chad, for example, are among the worst performers.

Regional ozone levels are a function of multiple factors, including emissions within the country, emissions in countries downwind, and meteorological conditions that influence atmospheric chemistry. Emissions, transport dynamics, and meteorology are not evenly distributed geographically. The highest ozone concentrations are found in countries such as Mexico, Guatemala, China, Australia, and the United States. The lowest concentrations are in tropical countries with low emissions, such as Gabon, and Congo.

Prospects for Performance-Based Action

Air pollution concerns do not lend themselves well at present to coordinated international action organized around quantitative benchmarks and monitoring. Outcome measurement is limited, and the measurements we rely on here are derived from models. Of the many pollutants that should be tracked, only urban particulates are measured on an annual basis. Even with regard to urban particulates, monitoring is spotty, with ground-level monitoring observations available for only

62 countries (Esty, Levy et al., 2005). Better air pollution metrics, gathered on a worldwide basis, should be a priority for the global environmental policy community.

D.3. Water Resources

Our Focus

We use two indicators for this policy category, Nitrogen Loading and Water Consumption. Nitrogen load per average flow unit of a country's river basins is the indicator that was chosen to capture pollutant emissions. Changes to the global nitrogen cycle are emblematic of those in water quality more generally, as high concentrations of people or major landscape disturbances translate into a disruption of the basic character of natural inland water and coastal ecosystems.[9] Elevated levels of nitrogen are associated with air pollution deposition, industrial fertilizer application, natural and crop fixation (e.g. soybeans), and the subsequent fate of feed for livestock or food destined for direct human consumption. As nitrogen is highly reactive, there is a "self-cleansing" potential of land and aquatic-based ecosystems, accounting for about 80% of incident loads (Howarth et al., 1996).

The target for nitrogen concentrations was set at 1 mg/liter, which is at the border between oligotrophic and mesotrophic levels. Oligotrophic waters are nutrient poor, while mesotrophic waters have moderate amounts of nutrients (Smith and Smith, 2001). This is supported by environmental legislation in several countries—including South Africa and Australia—but it must be acknowledged that the actual nitrogen concentrations that are sustainable depend on the ecosystem type and the level of phosphorus in the water bodies, since eutrophication is often P-limited.

It must be added that the nitrogen loading is a modeled dataset on a globally consistent one-half degree grid. This was combined with modeled river flow data. Ideally we would have chosen direct measures of water pollutant concentrations such as nitrogen, phosphorus, and fecal coliform, but data are not available for many countries. Thus, we needed to rely on a modeled dataset to provide a useful but incomplete picture of water quality.

The second water indicator is the percentage of a country's territory affected by oversubscription of water resources. A growing world population with rising expectations for material well-being will place added and in some cases unsustainable pressure on the freshwater resource base. Water use is represented by local demands summed by domestic, industrial, and agricultural water withdrawals and then divided by available water supply to yield an index of local relative water use. A high degree of oversubscription is indicated when the water use is more than 40% of available supply (WMO, 1997). Countries can to some extent accommodate oversubscription in one region with inter-basin transfers, but these engender significant environmental impacts of their own. Thus, the ultimate target for each country is to have no area of their territory affected by oversubscription.

Colleagues at the University of New Hampshire Water Systems Analysis Group developed indicators on river fragmentation and impoundment of water supplies. However, these data are left out of the EPI aggregation at this time because of a lack of clear and globally consistent evidence demonstrating the negative ecosystem impacts of dams, and the potential offsetting environmental benefits of hydroelectric as a renewable energy resource. Box D2 presents the results of this assessment.

[9] The contrast between pristine and contemporary states can be dramatic and potentially global in scope. Compared with the preindustrial condition, loading of reactive nitrogen to the landmass has doubled from 111 million to 223 million tons per year (Green et al. 2004) or possibly even higher (Galloway et al. 2004).

The Policy Context

Water is firmly established in the international dialogue on sustainable development. The Johannesburg World Summit on Sustainable Development (WSSD) was framed in part around the WEHAB initiative, with Water taking a prominent role among the other major development imperatives of Energy, Health, Agriculture, and Biodiversity (WEHAB, 2002). Follow-up activities of the United Nations Commission on Sustainable Development (CSD) consolidated during the 2-year "Water Cycle" that ended in 2005 emphasized the critical role of water in poverty alleviation. A 24-agency consortium of the United Nations is now engaged through the World Water Assessment Programme to issue triennial assessments on the state of the world's fresh water (e.g. UNESCO, 2003). Water is also the centerpiece of the United Nations International Decade for Action, "Water for Life" (2005-2015), which will help to set a world agenda on water issues for the 21st century.

Despite all of this policy attention, there are no internationally recognized targets for pollutant concentrations in water supplies designed to protect either human or ecosystem health. Nor are there targets for the unsustainable extraction of water resources from surface or ground water sources for economic activities or human needs. These two areas are in need of international policy attention.

Assessment

Results for nitrogen loading show no clear pattern in relation to GDP per capita. Arid and semi-arid countries perform poorly, largely owing to limited dilution potential.[10] After filtering out the arid countries, densely settled or agricultural exporting countries also show high levels of deposition due to high-input agriculture. These include Mexico, China, Australia, the United States, and Argentina.

The percent of territory that is oversubscribed is affected by climatic factors and natural endowments, with many arid countries showing more than 50% of their territories oversubscribed. The percentage of a country's territory that is densely settled (>100 person per km^2) does not appear to affect this indicator, although Belgium and the Netherlands are two densely settled, temperate humid countries with significant portions (50% and 25% respectively) of their territories oversubscribed.[11] Water use for the agricultural sector is the most significant factor contributing to oversubscription.

Prospects for Performance-Based Action

Increased global demand for agricultural products and freshwater will make it difficult to meet targets for the two water indicators. Policy pressures can affect nitrogen loadings, though it will require significant effort to reign in agricultural nitrogen emissions. In light of population growth and the push for greater use of chemical fertilizers as part of the package for meeting MDG-1 on poverty and hunger, it seems unlikely that many countries will implement serious reforms regarding nitrogen emissions. The literature shows that the nitrogen cycle has accelerated dramatically in the past few decades, with few prospects in sight for slowing (Smil, 2004). The same basic problem faces the percentage of territory oversubscribed—global demands for freshwater rise unabated, and the push to meet the MDGs for hunger, water, and sanitation provision suggest that the target of zero percent oversubscribed territory will be difficult if not impossible to meet, yet continued over-abstraction (and particularly abstraction of fossil ground water) cannot be sustained indefinitely.

10 The R-square between percent land area in arid and semi-arid climatic zones and nitrogen loading per available freshwater is 0.19 ($p<0.000$).

11 The R-square between percent land area in arid and semi-arid climatic zones and percent of territory affected by the oversubscription of water resources is 0.15 ($p<0.000$).

Box D2: Water Impoundment and Flow Fragmentation

Two additional indicators, storage of continental runoff behind modern dam systems and dams per million kilometers of stream length could have been included in the Pilot EPI. Because it was difficult to interpret a clear environmental performance signal or to identify what would be a target for sustainability, these measures were left out of the EPI aggregation. Nevertheless, the results and some suggestions for further work are reported here.

The demand for reliable sources of fresh water and flood control prompts a broad array of water engineering schemes to control the inherent variability of the hydrologic cycle and thus increase the reliability of water for human use. Dam-building has been prolific, with a year 2000 estimate of 45,000 large dams worldwide (WCD, 2000) and possibly 800,000 smaller ones (Hoeg, 2000). The facilities represent substantial investments in civilian infrastructure (US$2 trillion in capital) and serve as important instruments for development, with 80% of the global expenditure of $32–46 billion per year focused on the developing world (WCD, 2000).

Most of the beneficial effects and environmental impacts associated with water engineering have taken place over the last half-century, associated directly with the major flow stabilization of the global system of rivers (Figure D2). Positive effects include sufficient water for irrigation, industry, and drinking water; flood control; and hydroelectricity generation. Negative environmental effects include fragmentation and destruction of habitat, loss of species, health issues associated with stagnant water, and loss of sediments and nutrients destined to support downstream freshwater and coastal ecosystems and fisheries.

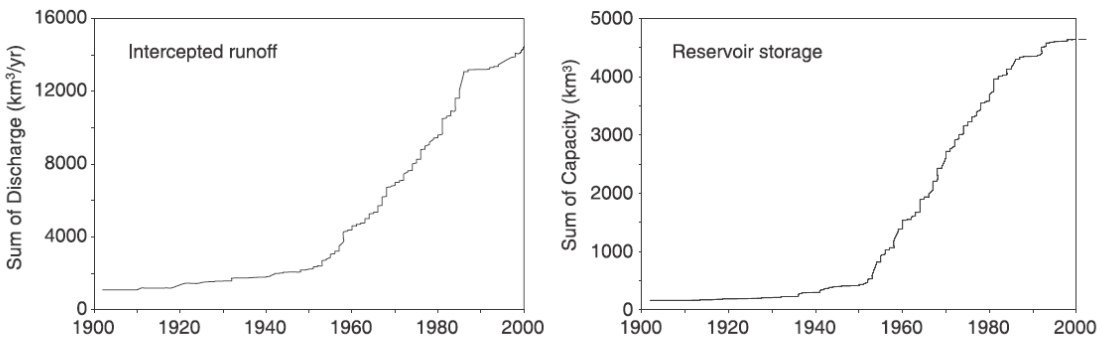


Figure D2. World's Largest Reservoirs

The time series here represent a subset of the world's largest reservoirs (>0.5 km^3 maximum storage each), representing about 70% of impounded volume globally (ICOLD and IWPDC archives).

Recent analysis shows the impact of these activities on the continental water cycle. Estimates place the volume of water trapped behind documented dams at 6,000–7,000 cubic kilometers (Shiklomanov and Rodda, 2003). In drainage basins regulated by large reservoirs (>0.5 cubic kilometers) alone, one third of the mean annual flow of 20,000 cubic kilometers is stored (Vörösmarty et al., 2003), or a volume sufficient to carry over an entire year's minimum flows.

While there are several shortcomings to their use in geospatial analysis, existing compendia of dams and reservoirs do provide several useful statistics for use in an EPI context. These are available as national inventories through the International Commission on Large Dams (ICOLD) and International Water Power and Dam Construction (IWPDC). From these data, indicators of the degree of flow storage relative to sustainable water supply can be calculated directly on a national basis. The resulting indicator is an aggregate measure of a society's capacity to store freshwater, with affiliated impacts assumed on the fragmentation of flow along the river continuum, disruption of migratory pathways, reservoir in-filling from siltation, loss of river sediment to nourish wetlands, etc.

Results of this impoundment measure are presented here for the top 20 countries. They are presented in terms of the residence time of water behind a country's dams. A value of one means that a country has water equivalent to one year's flow behind dams within its territory.

continued

Box D2: continued

The top 10 countries all have major dams that account for the majority of flow impoundment; in the case of Egypt the high residence time is almost entirely accounted for by the Aswan High Dam. Most of these countries have arid, semi-arid, or Mediterranean climates, with the exception of Ghana (which is semi-arid in the north only), Zambia (which is largely Savannah), North Korea, and Argentina.

The top 20 countries for the second measure, number of dams per million kilometers of stream length, are shown below. Many of the same countries show up here, but some small or island nations also make the list because of the relatively short length of their stream networks. Mountainous countries appear also to be disproportionately represented, which may be due to the relatively large numbers of small hydroelectric installations. From an ecosystem and aquatic habitat perspective, all things being equal the fewer the dams per kilometers of stream length the better, but this is a relatively under-studied area. From a renewable energy perspective, however, hydroelectric dams have the potential to provide a long-term sustainable energy supply. This underscores the difficulty of applying strict performance criteria. A longer-term strategy building on this indicator would consolidate the extant series of global georeferenced datasets, conjoin these with digital stream networks and flow estimates, and then make calculations across the full spectrum of river sizes. Statistical distributions of the indicator could then be assembled.

Country	Residence time all dams (in years)	Country	Residence time all dams (in years)
Egypt	31.0	Macedonia	1.4
Lesotho	10.6	Zambia	1.0
South Africa	7.2	Libya	1.0
Kyrgyzstan	4.3	Kazakhstan	0.6
Ghana	4.1	Tunisia	0.6
Morocco	4.1	North Korea	0.6
Tajikistan	3.2	Spain	0.6
Azerbaijan	2.9	Cyprus	0.6
Iraq	1.7	Albania	0.5
Turkey	1.7	Argentina	0.5
Country	**# dams per million km of stream**	**Country**	**# dams per million km of stream**
Albania	7827.8	Austria	1070.2
South Korea	5243.3	Slovenia	984.9
Cyprus	3385.3	Bulgaria	982.3
Mauritius	2461.6	India	864.6
Switzerland	2444.6	Portugal	777.0
Japan	1959.1	Slovakia	733.6
Spain	1578.1	France	709.8
United Kingdom	1351.0	Romania	686.4
Italy	1256.9	Germany	594.0
Czech Republic	1112.0	Turkey	583.1

Indicators with more direct links to environmental impacts (WCD, 2000) also need to be developed. For example, there would be good value in extending analysis from well-studied regions of the world (e.g. for the US), which have mapped stream reaches below regulated impoundments and then linked geophysical measures to ecosystem and biodiversity effects. Additional impacts arising from drainage of wetlands, river “training” and channelization, as well as levee construction should be considered.

– Charles Vörösmarty
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D.4. Productive Natural Resources

Our Focus

In this policy category we include three indicators: Agricultural Subsidies, Overfishing, and the Timber Harvest Rate. Agricultural subsidies, according to a report by the OECD (2004), exacerbate environmental pressures through the intensification of chemical use and expansion of land use to sensitive areas (OECD, 2004). Based on this linkage between agricultural subsidies and environmental harm, an indicator that measures agricultural subsidies as a percent of agricultural GDP was chosen for inclusion in the index. Agricultural production occurs in countries at all levels of GDP, regardless of location. Thus removing subsidies is an action within the power of all governments. The authors recognize that this indicator is not flawless, especially in light of the implications of environmentally beneficial subsidies.[12] Where data were available we adjusted the aggregate subsidy measures by subtracting so-called "green-box" subsidies – those that are intended to promote environmentally sustainable farming practices. The resulting indicator, therefore, is a better approximation of environmentally harmful subsidies.

Box D3: Sustainable Agriculture – From Subsidies to Soil Conservation

The productivity and sustainability of land devoted to production of food and fiber is a critical issue in both the environment and development realms. The long-term goal is to conserve soil quality — structure, nutrients, organic content, etc. — and productive capacity through sustainable agricultural practices. No good measures of soil conservation exist today on a worldwide basis. The Pilot 2006 EPI therefore uses agricultural subsidies (net of payments for environmental services) as a proxy for sustainable agriculture.

While imperfect, the logic of the Agricultural Subsidies indicator derives from the many studies that show that farm subsidies, particularly price guarantees and commodity-related payments, distort planting decisions and encourage ecologically harmful practices such as intensive use of chemicals, farming in riparian zones, and monoculture. But this metric is deficient in a number of ways. First, subsidies are an input rather than an output variable. Second, the data on agricultural subsidies is imperfect and relies heavily on country self-reporting to the WTO. For many countries, no data exists. Third, unsubsidized agriculture is not necessarily sustainable agriculture. Many farming and forestry practices in countries without subsidies still degrade the productivity of the land and the quality of the soil.

Even if soil conservation measures do not emerge in the near future, better proxies for the sustainability of agriculture might be found. One possibility would be to track "agricultural land under controlled organic cultivation as a percentage of total agricultural land" with a target of 100% organic. While some observers might not like this focus and would argue that the developing world needs to expand its use of chemicals to increase yields, many agricultural experts (and consumers) see organic agriculture as the ultimate test of sustainability.

Practical issues limit the viability of an Organic Agriculture indicator today, but these obstacles are disappearing. Data availability on organic agriculture is quite good in developed countries, and differences among these nations in their definitions of "organic" are diminishing. In the developing world, the requisite data generally do not exist. So a focus on organic production as a metric would require some effort to expand worldwide tracking of farming on this basis. The growing emphasis on certification of products and the need for verification of supply chains should facilitate progress in this regard.

– R. Andreas Kraemer
Ecologic (Berlin, Germany)

[12] Comment taken from the EPI Expert Workshop held October 27-28, 2005.

For sustainable forest management, the EPI considers timber harvest relative to standing volume of forest, measuring countries' production of round wood as compared to wood volume.[13] Forest experts suggested that countries aim to harvest no more than three percent of their standing forest volume, ensuring a sustainable target for all countries given the varying growth rates of different forest types.[14]

There were also concerns about the data—with some countries appearing to harvest in excess of 30% of their standing forest volume annually. This appears to be an artifact of the data, since the two datasets on harvest and standing volume were produced for different purposes. It might also be representative of the fact that some countries have fuelwood plantations that account for their high rates of harvest relative to volume. However, the 95th percentile threshold for the worst performing countries is 24%, which means that no country is penalized for harvests in excess of this percentage.

We use a measure of "productivity overfishing" developed by the South Pacific Applied Geoscience Commission (SOPAC) in partnership with UNEP as part of their Environmental Vulnerability Index (SOPAC, 2004). Productivity overfishing is measured as the ratio of biological productivity, measured in tons of carbon per square kilometer of exclusive economic zone per year, to tons of fish catch per square kilometer of shelf per year. Higher ratios indicate better results. The target was set at 3.2 million tons of carbon per ton of fish catch. This indicator only reflects fishing within a country's exclusive economic zone (EEZ) under national responsibility, and not the behavior of many national fishing fleets ranging over the open ocean, for which flag nations should also be held responsible. A better measurement of overfishing would therefore examine proportional impacts on endangered fisheries by flag fishing fleet—yet data for this indicator are not readily available.

Three other potential indicators were explored—land degradation, subsistence crop yields, and urban sprawl—but ultimately could not be incorporated for reasons of data quality. Box D4 provides a current assessment of land degradation data. Unfortunately the only globally consistent dataset on this subject is woefully out of date and largely the product of expert judgment rather than on-the-ground measurement. We explored a measure of soil salinization due to irrigation, but there are a variety of biophysical reasons for which a country may be more likely to experience salinization that have little to do with the sustainability of irrigation.

Because declines in subsistence crop yields are a harbinger of poor soil fertility management, the authors explored a measure of trends in yields per hectare over time for maize, sorghum, and millet. However, data compiled by FAO for these crops show some suspicious patterns—such as consistent annual growth rates for certain crops over five year periods. This led to the conclusion that yield statistics for some countries are likely to be fabricated. Finally, we attempted to calculate a measure of land consumed due to urban growth (so called "urban sprawl") based on the average population density within urban areas (CIESIN, 2005).

This measure yielded some anomalous results. Some countries in Africa show very high-density urban areas because of under-estimates of their urbanized land area. As such, the sprawl indicator ultimately had to abandoned.

13 The FAO data do not appear to include estimates of subsistence-level forest cutting, but only commercial operations, and as such may seriously underestimate cutting in some countries where forests are cut for fuel wood. On the other hand, the data on standing volume may underestimate total wood volume in a country, particularly where crown cover is below 10-20%.

14 Suggestion taken from discussions with forest experts from the Yale School of Forestry and Environmental Studies on December 7-8, 2005.

Box D4: Paucity of Soil Quality and Land Degradation Data

The Global Assessment of Land Degradation (GLASOD) is the only comprehensive and uniform global assessment to date. It represents a consensus opinion of national and regional experts on the extent of land degradation in various categories of severity as of the early 1990s. According to Bot et al. (2000):

> *"The GLASOD data were derived from estimates by over 290 national collaborators, moderated by 23 regional collaborators. These estimates were based upon defined mapping units and a carefully structured set of definitions, but ultimately they were dependent on local knowledge rather than surveys. The results are thus to a degree subjective, and open to the criticism that local experts may have allowed perceived correlations with other factors, or even the vested interests of conservation institutions, to influence their judgment. Until methods are established for surveying and monitoring the status of land degradation, however, there is no better source of global data."*

Soil experts that were consulted had serious reservations about the reliability and validity of the GLASOD estimates. FAO has updated the numbers since the early 1990s, but there is no documentation on the methodology that was used.

A new global assessment, the Land Degradation Assessment in Drylands (LADA), will use improved methodologies with greater ground-truthing, but will be limited to dryland areas. Unless or until the Convention to Combat Desertification or some other international body provides the impetus to improve global measurements of soil degradation using some combination of satellite and *in situ* data, there is little prospect for improved data on soil conservation in this policy area.

The Policy Context

There are a number of international conventions in the area of ecosystems and natural resources, such as the Convention on Biological Diversity, the Ramsar Convention on Wetlands, and the Convention to Combat Desertification. Unfortunately, most of these agreements lack compliance mechanisms, and have only limited effectiveness in directing human actions onto a sustainable course.

For agricultural subsidies, the authors drew on the guidelines set forth by GATT and the WTO, which set an ultimate target of zero percent agricultural subsidies as a percent of agricultural GDP. Although the GATT and WTO guidelines are largely intended to promote free trade and remove barriers to developing country products, they can have an equally beneficial effect in the environmental arena. Establishing an ultimate target calling for the eradication of any agricultural subsidies underscores the necessity to remove incentives for unsustainable practices.

Despite the fact that forestry is an economic sector entirely dependent on natural resources, there have been few environmental successes in the international forestry policy arena. Policymaking for forest management differs from country to country based on the endowments and property rights regimes of individual nations. Countries have engaged in a forest policy dialogue for decades, recognizing that forest management is an important aspect of overall sustainable development. Understanding and implementing proposals resulting from these dialogues remains a challenge, and there have yet to be any global frameworks regarding sustainable forest management. As a result, forests continue to be subject to overcutting and degradation at a rapid rate.

The world's fisheries have seen mixed results in the international arena. The Law of the Sea includes Exclusive Economic Zones within the boundaries of the continental shelf, but high seas fishing regulations are much less defined and inadequate in many areas. Because of their open access nature, fisheries with a weak regulatory regime are at risk of overexploitation. This situation is exacerbated by government subsidies in a number of countries that provide incentives for expanding fishing beyond sustainable levels.

Environmental sustainability at the global scale would require that fish be caught at a rate that matches that of replenishment, hence the idea for maximum sustainable yield. Maximum economic benefit is actually reached before the maximum sustainable yield level and hence is even more desirable. Estimation of these quotas, however, depends on many factors. Several countries have successfully implemented property rights systems such as individually tradable quotas (ITQs) that are helping to protect the livelihoods of those who fish and the viability of the fisheries (e.g. New Zealand, Australia, and Canada). Achieving sustainable fisheries is a crucial issue in many parts of the world because seafood is an important source of protein in the diet. This issue deserves greater international policy attention.

Assessment

Agricultural subsidies are high across Europe. The worst performers—Switzerland, Norway, and Iceland—are all relatively small but affluent economies that are seeking to protect their farm sectors from international competition. Among other major agricultural producers, high subsidies are found in Japan, Korea, and the United States.

The measure of round wood volume harvests as a percent of standing forest volume show a different picture, with generally impoverished, arid and/or massively deforested countries showing up as the worst performers. Niger, Mauritania, Egypt, and Haiti all purportedly have more than 100% harvest of standing forests, but this is most likely an artifact of the data, with only forest plantations measured and large areas of very sparse vegetation not considered at all in the calculations. Although the percentages cannot be taken at face value, this indicator nevertheless reflects a reality that poor, subsistence countries are harvesting forests for fuel wood and charcoal production at unsustainable rates.

Regarding productivity overfishing, small island states perform quite well, perhaps because of their small or traditional fishing fleets. The worst performers are Chile, China, Iceland, Japan, Norway, Peru, Slovenia, and Thailand. With the exception of Slovenia, these are countries with large fishing fleets that consume large amounts of fish. Slovenia is among the worst performers because of an extremely small coastal zone (and hence small amounts of carbon production) relative to its fish catches.

Prospects for Performance-Based Action

The three core indicators are merely proxies for sustainable use of natural resources. Agricultural subsidies are a crude measure, and direct measures like soil erosion or marginal land under cultivation would be preferred. These measures could better indicate whether or not farmland is being appropriately managed.

Another as yet unavailable indicator of sustainably managed agricultural systems would measure yields per land area controlled for inputs such as labor, capital, and resources. With respect to forest management, it would be useful to include a measure of timber extraction as a fraction of regrowth in subsequent indices.

Regardless of how things are measured, there does not appear to be any impetus internationally to tackle the thorny issues of forest loss, unsustainable agriculture, and land degradation with anywhere near the levels of investment required.

For fisheries, there is increasing potential to obtain governmental data on the amount of fish that are being landed, and to allocate fishing allowances or property rights for fish that can protect the sustainability of the fishery in question. While at one time this seemed difficult because of data tracking issues, the increased capacity of remote-sensing and wireless communications makes it ever easier to imagine a regime that controls the number of fish landed by boat, by country, and by fishery. This would allow a move toward a regime that would keep fishing within sustainability limits.

D.5. Biodiversity & Habitat

Our Focus

Defining global indicators to monitor biodiversity conservation is a complex task. A recent publication proposed that over 100 individual indicators are needed to monitor the state of the ecosystems in the United States alone, and 14 indicators addressing different components of biodiversity are included in the Convention for Biological Diversity's framework (Balmford et al., 2005; Heinz Center, 2002; UNEP, 2004). In addition, a lack of global datasets precludes even the application of those 14 indicators at present.

The EPI focuses on two measures based on the national extent and location of protected area (PA) networks: a measure of the evenness of protected areas coverage by biome (Ecoregion Protection) and a measure of the degree to which the country's wildest areas are protected (Wilderness Protection). Protected areas are the cornerstone of conservation strategies and have been shown to effectively slow environmental alteration both within their borders and in surrounding areas, and to protect valuable goods and services. The extent and placement of PAs within a country can be used as an indicator of progress in biodiversity conservation (Chape et al., 2005).

Ideally, PA networks must contain a representative fraction of a region's biological diversity and separate it from possible threats. The degree to which a PA network is successful in achieving its intended goals depends on a series of interactions among selection, design, and management issues (Box D5). In general, two types of measurements can be used in evaluating PA success: effectiveness of management and effectiveness of coverage (Chape et al., 2005).

Clearly, the mere establishment of PA boundaries does not lead to biodiversity conservation if habitat destruction is allowed within the protected area. Although the significance of "paper parks" has been debated in the scientific literature, effectiveness in PA management is an important factor in evaluating a country's conservation efforts. The effectiveness of protected areas depends on several factors that are best measured at the site level (Ervin, 2003b; Hockings, 2003), but the overall effectiveness of conservation projects is correlated with budget and staffing levels (Dearden et al., 2005; Ervin, 2003a; James et al., 1999). However, current and internationally representative data are unavailable and it was not possible to monitor effectiveness of management here.

We chose the measure of the evenness of protected areas coverage by biome because some regions are under-represented at the global scale (Hazen & Anthamatten, 2004). This is despite an internationally agreed target of protection of 10% of the area in all major ecological regions. Consequently, the EPI evaluates the level of inclusion of a country's ecological regions in its PA network. Our target is protection of 10% of the area in every ecological region in a country. The focus is on terrestrial areas, as global targets for marine PA coverage have been suggested but are not yet universally accepted.

Box D5: Conservation of High Diversity Areas

Representation of a region's biodiversity is one of the main goals of protected area networks. Ideally, the selection of optimal areas to be set aside for conservation must be based on detailed knowledge about a region's biodiversity including species' identities, ranges, and threat levels. In reality, this is not the norm. For example, a recent study found that a significant fraction of species is not included in existing protected area networks (Rodrigues et al., 2004).

Although all major ecological regions regardless of their level of biodiversity should receive adequate protection, protecting areas of high biological value (e.g. high diversity, endemism or irreplaceability) is a sensible conservation strategy. Globally, several prioritization schemes are used to establish areas of high biological value that suffer from some level of threat (Olson and Dinerstein, 2002; Eken et al., 2004; Mittermeier et al., 1998). A global assessment of biodiversity conservation should include the level of protection afforded to biologically rich areas within each country, but global prioritization schemes emphasize conservation in tropical and sub-tropical countries. The data necessary to monitor the protection of high biodiversity areas in all countries are not currently available. Global biodiversity assessments are scarce, biased towards vertebrates, and the knowledge and the data required to estimate overall diversity at the global scale using surrogates are lacking. The lack of such fundamental data is a major hurdle in monitoring success in biodiversity conservation.

–Andres Gomez
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The second measure—the Protected Wilderness Indicator (PWI)—focuses on the level of wilderness area protection. Protecting its last remaining wild areas may be a country's only or most cost effective conservation strategy. Each country's last wild areas are highlighted using an index of human environmental alteration based on human population density, land transformation, accessibility and electrical power infrastructure developed by Sanderson et al. (2002). The least disturbed areas within each ecological region in each country are identified and the total area protected is measured.[15]

Setting a global target for wilderness conservation is necessarily a subjective task, but since larger areas under formal protection are associated with greater success in achieving conservation goals, the EPI uses 90% as a target for remaining wild areas protection.

In addition to these two measures of protected area coverage, the timber harvest rate (described in Section D.4) and the oversubscription of water resources (described in Section D.3) were also included in this category. This is in recognition of the impact that deforestation has on habitat loss, and crucial role of water in sustaining aquatic ecosystems.

Ideally, we would have liked to include measures relating to habitat destruction and species conservation. Increasingly, biodiversity policymaking has shifted from species and protected areas to broader efforts to preserve habitat. Little in the way of data is available, however, on habitat conservation across the world. Species conservation measures, such as the percent of species threatened with extinction, are highly tied to natural endowments, with countries home to a large number of endemic species tending to score poorly.

[15] The least disturbed areas are defined as those that fall below one standard deviation below the mean for the human influence index in that ecoregion for that country.

Furthermore, in most cases it is impossible to attribute country responsibility for threatened species because species are listed as threatened on the basis of their global threat status. Thus, a country could be implementing extensive programs to protect a particular species, yet it would still appear to be doing poorly if that species happens to be threatened. In future work we would like to convey not only the extent of a country's protected area network, but also its success in targeting species rich areas, and the degree to which management of those protected areas is effective (as described above).

The Policy Context

Legal instruments concerned with biodiversity conservation exist at regional, national, and international levels. However, environmental policy is usually developed in isolation from other policy sectors resulting in conservation strategies that are not coherent with other development goals. Too often national environmental authorities lack institutional capacity to adequately design and enforce conservation policies, especially those with transboundary effects. In addition to the problems of coordination and capacity, we lack the knowledge to precisely link biodiversity to ecosystem functions and services and to define appropriate conservation strategies to protect large-scale and long-term ecological and evolutionary processes.

Despite the existence of legal instruments and international agreements, conservation policy generally lacks quantitative benchmarks, and action plans based on quantitative measures are rare. Even when benchmarks do exist, they are largely a product of political negotiations and are rarely grounded in conservation science; in some cases conservation science itself does not yet have the answers. For example, although the inclusion in protected areas of 10% of all major ecological regions is an internationally agreed upon target in the Convention on Biological Diversity, protection is not necessarily based on a sound scientific understanding of the territory required to preserve biodiversity and ecosystem functioning, nor is it based on quantitative measures already established.

Assessment

Five countries—Venezuela, Burkina Faso, Benin, Botswana, Jamaica and Panama—not only have completely representative protected area systems (protecting a minimum of 10% of each ecoregion) but also protect more than 60% of their wilderness areas. Thirty-seven countries currently achieve the target of 10% or greater protection of all their ecoregions. With the exception of Japan, these are all tropical countries. Many large countries, such as Russia, the United States, China, and Canada, are very near the target.

For the Protected Wilderness Indicator, it is harder to discern any particular pattern in the data. Although one might expect that Western European countries would score highly due to the fact that the only remaining lands that are relatively wild would by default be under protected status, in reality it is the developing countries that appear to have the highest percentages of their remaining wild lands under protected status. The Netherlands, Germany, and Belgium protect less than four percent of their wild lands, and France and Italy protect 6 and 11 percent, respectively. The United Kingdom, by contrast, protects 26%, which is very close to the United States total of 28%.

Prospects for Performance-Based Action

Currently, lack of appropriate databases and quantitative benchmarks make performance-based action difficult. Critical knowledge gaps about biodiversity itself, how it relates to ecosystem services, and how to effectively protect it from threats acting at different geographic scales need to be addressed before coordinated action can be implemented. The indicators produced here can be used to improve performance in PA selection and design; if properly managed, well-selected and representative PA networks are the basis of national biodiversity conservation strategies.

D.6. Sustainable Energy

Our Focus

Shifting toward non-polluting and sustainable energy sources has emerged as a central policy challenge. Present energy use, particularly electricity generation and fossil fuel combustion in the industrial transport, household, and commercial sectors, produces significant local air pollution and greenhouse gas emissions. To gauge progress toward sustainable energy, we include three indicators: Energy Efficiency, Renewable Energy, and Carbon Dioxide Emissions per unit GDP.

The Energy Efficiency indicator (energy consumption per unit GDP adjusted for PPP) reflects the degree of priority given to eco-efficiency in both the policy and business worlds, as well as its inclusion on the official indicator list under MDG-7. For a truly sustainable energy future, the world needs to decouple energy consumption from economic activity and GDP growth (IAEA, 2005). Although the world is a long way from achieving a complete decoupling, some countries are making progress through conservation, improved resource productivity, and shifts toward renewable energy sources such as wind, solar, and hydropower. In the absence of internationally agreed upon efficiency targets, the EPI establishes a target of efficient consumption equivalent to the 10th percentile of the most energy efficient countries currently.

We recognize that the use of renewable energy is partly a function of geography and natural endowments. All countries do not have access to hydropower, wind, or thermal energy. But all countries still have reasonable opportunities to replace non-renewable with renewable energy sources such as solar or biomass.

Renewable energy as a percent of total energy consumption is used as a proxy for clean and sustainable energy, for which no viable data exist.[15] The specific renewable sources tracked include hydroelectric, biomass, geothermal, solar, and wind electric power production.[16] The renewable energy indicator also measures energy diversification within a country, which provides both positive economic and environmental benefits (IAEA, 2005). The EPI target is set at 100% renewable energy, which by definition is the target that is sustainable in the long run. This target is crude, however, and a better one would track the percentage of energy from clean and sustainable sources.

In relation to climate change, it would be best for the EPI to report emissions of all six greenhouse gases tracked under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol. However, given a lack of global data across several of these greenhouse gases, the best available option was a focus on carbon dioxide (CO_2) emissions per unit GDP. International benchmarks have been established for GHG emissions for industrialized countries through the Kyoto Protocol. Most of the countries that

[15] Clean and sustainable energy includes solar power, photovoltaic cells, tidal power, geothermal energy, hydropower, and wind power.
[16] Note that this indicator does not include non-commercial energy, such as biomass energy utilized by the rural poor or passive solar heaters utilized to heat water.

have taken on Kyoto obligations appear not to be on track to achieve these targets in the first budgeted period (2008-2012). Several other countries, most notably the United States and Australia, have declined to take on Kyoto emissions reduction targets. This makes the global response to climate change goals hard to achieve.

In the absence of both agreed-upon long-term total emissions targets or an allocation of permitted emissions, we have little guidance in establishing national GHG targets. From a planet-wide perspective, the absolute level of GHG emissions must be reduced. Indeed, to meet the Climate Change Convention's goal of "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system," very substantial emissions reductions will be required. Absent consensus on a permitted level of emissions, we use a strict interpretation of the Convention goal and deploy a zero net emissions target. We recognize this goal might be relaxed slightly with more refined analysis.

It might be argued that including energy consumption per GDP and CO_2 per GDP in the same policy category is double counting. In fact, these two indicators are measuring different things. The overall R^2 for the two measures is .46 ($p<.001$), which suggests that energy efficiency only predicts 46% of the variation in CO_2 per GDP. The correlation is not higher because some countries have substituted renewable and nuclear energy for fossil fuel energy.

The Policy Context

While no definite policy goals have been set within the realm of sustainable energy use, the MDGs cite decreases in energy consumption per GDP among the indicators under Goal 7 (UNSTATS, 2005). Substantial international attention is focused on making economies more energy efficient. The Clean Development Mechanism (CDM) of the Kyoto Protocol seeks to reward high emitting countries for transferring technologies to promote energy efficiency among less efficient economies such as China and India.

There is currently no international agreement on clean or renewable energy, although these technologies constitute a key strategy for reducing global dependence on fossil fuels that emit greenhouse gases.

An argument might be made for tracking absolute levels of GHGs rather than GHGs/GDP as we do. Indeed as a matter of climate change policy, absolute levels of GHGs are of ultimate interest. Challenges to this include the estimation of the net carbon emissions permissible to avoid disruption or lasting changes in climatic conditions, and figuring out how to allocate those emissions to countries. The former constitutes a scientific problem while the latter is the subject of intense policy debates. Per capita quotas would favor population rich countries such as China and India and could counteract other policy goals such as demographic targets.

GHG emissions are an issue on which time series data would seem to be the most logical way to gauge current policy performance. We therefore provide, in table D1 below, changes in CO_2 emissions (1992-2000). Unfortunately, the most "successful" countries all achieved their emissions reductions by means of economic collapse rather than a focused GHG control policy.

The problem with looking at GHGs alone is that these levels today are largely a function of economic activity and population size. Moreover, almost all of the countries that have reduced their GHG emissions during this recent time period have done so not through policy design but as a by-product of economic collapse. We therefore focus instead on the critical measure of policy success in the short-run, the GHG efficiency of the economy.

Assessment

For energy efficiency, the best performing countries are also among the world's poorest—including Chad, Cambodia, Uganda, and Burkina Faso. There is a not a single industrialized country among the top 37 most energy efficient. Among industrialized countries, Ireland, ranked 38th, is followed by Italy (53), Switzerland (55), and Denmark (56). The worst performing countries are in the former Soviet Union and Arab States. There is no correlation between GDP per capita and energy efficiency.

For renewable energy, the top five countries are again developing countries, but ones with large hydro-power installations: Paraguay, Mozambique, Zambia, the Democratic Republic of Congo, and Laos. Among larger economies, Norway, Brazil, and Switzerland were the best performers. OPEC members and many African and Island nations had zero percent renewable energy.

Several industrialized countries perform surprisingly well on the measure of CO_2 emissions per GDP, including Switzerland, Sweden, France, Japan and Denmark, each with less than 60 metric tons of CO_2 emissions per million dollars GDP. This is no doubt partially due to the use of renewables in Switzerland and Sweden and the use of nuclear power in France and Japan. In general, the performance for this measure closely tracks the Sustainable Energy indicators—with the best performance from efficient countries, characterized by high degrees of renewables usage, and developing countries. Some of the worst performance is from the former Soviet republics and Arab States.

Prospects for Performance-Based Action

In the long term, decoupling energy use from GDP growth requires technological advances that make sustainable energy sources cost effective. In the short run, movement toward decoupling can be achieved by using energy more efficiently. Energy efficiency is also a function of the structure of the economy. Countries with large industrial sectors or agro-industries will, by their nature, consume more energy than countries that have large high technology or service sectors. Although manufacturing has become more efficient in the advanced industrialized countries, most of the efficiency gains have been due to adoption of information and communication technologies in all sectors and the progressive de-industrialization of their economies. The most important gains in energy efficiency need to be made in the industrial sector, particularly in countries such as China and India that are industrializing rapidly

.

Table D1: Changes in Total Carbon Dioxide Emissions (1992-2000)

Rank	Country	% Change	Rank	Country	% Change	Rank	Country	% Change
1	Tajikistan	-81	46	United Arab Em.	11	91	Pakistan	44
2	Moldova	-69	47	Cambodia	12	92	Swaziland	44
3	Georgia	-59	48	Ecuador	12	93	Taiwan	45
4	Kyrgyzstan	-58	49	Finland	12	94	Costa Rica	45
5	Kazakhstan	-52	50	Burkina Faso	14	95	Angola	45
6	Nigeria	-44	51	Argentina	16	96	South Korea	47
7	Ukraine	-43	52	United States	16	97	Indonesia	49
8	Yemen	-39	53	South Africa	17	98	Laos	51
9	Azerbaijan	-38	54	Rwanda	17	99	Nicaragua	51
10	Mongolia	-32	55	Mozambique	18	100	Israel	51
11	Romania	-29	56	Slovenia	19	101	Turkey	51
12	Russia	-28	57	Malawi	19	102	Philippines	55
13	Zambia	-26	58	Iceland	19	103	Ghana	55
14	Slovakia	-21	59	Albania	20	104	Honduras	56
15	Congo	-18	60	Greece	22	105	Haiti	57
16	Dem. Rep. Congo	-18	61	Senegal	22	106	Thailand	57
17	Zimbabwe	-18	62	Guinea-Bissau	22	107	Panama	58
18	Bulgaria	-17	63	Tunisia	23	108	Chad	62
19	Denmark	-16	64	New Zealand	23	109	Venezuela	63
20	Czech Rep.	-14	65	Turkmenistan	23	110	Guatemala	64
21	Poland	-11	66	Burundi	25	111	Oman	64
22	Germany	-9.3	67	Central Afr. Rep.	25	112	Bolivia	68
23	Sweden	-8.7	68	Guinea	26	113	Chile	70
24	Switzerland	-8.6	69	Mali	26	114	Kenya	71
25	Armenia	-4.6	70	Spain	26	115	Egypt	76
26	Papua NG	-4.1	71	Trinidad & Tobago	26	116	Uganda	78
27	Hungary	-3.4	72	Cameroon	26	117	Benin	78
28	Norway	-1.7	73	Gabon	26	118	Bangladesh	81
29	Belgium	-1.6	74	Syria	26	119	Tanzania	85
30	Netherlands	-0.3	75	Australia	27	120	Myanmar	87
31	Cuba	0.1	76	Jordan	27	121	Ethiopia	92
32	France	0.2	77	Portugal	27	122	Malaysia	94
33	United Kingdom	0.3	78	Iran	28	123	Sudan	95
34	Suriname	0.3	79	Cyprus	29	124	El Salvador	95
35	Colombia	2.5	80	Jamaica	33	125	Saudi Arabia	101
36	Canada	4.4	81	Lebanon	34	126	Sri Lanka	102
37	Uzbekistan	4.7	82	Ireland	34	127	Togo	122
38	China	5.6	83	Gambia	37	128	Dominican Rep.	124
39	Italy	5.9	84	India	38	129	Madagascar	128
40	Mauritania	6.5	85	Sierra Leone	39	130	Côte d'Ivoire	141
41	Japan	7.2	86	Paraguay	40	131	Nepal	155
42	Mexico	7.2	87	Peru	40	132	Viet Nam	163
43	Austria	8.0	88	Morocco	41	133	Namibia	12000
44	Niger	9.9	89	Brazil	43			
45	Algeria	11	90	Liberia	43			

Source: Carbon Dioxide Information and Analysis Center (CDIAC).

Appendix E:

The Pilot 2006 EPI's Relationship to the 2005 Environmental Sustainability Index (ESI)

Appendix E: The Pilot 2006 EPI's Relationship to the 2005 Environmental Sustainability Index (ESI)

Both the Environmental Sustainability Index (ESI) and the Pilot 2006 Environmental Performance Index contribute to data-driven environmental decisionmaking. However, there are important differences in the perspectives the ESI and EPI bring to environmental policymakers. The EPI does not seek to replace the ESI; instead, the two indices supplement each other.

The ESI provides a gauge of a country's long-term environment trajectory. Constructed around the concept of "sustainability," it tracks the environmental past, present, and future. It includes metrics related to underlying natural resource endowments, past pollution control, and the existing degree of ecosystem degradation as well as current environmental policy results and forecasts of a society's ability to change negative trends.

In contrast, the EPI addresses the need for a gauge of policy performance in reducing environmental stresses on human health and promoting ecosystem vitality and sound natural resource management. The EPI focuses on *current* on-the-ground outcomes across a core set of environmental issues tracked through 16 indicators in six policy categories for which all governments are being held accountable.

The EPI has several important distinctions from the ESI. Perhaps most significantly, the EPI measures country performance against an absolute target established by international agreements, national standards, or scientific consensus. It is based on actual environmental results measured on a proximity-to-target basis. With this approach and more comprehensive data, the EPI could be used for global-scale aggregation, showing how close the world is to environmental sustainability. In contrast, the ESI is based on comparisons between countries, thus providing only a relative measure of environmental performance. In addition, the EPI focuses narrowly on areas within government control, while the ESI tracks a broader set of factors affecting sustainability.

With minor exceptions, for a country to be included in the EPI, data must be available for all 16 indicators. Current data gaps make it possible to include only 133 countries in the EPI rankings. In contrast, the ESI has a more flexible data requirement that allows missing data to be imputed in certain cases. Because of this difference, the EPI provides a more refined picture of a country's current environmental performance.

While the ESI and the EPI were designed with different objectives in mind, some insight can be gained from a comparison of the relative positions of countries on each index (see Figure E1 below). The rankings of some countries are notably higher on the EPI than the ESI. This is particularly true of the United Kingdom, Germany, and Taiwan. This result suggests that they face significant long-term sustainability challenges but are managing their present circumstances well.

A number of countries, particularly in Africa, have lower EPI than ESI scores. These nations are relatively unpolluted due to their under-development, but they are not meeting the challenge of providing environmental infrastructure (drinking water and waste water treatment) for their people and creating systems for pollution control and ecosystem protection.

Finally, both the EPI and the ESI reveal substantial gaps in global environmental data. Many important environmental issues relating to sustainability, human health, and ecosystem vitality are not being tracked quantitatively. To the degree that both the ESI and the EPI provide useful guidance for making policy choices, there is a compelling argument for greater investment in tracking environmental metrics and indicators more systematically across the world. The ultimate goal is to provide a firmer foundation for environmental policymaking and to help ensure that money devoted to environmental protection delivers maximum returns.

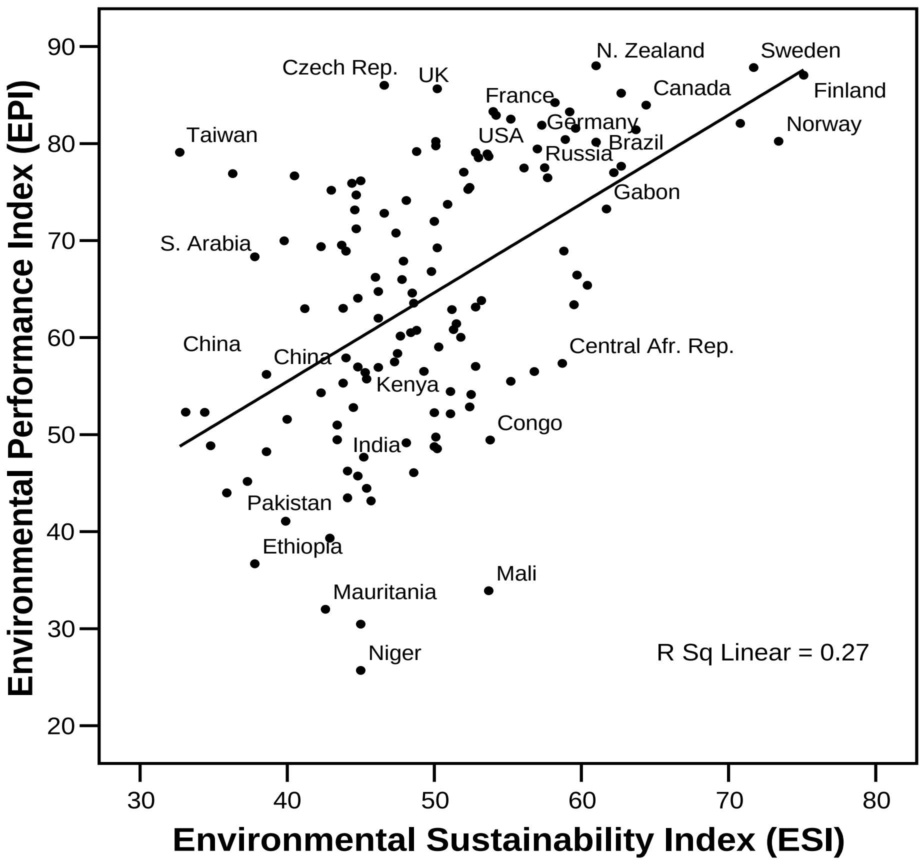

Figure E1. Relationship between the 2006 EPI and the 2005 Environmental Sustainability Index

Appendix F:

Methodology & Measurement Challenges

Appendix F: Methodology & Measurement Challenges

The Pilot 2006 EPI introduces a policy-relevant framework for environmental performance assessment. The framework depends on the data it contains. While the methodology of the EPI is quite straightforward (as explained in Chapter 2), calculation of the EPI scores and rankings requires considerable numerical alignment and statistical processing. The purpose of this Appendix is to provide a detailed description of the steps included in calculating the EPI and of the statistical techniques and methods used. We offer this detail because we believe that transparency is an essential foundation for good analysis and policymaking.

The issues addressed in the following sections mirror those commonly encountered in the computation of composite indices: indicator and country selection, missing data treatment, standardization, aggregation and weighting methodologies, as well as performance testing (OECD, 2003).

F.1. Country Selection Criteria

While the data metrics for the 16 indicators contain information for as many countries as possible, the EPI contains only those countries with complete data coverage across all indicators and policy categories. There are two exceptions to this rule. First, data availability for two indicators—Overfishing and the Timber Harvest Rate—depends on a country's geographical location. Therefore, landlocked countries without data for the overfishing indicator and countries with no natural or planted forests are included in the EPI if they are not missing any other data. The second exception applies to two indicators found in the Environmental Health policy category: access to improved drinking water and access to sanitation. The very high correlation between these indicators permits us, in the event that one of the data points is missing, to use the available data point as a proxy for the missing one. A further discussion on the treatment of missing data is given in the next section.

F.2. Missing Data

Data gaps remain a very serious obstacle to a more refined EPI and to data-driven policymaking more generally. Persistent data gaps or incomparability of data across countries means that several important policy challenges cannot presently be addressed. And many countries, particularly in the developing world, lack data on a number of critical indicators.

For example, air quality indicators based on ground-monitoring are simply not available for many developing countries and are further limited by weak data comparability even in developed countries. Pollutants such as lead, ultra-fine particulate matter (PM2.5), tropospheric ozone, and volatile organic compounds (VOCs) do not have sufficient ground observations available and are not updated on a sufficiently frequent basis to permit robust performance metrics. Although satellite-based observation of air pollutants is advancing rapidly and provides more reliable estimates to fill in the gaps, availability and use of these technologies is still constrained. The result of these data gaps and inconsistencies is that only measures of ground-level ozone and particulates are included in the Pilot 2006 EPI to represent air pollution. These inadequacies point to the need for increased national and international focus on this data situation, specifically with regard to better air quality measures.

Missing data are a major source of uncertainty in index construction. Although statistical methods exist for imputing missing data, they are not free of assumptions regarding the causes for the missing values. In addition, application of these methods requires knowledge and careful consideration of the strengths and weaknesses of various techniques in light of the available data. To continue the air pollution example, such data are highly dependent on spatial and temporal conditions, which complicate the development of imputation models that are applicable to different regions and countries.

Because of the lack of robust, well-tested imputation models, missing data are not imputed in the Pilot 2006 EPI, with the exception of the Drinking Water and Adequate Sanitation indicators. These two measures were found to correlate so strongly with each other that one parameter can justifiably be used to estimate missing values in the other. In the future, as data quality improves and time series data becomes available, further investigation will address the use of imputation models to increase the geographical coverage of the EPI. But the essence of the EPI—as a gauge of actual environmental results—requires particular confidence that any numbers imputed reflect on-the-ground circumstances and outcomes.

Because of the limited data quality, the coverage of countries for the non-imputed indices is necessarily smaller than if missing data had been imputed. The EPI's stringent data requirements mean that the data presented and the analysis derived from them are free of the uncertainty that arises when missing data are imputed. In addition, the authors believe that at present, performance analysis benefits more from a conservative approach to data availability than from the application of sophisticated but untestable missing data imputation models.

As the understanding of the drivers of superior environmental performance grows over time, it is anticipated that statistical modeling of missing data may become more appropriate in the context of performance measurement.
Another important requirement of performance measurement is the ability to measure all relevant environmental policy areas. Several additional theoretically important environmental indicators were identified for inclusion in an ideal performance index, however, these could not be included due to the practical limitations noted above. Most importantly, data are often not measured widely enough or with a sufficient degree of methodological consistency to be useful within the context of a broad analysis. Exposure-effect indicators for many important environmental toxins belong in this category. To compensate for this information gap, proxy indicators that link exposure and outcomes are used, including increased exposure to toxins and increased mortality.

An additional challenge arises from the difficulty of determining clear sustainability targets for some of the indicators. For example, setting targets for mortality rates due to environmental factors requires far-reaching assumptions about a range of health and socio-economic parameters. The specification of targets is discussed in Chapter 2 of the main report.

The urgent need to improve the availability and quality of policy-relevant environmental indicators cannot be overemphasized. Effective environmental policy requires dependable and timely data, not only to identify problems, but also to monitor implementation of response measures, and to follow-up on their effectiveness. Time-series data is also crucial in this regard, allowing for cause-effect analyses and the illumination of best practices with respect to pressing environmental problems.

F.3. Calculation of the EPI and Policy Category Sub-Indices

Indicator Transformation for Cross-Country Comparisons

The raw data for each of the 16 indicators requires standardization to permit cross-country comparisons and to ensure that no indicator dominates the aggregated EPI and policy indices. The other main objective of standardization is to convey information about a country's environmental performance in an easy-to-understand and meaningful way. Thus, we used a proximity-to-target approach that evaluates how close a country is to a desirable performance target for each of the 16 indicators. The choice of the targets is based on sustainability criteria and expert judgments, and in some cases, such as CO_2, had to be based on pragmatic realities rather than ideal goals.

To calculate proximity-to-target values, each indicator is first converted to point in the same direction so that higher values correspond to better performance. Then, the observed values are winsorized at the lowest fifth percentile. Winsorization means that all values falling below the fifth percentile are set to the value corresponding to the fifth percentile. The logic for this approach is to prevent a few extremely low values from skewing the indicator's distribution and exerting an unacceptably high influence on the EPI.

Similarly, countries exceeding the specified target for an indicator are not given additional credit but rather have their value set to the target. This form of "target winsorization" is done to reduce the ability of countries to use above-target performance in one area to make up for poor performance on other indicators. Since the majority of targets also reflect sustainability criteria, overachievement is not desirable with respect to the efficient deployment of a country's resources. In some cases, moreover, above-target results may be a function of data anomalies or reporting errors.

Following the winsorization of the upper and lower tails of the indicators, proximity to target is calculated as the difference between the observed value and the target divided by the range between the worst observed value and the target. Calibration of the results to the interval zero to 100 then allows interpretation of a country's performance as the shortfall from achieving the target expressed in percent. For example, a country's score of 80 for the Drinking Water indicator means that it is 20% short of meeting the target; in this case 20% of the population do not have access to drinking water.

Since the standardization only transforms the indicator data to fall into the interval zero to 100 but does not alter the spread, i.e., the range of values covered in this interval, the indicators contribute differently to the aggregated policy and EPI scores. We are, therefore, testing an alternative transformation methodology, which aims to stabilize the variation in the data prior to standardization. The Box-Cox family of transformations is designed to estimate the transformation parameter that moves the data distribution closest to normality. The by-product of transformation to a more normal distribution is variance stabilization since the variance does not depend on the expected value. Once complete, this approach will be made available on the EPI website at www.yale.edu/epi.

Data Aggregation and Weighting

Aggregation is always a potential area of methodological controversy in the field of composite index construction. The choice of the two broad objectives, the six policy categories, and the 16 indicators, as well as the EPI's aggregation methodology, are grounded on:

extensive consultations with indicator experts, scientists, and public policymakers from national and international organizations; analyses of existing performance measurement initiatives (most notably the Millennium Development Goals); and detailed literature reviews.

Composite indices are aggregations of sets of variables for the purpose of meaningfully condensing large amounts of information. Various aggregation methods exist and the choice of an appropriate method depends on the purpose of the composite indicator as well as the nature of the subject being measured. Appropriate choice of the components of composite indices and their weights is an important part of the aggregation process.

For the EPI, we decided to combine a statistical method with a policy-oriented expert judgment approach for deriving the composition of the EPI indicators and their respective weights. Principal component analysis (PCA) was carried out on the proximity-to-target data to identify which indicators form natural dimensions of environmental performance and how much each indicator contributes to its component.

The results of the PCA were astonishingly clear and appealing from an environmental policy perspective. Of the six dimensions with eigenvalues larger than one (see Box F1 for a description of the concept underlying PCA), three major dimensions emerged: (1) Environmental Health, which represents the impacts of environmental degradation on human health and well-being and contains the Urban Particulates, Indoor Air Pollution, Drinking Water, and Child Mortality indicators, (2) Sustainable Energy, encompassing the indicators measuring Energy Efficiency, Renewable Energy, and CO_2 per GDP, and (3) Biodiversity and Habitat, covering the indicators Water Consumption, Timber Harvest Rate, Wilderness Protection, and Ecoregion Protection.

Box F1: Principal Component Analysis

Principal component analysis (PCA) is a statistical method for dimension reduction through identification of patterns inherent in a multivariate model. It is a useful tool to investigate the relationships between the 16 indicators in the EPI. PCA summarizes a *p*-dimensional dataset into a smaller number, *q*, of dimensions while preserving the variation in the data to the maximum extent possible. The *q* new dimensions are constructed such that:

1. They are linear combinations of the original variables.
2. They are independent of each other.
3. Each dimension captures a successively smaller amount of the total variation in the data.

The objective is to capture those features in the data that help better understand an issue of interest or to discover interesting new patterns among the relationships between variables.

The *p* original variables are combined into *q* linear combinations, which form the new principal components of the system. A standardized linear combination Z_1 of a data vector, $X_1=(X_{11}, X_{12}, \ldots, X_{1p})$, of length *p* is defined as:

$$Z_1=w_1^t X_1, \text{ where the sum of the squares of the weights, } w_i, \text{ is 1.}$$

PCA chooses the weights by determining the linear combination of all *p* variables in the transformed dataset that maximizes the variance of the data. That is, the vector ***w*** of weights is calculated such that the squared difference of the new variable values and their respective means is maximized in relation to the total variance of the untransformed data.

The results for w_1 determine the first principal component. The second principal component with weights w_2 is then obtained analogously by maximizing the variance orthogonal to the direction of the first component, and so forth. Orthogonality of the principal components means that they are statistically independent so that any changes in one component do not impact the others. This is sometimes a desirable feature of composite indicators.

The consecutive process of maximizing residual variance implies that at every step less variance is remaining. Once it falls below a specified threshold, the procedure is halted and no more additional principal components are calculated. Several criteria exist to determine the threshold value. One method considers the eigenvalues of the data matrix. The eigenvalue, λ, is the value that solves the equation:

$$X_{corr}\, a=\lambda a,$$

where *Xcorr* is the $(p \times p)$ correlation matrix calculated from the data for *n* countries and *p* variables and *a* is a vector in $\Re^p \neq 0$.

Values of λ *less than 1* indicate that there is no gain to be expected from adding the principal component to the set of selected components. The first $(j-1)$ components are sufficient to summarize the data.

Each principal component provides a set of factor loadings of the indicators, which correspond to their importance for the component, i.e., the higher the loading of an indicator, the more useful it is for explaining variation in the direction of the principal component. Indicators with similarly large loadings on the same principal component can be interpreted as being related along the direction of this component. The loadings from the principal component analysis can also be treated as inherent weights of the indicators for the aggregation process.

The fourth through sixth components explained less variation (i.e., structure) in the data and hence were more ambiguous in their interpretation as policy areas. For this reason, we chose to combine the first three principal components with three policy categories formed by expert judgment. These latter components are titled Water Resources, Air Quality, and Productive Natural Resources.

The Water Resources category consists of indicators for nitrogen loading and over-subscription of water resources. The Air Quality category is comprised of measures for ground-level ozone and particulates, and the Productive Natural Resources category evaluates timber harvesting rate, negative agricultural subsidies, and the extent of overfishing. For landlocked countries the Overfishing indicator is waived. We also note that three indicators contribute to two policy categories, respectively. In each case, the indicator is a distinct contributor to both human health and ecological vitality. The Urban Particulates measure is important to Environmental Health and Air Quality. Water Consumption affects both Water Resources and Biodiversity and Habitat categories, while the Timber Harvest Rate indicator contributes to Biodiversity and Productive Natural Resources.

For each country in the EPI, the six policy categories are, therefore, calculated as the weighted averages of their constituent indicators. Environmental Health, Sustainable Energy, and Biodiversity and Habitat use PCA derived weights. Water Resources, Air Quality, and Productive Natural Resources use equal weights. The weights from the PCA are given in Table F1.

Table F1: PCA Derived Weights of the EPI Indicators.

Policy Category	Indicator	PCA-derived weight
Environmental Health	Urban Particulates	0.539401
	Indoor Air Pollution	0.900439
	Drinking Water	0.905929
	Adequate Sanitation	0.908663
	Child Mortality	0.888496
Sustainable Energy	Energy Efficiency	0.804238
	Renewable Energy	0.192102
	CO_2 per GDP	0.868776
Biodiversity and Habitat	Water Consumption	0.154027
	Timber Harvest Rate	0.355348
	Wilderness Protection	0.920753
	Ecoregion Protection	0.905158

The Pilot Environmental Performance Index is then calculated as the weighted average of the six policy categories. The weighting of the categories mirrors the distinct policy sectors and responsibilities within government allocated to human health and ecological integrity. The overarching importance of an intact and healthy environment for human health and well-being is reflected in the higher weight of 50% given to this category. The remaining policy categories are each weighted at 10%, so that the final EPI is calculated as:

EPI = 0.5 × Environmental Health + 0.1 × (Air Quality + Water Resources + Productive Natural Resources + Biodiversity and Habitat + Sustainable Energy).

F.4. Data Quality and Coverage

The EPI should be seen as a *pilot* index because a number of serious data gaps and methodological questions remain open. Data gaps relate to both the lack of available information on important environmental policy issues and serious shortcomings in the quality, geographical coverage, or timeliness of the available data.

For example, to measure environmental health policy outcomes, we would ideally like to use indicators measuring the exposure-effect relationships of major environmental toxins such as lead and mercury. Many important environmental health indicators are, however, available only for very few countries or at limited sub-national or regional levels. A major initiative in this context is a project under the guidance of the World Health Organization to estimate the Global Burden of Disease, including environmental diseases.[17] Due to serious data gaps and methodological issues, these estimates are published for the WHO's regional areas only. Hopefully, continued efforts will make it possible to report country-level data in the future.

The need to incorporate economic policy decisions into environmental performance measurement is exemplified through the issue of governmental subsidies. Perverse subsidies in agriculture, fisheries, and energy sectors have been shown to have negative impacts on resource use and management practices. But data on the amount of subsidies and especially on their impacts are extremely difficult to obtain. The EPI contains an improved agricultural subsidy measure that builds on the variable used in the 2005 Environmental Sustainability Index (Esty, Levy et al., 2005).

Biodiversity and habitat protection have recently received greater attention with a focus on developing new and better indicators. Wetland protection, for example, is an important aspect of biodiversity protection. Yet, it is not routinely measured on a grand scale. The issue of land degradation, which affects many countries worldwide, is so complex that scientists and experts at the Food and Agricultural Organization of the United Nations have not yet been able to harmonize existing methodologies to the extent necessary to obtain routine, high-quality global assessments of the extent and severity of anthropogenic land degradation.[18]

Another noteworthy issue affecting national performance measurement is that not every indicator is equally applicable or relevant for each country. For example, the EPI includes a measure of timber harvesting. Not every country has forests, however, making this indicator less valuable to these countries. The index does not consider timber harvesting for countries without

[17] WHO Burden of Disease Project. More information is available at http://www.who.int/healthinfo/bodproject/en/index.html

[18] We considered, for example, inclusion of the GLASOD land degradation assessment but refrained because the data are outdated and not comparable enough to permit cross-country performance assessments.

natural or planted forests. Equally relevant in this context is consideration of how environmental pollution and resource use affect countries at different stages of economic development.

The cluster analysis and presentation of EPI results for various "country peer groups" highlights that different EPI indicators are of high importance to various country groupings. While this is an important issue for weighting the indicators, it also demonstrates that indicator selection for a global index is a difficult task.

While our search for additional and better data is ongoing, this Pilot EPI contains 16 indicators for 133 countries, which we believe reflect the most important and best available measures to track and assess environmental performance. Aside from policy relevance, only datasets with sufficient coverage, data "freshness", and methodological consistency were chosen.

F.5. Cluster Analysis

Cluster analysis refers to a rich suite of statistical classification methods used to determine similarities (or dissimilarities) of objects in large datasets. We use this technique to identify groupings of relevant peer countries. Within each peer group, countries have a better basis for benchmarking their environmental performance because the group members are similar with respect to the data used to classify them and the differences across the groups are maximized.

Cluster analysis helps to advance this process by grouping beyond the level of development alone. In doing so, it enables countries to identify others who are similarly situated—thus providing a good starting point in the search for best practices. In this context, the question of interest in carrying out a cluster analysis of the EPI is whether there are similarities among countries in their environmental performance at the aggregate EPI level and with respect to the EPI indicators and policy categories.

Cluster Analysis Techniques

There is no best method for cluster analysis and the results of cluster analyses are subject to interpretation. Therefore, we applied two different algorithms. Specifically, we explored the data structure using a non-parametric, distance-based agglomerative clustering algorithm known as Ward's method.

A feature of agglomerative clustering is that it starts with as many individual clusters as there are countries. It then successively combines countries that are most similar to each other with respect to a quantitative similarity measure until all countries are joined in a single cluster.

The similarity measure decreases during this process, while the within-cluster dissimilarity increases as more and more countries are added. The trade-off lies therefore in choosing a similarity measure, or "pruning value," that yields both a relatively small number of clusters and a high level of similarity. We determine that six clusters yield a reasonable division between the countries.

After determining the number of country clusters, we use the *k* means clustering method developed by Hartigan and Wong (Hartigan and Wong, 1979) to determine cluster membership. K means is a non-hierarchical method that requires that the number of clusters, *k*, be specified upfront (hence the preliminary use of Ward's method) and then iteratively finds the disjoint partition of the objects into *k* homogeneous groups such that the sum of squares within the clusters is minimized.

The algorithm converges in fewer than 10 iterations for the 16 proximity-to-target indicators.

The differences between the six country groupings at the indicator level can also be illustrated by a plot of the respective cluster centers (see Figure F1).

Indicators that are particularly influential in determining the differences between the groups have large deviations in the cluster centers.

These indicators are:

- Regional Ozone (OZONE),
- Indoor Air Pollution (INDOOR),
- Water Consumption (OVRSUB),
- Energy Efficiency (ENEFF),
- CO_2 Emissions per GDP (CO_2GDP),
- Drinking Water (WATSUP),
- Adequate Sanitation (ACSAT), and
- Ecoregion Protection (PACOV).

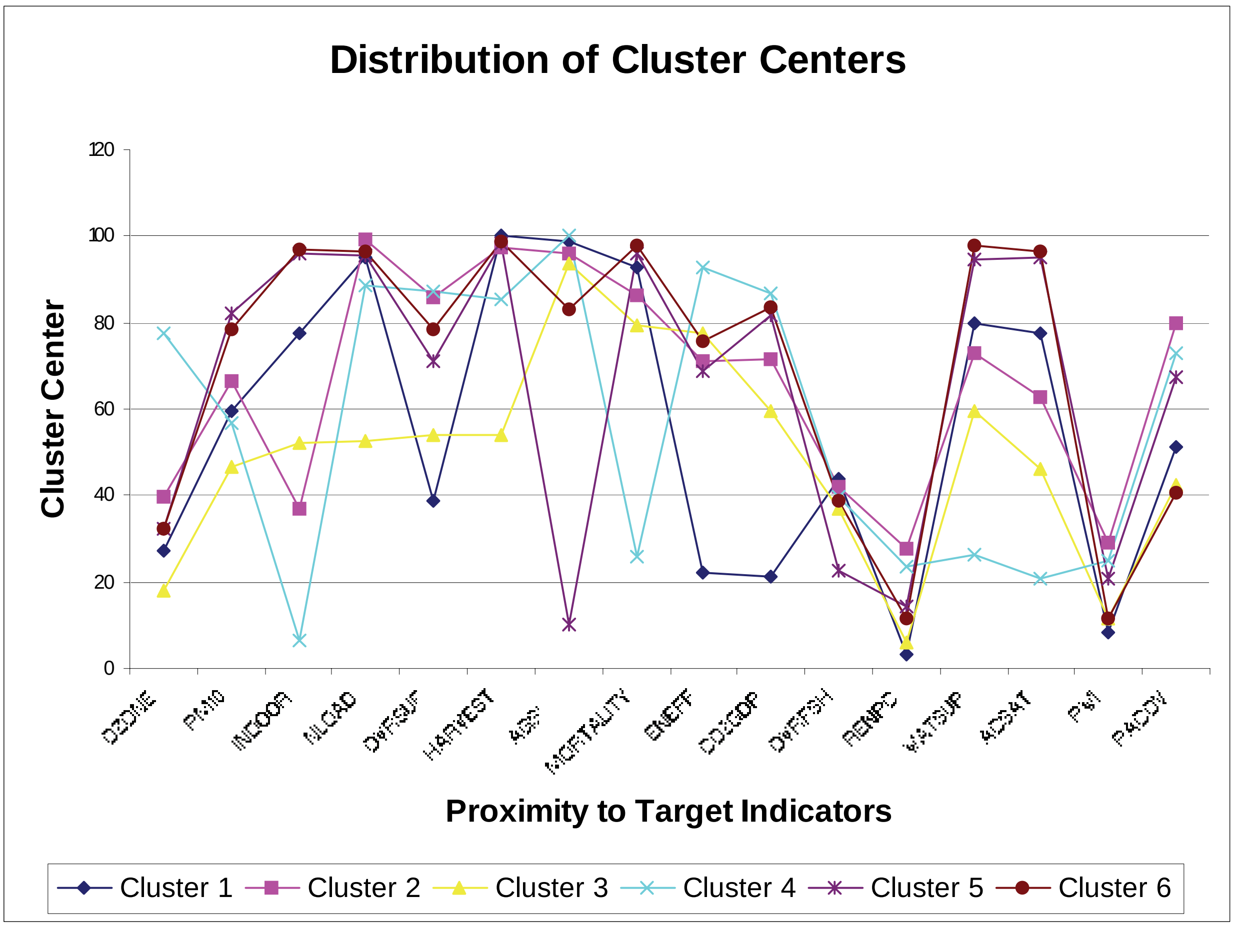

Figure F1: Distribution of Cluster Centers for the Six Country Peer Groups and Proximity-to-Target Indicators

Appendix G:

Sensitivity Analysis

Appendix G: Uncertainty and Sensitivity Analysis of the EPI

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To establish the robustness of the methodology used and the assumptions made in the construction of an index, it is useful to undertake an analysis of the sensitivity of the results to these choices. In the case of the Pilot 2006 EPI, several assumptions need to be tested, notably the selection of indicators, the aggregation approach used, and the weights of the indicators and categories used in computing the index.

The analysis that we have undertaken maps the effects of these uncertainties and assumptions on the EPI country scores and rankings. We also seek to use uncertainty and sensitivity analyses to assess whether useful conclusions can be drawn from the index given the construction methodology selected.

Sensitivity analysis is the study of how output variation in models such as the EPI can be apportioned, qualitatively or quantitatively, to different sources of variation in the assumptions. In addition, it measures the extent to which the composite index depends upon the information that composes it. Sensitivity analysis is closely related to uncertainty analysis, which aims to quantify the overall variation in the ranking resulting from uncertainties in the model input.

We note that the soundness (i.e., accuracy and precision) of the EPI depends on a number of factors including:

- the model chosen for estimating the measurement error in the data, which is based on available information on variance estimation;
- the mechanism for including or excluding variables in the index;
- the transformation of variables during the process of constructing the index;
- the type of normalization scheme, such as re-scaling or standardization, applied to remove scale effects from the variables;
- the amount of missing data;
- the choice of the weights, e.g. equal weights or weights derived from factor analysis or expert opinion models;
- the level of aggregation, e.g. at the indicator or at the sub-indices level;
- the choice of aggregation system, e.g. additive, multiplicative, or multi-criteria analysis.

All of these assumptions can heavily influence the output—and reliability—of an index. Using uncertainty and sensitivity analysis, we systematically evaluated the impact that the methodological and conceptual choices highlighted above have on the robustness of the EPI scoring and ranking.

Our study aimed to answer the following questions:

1. How do the EPI ranks compare to the most likely ranks under alternative scenarios?
2. What is the optimal set of assumptions for each country?
3. Which countries have the most volatile ranks and why?
4. What are the major sources of variability in the EPI rankings?
5. What are the confidence intervals for the country scores and ranks in the policy categories?

G.1. Our approach

We focus on three central methodological issues related to the construction of the 2006 EPI: (1) variability in the target values, (2) the weighting of the indicators, and (3) aggregation of the indicators as opposed to aggregation at the category level. There are 18 uncertain input factors in our analysis that are described in Table G1. The factors X_1 to X_{16} determine the target value for each of the 16 indicators.

These factors follow a uniform distribution in the range for each target, low or high 10th percentile of the relevant indicator. The target values are sampled independently of one another. Next, trigger X_{17} determines the set of weights, be it either the current set of weights based on principal components analysis, or equal weighting within each category. Finally, trigger X_{18} determines the level of aggregation, either at the current six categories, or at one category. In the latter case, the trigger X_{17} would result in equal weighting for all 16 indicators. In order to sample in the most representative way, within this space of uncertainties, we have selected an **LP-τ** sampling scheme (Sobol, 1967) of size N=19,456 for the purposes of the sensitivity analysis.

All these uncertainties are translated into a set of N combinations of scalar input factors, which are sampled from their distributions in a Monte Carlo simulation framework. The composite index is then evaluated N times, and the EPI scores and ranks obtained are associated with the corresponding draws of uncertain factors to appraise their influence. When several layers of uncertainty are simultaneously activated composite indicators turn out to be non-linear, possibly non-additive models, due to interactions between the uncertain input factors (Saisana et al. 2005). As a result, all EPI scores and ranks are non-linear functions of the uncertain input factors, and the purpose of the Uncertainty Analysis (UA) is the estimation of their probability distribution functions (PDF).

As argued by practitioners (Saltelli et al., 2000b, EPA, 2004), robust, "model-free" techniques for sensitivity analysis should be used for non-linear models. Variance-based techniques have been shown to yield useful results for sensitivity analysis. The discussion of their methodological formulation to compute sensitivity measures that account for the interaction between the input factors goes beyond the scope of this report (Saltelli et al., 2000a). Here we only display those additional properties of model-free variance-based techniques that are convenient for the present analysis:

- they allow an exploration of the whole range of variation of the input factors, instead of just sampling factors over a limited number of values, as done in other techniques, e.g. in fractional factorial design (Box et al., 1978);
- they are quantitative, and can distinguish main effects (first order) from interaction effects (second and higher order);
- they are easy to interpret and to explain;
- they allow for a sensitivity analysis in which uncertain input factors are treated in groups instead of individually.

1. How do the EPI ranks compare to the most likely ranks under all scenarios?

The Uncertainty Analysis results of the 133 country ranks are given in Figure G1. Countries are ordered by their original 2006 EPI rank. For ease of reading, the countries in Figure 1 are split into three groups according to original 2006 EPI rank: beginning with New Zealand (original EPI rank =1) to Bulgaria (rank = 50) in the top graph; Ukraine (rank = 51) to Cameroon (rank =100) in the center graph; and Swaziland (rank = 101) to Niger (rank =133) in the bottom graph.

The width of the 5th–95th percentile bounds and the generally small deviation of the median rank (black hyphen) from the original EPI rank (grey hyphen) demonstrate that there are only differences between the Monte Carlo and Pilot EPI ranks. For about 95 countries the difference between the original 2006 EPI rank and the median rank when considering different approaches/assumptions is less than 15 positions. This outcome implies a reasonably high degree of robustness for the EPI. In fact, for most of the countries, the range of possible ranks is very close to the actual 2006 EPI rank.

The dominant source for the observed deviations arises from the aggregation process and its combined effect with the selection of weights. For the countries in the top group this average difference is nine positions, which increases to 14 positions for the center group and seven for the bottom group. But given the potential degree of movement, these ranges are quite narrow.

The greatest differences between the 2006 EPI rank and the median rank in the simulations are for Jordan, Egypt, Uganda, Zambia, and Laos. Jordan and Egypt appear 25 positions higher in the 2006 EPI than their median rank in our modeling of alternative weighting. Uganda, Zambia and Laos are 25 positions lower than their median rank in our simulations.

As Figure G1 demonstrates, countries at the high end of the EPI ranking do not have wide variations in their ranks under alternative scenarios. The exceptions to this rule are Germany, Slovenia, Poland, and South Korea. In each of these cases the country could be ranked substantially lower under other assumptions. Among the middle tier countries, there is a somewhat higher degree of variability. Among the low-ranked countries, the variability is again quite small, with a few exceptions including Guinea, Congo, and Laos. This produces a quite high degree of confidence that most countries are ranked roughly in the correct place.

Table G1: EPI Ranking and Optimal Rank for Each Country Under All Tested Combinations of Uncertainty Inputs

Country	EPI Rank	Best Rank	Country	EPI Rank	Best Rank	Country	EPI Rank	Best Rank
New Zealand	1	1	Gabon	46	9	Malawi	91	30
Sweden	2	1	United Arab Em.	47	47	Namibia	92	54
Finland	3	2	Suriname	48	16	Kenya	93	73
Czech Rep.	4	4	Turkey	49	47	China	94	94
United Kingdom	5	4	Bulgaria	50	49	Azerbaijan	95	95
Austria	6	4	Ukraine	51	48	Papua New Guinea	96	78
Denmark	7	7	Honduras	52	15	Syria	97	97
Canada	8	5	Iran	53	53	Zambia	98	35
Malaysia	9	6	Dominican Rep.	54	39	Viet Nam	99	96
Ireland	10	9	Philippines	55	27	Cameroon	100	55
Portugal	11	11	Nicaragua	56	17	Swaziland	101	94
France	12	12	Albania	57	36	Laos	102	51
Iceland	13	10	Guatemala	58	25	Togo	103	90
Japan	14	13	Saudi Arabia	59	59	Turkmenistan	104	103
Costa Rica	15	1	Oman	60	60	Uzbekistan	105	105
Switzerland	16	12	Thailand	61	61	Gambia	106	106
Colombia	17	5	Paraguay	62	30	Senegal	107	104
Norway	18	15	Algeria	63	62	Burundi	108	95
Greece	19	19	Jordan	64	63	Liberia	109	93
Australia	20	20	Peru	65	61	Cambodia	110	76
Italy	21	19	Mexico	66	66	Sierra Leone	111	94
Germany	22	20	Sri Lanka	67	52	Congo	112	70
Spain	23	23	Morocco	68	68	Guinea	113	75
Taiwan	24	24	Armenia	69	69	Haiti	114	114
Slovakia	25	21	Kazakhstan	70	60	Mongolia	115	115
Chile	26	13	Bolivia	71	56	Madagascar	116	98
Netherlands	27	27	Ghana	72	45	Tajikistan	117	107
USA	28	26	El Salvador	73	62	India	118	118
Cyprus	29	25	Zimbabwe	74	38	Dem. Rep. Congo	119	87
Argentina	30	17	Moldova	75	68	Guinea-Bissau	120	101
Slovenia	31	26	South Africa	76	75	Mozambique	121	88
Russia	32	24	Georgia	77	66	Yemen	122	122
Hungary	33	33	Uganda	78	22	Nigeria	123	115
Brazil	34	7	Indonesia	79	74	Sudan	124	112
Trinidad & Tobago	35	21	Kyrgyzstan	80	63	Bangladesh	125	125
Lebanon	36	33	Nepal	81	53	Burkina Faso	126	102
Panama	37	10	Tunisia	82	82	Pakistan	127	127
Poland	38	35	Tanzania	83	29	Angola	128	111
Belgium	39	39	Benin	84	57	Ethiopia	129	120
Ecuador	40	19	Egypt	85	85	Mali	130	125
Cuba	41	32	Côte d'Ivoire	86	46	Mauritania	131	131
South Korea	42	41	Central Afr. Rep.	87	49	Chad	132	130
Jamaica	43	20	Myanmar	88	88	Niger	133	132
Venezuela	44	42	Rwanda	89	64			
Israel	45	45	Romania	90	89			

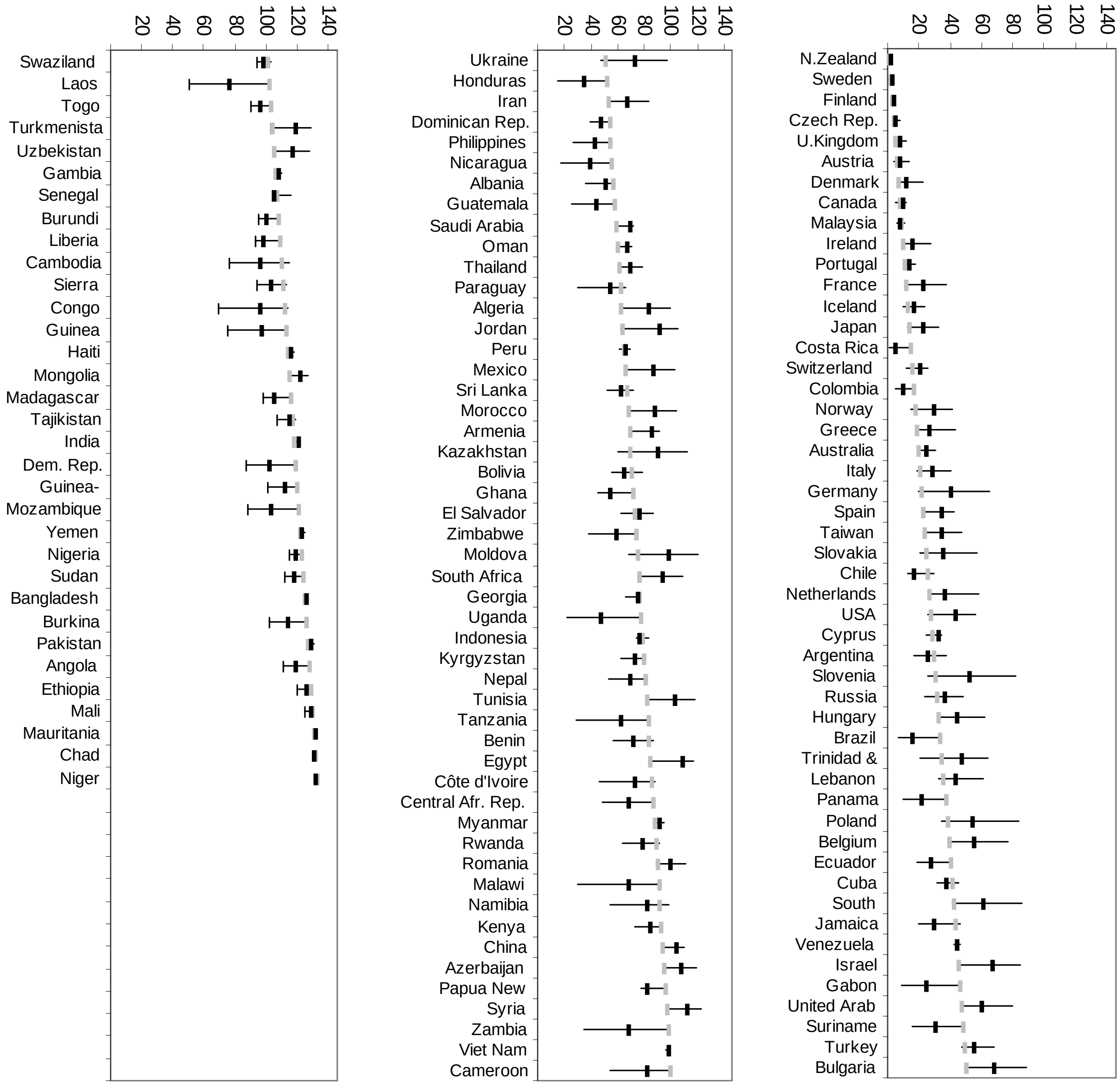


Figure G1: The Relationship between EPI Rank and Median Rank

Note: Grey marks correspond to actual EPI rank; black marks to median simulation rank. Whiskers show 5th and 95th percentiles (bounds) of simulation rank distribution.

2. What is the optimal scenario for each country?

Interpreting the fifth percentile of a country's rank distribution as its best rank under all assumptions made in the index, we generate Table G1, which shows the best possible rank for each country under alternative assumptions. The most pronounced improvement in performance among the top 50 countries is observed for Brazil, Panama, Ecuador, Jamaica, Gabon and Suriname, which gain some 21 to 37 positions in the ranking if the index were calculated according to a different structure (see Table G1). For example, Gabon greatly advances its rank from 46th to 9th if the targets are reset closer to the low or high 10th percentile and the aggregation takes place at the indicator level. Costa Rica could move up to the first position if aggregation takes place at the indicator level, irrespective of the changes in the other factors. In both cases, these shifts derive from the much greater weight on ecosystem issues when aggregation is undertaken at the indicator level.

Among the countries ranked between 51st and 100th in the EPI, the most pronounced improvement occurs for Uganda, Tanzania, Malawi and Zambia, which gain more than 50 positions in the ranking under alternative structures for the index. Uganda, for example, owes its improvement to the combined effect of less ambitious target values and aggregation at the indicators level.

Among the lowest-ranked 33 countries, Laos, Congo and Guinea display the most improvement, at 40 to 50 positions. For all three countries this is due to the combined effect of less ambitious target values and aggregation at the indicators level.

3. Which countries have the most volatile ranks and why?

We use the term "volatility" as a measure of the difference between a country's best and worst rank, given by its positions in the fifth and the 95th percentiles of the rank distribution simulations. For the first 10 countries in the 2005 ESI rankings, except for Guyana and Argentina, the volatility is very low, ranging from two to four positions. This limited volatility suggests that the EPI provides a robust measure of performance for those countries.

Table G2 presents the 20 countries that are affected strongly by the methodological choices made during the construction of the EPI. These countries, with a difference in their best and worst rank (5th and 95th percentiles) of some 40 to 63 positions, are ranked between 22nd (Germany) and 112th (Democratic Republic of Congo). Quite a few of those countries, such as Germany, Slovenia, Trinidad and Tobago, Poland, South Korea, Israel, and Bulgaria, are ranked among the top 50 in the EPI. The volatility of those countries' ranks can be attributed mainly to the choice of aggregation level as indicated by Sobol's sensitivity measures (Sobol, 1993) in their improved version (Saltelli, 2002).

Table G2: Most Volatile Countries in the EPI

Country	EPI Rank	Range of Simulation Ranks	Country	EPI Rank	Range of Simulation Ranks
Germany	22	[20, 65]	Moldova	75	[68, 121]
Slovenia	31	[26, 82]	Uganda	78	[22, 79]
Trinidad and Tobago	35	[21, 64]	Tanzania	83	[29, 83]
Poland	38	[35, 84]	Côte d'Ivoire	86	[46, 88]
South Korea	42	[41, 86]	Malawi	91	[30, 91]
Israel	45	[45, 85]	Namibia	92	[54, 98]
Bulgaria	50	[49, 89]	Zambia	98	[35, 98]
Ukraine	51	[48, 97]	Cameroon	100	[55, 100]
Jordan	64	[63, 106]	Laos	102	[51, 102]
Kazakhstan	70	[60, 112]	Congo	112	[70, 114]

Table G3: Current and Alternative Targets Where at Least 10% of the Countries Meet Target

EPI Indicator	Current set of targets	Alternative set of targets	EPI Indicator	Current set of targets	Alternative set of targets
OZONE	15	20	ENEFF	1650	1885
PM10	10	23	CO2GDP	0	65
INDOOR	0	0	RENPC	100	43
NLOAD	1	7	OVRFSH	1	3
OVRSUB	0	0	WATSUP	100	100
HARVEST	3	3	ACSAT	100	100
AGSUB	0	0	PWI	90	42
MORTALITY	0	0.3	PACOV	1	1

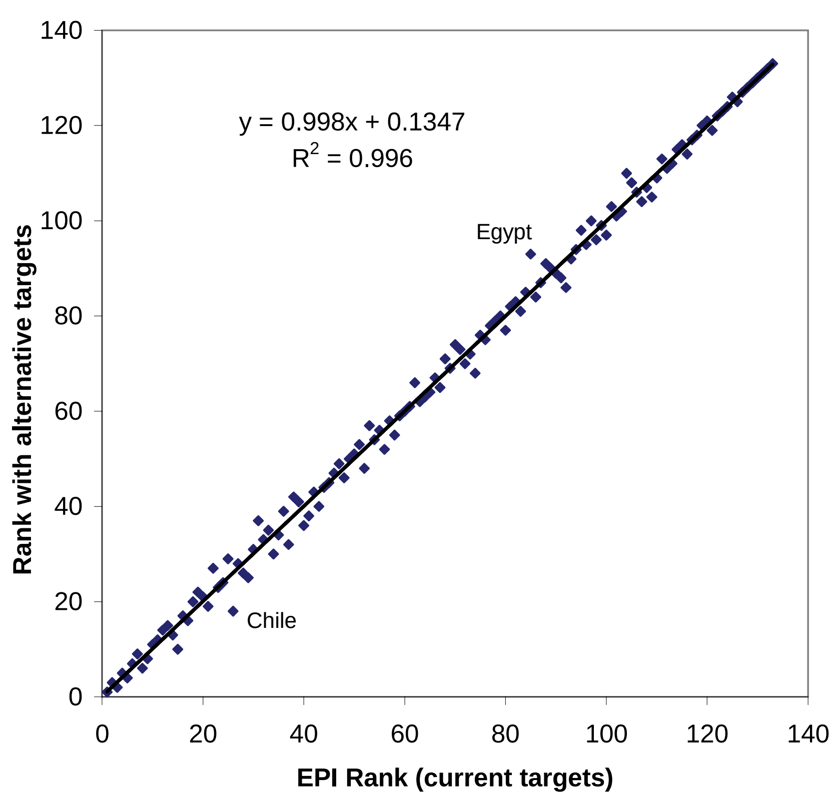


Figure G2: Current Targets v. Alternative Targets Where at Least 10% of Countries Meet Target

4. What are the sources of major impact on the variability of the EPI ranking?

At this point, we focus on the impact of each of the three assumptions independently. We undertake the following comparisons:

- current target values v. less strict target values (achieved by at least 10% of the countries);
- PCA-derived weights for the Environmental Health, Biodiversity and Habitat, and Sustainable Energy categories vs. equal weighting within each category;
- aggregation at the category level as opposed to indicator level.

Targets

It is reasonable to assume that less ambitious target values would mean that more countries meet the target. Tables G3 present the current target values and an alternative set chosen such that at least 10% of the countries reach or exceed the target (scaled back to 100 if target exceeded, per the EPI aggregation methodology). Note that the alternative target values for INDOOR, OVRSUB, HARVEST, AGSUB, WATSUP, ACSAT, and PACOV are equal to the current ones, as those indicators have at least 10% of the countries at the target already.

The countries most influenced by the choice of targets are Costa Rica, Chile, Panama, Zimbabwe, Namibia, Germany, Slovenia, Egypt, and Turkmenistan. But the alternative targets result in only moderate changes to their ranks, of between 5 to 8 places. Overall, as shown in Figure G2, the alternative set of target values has an average impact of 2 ranks and a very high rank-order correlation coefficient of 0.996. This strongly suggests that the choice of targets has very little effect on the rankings.

Principal components analysis-derived weights as opposed to equal weighting within categories

Equal weighting within each category would increase the weight of PM10 in the Environmental Health category, the weight of OVRSUB and HARVEST in the Biodiversity and Habitat category, and the weight of RENPC in the Sustainable Energy category. The countries whose EPI ranks are most affected by this change are given in Table G4.

The countries that improve their ranks the most are Russia, Trinidad and Tobago, Kazakhstan, Ghana, Uganda, Papua New Guinea, and Tajikistan. Spain, Jordan, Morocco, Armenia, and Egypt would fall most in the rankings. Overall, the weighting has an average impact of three ranks and a rank-order correlation coefficient of 0.987 (Figure G3). This modest effect suggests that the use of Principal Component Analysis weighting does not substantially affect EPI rankings.

Aggregation at the level of the policy categories as opposed to aggregation at the level of the indicators

Giving equal weights to the 16 indicators, instead of equal weights to the Environmental Health and Ecosystem Vitality broad objectives, offers another possible aggregation approach for the EPI.

Figure G4 compares the ranking obtained from both approaches. This analysis demonstrates that by changing the aggregation level the average shift of the top 30 and the bottom 30 countries of the EPI is about 10 positions. The shift of the remaining countries is about 23 positions on average.

As expected, middle-of-the-road performers display higher variability than the top and bottom countries. We find that by changing the aggregation level, the average impact is 18 ranks and the rank-order correlation coefficient is 0.707. Therefore, compared to the other two methodological choices in the development of the EPI, the choice of the aggregation level has the highest impact on the countries scores and respective ranks.

If aggregation is done at the level of indicators, Zambia and Uganda, for example, would improve their ranks by more than 50 positions (Table G5). On the contrary, countries such as Ukraine, Jordan, and Moldova would see their ranks decline by more than 40 positions.

The countries whose rankings move up the most under the indicator-based aggregation are those with relatively pristine conditions and low levels of economic development. The indicator-based aggregation scheme diminishes the emphasis placed on environmental health and lifts the weight given to ecosystem measures. Those whose ranks drop most significantly are in the opposite position, with relatively strong environmental health scores but degraded ecosystems.

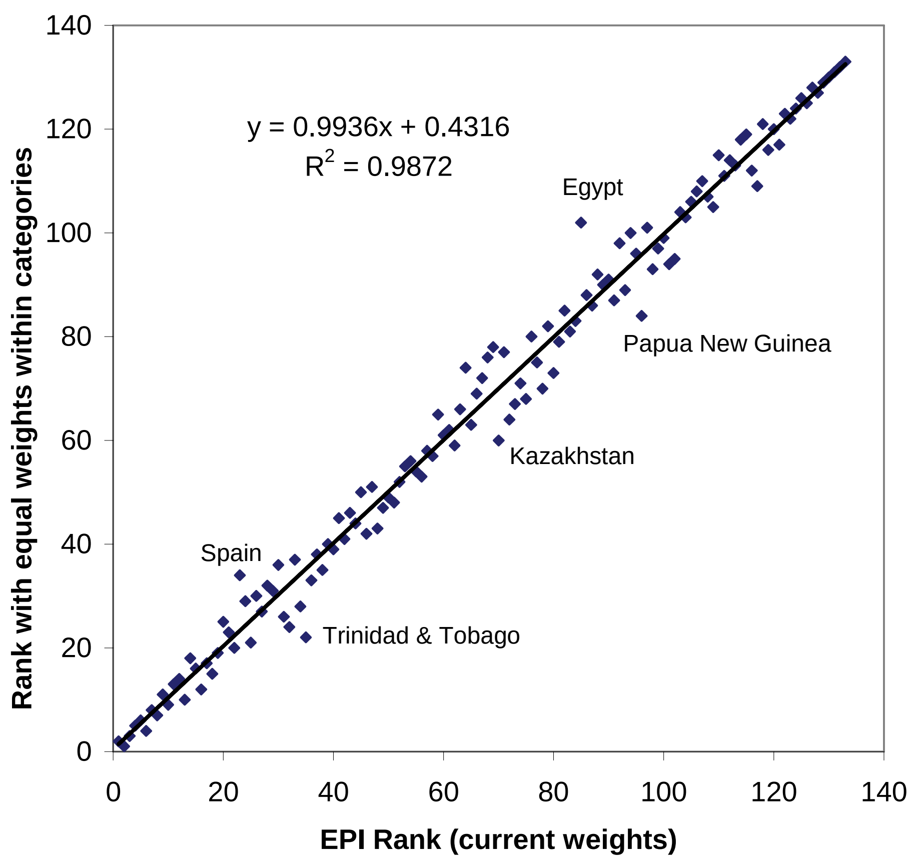


Figure G3: Current PCA-Derived Weights v. Equal Weights Within Categories

Table G4: Countries Most Affected by Choice of Level of Aggregation

		EPI Rank with Current Weights	Rank with Equal Weights	Change in Rank
Improvement	Russia	32	24	8
	Trinidad and Tobago	35	22	13
	Kazakhstan	70	60	10
	Ghana	72	64	8
	Uganda	78	70	8
	Papua New Guinea	96	84	12
	Tajikistan	117	109	8
Decline	Spain	23	34	-11
	Jordan	64	74	-10
	Morocco	68	76	-8
	Armenia	69	78	-9
	Egypt	85	102	-17
	Average change over 133 countries			*3*

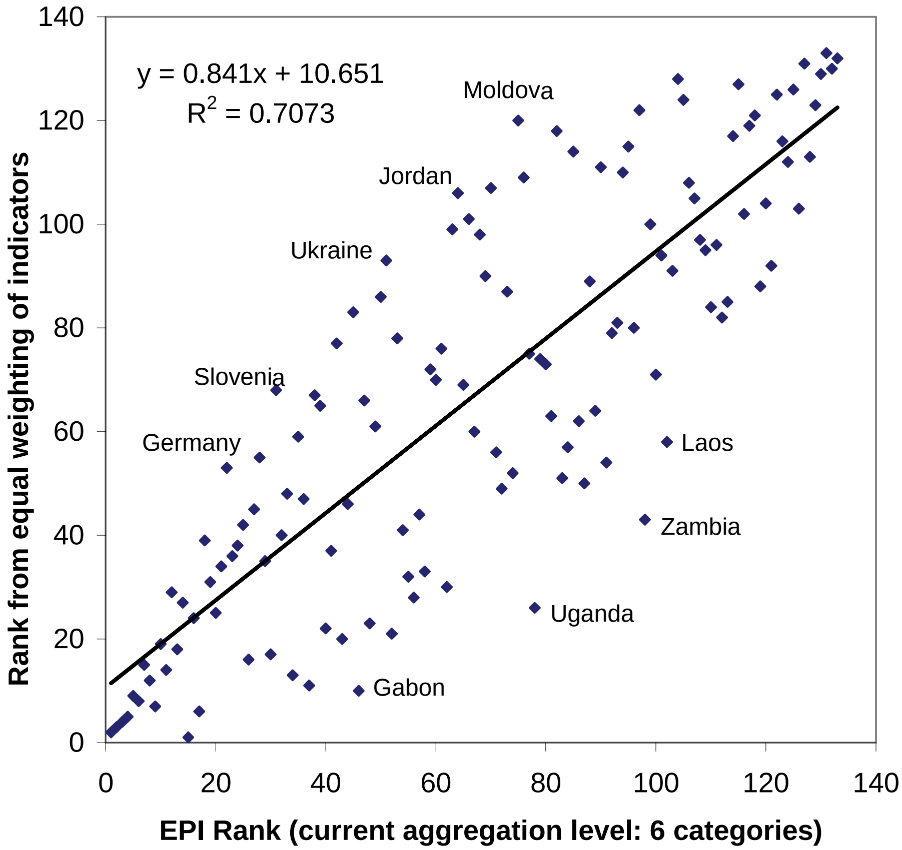


Figure G4: Aggregation at the Policy Category v. Indicator Level

Table G5: Most Impact with Aggregation at Policy Category v. Indicator Level

		EPI Rank with aggregation at category level	Rank with aggregation at indicator level	Change in Rank
Improvement	Gabon	46	10	36
	Paraguay	62	30	32
	Uganda	78	26	52
	Tanzania	83	51	32
	Central Afr. Rep.	87	50	37
	Malawi	91	54	37
	Zambia	98	43	55
	Laos	102	58	44
Decline	Slovenia	31	68	-37
	South Korea	42	77	-35
	Israel	45	83	-38
	Bulgaria	50	86	-36
	Ukraine	51	93	-42
	Algeria	63	99	-36
	Jordan	64	106	-42
	Mexico	66	101	-35
	Kazakhstan	70	107	-37
	Moldova	75	120	-45
	South Africa	76	109	-33
	Tunisia	82	118	-36
Average change over 133 countries				***18***

5. What are the confidence intervals for the countries scores and ranks in the policy categories?

We further assess the impact on the countries' scores and ranks within the EPI policy categories of the two remaining types of uncertainty: (1) the variability in the target values, and (2) the weighting of the indicators. The results are shown only for the three categories for which indicators were aggregated using PCA-derived weights, i.e. the Environmental Health (Table G6), the Biodiversity and Habitat (Table G7) and the Sustainable Energy (Table G8).

The top eight performing countries in the Environmental Health Category (Table G6) could all see their rank decline to the 8th or 9th position under alternative aggregation procedures. Most of the remaining country ranks' are very robust to the uncertainties with a shift of some 2 to 5 positions only, with a few notable exceptions for Albania, Bangladesh and Sudan whose rank could decline up to 8-9 positions. Overall, the average impact of the uncertainties on the median of the simulated ranks is just 1 position.

Compared to the previous policy category, country ranks are more volatile in the Biodiversity and Habitat Category (Table G7). Burkina Faso, for example, is ranked 8th in the EPI but could see its rank decline to 35th if less ambitious targets values are selected and with equally weight given to each indicators instead of using the PCA-derived weights. Jordan is another example of country that could see its Biodiversity and Habitat performance in a much lower position (from 56th to the 107th) for similar reasons. Overall, the average impact of the uncertainties on the median of the simulated ranks is 5 positions.

The top four performing countries in the Sustainable Energy category (Table G8) — Uganda, Mali, Democratic Republic of the Congo and Laos — can all occupy one of the two 2 ranks depending on the methodological choices. Interestingly, Mozambique could see its rank improve from 20th up to the 3rd if the indicators within this category receive equal weight.

The most volatile countries in this category are Iceland, Paraguay, Georgia and Zambia. These countries' ranks could fluctuate more than 50 positions. For example, countries that could improve their rank under a different methodological scenario are Zambia and Paraguay which could be ranked 8 or 9th position if the indicators that belong to this category receive equal weight. Overall, the average impact of the uncertainties on the median of the simulated ranks is 6 positions

Overall, the average impact of the uncertainties on the median of the simulated ranks is six positions. Media and policymakers look with increasing interest at composite indices as appealing tools to attract the attention of the global community, build narratives around issues of concern, and focus policy debates. Methodological gaps or fragilities in the design and construction of an index can lead to simplistic or misleading conclusions. Careful scrutiny of the methodological assumptions and construction design of any composite index is essential.

In this analysis, we assessed the validity of the EPI scoring and respective ranking by evaluating how sensitive the ranks are to the assumptions that underpin the EPI's structure: (1) variability in the target values selected, (2) the weighting of the indicators in each policy category, and (3) the choice of the aggregation level.

The main findings can be summarized as follows:

How do the EPI ranks compare to the most likely ranks under all scenarios?

The most likely (median) rank of a country considering all combinations of assumptions in the sensitivity analysis rarely deviates substantially from its actual EPI rank. For 95 out of 133 countries the difference between the EPI rank and the most likely (median) rank is less than 15 positions. This modest sensitivity of the EPI ranking to the choice of the targets, indicator weighting, and aggregation level implies a quite high degree of robustness of the index.

Which countries are most volatile and why?

The top four ranking countries in the EPI all have modest volatility (one to two positions). This small degree of sensitivity implies a robust evaluation of performance for those countries. The countries that present the highest volatility (between 50 and 63 positions) are between Slovenia (rank: 31) and Laos (rank: 102). Slovenia's volatility is due to the combined effect of all three assumptions. Laos's high volatility is mainly attributable to the effect of the choice of aggregation level.

What if alternative target values for the indicators are used?

The selection of less ambitious target values (up to levels that are met by 10% of the countries) plays a minor role in the sensitivity of the EPI ranking. For the set of 133 countries, the assumption of target values has an average impact of only 2 ranks.

What if equal weighting of the indicators within each category were used, instead of the PCA-derived weights?

An equal weighting approach within each of the six policy categories only affects the indicators within Environmental Health, Biodiversity and Habitat, and Sustainable Energy for which PCA weights were applied. Using equal weights within each category has a pronounced positive effect on the rank of only a few countries. Overall, the analysis shows only a small sensitivity to the weighting assumption with an average impact of three ranks.

What if aggregation is applied at the indicator level, instead of the category level?

An alternative weighting scheme that places equal weights on the 16 indicators, as opposed to equal weights on the two broad objectives, alters the EPI scores and ranks more than any other assumption. Because this choice makes a big difference in the ranks, it must be evaluated according to its analytical rationale, policy relevance, and implied value judgments.

Table G6: Ranges (Confidence Intervals) for the Scores and Ranks in the Environmental Health Policy Category

Rank	Rank Range	Country	Score	Score Range	Rank	Rank Range	Country	Score	Score Range	Rank	Rank Range	Country	Score	Score Range
1	[1, 8]	Sweden	99.4	[99.1, 100]	51	[50, 51]	Mexico	80.6	[79.8, 81.8]	101	[99, 101]	Tajikistan	38.0	[38.0, 41.4]
2	[2, 8]	France	99.2	[98.8, 100]	52	[52, 58]	Oman	79.5	[75.7, 80.1]	102	[97, 102]	Tanzania	37.3	[37.3, 42.4]
3	[3, 9]	Australia	99.0	[98.5, 100]	53	[50, 53]	Brazil	79.3	[79.3, 81.5]	103	[103, 104]	Côte d'Ivoire	34.8	[34.8, 38.1]
4	[4, 8]	Un. Kingdom	98.9	[98.5, 100]	54	[52, 54]	Ecuador	78.2	[78.2, 81.0]	104	[102, 104]	Pap. N. Guin.	34.1	[34.1, 40.2]
5	[5, 8]	Finland	98.8	[98.3, 100]	55	[55, 63]	Albania	77.7	[71.4, 77.9]	105	[104, 105]	Benin	33.1	[33.1, 37.9]
6	[6, 8]	Iceland	98.8	[98.3, 100]	56	[54, 56]	Tunisia	77.2	[76.9, 78.6]	106	[103, 106]	Uganda	31.7	[31.7, 37.8]
7	[7, 8]	Norway	98.8	[98.3, 100]	57	[56, 57]	Jamaica	76.4	[75.8, 77.5]	107	[107, 112]	Cameroon	31.4	[31.4, 33.6]
8	8	Germany	98.6	[98.0, 100]	58	[55, 58]	Morocco	75.7	[75.7, 78.6]	108	[106, 108]	Rwanda	31.1	[31.1, 36.8]
9	[8, 9]	Canada	98.6	[98.0, 100]	59	[57, 59]	Panama	75.6	[75.2, 76.7]	109	[107, 109]	Burundi	30.6	[30.6, 36.2]
10	10	Ireland	98.6	[98.0, 100]	60	[59, 60]	Suriname	75.1	[74.8, 76.4]	110	[109, 110]	Swaziland	30.0	[30.0, 35.5]
11	11	Denmark	98.5	[97.9, 100]	61	[61, 67]	Egypt	74.6	[68.6, 74.8]	111	[110, 111]	Malawi	29.6	[29.6, 34.6]
12	[12, 14]	Switzerland	98.3	[97.5, 99.7]	62	[62, 65]	Syria	72.3	[69.4, 73.0]	112	[112, 116]	Mauritania	28.4	[28.3, 28.9]
13	[12, 13]	Un. States	98.3	[97.6, 99.7]	63	[60, 63]	South Africa	71.8	[71.8, 75.2]	113	[111, 113]	Togo	28.3	[28.3, 33.7]
14	[12, 16]	N. Zealand	97.9	[97.7, 98.9]	64	[64, 65]	Thailand	71.0	[69.5, 71.9]	114	[113, 114]	Cent. Afr. R.	26.6	[26.6, 31.7]
15	[14, 15]	Austria	97.7	[96.6, 99.0]	65	[61, 65]	Kazakhstan	70.8	[70.8, 74.1]	115	[115, 123]	Sudan	24.5	[22.6, 24.6]
16	[15, 16]	Japan	97.6	[96.5, 98.9]	66	[66, 67]	Armenia	70.2	[68.4, 71.1]	116	[115, 117]	Zambia	24.0	[24.0, 27.6]
17	17	Portugal	97.4	[96.2, 98.7]	67	[62, 67]	Dominican R.	69.2	[69.2, 71.8]	117	[114, 118]	Liberia	23.3	[23.3, 29.2]
18	[18, 21]	Czech Rep.	97.3	[95.9, 98.4]	68	68	Honduras	66.1	[66.1, 68.3]	118	[115, 118]	Madagascar	23.3	[23.3, 29.0]
19	[18, 19]	Slovenia	97.3	[96.0, 98.6]	69	[69, 70]	Peru	64.8	[64.7, 66.2]	119	[119, 120]	Nigeria	23.0	[23.0, 24.4]
20	[19, 20]	Netherlands	97.1	[95.8, 98.4]	70	[70, 71]	Guatemala	64.4	[64.4, 66.0]	120	[118, 120]	Laos	21.3	[21.3, 27.2]
21	[21, 23]	Spain	97.0	[95.5, 98.2]	71	[69, 71]	El Salvador	64.1	[64.1, 66.9]	121	[119, 121]	Sierra Leone	20.4	[20.4, 25]
22	[19, 22]	Belgium	96.6	[95.8, 97.9]	72	[72, 75]	Paraguay	63.7	[61.7, 64.4]	122	[122, 124]	Congo	19.4	[19.4, 22.4]
23	[22, 23]	Slovakia	96.4	[95.4, 97.7]	73	[72, 73]	Philippines	63.5	[63.5, 65.9]	123	[121, 123]	Cambodia	18.3	[18.3, 22.9]
24	[24, 25]	Greece	96.3	[94.4, 97.5]	74	[73, 74]	Nicaragua	62.5	[62.5, 65.5]	124	[124, 125]	Guinea	17.2	[17.2, 21.8]
25	[25, 27]	Israel	95.9	[93.8, 97.0]	75	[75, 78]	Georgia	61.8	[59.9, 62.6]	125	[125, 126]	Guinea-Bis.	17.1	[17.1, 20.2]
26	[24, 26]	Italy	95.3	[94.4, 96.6]	76	[76, 79]	Sri Lanka	61.3	[59.6, 62.0]	126	[122, 126]	Mozambique	16.7	[16.7, 22.8]
27	[27, 28]	Poland	95.0	[93.5, 96.3]	77	[76, 77]	Romania	61.2	[60.9, 62.2]	127	127	D. R. Congo	12.8	[12.8, 18.8]
28	[28, 29]	Hungary	94.2	[93.1, 95.5]	78	[74, 78]	Gabon	61.0	[61.0, 65.3]	128	128	Ethiopia	10.4	[10.4, 14.1]
29	[26, 29]	Trin. & Tob.	94.1	[93.7, 95.8]	79	[77, 79]	China	61.0	[59.8, 61.8]	129	129	Burk. Faso	9.9	[9.9, 12.2]
30	30	Ukraine	93.8	[92.8, 95.1]	80	[80, 81]	Azerbaijan	59.2	[57.5, 59.9]	130	[130, 131]	Mali	8.6	[7.9, 8.6]
31	[31, 34]	Bulgaria	93.7	[91.6, 94.8]	81	[81, 82]	Uzbekistan	57.7	[56.9, 58.5]	131	[130, 131]	Angola	7.8	[7.8, 9.0]
32	[32, 35]	Taiwan	93.5	[91.1, 94.6]	82	[80, 82]	Turkmenistan	57.4	[57.4, 59.0]	132	132	Niger	1.0	[0.9, 1.0]
33	[31, 33]	S. Korea	93.5	[92.2, 94.7]	83	[83, 84]	Indonesia	53.9	[52.5, 54.6]	133	133	Chad	0.0	[0, 0]
34	[33, 34]	Lebanon	93.4	[92.0, 94.7]	84	[83, 84]	Kyrgyzstan	53.7	[53.7, 57.5]					
35	[35, 37]	Un. Arab Em.	92.7	[89.4, 93.5]	85	[85, 86]	Bolivia	53.6	[51.9, 54.2]					
36	[31, 36]	Russia	92.3	[92.0, 94.0]	86	[86, 87]	Zimbabwe	49.9	[49.9, 52.3]					
37	[37, 38]	Cyprus	90.4	[88.5, 91.5]	87	[85, 87]	Ghana	48.8	[48.8, 53.3]					
38	[36, 38]	Malaysia	88.7	[88.7, 90.9]	88	88	Mongolia	47.8	[47.8, 49.9]					
39	[39, 40]	Chile	87.2	[85.1, 88.2]	89	[89, 90]	Myanmar	47.3	[47.0, 48.0]					
40	[40, 41]	Argentina	86.7	[84.3, 87.7]	90	[90, 96]	Pakistan	46.1	[42.4, 46.3]					
41	[41, 44]	Iran	85.7	[83.3, 86.6]	91	[91, 92]	Viet Nam	44.4	[44.4, 46.6]					
42	[42, 46]	Jordan	85.5	[82.9, 86.5]	92	[89, 92]	Nepal	44.1	[44.1, 48.1]					
43	[43, 47]	Algeria	85.1	[82.6, 86.0]	93	[91, 93]	Namibia	43.9	[43.9, 47.5]					
44	[39, 44]	Cuba	85.1	[85.1, 87.4]	94	[93, 94]	India	43.8	[43.8, 44.9]					
45	[43, 45]	Turkey	84.6	[83.3, 85.7]	95	[95, 98]	Yemen	40.7	[40.6, 41.5]					
46	[46, 53]	Saudi Ar.	83.6	[79.5, 84.3]	96	[96, 100]	Senegal	39.9	[39.9, 40.9]					
47	[42, 47]	Colombia	82.4	[82.4, 84.9]	97	[97, 101]	Gambia	39.3	[39.3, 40.3]					
48	[45, 49]	Venezuela	81.8	[81.8, 84.0]	98	[95, 98]	Haiti	38.4	[38.4, 42.7]					
49	[48, 49]	Moldova	81.7	[81.7, 83.7]	99	[99, 108]	Bangladesh	38.2	[35.4, 38.4]					
50	[49, 50]	Costa Rica	81.1	[81.1, 82.9]	100	[94, 100]	Kenya	38.0	[38.0, 42.7]					

Table G7: Ranges (Confidence Intervals) for the Scores and Ranks in the Biodiversity and Habitat Policy Category

Rank	Rank Range	Country	Score	Score Range	Rank	Rank range	Country	Score	Score Range	Rank	Rank Range	Country	Score	Score Range
1	[1, 3]	Benin	88.1	[88.1, 100]	51	[38, 57]	Thailand	60.2	[60.2, 77]	101	[93, 108]	Algeria	37.8	[37.8, 52.8]
2	[2, 9]	Venezuela	88.0	[88, 98.8]	52	[43, 52]	Un. Kingdom	58.8	[58.8, 78.8]	102	[88, 112]	Burundi	37.2	[37.2, 50.3]
3	[2, 5]	Jamaica	86.1	[86.1, 99.9]	53	[53, 58]	Peru	57.4	[57.4, 71.3]	103	[88, 103]	Romania	36.8	[36.8, 58.4]
4	[4, 6]	Panama	83.2	[83.2, 99.7]	54	[44, 65]	Sri Lanka	56.5	[56.5, 71.8]	104	[73, 104]	Liberia	36.7	[36.7, 63.9]
5	[3, 5]	Cambodia	82.7	[82.7, 100]	55	[42, 62]	Sierra Leone	56.2	[56.2, 75.1]	105	[76, 105]	Norway	35.8	[35.8, 61.3]
6	[4, 6]	Zambia	81.6	[81.6, 100]	56	[56, 107]	Jordan	56.0	[48.3, 63.3]	106	[81, 107]	Pap. N. Guin	34.3	[34.3, 58]
7	[3, 7]	Costa Rica	80.3	[80.3, 100]	57	[43, 61]	Sweden	55.6	[55.6, 75.6]	107	[85, 107]	Trin. & Tob.	32.0	[32, 58.6]
8	[8, 35]	Burkina Faso	80.0	[75.1, 91]	58	[58, 93]	Un. Arab.Em.	55.6	[55.6, 56]	108	[94, 110]	Georgia	31.8	[31.8, 55]
9	[7, 9]	Honduras	78.1	[78.1, 98.5]	59	[47, 65]	Canada	55.2	[55.2, 73.7]	109	[102, 109]	Turkey	31.8	[31.8, 52.4]
10	[8, 10]	Laos	76.1	[76.1, 96]	60	[50, 104]	Armenia	55.0	[50.5, 67.2]	110	[108, 120]	Bulgaria	30.9	[30.9, 44.2]
11	[11, 18]	Tanzania	74.1	[74.1, 91.2]	61	[61, 100]	Morocco	54.7	[53.2, 55.7]	111	[111, 116]	Turkmenistan	30.3	[30.3, 45.1]
12	[12, 15]	Uganda	73.6	[73.6, 91.1]	62	[56, 63]	Portugal	54.6	[54.6, 70.5]	112	[98, 114]	Poland	29.1	[29.1, 53.2]
13	[10, 13]	New Zealand	73.5	[73.5, 94]	63	[45, 63]	Finland	54.3	[54.3, 77.6]	113	[92, 113]	Austria	28.8	[28.8, 56.2]
14	[11, 21]	Central Afr. R.	72.9	[72.9, 91.5]	64	[45, 64]	D. R. Congo	54.3	[54.3, 75.9]	114	[93, 115]	Switzerland	28.5	[28.5, 55.2]
15	[15, 25]	Mongolia	71.7	[71.7, 89.2]	65	[59, 65]	Kenya	54.1	[54.1, 70.4]	115	[100, 116]	Greece	27.4	[27.4, 53.1]
16	[12, 24]	Malaysia	71.5	[71.5, 90.2]	66	[49, 66]	Cameroon	54.0	[54, 76.6]	116	[101, 118]	Ireland	26.3	[26.3, 52.8]
17	[13, 25]	Czech Rep.	71.4	[71.4, 89]	67	[61, 77]	France	50.9	[50.9, 67.6]	117	[116, 117]	Netherlands	26.1	[26.1, 44.8]
18	[18, 36]	Dominican R.	70.9	[70.9, 85.4]	68	[53, 68]	Brazil	50.5	[50.5, 72]	118	[111, 124]	Bangladesh	25.3	[25.3, 37.7]
19	[11, 19]	Côte d'Ivoire	70.7	[70.7, 93.7]	69	[69, 87]	Azerbaijan	50.1	[50.1, 59.7]	119	[119, 127]	Egypt	23.9	[23.9, 28.2]
20	[20, 29]	Japan	70.4	[70.4, 86.7]	70	[60, 78]	Ghana	50.1	[50.1, 68.5]	120	[103, 121]	Slovenia	23.5	[23.5, 51.1]
21	[11, 21]	Nicaragua	69.4	[69.4, 93.8]	71	[71, 77]	Argentina	49.8	[49.8, 61.7]	121	[120, 130]	Pakistan	23.0	[22.9, 25.7]
22	[13, 22]	Guatemala	69.0	[69, 91.9]	72	[70, 105]	Australia	49.5	[49.5, 55.8]	122	[106, 122]	Albania	22.2	[22.2, 50.4]
23	[22, 34]	Philippines	69.0	[69, 85.4]	73	[70, 76]	Italy	48.8	[48.8, 64.1]	123	[114, 124]	Gambia	21.2	[21.2, 44.7]
24	[24, 32]	Togo	68.5	[68.5, 84.3]	74	[65, 74]	Tajikistan	48.7	[48.7, 67.3]	124	[117, 124]	Germany	21.1	[21.1, 43.8]
25	[17, 38]	Chile	68.4	[68.4, 89.1]	75	[74, 90]	Mexico	48.5	[48.5, 59.2]	125	[119, 125]	Lebanon	20.2	[20.2, 42.1]
26	[22, 40]	China	68.2	[68.2, 86.6]	76	[76, 83]	Iran	48.0	[48, 60.6]	126	[122, 126]	El Salvador	18.9	[18.9, 40.4]
27	[18, 41]	Kyrgyzstan	68.1	[68.1, 88.3]	77	[67, 82]	Hungary	47.7	[47.7, 63.4]	127	[125, 127]	Haiti	17.4	[17.4, 31.7]
28	[26, 71]	Namibia	68.0	[60, 84]	78	[64, 81]	Angola	47.3	[47.3, 67.3]	128	128	Syria	17.1	[17.1, 26.7]
29	[29, 38]	Senegal	67.6	[67.6, 80.6]	79	[64, 110]	Israel	47.3	[45.6, 59.8]	129	129	Moldova	16.8	[16.8, 26.4]
30	[20, 44]	Zimbabwe	67.5	[67.5, 87.2]	80	[55, 80]	Guin.-Bissau	47.3	[47.3, 72.5]	130	[126, 130]	Belgium	16.7	[16.7, 27.9]
31	[19, 32]	Taiwan	67.3	[67.3, 87.7]	81	[80, 118]	South Africa	47.2	[43.2, 52.3]	131	131	Yemen	13.7	[13.7, 22.5]
32	[21, 39]	Suriname	66.9	[66.9, 83.6]	82	[62, 86]	Slovakia	45.8	[45.8, 66.8]	132	132	Mauritania	5.9	[5.9, 18.6]
33	[30, 46]	United States	66.9	[66.9, 81.1]	83	[72, 90]	Mali	45.0	[45, 60.5]	133	133	Tunisia	5.1	[5.1, 7.5]
34	[24, 37]	Bolivia	66.6	[66.6, 84.4]	84	[84, 95]	Paraguay	43.8	[43.8, 56]					
35	[23, 41]	Indonesia	66.0	[66, 83.1]	85	[82, 121]	Ethiopia	43.5	[41.9, 50.2]					
36	[31, 54]	Cuba	66.0	[66, 80.7]	86	[73, 86]	Viet Nam	42.8	[42.8, 63]					
37	[28, 39]	Malawi	64.6	[64.6, 83.9]	87	[66, 87]	Myanmar	42.7	[42.7, 65.8]					
38	[33, 51]	Ecuador	64.6	[64.6, 80.1]	88	[72, 88]	Nigeria	42.0	[42, 64]					
39	[26, 45]	Guinea	64.3	[64.3, 81.3]	89	[79, 96]	Sudan	41.3	[41.3, 59.8]					
40	[24, 40]	Congo	64.1	[64.1, 85.3]	90	[89, 109]	Oman	41.0	[41, 51.3]					
41	[28, 48]	Iceland	63.7	[63.7, 80.7]	91	[69, 91]	Denmark	41.0	[41, 64.8]					
42	[40, 52]	Rwanda	63.2	[63.2, 76.6]	92	[92, 99]	Ukraine	40.0	[40, 54.5]					
43	[29, 55]	Gabon	62.5	[62.5, 77.7]	93	[93, 115]	India	39.8	[39.8, 47.5]					
44	[44, 68]	Spain	62.1	[61.8, 70.4]	94	[80, 94]	Mozambique	39.7	[39.7, 60.2]					
45	[30, 45]	Cyprus	62.0	[62, 82.7]	95	[84, 100]	Madagascar	39.5	[39.5, 58.3]					
46	[33, 52]	Russia	61.0	[61, 77.5]	96	[80, 98]	South Korea	39.4	[39.4, 60.1]					
47	[35, 47]	Nepal	60.5	[60.5, 80.5]	97	[97, 124]	Niger	39.0	[35, 40.5]					
48	[48, 62]	Chad	60.5	[60.5, 69.7]	98	[78, 105]	Swaziland	38.8	[38.8, 58.9]					
49	[37, 49]	Colombia	60.3	[60.3, 79.7]	99	[97, 102]	Kazakhstan	38.4	[38.4, 54.4]					
50	[50, 91]	Saudi Arabia	60.2	[55.2, 66.9]	100	[100, 113]	Uzbekistan	38.3	[38.3, 46.7]					

Table G8: Ranges (Confidence Intervals) for the Scores and Ranks in the Sustainable Energy Policy Category

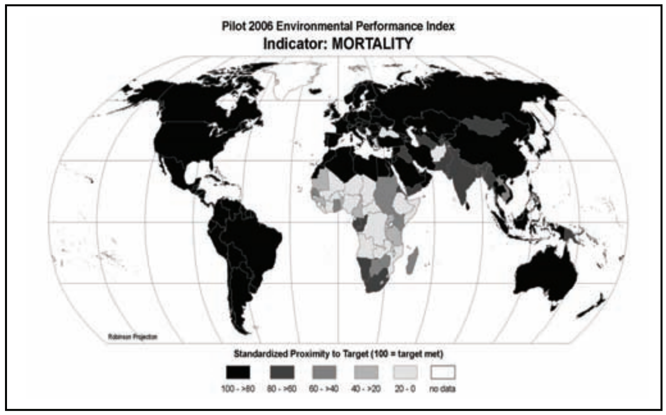
Rank	Rank Range	Country	Score	Score Range	Rank	Rank Range	Country	Score	Score Range	Rank	Rank Range	Country	Score	Score Range
1	[1, 4]	Uganda	92.4	[80.8, 100]	51	[51, 77]	Sierra Leone	78.3	[58.3, 81]	101	[101, 105]	Yemen	59.2	[44, 61.3]
2	[2, 5]	Mali	92.1	[79.6, 100]	52	[45, 52]	Côte d'Ivoire	78.2	[62.5, 83.1]	102	[40, 102]	Georgia	58.2	[56.8, 73.9]
3	[1, 3]	Dem. R. Congo	90.1	[86.8, 96.7]	53	[53, 58]	Spain	78.0	[60.2, 82.2]	103	[103, 106]	Oman	57.6	[42.7, 59.7]
4	[2, 4]	Laos	89.8	[86.1, 95.9]	54	[50, 54]	Argentina	77.8	[61.3, 82.6]	104	[102, 104]	Egypt	57.2	[44.1, 59.9]
5	[5, 42]	Cambodia	89.1	[68, 91.3]	55	[55, 75]	U. Kingdom	77.8	[58, 80.8]	105	[104, 106]	Slovakia	56.0	[42.7, 58.6]
6	[6, 31]	Cent. Afr. Rep.	88.8	[69.9, 93.3]	56	[56, 78]	Senegal	77.6	[57.8, 80.3]	106	[106, 108]	Cuba	55.2	[41.1, 57.8]
7	[7, 53]	Chad	88.8	[66, 89.7]	57	[12, 57]	Norway	76.5	[72, 87.2]	107	[107, 110]	Poland	54.7	[41.1, 56.5]
8	[7, 24]	Burundi	88.8	[70.8, 94]	58	[33, 58]	Kenya	76.5	[63.7, 82.6]	108	[108, 114]	South Africa	53.3	[39.8, 55.1]
9	[8, 22]	Guinea	88.6	[71, 93.9]	59	[59, 82]	Israel	76.0	[56.4, 78.8]	109	[109, 115]	Czech Rep.	51.9	[39.1, 53.8]
10	[10, 32]	Myanmar	88.3	[69.5, 92.5]	60	[49, 60]	Finland	75.7	[60.2, 80.8]	110	[110, 116]	Jordan	51.7	[38.6, 53.5]
11	[11, 44]	Rwanda	87.3	[66.8, 91]	61	[15, 61]	Albania	75.6	[66.7, 86.8]	111	[107, 111]	China	50.8	[39.9, 53]
12	[5, 12]	Malawi	86.5	[77.9, 95.7]	62	[62, 83]	Tunisia	75.3	[56.1, 78]	112	[112, 117]	Mauritania	50.3	[37.9, 51.9]
13	[13, 47]	Burk. Faso	86.5	[66.1, 90.1]	63	[63, 80]	Netherlands	75.3	[56, 78.4]	113	[109, 113]	Romania	47.3	[38.1, 50]
14	[6, 14]	Nepal	86.4	[73.8, 94.1]	64	[64, 79]	Morocco	75.1	[56.5, 78]	114	[113, 115]	Armenia	45.2	[35.9, 48.3]
15	[6, 15]	Costa Rica	86.0	[77.3, 95.3]	65	[61, 65]	Angola	74.9	[58.3, 78.8]	115	[115, 119]	Jamaica	42.7	[32, 44.5]
16	[7, 16]	Cameroon	85.3	[73.4, 93.4]	66	[66, 85]	Togo	74.8	[56, 77.3]	116	[86, 116]	Kyrgyzstan	38.3	[38.3, 57.2]
17	[17, 43]	Haiti	84.8	[65.7, 89]	67	[67, 76]	Greece	74.7	[56.6, 78.1]	117	[117, 120]	Iran	36.6	[27.9, 37.9]
18	[17, 18]	Switzerland	84.7	[70.3, 90.4]	68	[39, 68]	Chile	74.6	[61.5, 80.5]	118	[118, 121]	U. Arab Em.	34.3	[24.6, 36.4]
19	[19, 21]	Ethiopia	84.1	[69.7, 90.1]	69	[9, 69]	Zambia	74.2	[74.2, 84.1]	119	[119, 123]	Saudi Arabia	33.1	[24.4, 34.5]
20	[3, 31]	Mozambique	84.0	[84, 90.6]	70	[70, 88]	Cyprus	73.9	[54.8, 76.6]	120	[117, 120]	Venezuela	32.1	[28.7, 39.1]
21	[21, 48]	Swaziland	83.9	[64.6, 88.2]	71	[23, 71]	N. Zealand	73.4	[63.3, 81.1]	121	[121, 124]	Bulgaria	28.1	[21.8, 29.2]
22	[22, 46]	Sudan	83.8	[64.9, 88]	72	[52, 72]	Honduras	73.2	[59, 78.1]	122	[122, 124]	Syria	22.0	[20.2, 25.9]
23	[23, 65]	Niger	83.6	[62.3, 86.1]	73	[73, 89]	Belgium	73.2	[54.3, 76.2]	123	[111, 123]	Suriname	19.1	[19.1, 42]
24	[13, 24]	Peru	83.5	[70.6, 90.9]	74	[69, 74]	Slovenia	72.6	[56.6, 76.8]	124	[112, 124]	Tajikistan	16.9	[16.9, 41.5]
25	[25, 66]	Gambia	83.5	[62.2, 85.9]	75	[75, 92]	Guin.-Bissau	72.1	[53.7, 74.6]	125	125	Russia	15.5	[13, 16.9]
26	[18, 26]	Namibia	83.4	[69.4, 90.2]	76	[59, 76]	Nicaragua	71.3	[57, 75.5]	126	[126, 128]	Mongolia	8.7	[6.7, 8.8]
27	[25, 30]	Pap. N. Guin.	83.3	[67.2, 89]	77	[77, 91]	Taiwan	70.7	[53, 73.6]	127	[126, 127]	Kazakhstan	8.5	[7.7, 9.8]
28	[11, 28]	Ghana	83.3	[71.5, 91]	78	[8, 82]	Paraguay	69.9	[69.9, 78.9]	128	[127, 128]	Azerbaijan	8.0	[7.2, 9]
29	[10, 29]	Tanzania	82.9	[71.4, 90.8]	79	[73, 79]	Turkey	69.7	[54.7, 73.7]	129	129	Ukraine	3.7	[3.3, 4]
30	[30, 38]	Madagascar	82.7	[65.5, 87.6]	80	[80, 90]	Un. States	69.7	[52.6, 72.9]	130	[130, 131]	Trin. & Tob.	3.4	[2.5, 3.6]
31	[31, 39]	Sri Lanka	82.6	[65.4, 87.5]	81	[68, 81]	Panama	69.5	[55.1, 74.1]	131	[130, 131]	Uzbekistan	0.4	[0.4, 2.7]
32	[19, 32]	El Salvador	82.5	[69, 89.3]	82	[82, 87]	Dominican R.	69.3	[53, 72.2]	132	132	Moldova	0.2	[0.2, 1.6]
33	[16, 33]	Colombia	82.4	[69.5, 89.6]	83	[83, 97]	Hungary	69.2	[51.5, 71.7]	133	133	Turkmenistan	0.0	[0, 0]
34	[26, 34]	Austria	82.2	[67.3, 88.5]	84	[25, 84]	Iceland	68.9	[68.9, 80.5]					
35	[34, 37]	Guatemala	82.1	[65.5, 87.3]	85	[81, 86]	Nigeria	68.6	[53.2, 72.2]					
36	[36, 64]	Bangladesh	81.7	[61.3, 84.7]	86	[86, 94]	Australia	68.4	[51.6, 71.5]					
37	[37, 51]	Denmark	81.5	[62.8, 85.5]	87	[87, 96]	Thailand	68.1	[51.6, 71]					
38	[38, 71]	Liberia	81.3	[60.6, 84.1]	88	[88, 98]	S. Korea	68.1	[50.6, 70.8]					
39	[39, 67]	Ireland	81.2	[60.8, 84.4]	89	[89, 93]	Mexico	67.6	[51.5, 70.7]					
40	[12, 40]	Brazil	80.6	[69.3, 88.6]	90	[90, 95]	Indonesia	67.1	[51.2, 70.1]					
41	[41, 55]	Italy	80.3	[61.3, 84.1]	91	[74, 91]	Pakistan	66.6	[53.3, 70.7]					
42	[28, 42]	Gabon	79.8	[65.9, 86.1]	92	[63, 92]	Ecuador	66.4	[54.2, 71.3]					
43	[43, 57]	Japan	79.7	[60.7, 83.2]	93	[60, 94]	Viet Nam	64.1	[53.6, 68.9]					
44	[44, 72]	Benin	79.5	[59.2, 82.3]	94	[84, 96]	Bolivia	63.7	[50.8, 67.7]					
45	[41, 46]	Portugal	79.1	[62.9, 84.2]	95	[58, 95]	Zimbabwe	63.0	[53.3, 68.2]					
46	[34, 46]	Congo	79.0	[64.7, 84.8]	96	[56, 96]	Canada	62.8	[52.9, 69]					
47	[47, 62]	France	78.9	[59.9, 82.3]	97	[97, 99]	Lebanon	61.2	[46.6, 64.1]					
48	[27, 48]	Sweden	78.9	[65.6, 84.9]	98	[98, 101]	Malaysia	60.8	[45.8, 63.4]					
49	[35, 49]	Philippines	78.9	[64.4, 84.5]	99	[99, 103]	Algeria	60.1	[44.9, 62]					
50	[50, 70]	Germany	78.3	[59, 81.8]	100	[99, 100]	India	59.7	[46.2, 62]					

Pilot 2006 Environmental Performance Index

Appendix H: Raw Data & Metadata

Indicator: MORTALITY

Policy Category: Environmental Health
Description: Child Mortality
Data Source: United Nations, Department of Economic and Social Affairs, Population Division: World Population Prospects, Revision 2004 (http://esa.un.org/unpp/).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 2000-2005, most recent year available.
Country Coverage: 192



Target: 0%
Target Source: MDG 4, Target 5, Indicator 13

QUICK SUMMARY
Maximum: 41.63
Minimum: 0.09
Mean: 6.24
Std Dev: 8.75

Top Performers:
Czech Rep., Sweden, Macao, Finland, Iceland

Bottom Performers:
Sierra Leone, Niger, Angola, Afghanistan, Dem. Rep. Congo

COUNTRY DATA (Units: Deaths per 1000 Population Aged One to Four)

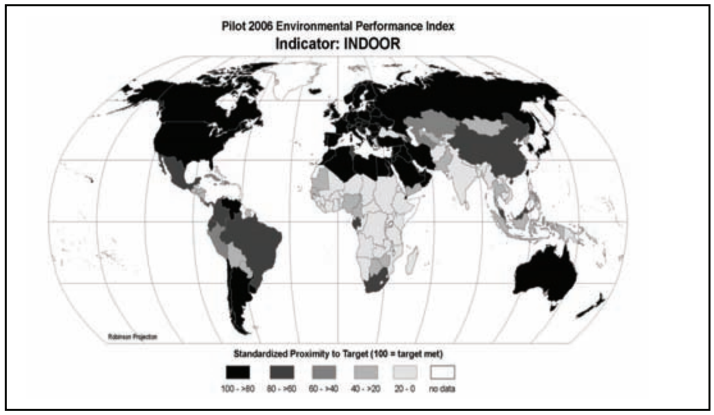
Country	Value	Country	Value	Country	Value
Afghanistan	32.9	Brit. Indian Ocean Terr.	..	Djibouti	13.4
Albania	2.3	British Virgin Islands	..	Dominica	..
Algeria	0.8	Brunei Darussalam	0.3	Dominican Rep.	4.2
Am. Samoa	..	Bulgaria	0.9	East Timor	11.5
Andorra	..	Burkina Faso	22.6	Ecuador	1.3
Angola	33.6	Burundi	24.1	Egypt	1.6
Anguilla	..	Cambodia	13.0	El Salvador	2.1
Antigua & Barbuda	..	Cameroon	19.9	Equ. Guinea	23.5
Argentina	0.6	Canada	0.3	Eritrea	8.0
Armenia	1.3	Cape Verde	1.6	Estonia	0.5
Aruba	..	Cayman Islands	..	Ethiopia	21.2
Australia	0.3	Central Afr. Rep.	22.8	Faeroe Islands	..
Austria	0.2	Chad	26.4	Falkland Islands	..
Azerbaijan	4.1	Chile	0.4	Fiji	1.4
Bahamas	0.7	China	1.5	Finland	0.2
Bahrain	0.9	Christmas Island	..	France	0.2
Bangladesh	5.5	Cocos Islands	..	French Guiana	0.5
Barbados	0.3	Colombia	1.9	French Polynesia	0.7
Belarus	0.7	Comoros	5.2	Fr. Southern Territories	..
Belgium	0.4	Congo	9.9	Gabon	10.1
Belize	2.7	Cook Islands	..	Gambia	14.6
Benin	16.4	Costa Rica	0.4	Georgia	0.7
Bermuda	..	Côte d'Ivoire	21.3	Germany	0.3
Bhutan	7.5	Croatia	0.3	Ghana	10.8
Bolivia	4.5	Cuba	0.4	Gibraltar	..
Bosnia & Herzegovina	0.6	Cyprus	0.3	Greece	0.3
Botswana	15.1	Czech Rep.	0.1	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	28.4	Grenada	..
Brazil	2.1	Denmark	0.3	Guadeloupe	0.6

MORTALITY Indicator

Country	Value	Country	Value	Country	Value
Guam	0.4	Micronesia	2.5	Slovakia	0.5
Guatemala	3.4	Moldova	1.5	Slovenia	0.5
Guinea	17.6	Monaco	..	Solomon Islands	6.2
Guinea-Bissau	27.9	Mongolia	7.4	Somalia	25.9
Guyana	5.1	Montserrat	..	South Africa	8.3
Haiti	13.3	Morocco	2.2	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	23.8	South Korea	0.4
Holy See	..	Myanmar	10.3	Spain	0.3
Honduras	4.3	Namibia	9.1	Sri Lanka	0.7
Hong Kong	0.3	Nauru	..	St. Helena	..
Hungary	0.6	Nepal	6.4	St. Kitts & Nevis	..
Iceland	0.2	Netherlands	0.4	St. Lucia	1.2
India	8.5	Netherlands Ant.	0.4	St. Pierre & Miquelon	..
Indonesia	3.0	New Caledonia	0.7	St. Vincent & the Grenadines	1.3
Iran	1.4	New Zealand	0.4	Sudan	13.2
Iraq	8.3	Nicaragua	2.6	Suriname	1.4
Ireland	0.3	Niger	35.9	Svalbard & Jan Mayen Isl.	..
Israel	0.3	Nigeria	26.0	Swaziland	19.9
Italy	0.3	Niue	..	Sweden	0.2
Jamaica	1.5	Norfolk Island	..	Switzerland	0.3
Japan	0.3	North Korea	3.6	Syria	0.7
Jordan	0.8	Northern Mariana Isl.	..	Taiwan	2.0
Kazakhstan	4.4	Norway	0.3	Tajikistan	7.5
Kenya	13.9	Occ. Palestinian Terr.	0.9	Tanzania	17.3
Kiribati	..	Oman	0.6	Thailand	1.3
Kuwait	0.5	Pakistan	9.8	Togo	12.7
Kyrgyzstan	3.0	Palau	..	Tokelau	..
Laos	15.0	Panama	1.6	Tonga	1.0
Latvia	0.9	Papua New Guinea	7.6	Trinidad & Tobago	1.3
Lebanon	1.0	Paraguay	2.1	Tunisia	0.8
Lesotho	15.8	Peru	4.9	Turkey	2.0
Liberia	25.5	Philippines	1.5	Turkmenistan	5.8
Libya	0.5	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	0.4	Tuvalu	..
Lithuania	0.6	Portugal	0.5	Uganda	16.4
Luxembourg	0.3	Puerto Rico	0.5	Ukraine	0.6
Macao	0.2	Qatar	0.6	United Arab Em.	0.2
Macedonia	0.6	Réunion	0.6	United Kingdom	0.3
Madagascar	14.8	Romania	1.1	United States	0.4
Malawi	21.9	Russia	1.2	U. S. Minor Outlying Islands	..
Malaysia	0.7	Rwanda	22.3	United States Virgin Islands	0.3
Maldives	3.2	Samoa	1.4	Uruguay	0.6
Mali	26.8	San Marino	..	Uzbekistan	3.1
Malta	0.3	Sao Tome & Principe	8.2	Vanuatu	2.0
Marshall Isl.	..	Saudi Arabia	1.0	Venezuela	3.0
Martinique	0.5	Senegal	13.9	Viet Nam	2.2
Mauritania	17.3	Serbia & Montenegro	0.6	Wallis & Futuna Islands	..
Mauritius	0.7	Seychelles	..	Western Sahara	4.6
Mayotte	..	Sierra Leone	41.6	Yemen	7.1
Mexico	1.1	Singapore	0.3	Zambia	22.8
				Zimbabwe	15.2

Indicator: INDOOR

Policy Category: Environmental Health
Description: Indoor Air Pollution
Data Source: Desai, Manish A., Sumi Mehta, Kirk R. Smith. 2004. Assessing the environmental burden of disease at national and local levels. Geneva: World Health Organization. (http://www.who.int/quantifying_ehimpacts/publications/9241591358/en/).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 2004
Country Coverage: 160



Target: 0%
Target Source: Expert judgment

QUICK SUMMARY
Maximum: 100.00
Minimum: 0.00
Mean: 44.32
Std Dev: 40.04

Top Performers:
37 countries meet the target for this indicator

Bottom Performers:
11 countries have a value of 100 for this indicator

COUNTRY DATA (Units: Percentage of Households Using Solid Fuels, Adjusted for Ventilation)

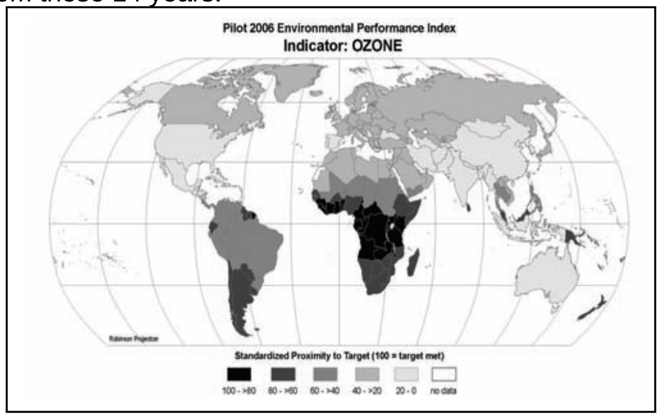
Country	Value	Country	Value	Country	Value
Afghanistan	98	Brit. Indian Ocean Terr.	..	Djibouti	6
Albania	15	British Virgin Islands	..	Dominica	..
Algeria	4	Brunei Darussalam	70	Dominican Rep.	48
Am. Samoa	..	Bulgaria	6	East Timor	..
Andorra	..	Burkina Faso	97	Ecuador	28
Angola	100	Burundi	100	Egypt	8
Anguilla	..	Cambodia	100	El Salvador	65
Antigua & Barbuda	..	Cameroon	77	Equ. Guinea	83
Argentina	0	Canada	0	Eritrea	97
Armenia	66	Cape Verde	..	Estonia	8
Aruba	..	Cayman Islands	..	Ethiopia	97
Australia	0	Central Afr. Rep.	99	Faeroe Islands	..
Austria	0	Chad	100	Falkland Islands	..
Azerbaijan	37	Chile	15	Fiji	..
Bahamas	..	China	30	Finland	0
Bahrain	0	Christmas Island	..	France	0
Bangladesh	96	Cocos Islands	..	French Guiana	..
Barbados	57	Colombia	36	French Polynesia	..
Belarus	2	Comoros	..	Fr. Southern Territories	..
Belgium	0	Congo	100	Gabon	34
Belize	..	Cook Islands	..	Gambia	98
Benin	88	Costa Rica	58	Georgia	71
Bermuda	..	Côte d'Ivoire	93	Germany	0
Bhutan	..	Croatia	3	Ghana	95
Bolivia	61	Cuba	42	Gibraltar	..
Bosnia & Herzegovina	15	Cyprus	24	Greece	0
Botswana	65	Czech Rep.	0	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	100	Grenada	..
Brazil	27	Denmark	0	Guadeloupe	..

INDOOR Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	5
Guatemala	73	Moldova	14	Slovenia	0
Guinea	99	Monaco	..	Solomon Islands	..
Guinea-Bissau	95	Mongolia	67	Somalia	..
Guyana	..	Montserrat	..	South Africa	28
Haiti	82	Morocco	11.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	87	South Korea	0
Holy See	..	Myanmar	100	Spain	0
Honduras	66	Namibia	83	Sri Lanka	89
Hong Kong	0	Nauru	..	St. Helena	..
Hungary	5	Nepal	97	St. Kitts & Nevis	..
Iceland	0	Netherlands	0	St. Lucia	..
India	81	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	63	New Caledonia	..	St. Vincent & the Grenadines	..
Iran	2	New Zealand	0	Sudan	100
Iraq	2	Nicaragua	73	Suriname	69
Ireland	0	Niger	98	Svalbard & Jan Mayen Isl.	..
Israel	0	Nigeria	67	Swaziland	88
Italy	0	Niue	..	Sweden	0
Jamaica	47	Norfolk Island	..	Switzerland	0
Japan	0	North Korea	68	Syria	19
Jordan	10	Northern Mariana Isl.	..	Taiwan	0
Kazakhstan	51	Norway	0	Tajikistan	100
Kenya	85	Occ. Palestinian Terr.	..	Tanzania	96
Kiribati	..	Oman	0	Thailand	72
Kuwait	0	Pakistan	76	Togo	96
Kyrgyzstan	96	Palau	..	Tokelau	..
Laos	95	Panama	37	Tonga	..
Latvia	4	Papua New Guinea	97	Trinidad & Tobago	0
Lebanon	9	Paraguay	64	Tunisia	29
Lesotho	85	Peru	40	Turkey	11
Liberia	83	Philippines	85	Turkmenistan	50
Libya	3	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	7	Tuvalu	..
Lithuania	8	Portugal	0	Uganda	97
Luxembourg	..	Puerto Rico	..	Ukraine	11
Macao	..	Qatar	0	United Arab Em.	0
Macedonia	12	Réunion	..	United Kingdom	0
Madagascar	99	Romania	9	United States	0
Malawi	99	Russia	1	U. S. Minor Outlying Islands	..
Malaysia	29	Rwanda	100	United States Virgin Islands	..
Maldives	..	Samoa	..	Uruguay	0
Mali	100	San Marino	..	Uzbekistan	79
Malta	0	Sao Tome & Principe	..	Vanuatu	..
Marshall Isl.	..	Saudi Arabia	0	Venezuela	0
Martinique	..	Senegal	79	Viet Nam	98
Mauritania	69	Serbia & Montenegro	14	Wallis & Futuna Islands	..
Mauritius	75	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	92	Yemen	66
Mexico	22	Singapore	0	Zambia	87
				Zimbabwe	67

Indicator: OZONE

Policy Category: Air Quality
Description: Regional Ozone
Data Source: Ozone concentrations data: Global Chemical Tracer Model MOZART-2 model, The National Center for Atmospheric Research (NCAR) (http://gctm.acd.ucar.edu/mozart/models/m2/index.shtml).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1990-2004, 10 highest concentrations from these 14 years.
Country Coverage: 218



Target: 15 ppb
Target Source: Expert judgment

QUICK SUMMARY
Maximum: 64.46
Minimum: 11.74
Mean: 38.77
Std Dev: 11.97

Top Performers:
Sao Tome & Prin.cipe, Gabon, Congo, Equ. Guinea, Rwanda

Bottom Performers:
Belize, Guatemala, Mexico, China, East Timor

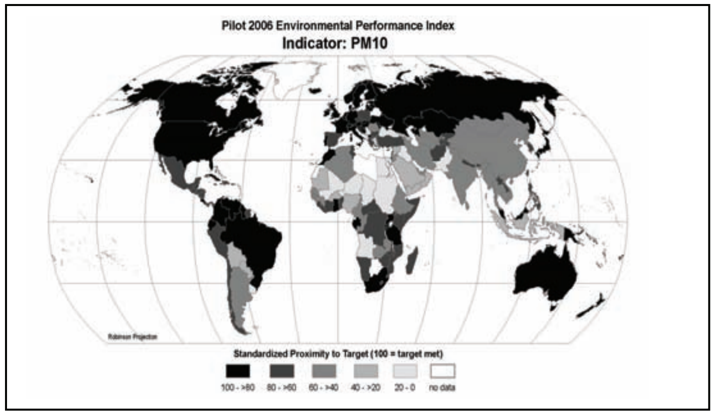
COUNTRY DATA (Units: Parts per Billion)

Country	Value	Country	Value	Country	Value
Afghanistan	57.3	Brit. Indian Ocean Terr.	..	Djibouti	29.8
Albania	45.3	British Virgin Islands	46.5	Dominica	37.9
Algeria	46.8	Brunei Darussalam	23.2	Dominican Rep.	52.8
Am. Samoa	26.5	Bulgaria	44.7	East Timor	62.7
Andorra	46.2	Burkina Faso	25.8	Ecuador	28.1
Angola	21.8	Burundi	14.7	Egypt	45.0
Anguilla	46.5	Cambodia	34.2	El Salvador	53.9
Antigua & Barbuda	43.0	Cameroon	20.1	Equ. Guinea	12.6
Argentina	27.9	Canada	48.5	Eritrea	36.9
Armenia	45.3	Cape Verde	32.8	Estonia	39.9
Aruba	38.1	Cayman Islands	48.7	Ethiopia	27.9
Australia	60.6	Central Afr. Rep.	20.0	Faeroe Islands	43.4
Austria	44.5	Chad	36.8	Falkland Islands	25.5
Azerbaijan	45.2	Chile	29.2	Fiji	31.8
Bahamas	54.2	China	63.4	Finland	41.4
Bahrain	45.6	Christmas Island	..	France	45.7
Bangladesh	52.7	Cocos Islands	..	French Guiana	22.8
Barbados	36.3	Colombia	36.5	French Polynesia	52.6
Belarus	43.4	Comoros	20.9	Fr. Southern Territories	..
Belgium	44.4	Congo	12.6	Gabon	12.3
Belize	64.5	Cook Islands	62.7	Gambia	28.3
Benin	21.7	Costa Rica	40.1	Georgia	45.2
Bermuda	47.9	Côte d'Ivoire	18.8	Germany	44.2
Bhutan	58.9	Croatia	45.1	Ghana	18.8
Bolivia	37.8	Cuba	52.8	Gibraltar	..
Bosnia & Herzegovina	45.1	Cyprus	45.1	Greece	45.4
Botswana	27.6	Czech Rep.	44.2	Greenland	46.0
Bouvet Island	..	Dem. Rep. Congo	17.7	Grenada	34.6
Brazil	38.7	Denmark	43.5	Guadeloupe	42.8

Country	Value	Country	Value	Country	Value
Guam	38.0	Micronesia	34.5	Slovakia	44.4
Guatemala	64.4	Moldova	44.1	Slovenia	44.6
Guinea	23.1	Monaco	..	Solomon Islands	30.2
Guinea-Bissau	24.6	Mongolia	60.9	Somalia	25.0
Guyana	26.9	Montserrat	38.0	South Africa	28.9
Haiti	53.4	Morocco	47.9	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	25.6	South Korea	50.1
Holy See	..	Myanmar	52.8	Spain	49.0
Honduras	54.8	Namibia	28.1	Sri Lanka	29.9
Hong Kong	..	Nauru	26.4	St. Helena	24.6
Hungary	44.6	Nepal	58.6	St. Kitts & Nevis	45.6
Iceland	44.5	Netherlands	44.4	St. Lucia	37.6
India	52.1	Netherlands Ant.	43.2	St. Pierre & Miquelon	43.4
Indonesia	51.0	New Caledonia	29.0	St. Vincent & the Grenadines	36.5
Iran	55.1	New Zealand	26.8	Sudan	36.3
Iraq	45.6	Nicaragua	47.5	Suriname	25.1
Ireland	45.0	Niger	38.1	Svalbard & Jan Mayen Isl.	46.0
Israel	45.3	Nigeria	24.1	Swaziland	28.0
Italy	46.2	Niue	28.0	Sweden	42.0
Jamaica	46.1	Norfolk Island	..	Switzerland	44.6
Japan	48.3	North Korea	50.3	Syria	45.1
Jordan	45.3	Northern Mariana Isl.	41.7	Taiwan	44.1
Kazakhstan	43.9	Norway	43.4	Tajikistan	49.2
Kenya	15.8	Occ. Palestinian Terr.	45.3	Tanzania	18.5
Kiribati	47.3	Oman	47.3	Thailand	39.6
Kuwait	45.5	Pakistan	50.6	Togo	19.1
Kyrgyzstan	47.6	Palau	28.9	Tokelau	..
Laos	41.1	Panama	37.1	Tonga	30.1
Latvia	41.4	Papua New Guinea	30.9	Trinidad & Tobago	32.5
Lebanon	45.2	Paraguay	27.9	Tunisia	47.0
Lesotho	28.7	Peru	35.2	Turkey	45.0
Liberia	17.1	Philippines	35.9	Turkmenistan	55.0
Libya	45.5	Pitcairn	29.6	Turks & Caicos Islands	50.2
Liechtenstein	..	Poland	44.0	Tuvalu	31.7
Lithuania	42.7	Portugal	50.2	Uganda	14.2
Luxembourg	44.2	Puerto Rico	49.8	Ukraine	44.3
Macao	..	Qatar	45.8	United Arab Em.	46.7
Macedonia	45.1	Réunion	24.9	United Kingdom	44.9
Madagascar	25.4	Romania	44.6	United States	57.5
Malawi	21.7	Russia	48.0	U. S. Minor Outlying Islands	..
Malaysia	27.9	Rwanda	14.1	United States Virgin Islands	48.4
Maldives	..	Samoa	27.1	Uruguay	25.0
Mali	39.5	San Marino	..	Uzbekistan	47.0
Malta	46.1	Sao Tome & Principe	11.7	Vanuatu	30.5
Marshall Isl.	52.3	Saudi Arabia	45.3	Venezuela	32.9
Martinique	37.6	Senegal	30.2	Viet Nam	41.8
Mauritania	42.6	Serbia & Montenegro	45.0	Wallis & Futuna Islands	30.6
Mauritius	25.2	Seychelles	19.9	Western Sahara	..
Mayotte	..	Sierra Leone	19.9	Yemen	39.9
Mexico	64.2	Singapore	21.0	Zambia	22.3
				Zimbabwe	24.9

Indicator: PM10

Policy Category: Air Quality / Environmental Health
Description: Urban Particulates
Data Source: Global Model of Ambient Particulates (GMAPS), Kiran Dev Pandey, World Bank (http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20785646~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html), alternate data for select Eastern European countries.
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: PM10 data: 1999, Population data 2000
Country Coverage: 180



Target: 10 μg/m^3
Target Source: Expert judgment

QUICK SUMMARY
Maximum: 246.38
Minimum: 15.27
Mean: 57.61
Std Dev: 38.98

Top Performers: Belarus, Sweden, Antigua & Barbuda, Uganda, Venezuela

Bottom Performers:
Sudan, Mali, Pakistan, Iraq, Uruguay

COUNTRY DATA (Units: Micrograms per Cubic Meter)

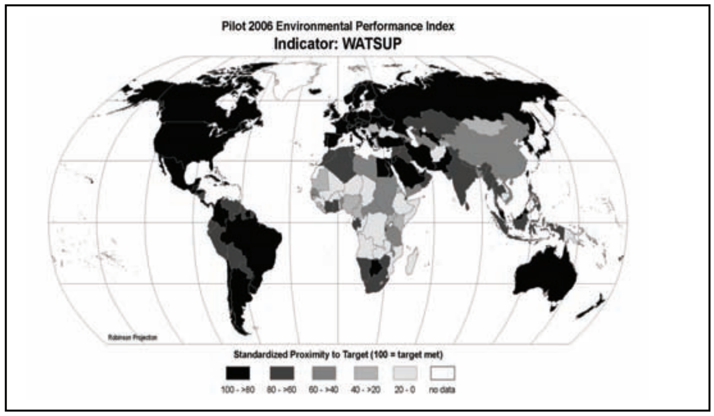
Country	Value	Country	Value	Country	Value
Afghanistan	47.4	Brit. Indian Ocean Terr.	..	Djibouti	..
Albania	150.7	British Virgin Islands	..	Dominica	28.0
Algeria	75.6	Brunei Darussalam	38.4	Dominican Rep.	39.1
Am. Samoa	..	Bulgaria	55.7	East Timor	..
Andorra	32.6	Burkina Faso	108.2	Ecuador	27.9
Angola	124.8	Burundi	35.6	Egypt	152.3
Anguilla	..	Cambodia	68.6	El Salvador	43.1
Antigua & Barbuda	15.6	Cameroon	84.6	Equ. Guinea	..
Argentina	71.0	Canada	22.4	Eritrea	80.0
Armenia	84.9	Cape Verde	..	Estonia	20.0
Aruba	..	Cayman Islands	33.0	Ethiopia	88.0
Australia	18.6	Central Afr. Rep.	49.5	Faeroe Islands	19.7
Austria	32.7	Chad	160.6	Falkland Islands	..
Azerbaijan	99.3	Chile	65.2	Fiji	33.6
Bahamas	43.5	China	87.8	Finland	20.6
Bahrain	70.3	Christmas Island	..	France	16.7
Bangladesh	147.0	Cocos Islands	..	French Guiana	..
Barbados	40.9	Colombia	24.9	French Polynesia	..
Belarus	..	Comoros	50.6	Fr. Southern Territories	..
Belgium	28.2	Congo	90.4	Gabon	20.9
Belize	22.5	Cook Islands	..	Gambia	92.9
Benin	47.0	Costa Rica	37.8	Georgia	97.9
Bermuda	..	Côte d'Ivoire	64.3	Germany	22.3
Bhutan	41.0	Croatia	36.8	Ghana	33.3
Bolivia	105.9	Cuba	25.0	Gibraltar	..
Bosnia & Herzegovina	30.2	Cyprus	55.2	Greece	47.4
Botswana	..	Czech Rep.	38.5	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	51.0	Grenada	25.0
Brazil	33.0	Denmark	22.7	Guadeloupe	..

PM10 Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	32.4
Guatemala	58.9	Moldova	35.0	Slovenia	35.5
Guinea	68.7	Monaco	..	Solomon Islands	31.2
Guinea-Bissau	86.1	Mongolia	70.5	Somalia	39.0
Guyana	34.1	Montserrat	..	South Africa	24.1
Haiti	49.9	Morocco	29.3	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	46.3	South Korea	42.5
Holy See	..	Myanmar	89.2	Spain	40.4
Honduras	48.5	Namibia	53.2	Sri Lanka	93.8
Hong Kong	37.6	Nauru	..	St. Helena	..
Hungary	37.0	Nepal	49.6	St. Kitts & Nevis	22.8
Iceland	20.8	Netherlands	36.9	St. Lucia	38.3
India	88.8	Netherlands Ant.	32.5	St. Pierre & Miquelon	..
Indonesia	101.5	New Caledonia	73.9	St. Vincent & the Grenadines	32.6
Iran	71.2	New Zealand	16.9	Sudan	246.4
Iraq	177.9	Nicaragua	41.7	Suriname	50.7
Ireland	22.6	Niger	163.7	Svalbard & Jan Mayen Isl.	..
Israel	51.8	Nigeria	103.9	Swaziland	39.6
Italy	32.8	Niue	..	Sweden	15.3
Jamaica	54.3	Norfolk Island	..	Switzerland	25.8
Japan	33.2	North Korea	92.6	Syria	102.1
Jordan	77.0	Northern Mariana Isl.	..	Taiwan	61.8
Kazakhstan	26.7	Norway	20.7	Tajikistan	63.6
Kenya	44.0	Occ. Palestinian Terr.	..	Tanzania	37.3
Kiribati	..	Oman	105.3	Thailand	76.1
Kuwait	134.0	Pakistan	180.1	Togo	46.0
Kyrgyzstan	40.9	Palau	..	Tokelau	..
Laos	47.4	Panama	53.3	Tonga	..
Latvia	22.1	Papua New Guinea	31.2	Trinidad & Tobago	24.1
Lebanon	44.8	Paraguay	97.0	Tunisia	47.5
Lesotho	54.5	Peru	61.8	Turkey	54.1
Liberia	41.0	Philippines	49.3	Turkmenistan	67.7
Libya	..	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	41.6	Poland	43.6	Tuvalu	..
Lithuania	29.3	Portugal	34.0	Uganda	15.7
Luxembourg	17.6	Puerto Rico	25.1	Ukraine	35.1
Macao	101.6	Qatar	66.9	United Arab Em.	78.3
Macedonia	33.5	Réunion	..	United Kingdom	19.0
Madagascar	46.7	Romania	73.8	United States	25.1
Malawi	46.4	Russia	25.8	U. S. Minor Outlying Islands	..
Malaysia	24.0	Rwanda	35.1	United States Virgin Islands	43.1
Maldives	49.1	Samoa	..	Uruguay	173.2
Mali	194.4	San Marino	..	Uzbekistan	83.1
Malta	..	Sao Tome & Principe	52.3	Vanuatu	28.3
Marshall Isl.	..	Saudi Arabia	105.9	Venezuela	15.9
Martinique	..	Senegal	92.3	Viet Nam	75.1
Mauritania	112.8	Serbia & Montenegro	26.0	Wallis & Futuna Islands	..
Mauritius	..	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	62.7	Yemen	97.6
Mexico	53.4	Singapore	41.0	Zambia	72.7
				Zimbabwe	61.4

Indicator: WATSUP

Policy Category: Environmental Health
Description: Drinking Water
Data Source: World Health Organization - United Nations Children's Fund (WHO-UNICEF) Joint Monitoring Program (http://milleniumindicators.un.org/unsd/mi/mi_series_results.asp?rowID=668), Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York (www.childinfo.org).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1990 and 2002
Country Coverage: 191



Target: 100%
Target Source: MDG 7, Target 10, Indicator 30

QUICK SUMMARY
Maximum: 100.00
Minimum: 13.00
Mean: 82.48
Std Dev: 18.88

Top Performers:
43 countries meet the target for this indicator

Bottom Performers:
Afghanistan, Ethiopia, Somalia, Chad, Cambodia

COUNTRY DATA (Units: Percentage Population with Access to an Improved Water Source)

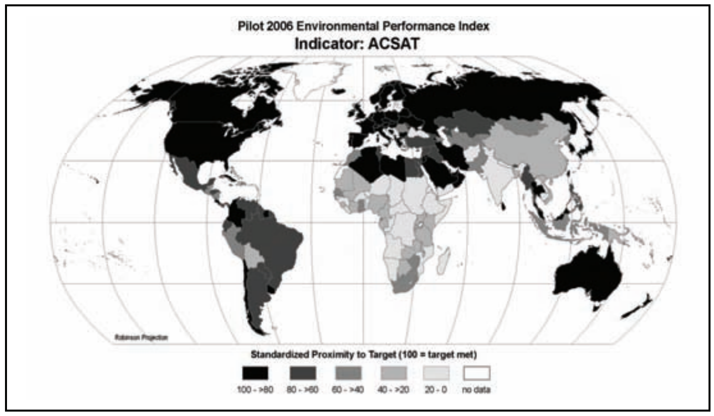
Country	Value	Country	Value	Country	Value
Afghanistan	13	Brit. Indian Ocean Terr.	..	Djibouti	80
Albania	97	British Virgin Islands	98	Dominica	97
Algeria	87	Brunei Darussalam	..	Dominican Rep.	93
Am. Samoa	..	Bulgaria	100	East Timor	52
Andorra	100	Burkina Faso	51	Ecuador	86
Angola	50	Burundi	79	Egypt	98
Anguilla	60	Cambodia	34	El Salvador	82
Antigua & Barbuda	91	Cameroon	63	Equ. Guinea	44
Argentina	94	Canada	100	Eritrea	57
Armenia	92	Cape Verde	80	Estonia	..
Aruba	100	Cayman Islands	..	Ethiopia	22
Australia	100	Central Afr. Rep.	75	Faeroe Islands	..
Austria	100	Chad	34	Falkland Islands	..
Azerbaijan	77	Chile	95	Fiji	..
Bahamas	97	China	77	Finland	100
Bahrain	..	Christmas Island	..	France	100
Bangladesh	75	Cocos Islands	..	French Guiana	84
Barbados	100	Colombia	92	French Polynesia	100
Belarus	100	Comoros	94	Fr. Southern Territories	..
Belgium	96	Congo	46	Gabon	87
Belize	91	Cook Islands	95	Gambia	82
Benin	68	Costa Rica	97	Georgia	76
Bermuda	..	Côte d'Ivoire	84	Germany	100
Bhutan	62	Croatia	..	Ghana	79
Bolivia	85	Cuba	91	Gibraltar	..
Bosnia & Herzegovina	98	Cyprus	100	Greece	100
Botswana	95	Czech Rep.	100	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	46	Grenada	95
Brazil	89	Denmark	100	Guadeloupe	98

WATSUP Indicator

Country	Value	Country	Value	Country	Value
Guam	100	Micronesia	94	Slovakia	100
Guatemala	95	Moldova	92	Slovenia	100
Guinea	51	Monaco	..	Solomon Islands	70
Guinea-Bissau	59	Mongolia	62	Somalia	29
Guyana	83	Montserrat	100	South Africa	87
Haiti	71	Morocco	80.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	42	South Korea	92
Holy See	..	Myanmar	80	Spain	100
Honduras	90	Namibia	80	Sri Lanka	78
Hong Kong	..	Nauru	..	St. Helena	..
Hungary	99	Nepal	84	St. Kitts & Nevis	99
Iceland	100	Netherlands	100	St. Lucia	98
India	86	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	78	New Caledonia	..	St. Vincent & the Grenadines	..
Iran	93	New Zealand	97	Sudan	69
Iraq	81	Nicaragua	81	Suriname	92
Ireland	100	Niger	46	Svalbard & Jan Mayen Isl.	..
Israel	100	Nigeria	60	Swaziland	52
Italy	94	Niue	100	Sweden	100
Jamaica	93	Norfolk Island	..	Switzerland	100
Japan	100	North Korea	100	Syria	79
Jordan	91	Northern Mariana Isl.	98	Taiwan	100
Kazakhstan	86	Norway	100	Tajikistan	58
Kenya	62	Occ. Palestinian Terr.	94	Tanzania	73
Kiribati	64.0	Oman	79	Thailand	85
Kuwait	..	Pakistan	90	Togo	51
Kyrgyzstan	76	Palau	84	Tokelau	..
Laos	43	Panama	91	Tonga	100
Latvia	..	Papua New Guinea	39	Trinidad & Tobago	91
Lebanon	100	Paraguay	83	Tunisia	82
Lesotho	76	Peru	81	Turkey	93
Liberia	62	Philippines	85	Turkmenistan	71
Libya	72	Pitcairn	..	Turks & Caicos Islands	100
Liechtenstein	100	Poland	100	Tuvalu	93
Lithuania	..	Portugal	100	Uganda	56
Luxembourg	100	Puerto Rico	..	Ukraine	98
Macao	..	Qatar	100	United Arab Em.	98
Macedonia	..	Réunion	..	United Kingdom	100
Madagascar	45	Romania	57	United States	100
Malawi	67	Russia	96	U. S. Minor Outlying Islands	..
Malaysia	95	Rwanda	73	United States Virgin Islands	..
Maldives	84	Samoa	88	Uruguay	98
Mali	48	San Marino	..	Uzbekistan	89
Malta	100	Sao Tome & Principe	79	Vanuatu	60
Marshall Isl.	85	Saudi Arabia	90	Venezuela	83
Martinique	..	Senegal	72	Viet Nam	73
Mauritania	56	Serbia & Montenegro	93	Wallis & Futuna Islands	..
Mauritius	100	Seychelles	87	Western Sahara	..
Mayotte	..	Sierra Leone	57	Yemen	69
Mexico	91	Singapore	..	Zambia	55
				Zimbabwe	83

Indicator: ACSAT

Policy Category: Environmental Health
Description: Adequate Sanitation
Data Source: World Health Organization - United Nations Children's Fund (WHO-UNICEF) Joint Monitoring Program (http://milleniumindicators.un.org/unsd/mi/mi_series_results.asp?rowID=668), Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York (www.childinfo.org).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1990 and 2002
Country Coverage: 184



Target: 100%
Target Source: MDG 7, Target 10, Indicator 31

QUICK SUMMARY
Maximum: 100.00
Minimum: 6.00
Mean: 68.98
Std Dev: 28.72

Top Performers:
39 countries meet the target for this indicator

Bottom Performers:
Ethiopia, Afghanistan, Chad, Congo, Eritrea

COUNTRY DATA (Units: Percentage Population with Improved Access)

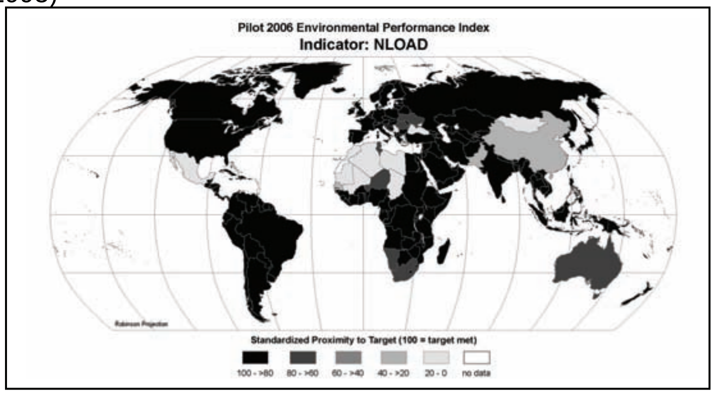
Country	Value	Country	Value	Country	Value
Afghanistan	8	Brit. Indian Ocean Terr.	..	Djibouti	50
Albania	89	British Virgin Islands	100	Dominica	83
Algeria	92	Brunei Darussalam	..	Dominican Rep.	57
Am. Samoa	..	Bulgaria	100	East Timor	33
Andorra	100	Burkina Faso	12	Ecuador	72
Angola	30	Burundi	36	Egypt	68
Anguilla	99	Cambodia	16	El Salvador	63
Antigua & Barbuda	95	Cameroon	48	Equ. Guinea	53
Argentina	82	Canada	100	Eritrea	9
Armenia	84	Cape Verde	42	Estonia	..
Aruba	..	Cayman Islands	..	Ethiopia	6
Australia	100	Central Afr. Rep.	27	Faeroe Islands	..
Austria	100	Chad	8	Falkland Islands	..
Azerbaijan	55	Chile	92	Fiji	98
Bahamas	100	China	44	Finland	100
Bahrain	..	Christmas Island	..	France	100
Bangladesh	48	Cocos Islands	..	French Guiana	78
Barbados	99	Colombia	86	French Polynesia	98
Belarus	..	Comoros	23	Fr. Southern Territories	..
Belgium	100	Congo	9	Gabon	36
Belize	47	Cook Islands	100	Gambia	53
Benin	32	Costa Rica	92	Georgia	83
Bermuda	..	Côte d'Ivoire	40	Germany	100
Bhutan	70	Croatia	..	Ghana	58
Bolivia	45	Cuba	98	Gibraltar	..
Bosnia & Herzegovina	93	Cyprus	100	Greece	100
Botswana	41	Czech Rep.	100	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	29	Grenada	97
Brazil	75	Denmark	100	Guadeloupe	64

ACSAT Indicator

Country	Value	Country	Value	Country	Value
Guam	99	Micronesia	28	Slovakia	100
Guatemala	61	Moldova	68	Slovenia	100
Guinea	13	Monco	..	Solomon Islands	31
Guinea-Bissau	34	Mongolia	59	Somalia	25
Guyana	70	Montserrat	96	South Africa	67
Haiti	34	Morocco	61.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	27	South Korea	100
Holy See	..	Myanmar	73	Spain	100
Honduras	68	Namibia	30	Sri Lanka	91
Hong Kong	..	Nauru	..	St. Helena	..
Hungary	95	Nepal	27	St. Kitts & Nevis	96
Iceland	100	Netherlands	100	St. Lucia	89
India	30	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	52	New Caledonia	..	St. Vincent & the Grenadines	..
Iran	84	New Zealand	100	Sudan	34
Iraq	80	Nicaragua	66	Suriname	93
Ireland	100	Niger	12	Svalbard & Jan Mayen Isl.	..
Israel	..	Nigeria	38	Swaziland	52
Italy	100	Niue	100	Sweden	100
Jamaica	80	Norfolk Island	..	Switzerland	100
Japan	100	North Korea	59	Syria	77
Jordan	93	Northern Mariana Isl.	94	Taiwan	..
Kazakhstan	72	Norway	100	Tajikistan	53
Kenya	48	Occ. Palestinian Terr.	76	Tanzania	46
Kiribati	39.0	Oman	89	Thailand	99
Kuwait	..	Pakistan	54	Togo	34
Kyrgyzstan	60	Palau	83	Tokelau	..
Laos	24	Panama	72	Tonga	97
Latvia	..	Papua New Guinea	45	Trinidad & Tobago	100
Lebanon	98	Paraguay	78	Tunisia	80
Lesotho	37	Peru	62	Turkey	83
Liberia	26	Philippines	73	Turkmenistan	62
Libya	97	Pitcairn	..	Turks & Caicos Islands	96
Liechtenstein	100	Poland	100	Tuvalu	88
Lithuania	..	Portugal	100	Uganda	41
Luxembourg	100	Puerto Rico	..	Ukraine	99
Macao	..	Qatar	100	United Arab Em.	100
Macedonia	..	Réunion	..	United Kingdom	100
Madagascar	33	Romania	51	United States	100
Malawi	46	Russia	87	U. S. Minor Outlying Islands	..
Malaysia	96	Rwanda	41	United States Virgin Islands	..
Maldives	58	Samoa	100	Uruguay	94
Mali	45	San Marino	..	Uzbekistan	57
Malta	..	Sao Tome & Principe	24	Vanuatu	..
Marshall Isl.	82	Saudi Arabia	..	Venezuela	68
Martinique	..	Senegal	52	Viet Nam	41
Mauritania	42	Serbia & Montenegro	87	Wallis & Futuna Islands	..
Mauritius	99	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	39	Yemen	30
Mexico	77	Singapore	..	Zambia	45
				Zimbabwe	57

Indicator: NLOAD

Policy Category: Water Resources
Description: Nitrogen Loading
Data Source: University of New Hampshire, Water Systems Analysis Group (http://www.watsys.sr.unh.edu), derived using their Water Balance Model, Vörösmarty, C. J., C. A. Federer and A. L. Schloss. 1998. Evaporation functions compared on US watershed: Possible implications for global-scale water balance and terrestrial ecosystem modeling, Journal of Hydrology, 207 (3-4): 147-169.
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: Contemporary (mean annual 1950-1995)
Country Coverage: 172



Target: 1 mg/L
Target Source: GEMS water expert group
QUICK SUMMARY
Maximum: 660,000.00
Minimum: 0.00
Mean: 16,050.34
Std Dev: 99,745.33
Top Performers:
9 countries meet the target for this indicator
Bottom Performers:
Algeria, Mali, Mauritania, Morocco, Libya

COUNTRY DATA (Units: Milligrams per Liter)

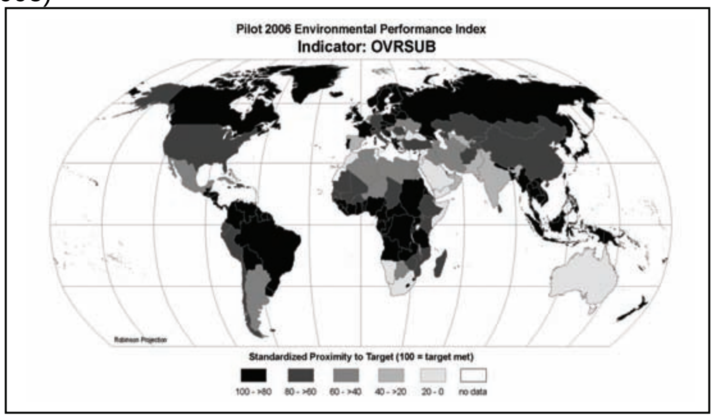
Country	Value	Country	Value	Country	Value
Afghanistan	62.5	Brit. Indian Ocean Terr.	..	Djibouti	3.1
Albania	27.1	British Virgin Islands	..	Dominica	..
Algeria	660,000.0	Brunei Darussalam	..	Dominican Rep.	57.1
Am. Samoa	..	Bulgaria	95.4	East Timor	24.5
Andorra	..	Burkina Faso	68.1	Ecuador	19.4
Angola	318.3	Burundi	410.3	Egypt	552.3
Anguilla	..	Cambodia	11.2	El Salvador	20.1
Antigua & Barbuda	..	Cameroon	41.3	Equ. Guinea	6.7
Argentina	692.3	Canada	13.2	Eritrea	4,475.3
Armenia	107.6	Cape Verde	..	Estonia	41.3
Aruba	..	Cayman Islands	..	Ethiopia	335.3
Australia	1,159.3	Central Afr. Rep.	112.1	Faeroe Islands	0.7
Austria	60.2	Chad	9,071.1	Falkland Islands	2.3
Azerbaijan	88.6	Chile	128.4	Fiji	1.4
Bahamas	13.8	China	3,429.8	Finland	17.2
Bahrain	..	Christmas Island	..	France	72.7
Bangladesh	64.9	Cocos Islands	..	French Guiana	4.7
Barbados	..	Colombia	8.2	French Polynesia	..
Belarus	91.6	Comoros	..	Fr. Southern Territories	..
Belgium	134.0	Congo	19.2	Gabon	8.9
Belize	11.2	Cook Islands	..	Gambia	42.6
Benin	61.8	Costa Rica	4.9	Georgia	61.7
Bermuda	..	Côte d'Ivoire	30.9	Germany	98.1
Bhutan	12.3	Croatia	47.2	Ghana	61.5
Bolivia	154.4	Cuba	134.7	Gibraltar	..
Bosnia & Herzegovina	37.1	Cyprus	191.3	Greece	114.1
Botswana	508.6	Czech Rep.	100.9	Greenland	3.2
Bouvet Island	..	Dem. Rep. Congo	35.1	Grenada	..
Brazil	19.7	Denmark	85.2	Guadeloupe	..

NLOAD Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	62.6
Guatemala	10.2	Moldova	399.9	Slovenia	53.6
Guinea	52.1	Monaco	..	Solomon Islands	0.6
Guinea-Bissau	9.2	Mongolia	6,752.8	Somalia	154.2
Guyana	6.3	Montserrat	..	South Africa	1,766.1
Haiti	59.5	Morocco	660,000.0	So. Georgia & So. Sand. Isl.	..
Hrd. & McDon. Is.	..	Mozambique	107.7	South Korea	42.1
Holy See	..	Myanmar	9.0	Spain	400.1
Honduras	13.0	Namibia	1,138.2	Sri Lanka	178.1
Hong Kong	..	Nauru	..	St. Helena	..
Hungary	68.5	Nepal	17.7	St. Kitts & Nevis	..
Iceland	2.1	Netherlands	157.8	St. Lucia	..
India	188.0	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	5.1	New Caledonia	3.2	St. Vincent & the Grenad.	..
Iran	476.3	New Zealand	17.5	Sudan	576.0
Iraq	65.0	Nicaragua	6.8	Suriname	6.5
Ireland	43.1	Niger	1,814.2	Svalbard & Jan Mayen Isl.	6.2
Israel	409.6	Nigeria	98.2	Swaziland	206.5
Italy	371.6	Niue	..	Sweden	18.5
Jamaica	9.7	Norfolk Island	..	Switzerland	40.0
Japan	12.8	North Korea	20.4	Syria	184.2
Jordan	440.6	Northern Mariana Isl.	..	Taiwan	19.9
Kazakhstan	731.7	Norway	6.2	Tajikistan	108.3
Kenya	269.4	Occ. Palestinian Terr.	..	Tanzania	160.2
Kiribati	..	Oman	0.0	Thailand	24.7
Kuwait	0.0	Pakistan	3,336.8	Togo	82.9
Kyrgyzstan	163.5	Palau	..	Tokelau	..
Laos	12.9	Panama	6.9	Tonga	..
Latvia	36.3	Papua New Guinea	3.6	Trinidad & Tobago	10.5
Lebanon	168.5	Paraguay	30.8	Tunisia	1,847.4
Lesotho	792.3	Peru	106.2	Turkey	137.2
Liberia	4.8	Philippines	7.3	Turkmenistan	128.3
Libya	54,181.5	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	125.1	Tuvalu	..
Lithuania	46.8	Portugal	179.6	Uganda	636.3
Luxembourg	66.4	Puerto Rico	8.9	Ukraine	1,339.8
Macao	..	Qatar	0.0	United Arab Em.	0.0
Macedonia	294.1	Réunion	0.0	United Kingdom	45.1
Madagascar	31.3	Romania	1,445.1	United States	708.3
Malawi	41.7	Russia	16.4	U. S. Minor Outlying Islands	..
Malaysia	3.3	Rwanda	524.7	United States Virgin Islands	..
Maldives	..	Samoa	..	Uruguay	29.7
Mali	660,000.0	San Marino	..	Uzbekistan	206.0
Malta	0.0	Sao Tome & Principe	..	Vanuatu	..
Marshall Isl.	..	Saudi Arabia	27.3	Venezuela	11.6
Martinique	..	Senegal	3,779.7	Viet Nam	22.6
Mauritania	660,000.0	Serbia & Montenegro	60.9	Wallis & Futuna Islands	..
Mauritius	5.5	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	3.8	Yemen	0.0
Mexico	8,222.4	Singapore	..	Zambia	33.7
				Zimbabwe	195.1

Indicator: OVRSUB

Policy Category: Water Resources / Biodiversity and Habitat
Description: Water Consumption
Data Source: University of New Hampshire, Water Systems Analysis Group (http://www.watsys.sr.unh.edu), derived using their Water Balance Model, Vörösmarty, C. J., C. A. Federer and A. L. Schloss. 1998. Evaporation functions compared on US watershed: Possible implications for global-scale water balance and terrestrial ecosystem modeling, Journal of Hydrology, 207 (3-4): 147-169.
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: Contemporary (mean annual 1950-1995)
Country Coverage: 171



Target: 0%
Target Source: By definition
QUICK SUMMARY
Maximum: 90.62
Minimum: 0.00
Mean: 13.09
Std Dev: 18.16
Top Performers:
39 countries meet the target for this indicator
Bottom Performers:
Kuwait, Israel, Jordan, Armenia, Somalia

COUNTRY DATA (Units: Percentage of Territory in which Consumption Exceeds 4% of Available Water)

Country	Value	Country	Value	Country	Value
Afghanistan	11.3	Brit. Indian Ocean Terr.	..	Djibouti	23.5
Albania	0.0	British Virgin Islands	..	Dominica	..
Algeria	24.5	Brunei Darussalam	..	Dominican Rep.	20.4
Am. Samoa	..	Bulgaria	36.5	East Timor	0.0
Andorra	..	Burkina Faso	12.2	Ecuador	19.2
Angola	5.5	Burundi	0.0	Egypt	25.5
Anguilla	..	Cambodia	0.0	El Salvador	0.0
Antigua & Barbuda	..	Cameroon	0.0	Equ. Guinea	0.0
Argentina	24.1	Canada	1.7	Eritrea	0.0
Armenia	68.6	Cape Verde	..	Estonia	2.5
Aruba	..	Cayman Islands	..	Ethiopia	18.2
Australia	45.7	Central Afr. Rep.	0.5	Faeroe Islands	0.0
Austria	0.0	Chad	16.4	Falkland Islands	0.0
Azerbaijan	31.4	Chile	16.5	Fiji	0.0
Bahamas	0.0	China	19.6	Finland	0.4
Bahrain	..	Christmas Island	..	France	8.4
Bangladesh	8.8	Cocos Islands	..	French Guiana	0.0
Barbados	..	Colombia	2.8	French Polynesia	..
Belarus	1.8	Comoros	..	Fr. Southern Territories	..
Belgium	49.8	Congo	0.0	Gabon	0.0
Belize	0.0	Cook Islands	..	Gambia	0.0
Benin	0.0	Costa Rica	0.0	Georgia	7.0
Bermuda	..	Côte d'Ivoire	1.8	Germany	15.9
Bhutan	0.0	Croatia	0.0	Ghana	0.0
Bolivia	2.1	Cuba	28.7	Gibraltar	..
Bosnia & Herzegovina	0.0	Cyprus	0.0	Greece	4.4
Botswana	30.6	Czech Rep.	2.6	Greenland	0.0
Bouvet Island	..	Dem. Rep. Congo	0.0	Grenada	..
Brazil	2.3	Denmark	2.3	Guadeloupe	..

OVRSUB Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	0.0
Guatemala	0.0	Moldova	54.7	Slovenia	0.0
Guinea	0.0	Monaco	..	Solomon Islands	0.0
Guinea-Bissau	0.0	Mongolia	11.3	Somalia	57.8
Guyana	0.0	Montserrat	..	South Africa	54.8
Haiti	1.6	Morocco	47.6	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	13.4	South Korea	9.7
Holy See	..	Myanmar	1.9	Spain	37.1
Honduras	2.3	Namibia	52.0	Sri Lanka	16.5
Hong Kong	..	Nauru	..	St. Helena	..
Hungary	24.5	Nepal	0.9	St. Kitts & Nevis	..
Iceland	0.9	Netherlands	24.1	St. Lucia	..
India	33.5	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	0.2	New Caledonia	0.0	St. Vincent & the Grenadines	..
Iran	25.3	New Zealand	1.2	Sudan	10.7
Iraq	26.0	Nicaragua	0.0	Suriname	0.0
Ireland	0.0	Niger	28.7	Svalbard & Jan Mayen Isl.	..
Israel	75.3	Nigeria	4.7	Swaziland	4.0
Italy	17.7	Niue	..	Sweden	0.4
Jamaica	0.0	Norfolk Island	..	Switzerland	0.0
Japan	5.6	North Korea	3.7	Syria	55.6
Jordan	75.0	Northern Mariana Isl.	..	Taiwan	0.0
Kazakhstan	20.1	Norway	0.0	Tajikistan	14.0
Kenya	13.9	Occ. Palestinian Terr.	..	Tanzania	10.8
Kiribati	..	Oman	37.5	Thailand	8.8
Kuwait	90.6	Pakistan	33.4	Togo	0.0
Kyrgyzstan	20.5	Palau	..	Tokelau	..
Laos	0.0	Panama	2.5	Tonga	..
Latvia	0.0	Papua New Guinea	1.8	Trinidad & Tobago	0.0
Lebanon	10.0	Paraguay	23.5	Tunisia	51.9
Lesotho	0.0	Peru	16.7	Turkey	13.9
Liberia	0.0	Philippines	3.0	Turkmenistan	27.9
Libya	24.7	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	5.6	Tuvalu	..
Lithuania	5.4	Portugal	10.0	Uganda	1.4
Luxembourg	0.0	Puerto Rico	0.0	Ukraine	24.2
Macao	..	Qatar	19.3	United Arab Em.	41.5
Macedonia	0.0	Réunion	0.0	United Kingdom	8.4
Madagascar	11.9	Romania	17.2	United States	21.3
Malawi	13.9	Russia	2.1	U. S. Minor Outlying Islands	..
Malaysia	0.7	Rwanda	0.0	United States Virgin Islands	..
Maldives	..	Samoa	..	Uruguay	0.0
Mali	13.5	San Marino	..	Uzbekistan	42.1
Malta	0.0	Sao Tome & Principe	..	Vanuatu	..
Marshall Isl.	..	Saudi Arabia	51.6	Venezuela	9.7
Martinique	..	Senegal	13.3	Viet Nam	3.0
Mauritania	15.8	Serbia & Montenegro	1.6	Wallis & Futuna Islands	..
Mauritius	0.0	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	0.0	Yemen	55.9
Mexico	31.5	Singapore	..	Zambia	0.1
				Zimbabwe	20.4

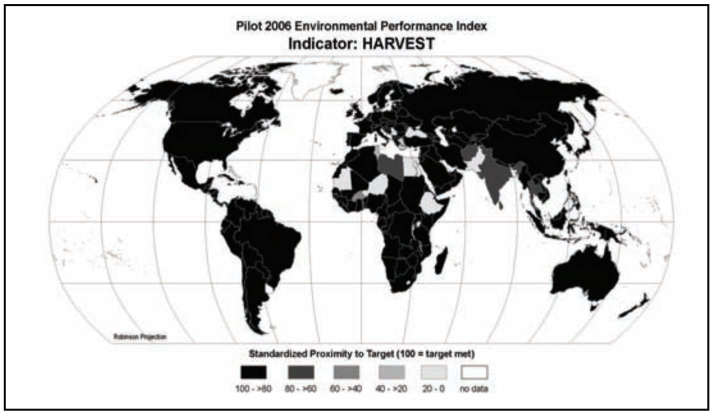
Indicator: HARVEST

Policy Category: Productive Natural Resources / Biodiversity and Habitat
Description: Timber Harvest Rate
Data Source: Volume of standing forests data: State of the World's Forests 2005, Food and Agricultural Organization of the United Nations (http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/007/y5574e/y5574e00.htm); Timber harvest data: FAO forestry database FAOSTAT (http://faostat.fao.org/faostat/collections?version=ext&hasbulk=0&subset=forestry).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 2000 and 2004
Country Coverage: 168

Target: 1%
Target Source: Expert judgment
QUICK SUMMARY
Maximum: 225.17
Minimum: 0.00
Mean: 7.66
Std Dev: 26.56

Top Performers:
69 countries meet the target for this indicator

Bottom Performers:
Niger, Mauritania, Egypt, Haiti, Bangladesh



COUNTRY DATA (Units: Percentage of Standing Forest)

Country	Value	Country	Value	Country	Value
Afghanistan	10.6	Brit. Indian Ocean Terr.	..	Djibouti	0.0
Albania	0.4	British Virgin Islands	..	Dominica	0.0
Algeria	8.1	Brunei Darussalam	0.4	Dominican Rep.	1.4
Am. Samoa	..	Bulgaria	1.0	East Timor	0.0
Andorra	..	Burkina Faso	17.4	Ecuador	0.5
Angola	0.2	Burundi	87.2	Egypt	125.8
Anguilla	..	Cambodia	2.5	El Salvador	18.0
Antigua & Barbuda	0.0	Cameroon	0.3	Equ. Guinea	0.5
Argentina	1.1	Canada	0.7	Eritrea	6.7
Armenia	0.1	Cape Verde	0.0	Estonia	3.2
Aruba	..	Cayman Islands	..	Ethiopia	36.9
Australia	0.4	Central Afr. Rep.	0.1	Faeroe Islands	..
Austria	1.5	Chad	5.3	Falkland Islands	..
Azerbaijan	0.0	Chile	1.6	Fiji	..
Bahamas	..	China	3.4	Finland	2.8
Bahrain	..	Christmas Island	..	France	1.2
Bangladesh	90.2	Cocos Islands	..	French Guiana	0.0
Barbados	..	Colombia	0.2	French Polynesia	..
Belarus	0.5	Comoros	..	Fr. Southern Territories	..
Belgium	3.0	Congo	0.1	Gabon	0.1
Belize	0.1	Cook Islands	..	Gambia	12.5
Benin	0.1	Costa Rica	1.2	Georgia	0.0
Bermuda	..	Côte d'Ivoire	1.2	Germany	1.9
Bhutan	0.9	Croatia	1.1	Ghana	7.1
Bolivia	0.0	Cuba	2.1	Gibraltar	..
Bosnia & Herzegovina	1.5	Cyprus	0.1	Greece	1.0
Botswana	0.1	Czech Rep.	2.3	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	0.4	Grenada	..
Brazil	0.3	Denmark	2.9	Guadeloupe	..

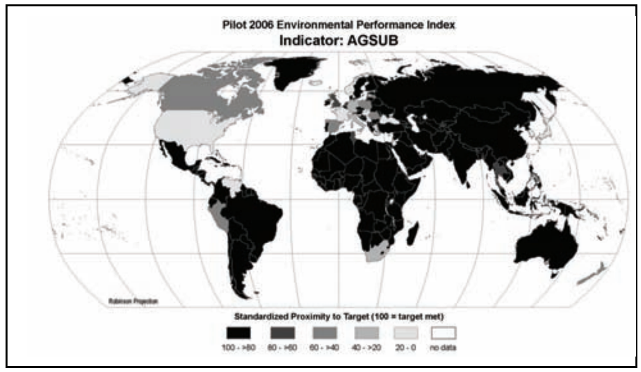
HARVEST Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	1.3
Guatemala	1.6	Moldova	0.1	Slovenia	0.8
Guinea	1.5	Monaco	..	Solomon Islands	..
Guinea-Bissau	1.4	Mongolia	0.0	Somalia	7.7
Guyana	0.0	Montserrat	..	South Africa	7.6
Haiti	111.6	Morocco	1.1	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	2.3	South Korea	1.1
Holy See	..	Myanmar	3.5	Spain	2.6
Honduras	3.1	Namibia	0.0	Sri Lanka	9.6
Hong Kong	..	Nauru	..	St. Helena	..
Hungary	1.8	Nepal	3.6	St. Kitts & Nevis	..
Iceland	0.0	Netherlands	1.7	St. Lucia	0.0
India	11.8	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	1.3	New Caledonia	..	St. Vincent & the Grenadines	0.0
Iran	0.1	New Zealand	2.2	Sudan	3.7
Iraq	0.5	Nicaragua	1.2	Suriname	0.0
Ireland	5.1	Niger	225.2	Svalbard & Jan Mayen Isl.	..
Israel	0.5	Nigeria	6.3	Swaziland	4.5
Italy	0.6	Niue	..	Sweden	2.3
Jamaica	3.2	Norfolk Island	..	Switzerland	1.2
Japan	0.4	North Korea	2.2	Syria	0.4
Jordan	8.6	Northern Mariana Isl.	..	Taiwan	0.0
Kazakhstan	0.1	Norway	1.1	Tajikistan	0.0
Kenya	3.7	Occ. Palestinian Terr.	..	Tanzania	1.4
Kiribati	..	Oman	0.0	Thailand	11.0
Kuwait	..	Pakistan	53.4	Togo	12.6
Kyrgyzstan	0.1	Palau	..	Tokelau	..
Laos	1.8	Panama	0.2	Tonga	..
Latvia	2.4	Papua New Guinea	0.7	Trinidad & Tobago	0.5
Lebanon	8.9	Paraguay	1.3	Tunisia	26.1
Lesotho	..	Peru	0.1	Turkey	1.1
Liberia	0.8	Philippines	4.1	Turkmenistan	0.0
Libya	13.0	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	0.0	Poland	1.7	Tuvalu	..
Lithuania	1.7	Portugal	3.2	Uganda	7.1
Luxembourg	..	Puerto Rico	..	Ukraine	0.0
Macao	..	Qatar	..	United Arab Em.	0.0
Macedonia	1.3	Réunion	0.5	United Kingdom	2.3
Madagascar	0.8	Romania	1.1	United States	1.5
Malawi	2.1	Russia	0.2	U. S. Minor Outlying Islands	..
Malaysia	0.9	Rwanda	16.2	United States Virgin Islands	..
Maldives	..	Samoa	..	Uruguay	..
Mali	1.9	San Marino	..	Uzbekistan	0.0
Malta	0.0	Sao Tome & Principe	0.3	Vanuatu	..
Marshall Isl.	..	Saudi Arabia	0.0	Venezuela	0.1
Martinique	..	Senegal	3.1	Viet Nam	8.2
Mauritania	158.7	Serbia & Montenegro	1.1	Wallis & Futuna Islands	..
Mauritius	..	Seychelles	0.0	Western Sahara	0.0
Mayotte	0.0	Sierra Leone	3.7	Yemen	5.9
Mexico	1.6	Singapore	..	Zambia	0.6
				Zimbabwe	1.2

Indicator: AGSUB

Policy Category: Productive Natural Resources
Description: Agricultural Subsidies
Data Source: Subsidies data: Table DS-4, WTO-US Department of Agriculture/Environmental Resource Service online data. (http://www.ers.usda.gov/db/Wto/AMS_database/), Annexes to the Commission Staff Working Document Accompanying the 33rd Financial Report on the European Agricultural Guidance and Guarantee Fund, Guarantee Section - 2003 Financial Year (http://europa.eu.int/comm/agriculture/fin/finrep03/ annexe_fr.pdf); Environmental Payments data: Table DS-1, WTO-US online data; Agricultural value added data: WTO_US online data, Eurostat online (http://epp.eurostat.cec.eu.int/).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1995-2001, average of available annual data for this period
Country Coverage: 238, 55 with data, the remaining countries set to 0 subsidies.

Target: 0%
Target Source: GATT and WTO agreements
QUICK SUMMARY
Maximum: 56.13
Minimum: - 1.63
Mean: 1.52
Std Dev: 5.71
Top Performers:
188 countries meet the target for this indicator
Bottom Performers:
Switzerland, Norway, Iceland, Japan, Slovakia



COUNTRY DATA (Units: Agricultural Subsidies as Percent of Agricultural Output)

Country	Value	Country	Value	Country	Value
Afghanistan	0	Brit. Indian Ocean Terr.	0	Djibouti	0
Albania	0	British Virgin Islands	0	Dominica	0
Algeria	0	Brunei Darussalam	0	Dominican Rep.	0
Am. Samoa	0	Bulgaria	1.6	East Timor	0
Andorra	0	Burkina Faso	0	Ecuador	0
Angola	0	Burundi	0	Egypt	0
Anguilla	0	Cambodia	0	El Salvador	0
Antigua & Barbuda	0	Cameroon	0	Equ. Guinea	0
Argentina	0.6	Canada	4.1	Eritrea	0
Armenia	0	Cape Verde	0	Estonia	- 0.4
Aruba	0	Cayman Islands	0	Ethiopia	0
Australia	- 0.8	Central Afr. Rep.	0	Faeroe Islands	0
Austria	0.8	Chad	0	Falkland Islands	0
Azerbaijan	0	Chile	1.0	Fiji	0
Bahamas	0	China	0	Finland	0.5
Bahrain	0	Christmas Island	0	France	8.7
Bangladesh	0	Cocos Islands	0	French Guiana	0
Barbados	0	Colombia	0.1	French Polynesia	0
Belarus	0	Comoros	0	Fr. Southern Territories	0
Belgium	1.0	Congo	0	Gabon	0
Belize	0	Cook Islands	0	Gambia	0
Benin	0	Costa Rica	0.1	Georgia	0
Bermuda	0	Côte d'Ivoire	0	Germany	6.0
Bhutan	0	Croatia	0	Ghana	0
Bolivia	0	Cuba	0	Gibraltar	0
Bosnia & Herzegovina	0	Cyprus	15.2	Greece	1.4
Botswana	0	Czech Rep.	0.4	Greenland	0
Bouvet Island	0	Dem. Rep. Congo	0	Grenada	0
Brazil	0.7	Denmark	1.2	Guadeloupe	0

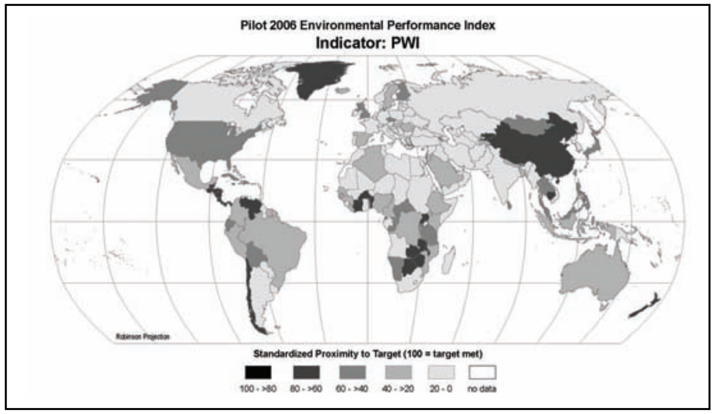
AGSUB Indicator

Country	Value	Country	Value	Country	Value
Guam	0	Micronesia	0	Slovakia	20.4
Guatemala	0	Moldova	0	Slovenia	8.1
Guinea	0	Monaco	0	Solomon Islands	0
Guinea-Bissau	0	Mongolia	0	Somalia	0
Guyana	0	Montserrat	0	South Africa	6.7
Haiti	0	Morocco	0.3	So. Georgia & So. Sandwich Isl.	0
Hrd. & McDon. Is.	0	Mozambique	0	South Korea	9.2
Holy See	0	Myanmar	0	Spain	4.7
Honduras	0	Namibia	0	Sri Lanka	0
Hong Kong	0	Nauru	0	St. Helena	0
Hungary	17.4	Nepal	0	St. Kitts & Nevis	0
Iceland	24.3	Netherlands	2.9	St. Lucia	0
India	- 1.6	Netherlands Ant.	0.0	St. Pierre & Miquelon	0
Indonesia	1.0	New Caledonia	0.0	St. Vincent & the Grenadines	0
Iran	0	New Zealand	4.5	Sudan	0
Iraq	0	Nicaragua	0	Suriname	0
Ireland	0.8	Niger	0	Svalbard & Jan Mayen Isl.	0
Israel	18.6	Nigeria	0	Swaziland	0
Italy	5.9	Niue	0	Sweden	0.6
Jamaica	0	Norfolk Island	0	Switzerland	56.1
Japan	22.3	North Korea	0	Syria	0
Jordan	17.3	Northern Mariana Isl.	0	Taiwan	7.9
Kazakhstan	0	Norway	40.1	Tajikistan	0
Kenya	0	Occ. Palestinian Terr.	0	Tanzania	0
Kiribati	0	Oman	0	Thailand	3.3
Kuwait	0	Pakistan	- 1.0	Togo	0
Kyrgyzstan	0	Palau	0	Tokelau	0
Laos	0	Panama	0	Tonga	0
Latvia	4.6	Papua New Guinea	0	Trinidad & Tobago	0
Lebanon	0	Paraguay	0	Tunisia	1.9
Lesotho	0	Peru	5.4	Turkey	1.0
Liberia	0	Philippines	0.4	Turkmenistan	0
Libya	0	Pitcairn	0	Turks & Caicos Islands	0
Liechtenstein	0	Poland	4.8	Tuvalu	0
Lithuania	0	Portugal	0.8	Uganda	0
Luxembourg	0	Puerto Rico	0	Ukraine	0
Macao	0	Qatar	0	United Arab Em.	0
Macedonia	0	Réunion	0	United Kingdom	3.2
Madagascar	0	Romania	4.8	United States	10.9
Malawi	0	Russia	0	U. S. Minor Outlying Islands	0
Malaysia	0	Rwanda	0	United States Virgin Islands	0.0
Maldives	0	Samoa	0	Uruguay	0.6
Mali	0	San Marino	0	Uzbekistan	0
Malta	0	Sao Tome & Principe	0	Vanuatu	0
Marshall Isl.	0	Saudi Arabia	0	Venezuela	10.0
Martinique	0	Senegal	0	Viet Nam	0
Mauritania	0	Serbia & Montenegro	0	Wallis & Futuna Islands	0
Mauritius	0	Seychelles	0	Western Sahara	0
Mayotte	0	Sierra Leone	0	Yemen	0
Mexico	1.5	Singapore	0	Zambia	0
				Zimbabwe	0

Indicator: PWI

Policy Category: Biodiversity and Habitat
Description: Wilderness Protection
Data Source: Protected areas data: 2005 World Database on Protected Areas (http://maps.geog.umd.edu/WDPA/WDPA_info/English/WDPA2005.html); Wilderness areas data: The Human Footprint, v.2, 2005, CIESIN, Wildlife Conservation Society (http://www.ciesin.columbia.edu/wild_areas/).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: circa 2000
Country Coverage: 204

Target: 90%
Target Source: Linked to MDG7, Target 9



QUICK SUMMARY
Maximum: 71.98
Minimum: 0.00
Mean: 15.67
Std Dev: 16.29
Top Performers:
Brunei Darussalam, Venezuela, Burkina Faso, Benin, Botswana
Bottom Performers:
26 countries have a valueof zero for this indicator

COUNTRY DATA (Units: Percentage of Wild Areas that are Protected)

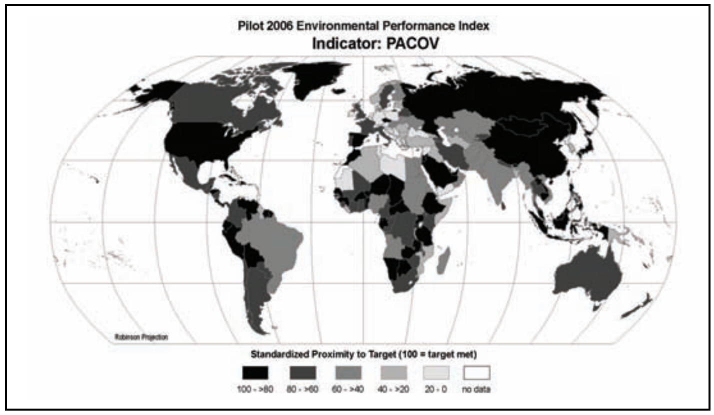
Country	Value	Country	Value	Country	Value
Afghanistan	0.8	Brit. Indian Ocean Terr.	..	Djibouti	0.2
Albania	0.3	British Virgin Islands	0.0	Dominica	41.1
Algeria	14.4	Brunei Darussalam	72.0	Dominican Rep.	29.2
Am. Samoa	..	Bulgaria	6.8	East Timor	7.6
Andorra	4.3	Burkina Faso	64.9	Ecuador	31.2
Angola	9.5	Burundi	17.9	Egypt	5.5
Anguilla	0.0	Cambodia	50.5	El Salvador	0.4
Antigua & Barbuda	5.6	Cameroon	18.8	Equ. Guinea	32.3
Argentina	9.0	Canada	8.9	Eritrea	4.2
Armenia	24.4	Cape Verde	0.0	Estonia	5.8
Aruba	0.0	Cayman Islands	18.5	Ethiopia	13.4
Australia	12.6	Central Afr. Rep.	28.2	Faeroe Islands	0.0
Austria	5.5	Chad	7.0	Falkland Islands	0.1
Azerbaijan	10.6	Chile	42.8	Fiji	..
Bahamas	4.0	China	37.1	Finland	21.7
Bahrain	0.0	Christmas Island	..	France	6.4
Bangladesh	12.7	Cocos Islands	..	French Guiana	16.5
Barbados	0.0	Colombia	19.2	French Polynesia	..
Belarus	11.4	Comoros	0.0	Fr. Southern Territories	..
Belgium	0.3	Congo	25.9	Gabon	4.5
Belize	38.1	Cook Islands	..	Gambia	0.4
Benin	62.8	Costa Rica	45.0	Georgia	3.9
Bermuda	0.0	Côte d'Ivoire	41.5	Germany	0.9
Bhutan	28.6	Croatia	1.1	Ghana	7.7
Bolivia	20.3	Cuba	29.5	Gibraltar	..
Bosnia & Herzegovina	0.0	Cyprus	21.7	Greece	3.7
Botswana	60.8	Czech Rep.	25.5	Greenland	41.7
Bouvet Island	..	Dem. Rep. Congo	15.8	Grenada	15.1
Brazil	14.1	Denmark	10.7	Guadeloupe	35.5

PWI Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	4.4
Guatemala	47.9	Moldova	1.1	Slovenia	0.0
Guinea	12.4	Monaco	..	Solomon Islands	2.2
Guinea-Bissau	19.3	Mongolia	35.1	Somalia	7.4
Guyana	10.8	Montserrat	13.5	South Africa	10.4
Haiti	1.1	Morocco	2.1	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	12.3	South Korea	7.9
Holy See	..	Myanmar	10.7	Spain	16.7
Honduras	40.8	Namibia	32.0	Sri Lanka	29.2
Hong Kong	22.2	Nauru	..	St. Helena	0.0
Hungary	19.3	Nepal	19.8	St. Kitts & Nevis	0.0
Iceland	13.0	Netherlands	3.8	St. Lucia	41.1
India	10.3	Netherlands Ant.	12.2	St. Pierre & Miquelon	..
Indonesia	15.1	New Caledonia	16.6	St. Vincent & the Grenadines	27.4
Iran	10.7	New Zealand	49.2	Sudan	5.4
Iraq	2.9	Nicaragua	42.2	Suriname	14.5
Ireland	3.2	Niger	3.0	Svalbard & Jan Mayen Isl.	..
Israel	25.0	Nigeria	14.2	Swaziland	0.7
Italy	11.0	Niue	..	Sweden	12.8
Jamaica	58.5	Norfolk Island	..	Switzerland	2.7
Japan	24.0	North Korea	1.1	Syria	1.4
Jordan	14.7	Northern Mariana Isl.	..	Taiwan	26.9
Kazakhstan	4.3	Norway	7.2	Tajikistan	17.2
Kenya	16.6	Occ. Palestinian Terr.	..	Tanzania	34.4
Kiribati	..	Oman	10.0	Thailand	31.3
Kuwait	0.0	Pakistan	5.4	Togo	29.6
Kyrgyzstan	40.5	Palau	..	Tokelau	..
Laos	35.4	Panama	52.3	Tonga	..
Latvia	3.4	Papua New Guinea	1.8	Trinidad & Tobago	6.7
Lebanon	0.0	Paraguay	2.1	Tunisia	0.3
Lesotho	0.7	Peru	14.9	Turkey	4.0
Liberia	13.7	Philippines	21.5	Turkmenistan	0.7
Libya	0.0	Pitcairn	..	Turks & Caicos Islands	33.7
Liechtenstein	50.0	Poland	1.8	Tuvalu	..
Lithuania	4.4	Portugal	10.5	Uganda	52.0
Luxembourg	0.0	Puerto Rico	5.3	Ukraine	6.0
Macao	0.0	Qatar	0.0	United Arab Em.	0.0
Macedonia	8.9	Réunion	31.0	United Kingdom	26.0
Madagascar	4.7	Romania	16.8	United States	28.6
Malawi	47.7	Russia	9.6	U. S. Minor Outlying Islands	..
Malaysia	27.1	Rwanda	21.8	United States Virgin Islands	25.0
Maldives	0.0	Samoa	..	Uruguay	6.0
Mali	2.0	San Marino	0.0	Uzbekistan	6.7
Malta	0.0	Sao Tome & Principe	0.0	Vanuatu	0.0
Marshall Isl.	..	Saudi Arabia	13.4	Venezuela	65.3
Martinique	8.6	Senegal	19.8	Viet Nam	10.8
Mauritania	0.2	Serbia & Montenegro	0.8	Wallis & Futuna Islands	..
Mauritius	9.9	Seychelles	16.0	Western Sahara	..
Mayotte	0.0	Sierra Leone	10.4	Yemen	0.0
Mexico	12.5	Singapore	32.3	Zambia	48.0
				Zimbabwe	39.4

Indicator: PACOV

Policy Category: Biodiversity and Habitat
Description: Ecoregion Protection
Data Source: Protected Areas data: 2004 World Database of Protected Areas(http://maps.geog.umd.edu/WDPA/WDPA_info/English/WDPA2005.html); Ecoregions data: World Wildlife Federations map: Terrestrial Ecoregions of the World (http://worldwildlife.org/wildworld/).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 2004
Country Coverage: 212



Target: 10% (score of 1)
Target Source: Linked to MDG7, Target 9 / IUCN

QUICK SUMMARY
Maximum: 1.00
Minimum: 0.00
Mean: 0.55
Std Dev: 0.36

Top Performers:
37 countries meet the target for this indicator

Bottom Performers:
Kiribati, Marshall Isl., Northern Mariana Isl., Monaco, Malta

COUNTRY DATA (Units:Scale 0-1, 1=10% of each biome protected)

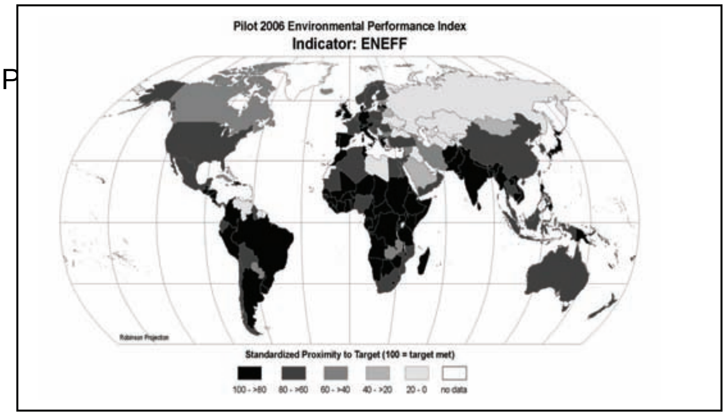
Country	Value	Country	Value	Country	Value
Afghanistan	0.59	Brit. Indian Ocean Terr.	..	Djibouti	0.01
Albania	0.01	British Virgin Islands	0.44	Dominica	0.00
Algeria	0.39	Brunei Darussalam	1.00	Dominican Rep.	1.00
Am. Samoa	..	Bulgaria	0.27	East Timor	0.49
Andorra	1.00	Burkina Faso	1.00	Ecuador	0.81
Angola	0.57	Burundi	0.59	Egypt	0.46
Anguilla	0.92	Cambodia	1.00	El Salvador	0.12
Antigua & Barbuda	1.00	Cameroon	0.62	Equ. Guinea	1.00
Argentina	0.69	Canada	0.76	Eritrea	0.52
Armenia	0.75	Cape Verde	1.00	Estonia	0.33
Aruba	0.00	Cayman Islands	1.00	Ethiopia	0.86
Australia	0.72	Central Afr. Rep.	1.00	Faeroe Islands	0.00
Austria	0.12	Chad	1.00	Falkland Islands	0.01
Azerbaijan	0.71	Chile	0.77	Fiji	0.03
Bahamas	0.90	China	0.84	Finland	0.59
Bahrain	0.13	Christmas Island	..	France	0.70
Bangladesh	0.37	Cocos Islands	..	French Guiana	1.00
Barbados	0.00	Colombia	0.78	French Polynesia	0.02
Belarus	0.72	Comoros	0.17	Fr. Southern Territories	..
Belgium	0.02	Congo	0.80	Gabon	1.00
Belize	1.00	Cook Islands	0.17	Gambia	0.11
Benin	1.00	Costa Rica	1.00	Georgia	0.24
Bermuda	0.00	Côte d'Ivoire	0.80	Germany	0.02
Bhutan	1.00	Croatia	0.08	Ghana	0.70
Bolivia	0.93	Cuba	0.90	Gibraltar	..
Bosnia & Herzegovina	0.00	Cyprus	0.79	Greece	0.12
Botswana	1.00	Czech Rep.	1.00	Greenland	1.00
Bouvet Island	..	Dem. Rep. Congo	0.66	Grenada	0.38
Brazil	0.59	Denmark	0.38	Guadeloupe	0.79

PACOV Indicator

Country	Value	Country	Value	Country	Value
Guam	0.22	Micronesia	0.21	Slovakia	0.57
Guatemala	0.68	Moldova	0.03	Slovenia	0.04
Guinea	0.96	Monaco	0.00	Solomon Islands	0.12
Guinea-Bissau	0.44	Mongolia	0.93	Somalia	0.26
Guyana	0.30	Montserrat	0.78	South Africa	0.77
Haiti	0.27	Morocco	0.97	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	0.36	South Korea	0.40
Holy See	..	Myanmar	0.43	Spain	0.97
Honduras	1.00	Namibia	0.99	Sri Lanka	0.71
Hong Kong	..	Nauru	..	St. Helena	0.00
Hungary	0.53	Nepal	0.79	St. Kitts & Nevis	0.03
Iceland	0.94	Netherlands	0.14	St. Lucia	1.00
India	0.57	Netherlands Ant.	0.39	St. Pierre & Miquelon	..
Indonesia	0.97	New Caledonia	1.00	St. Vincent & the Grenadines	0.19
Iran	0.63	New Zealand	0.78	Sudan	0.48
Iraq	0.20	Nicaragua	0.75	Suriname	1.00
Ireland	0.11	Niger	0.89	Svalbard & Jan Mayen Isl.	..
Israel	0.55	Nigeria	0.42	Swaziland	0.46
Italy	0.63	Niue	..	Sweden	0.73
Jamaica	1.00	Norfolk Island	..	Switzerland	0.14
Japan	1.00	North Korea	0.16	Syria	0.03
Jordan	0.96	Northern Mariana Isl.	0.00	Taiwan	0.87
Kazakhstan	0.44	Norway	0.28	Tajikistan	0.54
Kenya	0.70	Occ. Palestinian Terr.	..	Tanzania	0.99
Kiribati	0.00	Oman	0.50	Thailand	0.77
Kuwait	0.36	Pakistan	0.47	Togo	1.00
Kyrgyzstan	0.80	Palau	1.00	Tokelau	..
Laos	1.00	Panama	1.00	Tonga	0.80
Latvia	0.25	Papua New Guinea	0.31	Trinidad & Tobago	0.19
Lebanon	0.07	Paraguay	0.62	Tunisia	0.04
Lesotho	0.05	Peru	0.80	Turkey	0.26
Liberia	0.23	Philippines	1.00	Turkmenistan	0.30
Libya	0.00	Pitcairn	..	Turks & Caicos Islands	1.00
Liechtenstein	0.11	Poland	0.19	Tuvalu	1.00
Lithuania	0.17	Portugal	0.76	Uganda	0.81
Luxembourg	0.00	Puerto Rico	0.44	Ukraine	0.48
Macao	..	Qatar	1.00	United Arab Em.	1.00
Macedonia	0.38	Réunion	..	United Kingdom	0.69
Madagascar	0.44	Romania	0.25	United States	0.91
Malawi	0.61	Russia	0.91	U. S. Minor Outlying Islands	..
Malaysia	0.98	Rwanda	1.00	United States Virgin Islands	1.00
Maldives	0.00	Samoa	0.55	Uruguay	0.57
Mali	0.62	San Marino	0.00	Uzbekistan	0.48
Malta	0.00	Sao Tome & Principe	0.34	Vanuatu	0.09
Marshall Isl.	0.00	Saudi Arabia	1.00	Venezuela	1.00
Martinique	1.00	Senegal	1.00	Viet Nam	0.50
Mauritania	0.03	Serbia & Montenegro	0.09	Wallis & Futuna Islands	..
Mauritius	0.37	Seychelles	..	Western Sahara	..
Mayotte	..	Sierra Leone	0.78	Yemen	0.00
Mexico	0.65	Singapore	0.55	Zambia	1.00
				Zimbabwe	0.80

Indicator: ENEFF

Policy Category: Sustainable Energy
Description: Energy Efficiency
Data Source: Total energy consumption data: Energy information Administration, International Energy Annual 2003 http://www.eia.doe.gov/emeu/iea/wecbtu.html (Table E.1)); GDP data: World Bank, World Development Indicators (http://devdata.worldbank.org/dataonline/), plus alternate GDP data for select countries.
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1994-2003
Country Coverage: 182



Target: 1,650 Terajoules / million $ GDP PPP
Target Source: Linked to MDG7, Target 9, Indicator 27

QUICK SUMMARY
Maximum: 48,332.41
Minimum: 288.26
Mean: 8,430.08
Std Dev: 7,826.07
Top Performers:
15 countries meet the target for this indicator
Bottom Performers:
Uzbekistan ,Trinidad & Tobago, Tajikistan, United Arab Em., Bahrain

COUNTRY DATA (Units: Terajoules per Million GDP in Constant 2000 International PPP)

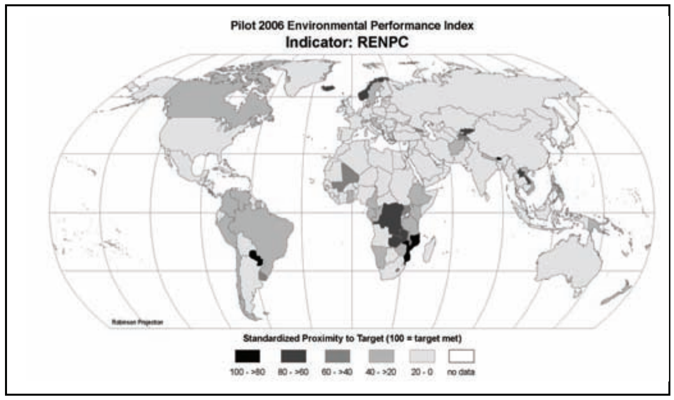
Country	Value	Country	Value	Country	Value
Afghanistan	967	Brit. Indian Ocean Terr.	..	Djibouti	18,185
Albania	6,751	British Virgin Islands	..	Dominica	4,902
Algeria	6,797	Brunei Darussalam	..	Dominican Rep.	4,699
Am. Samoa	..	Bulgaria	15,195	East Timor	..
Andorra	..	Burkina Faso	1,261	Ecuador	8,247
Angola	4,668	Burundi	1,650	Egypt	8,732
Anguilla	..	Cambodia	291	El Salvador	3,643
Antigua & Barbuda	9,058	Cameroon	2,300	Equ. Guinea	382
Argentina	6,120	Canada	14,227	Eritrea	2,142
Armenia	15,417	Cape Verde	925	Estonia	12,835
Aruba	..	Cayman Islands	..	Ethiopia	1,588
Australia	8,960	Central Afr. Rep.	1,362	Faeroe Islands	..
Austria	5,833	Chad	288	Falkland Islands	..
Azerbaijan	21,371	Chile	6,832	Fiji	5,703
Bahamas	8,710	China	7,079	Finland	8,349
Bahrain	30,151	Christmas Island	..	France	6,685
Bangladesh	2,524	Cocos Islands	..	French Guiana	..
Barbados	5,210	Colombia	3,805	French Polynesia	1,747
Belarus	20,601	Comoros	1,350	Fr. Southern Territories	..
Belgium	8,838	Congo	4,238	Gabon	4,561
Belize	7,142	Cook Islands	..	Gambia	1,550
Benin	3,480	Costa Rica	4,462	Georgia	11,490
Bermuda	4,843.	Côte d'Ivoire	4,027	Germany	6,382
Bhutan	6,373	Croatia	7,696	Ghana	2,762
Bolivia	8,241	Cuba	14,968	Gibraltar	..
Bosnia & Herzegovina	8,685	Cyprus	6,728	Greece	6,215
Botswana	3,487	Czech Rep.	9,418	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	2,139	Grenada	4,248
Brazil	6,402	Denmark	5,388	Guadeloupe	..

ENEFF Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	11,138
Guatemala	3,449	Moldova	27,180	Slovenia	7,898
Guinea	1,356	Monaco	..	Solomon Islands	3,304
Guinea-Bissau	4,960	Mongolia	20,733	Somalia	2,386
Guyana	7,341	Montserrat	..	South Africa	10,129
Haiti	1,822	Morocco	4,117.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	7,931	South Korea	9,432
Holy See	..	Myanmar	2,332	Spain	6,229
Honduras	5,355	Namibia	4,102	Sri Lanka	2,724
Hong Kong	4,607	Nauru	..	St. Helena	..
Hungary	6,909	Nepal	1,781	St. Kitts & Nevis	2,572
Iceland	15,716	Netherlands	8,000	St. Lucia	5,502
India	4,571	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	6,485	New Caledonia	5,047	St. Vincent & the Grenadines	4,281
Iran	13,048	New Zealand	9,838	Sudan	2,156
Iraq	25,242	Nicaragua	3,584	Suriname	25,730
Ireland	4,014	Niger	1,622	Svalbard & Jan Mayen Isl.	..
Israel	5,780	Nigeria	6,931	Swaziland	3,948
Italy	5,090	Niue	..	Sweden	8,238
Jamaica	15,398	Norfolk Island	..	Switzerland	5,361
Japan	6,248	North Korea	..	Syria	14,076
Jordan	10,528	Northern Mariana Isl.	..	Taiwan	7,490
Kazakhstan	21,143	Norway	10,689	Tajikistan	37,289
Kenya	4,642	Occ. Palestinian Terr.	..	Tanzania	3,493
Kiribati	..	Oman	10,917	Thailand	6,654
Kuwait	21,733	Pakistan	6,160	Togo	2,316
Kyrgyzstan	20,967	Palau	..	Tokelau	..
Laos	4,833	Panama	9,763	Tonga	2,281
Latvia	6,344	Papua New Guinea	3,290	Trinidad & Tobago	37,706
Lebanon	10,179	Paraguay	15,943	Tunisia	4,850
Lesotho	1,475	Peru	3,997	Turkey	6,690
Liberia	2,192	Philippines	3,603	Turkmenistan	25,630
Libya	20,811	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	8,036	Tuvalu	..
Lithuania	10,741	Portugal	5,618	Uganda	1,010
Luxembourg	6,177	Puerto Rico	4,858	Ukraine	23,643
Macao	2,669	Qatar	..	United Arab Em.	30,690
Macedonia	8,657	Réunion	..	United Kingdom	5,668
Madagascar	2,713	Romania	9,464	United States	9,112
Malawi	3,689	Russia	22,507	U. S. Minor Outlying Islands	..
Malaysia	9,851	Rwanda	1,298	United States Virgin Islands	..
Maldives	..	Samoa	2,757	Uruguay	5,985
Mali	1,318	San Marino	..	Uzbekistan	48,332
Malta	5,468	Sao Tome & Principe	..	Vanuatu	2,169
Marshall Isl.	..	Saudi Arabia	18,749	Venezuela	22,593
Martinique	..	Senegal	3,905	Viet Nam	4,880
Mauritania	9,024	Serbia & Montenegro	32,139	Wallis & Futuna Islands	..
Mauritius	3,792	Seychelles	11,504	Western Sahara	..
Mayotte	..	Sierra Leone	3,451	Yemen	9,360
Mexico	7,153	Singapore	16,660	Zambia	11,906
				Zimbabwe	6,126

Indicator: RENPC

Policy Category: Sustainable Energy
Description: Renewable Energy
Data Source: Renewable energy production and total energy consumption data: Energy Information Administration, International Energy Annual 2003. (http://www.eia.doe.gov/emeu/iea/wecbtu.html).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1994-2003, most recent year available.
Country Coverage: 210



Target: 100%
Target Source: Linked to MDG7, Target 9, Indicator 27 / Johannesburg Plan of Implementation

QUICK SUMMARY
Maximum: 123.39
Minimum: 0.00
Mean: 12.91
Std Dev: 20.39

Top Performers:
Paraguay, Bhutan, Mozambique, Zambia, DR Congo

Bottom Performers:
61 countries have a valueof zero for this indicator

COUNTRY DATA (Units: Hydropower & Renewable Energy Consump. as a % of Total Energy Consump.)

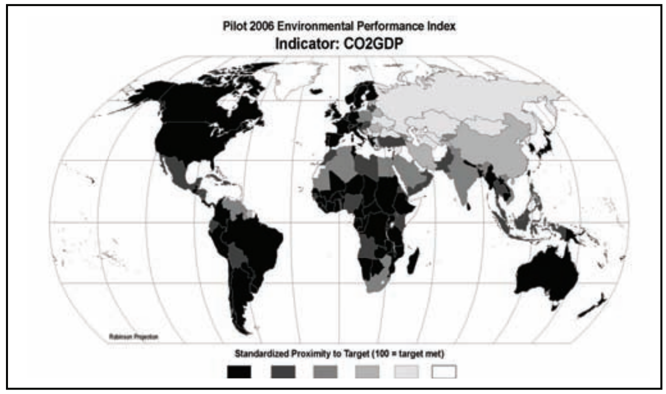
Country	Value	Country	Value	Country	Value
Afghanistan	33.5	Brit. Indian Ocean Terr.	..	Djibouti	0.0
Albania	41.0	British Virgin Islands	0.0	Dominica	16.9
Algeria	0.0	Brunei Darussalam	0.0	Dominican Rep.	4.9
Am. Samoa	0.0	Bulgaria	2.5	East Timor	..
Andorra	..	Burkina Faso	6.7	Ecuador	18.8
Angola	9.7	Burundi	18.6	Egypt	5.7
Anguilla	..	Cambodia	6.8	El Salvador	29.7
Antigua & Barbuda	0.0	Cameroon	38.6	Equ. Guinea	0.0
Argentina	13.8	Canada	25.9	Eritrea	0.0
Armenia	9.7	Cape Verde	0.0	Estonia	0.2
Aruba	0.0	Cayman Islands	0.0	Ethiopia	26.8
Australia	3.7	Central Afr. Rep.	14.9	Faeroe Islands	8.4
Austria	24.8	Chad	0.0	Falkland Islands	0.0
Azerbaijan	3.9	Chile	23.8	Fiji	23.2
Bahamas	0.0	China	6.3	Finland	16.3
Bahrain	0.0	Christmas Island	..	France	5.7
Bangladesh	1.8	Cocos Islands	..	French Guiana	0.0
Barbados	0.0	Colombia	32.1	French Polynesia	7.4
Belarus	0.0	Comoros	1.4	Fr. Southern Territories	..
Belgium	0.7	Congo	22.9	Gabon	25.4
Belize	6.5	Cook Islands	0.0	Gambia	0.0
Benin	0.1	Costa Rica	52.2	Georgia	52.7
Bermuda	0.0	Côte d'Ivoire	16.6	Germany	3.8
Bhutan	104.6	Croatia	12.5	Ghana	36.7
Bolivia	13.1	Cuba	1.8	Gibraltar	0.0
Bosnia & Herzegovina	24.6	Cyprus	0.0	Greece	4.3
Botswana	0.0	Czech Rep.	1.2	Greenland	0.0
Bouvet Island	..	Dem. Rep. Congo	76.6	Grenada	0.0
Brazil	37.0	Denmark	9.2	Guadeloupe	0.0

RENPC Indicator

Country	Value	Country	Value	Country	Value
Guam	0.0	Micronesia	..	Slovakia	4.4
Guatemala	17.4	Moldova	2.1	Slovenia	10.8
Guinea	19.9	Monaco	..	Solomon Islands	0.0
Guinea-Bissau	0.0	Mongolia	0.0	Somalia	0.0
Guyana	0.3	Montserrat	0.0	South Africa	0.2
Haiti	9.5	Morocco	2.1	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	92.3	South Korea	0.7
Holy See	..	Myanmar	15.1	Spain	9.4
Honduras	17.5	Namibia	28.8	Sri Lanka	15.4
Hong Kong	0.0	Nauru	0.0	St. Helena	0.0
Hungary	0.2	Nepal	36.5	St. Kitts & Nevis	0.0
Iceland	71.4	Netherlands	1.3	St. Lucia	0.0
India	5.3	Netherlands Ant.	0.0	St. Pierre & Miquelon	0.0
Indonesia	4.6	New Caledonia	11.6	St. Vincent & the Grenadines	10.6
Iran	1.7	New Zealand	35.3	Sudan	9.8
Iraq	0.3	Nicaragua	14.0	Suriname	39.3
Ireland	1.9	Niger	0.0	Svalbard & Jan Mayen Isl.	..
Israel	0.1	Nigeria	8.4	Swaziland	9.2
Italy	6.8	Niue	0.0	Sweden	28.1
Jamaica	1.3	Norfolk Island	..	Switzerland	29.1
Japan	6.2	North Korea	12.2	Syria	12.6
Jordan	0.2	Northern Mariana Isl.	..	Taiwan	1.8
Kazakhstan	4.6	Norway	60.4	Tajikistan	59.8
Kenya	26.2	Occ. Palestinian Terr.	..	Tanzania	37.9
Kiribati	0.0	Oman	0.0	Thailand	3.2
Kuwait	0.0	Pakistan	14.0	Togo	0.2
Kyrgyzstan	68.8	Palau	..	Tokelau	..
Laos	75.7	Panama	14.4	Tonga	0.0
Latvia	14.0	Papua New Guinea	20.4	Trinidad & Tobago	0.0
Lebanon	4.5	Paraguay	123.4	Tunisia	0.3
Lesotho	54.3	Peru	33.4	Turkey	10.8
Liberia	0.0	Philippines	22.0	Turkmenistan	0.0
Libya	0.0	Pitcairn	..	Turks & Caicos Islands	0.0
Liechtenstein	..	Poland	0.7	Tuvalu	..
Lithuania	0.8	Portugal	16.4	Uganda	46.9
Luxembourg	0.9	Puerto Rico	0.5	Ukraine	1.7
Macao	0.0	Qatar	0.0	United Arab Em.	0.0
Macedonia	8.4	Réunion	..	United Kingdom	1.2
Madagascar	15.1	Romania	9.7	United States	4.0
Malawi	52.9	Russia	6.1	U. S. Minor Outlying Islands	..
Malaysia	2.6	Rwanda	7.1	United States Virgin Islands	0.0
Maldives	0.0	Samoa	23.2	Uruguay	52.2
Mali	43.4	San Marino	..	Uzbekistan	3.5
Malta	0.0	Sao Tome & Principe	5.0	Vanuatu	0.0
Marshall Isl.	..	Saudi Arabia	0.0	Venezuela	20.9
Martinique	0.0	Senegal	0.0	Viet Nam	21.6
Mauritania	0.8	Serbia & Montenegro	16.0	Wallis & Futuna Islands	..
Mauritius	2.3	Seychelles	0.0	Western Sahara	0.0
Mayotte	..	Sierra Leone	0.0	Yemen	0.0
Mexico	4.8	Singapore	0.0	Zambia	78.5
				Zimbabwe	23.7

Indicator: CO2GDP

Policy Category: Sustainable Energy
Description: C02 per GDP
Data Source: CO2 emission data: Carbon Dioxide Information Analysis Center (CDIAC), http://cdiac.esd.ornl.gov/trends/emis/tre_coun.htm; GDP data: World Bank, World Development Indicators (http://devdata.worldbank.org/dataonline/), plus alternate GDP data for select countries.
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 2000
Country Coverage: 181



Target: 0 Tonnes / $ GDP PPP
Target Source: Expert judgment

QUICK SUMMARY
Maximum: 4,859.02
Minimum: 21.15
Mean: 363.68
Std Dev: 533.42
Top Performers:
Chad, Cambodia, French Polynesia, Switzerland, Myanmar
Bottom Performers:
North Korea, Turkmenistan, Ukraine, Uzbekistan, Mongolia

COUNTRY DATA (Units: Metric Tons of Carbon Emissions per Million GDP in Constant 1995 U.S. Dollars)

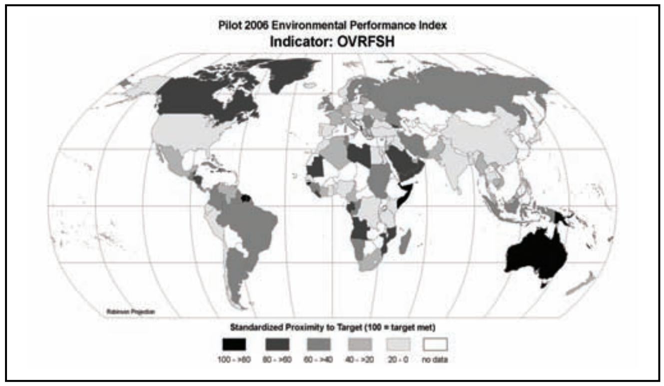
Country	Value	Country	Value	Country	Value
Afghanistan	..	Brit. Indian Ocean Terr.	..	Djibouti	213
Albania	225	British Virgin Islands	..	Dominica	113
Algeria	500	Brunei Darussalam	..	Dominican Rep.	378
Am. Samoa	..	Bulgaria	919	East Timor	..
Andorra	..	Burkina Faso	94	Ecuador	328
Angola	254	Burundi	70	Egypt	499
Anguilla	..	Cambodia	31	El Salvador	165
Antigua & Barbuda	157	Cameroon	178	Equ. Guinea	78
Argentina	129	Canada	168	Eritrea	271
Armenia	507	Cape Verde	57	Estonia	841
Aruba	..	Cayman Islands	..	Ethiopia	204
Australia	209	Central Afr. Rep.	59	Faeroe Islands	..
Austria	62	Chad	21	Falkland Islands	..
Azerbaijan	1,846	Chile	201	Fiji	92
Bahamas	116	China	731	Finland	89
Bahrain	749	Christmas Island	..	France	56
Bangladesh	163	Cocos Islands	..	French Guiana	..
Barbados	146	Colombia	165	French Polynesia	32
Belarus	851	Comoros	91	Fr. Southern Territories	..
Belgium	88	Congo	207	Gabon	177
Belize	284	Cook Islands	..	Gambia	153
Benin	170	Costa Rica	99	Georgia	471
Bermuda	..	Côte d'Ivoire	220	Germany	80
Bhutan	252	Croatia	240	Ghana	202
Bolivia	381	Cuba	263	Gibraltar	..
Bosnia & Herzegovina	828	Cyprus	164	Greece	176
Botswana	162	Czech Rep.	586	Greenland	..
Bouvet Island	..	Dem. Rep. Congo	162	Grenada	154
Brazil	107	Denmark	59	Guadeloupe	..

CO2GDP Indicator

Country	Value	Country	Value	Country	Value
Guam	..	Micronesia	..	Slovakia	419
Guatemala	152	Moldova	1,159	Slovenia	172
Guinea	78	Monaco	..	Solomon Islands	166
Guinea-Bissau	286	Mongolia	1,992	Somalia	..
Guyana	613	Montserrat	..	South Africa	519
Haiti	136	Morocco	254.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	95	South Korea	188
Holy See	..	Myanmar	43	Spain	110
Honduras	284	Namibia	120	Sri Lanka	167
Hong Kong	54	Nauru	..	St. Helena	..
Hungary	272	Nepal	167	St. Kitts & Nevis	..
Iceland	68	Netherlands	76	St. Lucia	151
India	621	Netherlands Ant.	..	St. Pierre & Miquelon	..
Indonesia	352	New Caledonia	123	St. Vincent & the Grenadines	150
Iran	802	New Zealand	127	Sudan	148
Iraq	..	Nicaragua	400	Suriname	774
Ireland	109	Niger	149	Svalbard & Jan Mayen Isl.	..
Israel	155	Nigeria	305	Swaziland	65
Italy	97	Niue	..	Sweden	44
Jamaica	549	Norfolk Island	..	Switzerland	32
Japan	57	North Korea	4,859	Syria	1,152
Jordan	541	Northern Mariana Isl.	..	Taiwan	212
Kazakhstan	1,437	Norway	77	Tajikistan	879
Kenya	258	Occ. Palestinian Terr.	..	Tanzania	182
Kiribati	115.6	Oman	378	Thailand	316
Kuwait	474	Pakistan	402	Togo	335
Kyrgyzstan	580	Palau	629	Tokelau	..
Laos	47	Panama	174	Tonga	190
Latvia	264	Papua New Guinea	136	Trinidad & Tobago	1,059
Lebanon	332	Paraguay	107	Tunisia	213
Lesotho	..	Peru	133	Turkey	294
Liberia	182	Philippines	235	Turkmenistan	3,122
Libya	373	Pitcairn	..	Turks & Caicos Islands	..
Liechtenstein	..	Poland	579	Tuvalu	..
Lithuania	360	Portugal	126	Uganda	53
Luxembourg	90	Puerto Rico	46	Ukraine	2,147
Macao	67	Qatar	..	United Arab Em.	300
Macedonia	593	Réunion	..	United Kingdom	118
Madagascar	162	Romania	718	United States	171
Malawi	121	Russia	914	U. S. Minor Outlying Islands	..
Malaysia	352	Rwanda	76	United States Virgin Islands	..
Maldives	228	Samoa	156	Uruguay	69
Mali	51	San Marino	..	Uzbekistan	2,007
Malta	190	Sao Tome & Principe	476	Vanuatu	89
Marshall Isl.	..	Saudi Arabia	632	Venezuela	540
Martinique	..	Senegal	197	Viet Nam	540
Mauritania	643	Serbia & Montenegro	838	Wallis & Futuna Islands	..
Mauritius	160	Seychelles	90	Western Sahara	..
Mayotte	..	Sierra Leone	200	Yemen	407
Mexico	311	Singapore	142	Zambia	125
				Zimbabwe	516

Indicator: OVRFSH

Policy Category: Productive Resource Management
Description: Overfishing
Data Source: South Pacific Applied Geosciences Commission, Environmental Vulnerability Index Indicator 34 (http://www.sopac.org/tiki/tiki-index.php?page=EVI).
NOTE: See methodological documentation at the end of this annex for expanded source information.
Time Period: 1993-1998, average ratio of productivity to catch for these five years.
Country Coverage: 172



Target: No overfishing (score of 1)
Target Source: By definition

QUICK SUMMARY
Maximum: 7.00
Minimum: 1.00
Mean: 3.91
Std Dev: 1.70

Top Performers:
16 countries meet the target for this indicator

Bottom Performers:
9 countries have the maximum value (7) for this indicator

COUNTRY DATA (Units: Scores Between One and Seven with High Scores Corresponding to Overfishing)

Country	Value	Country	Value	Country	Value
Afghanistan	..	Brit. Indian Ocean Terr.	..	Djibouti	1
Albania	3	British Virgin Islands	..	Dominica	..
Algeria	5	Brunei Darussalam	3	Dominican Rep.	4
Am. Samoa	1	Bulgaria	4	East Timor	..
Andorra	..	Burkina Faso	..	Ecuador	6
Angola	3	Burundi	..	Egypt	6
Anguilla	2	Cambodia	5	El Salvador	4
Antigua & Barbuda	2	Cameroon	5	Equ. Guinea	..
Argentina	4	Canada	3	Eritrea	..
Armenia	..	Cape Verde	3	Estonia	4
Aruba	2	Cayman Islands	1	Ethiopia	..
Australia	2	Central Afr. Rep.	..	Faeroe Islands	6
Austria	..	Chad	..	Falkland Islands	..
Azerbaijan	..	Chile	7	Fiji	3
Bahamas	1	China	7	Finland	4
Bahrain	3	Christmas Island	..	France	5
Bangladesh	6	Cocos Islands	..	French Guiana	1
Barbados	4	Colombia	4	French Polynesia	2
Belarus	..	Comoros	4	Fr. Southern Territories	..
Belgium	5	Congo	4	Gabon	3
Belize	3	Cook Islands	1	Gambia	5
Benin	6	Costa Rica	4	Georgia	3
Bermuda	2.	Côte d'Ivoire	5	Germany	5
Bhutan	..	Croatia	4	Ghana	6
Bolivia	..	Cuba	4	Gibraltar	..
Bosnia & Herzegovina	..	Cyprus	4	Greece	5
Botswana	..	Czech Rep.	..	Greenland	3
Bouvet Island	..	Dem. Rep. Congo	6	Grenada	2
Brazil	4	Denmark	6	Guadeloupe	5

OVRFSH Indicator

Country	Value	Country	Value	Country	Value
Guam	2	Micronesia	..	Slovakia	..
Guatemala	4	Moldova	..	Slovenia	7
Guinea	4	Monaco	1	Solomon Islands	4
Guinea-Bissau	2	Mongolia	..	Somalia	2
Guyana	4	Montserrat	1	South Africa	5
Haiti	3	Morocco	6.	So. Georgia & So. Sandwich Isl.	..
Hrd. & McDon. Is.	..	Mozambique	3	South Korea	6
Holy See	..	Myanmar	5	Spain	6
Honduras	3	Namibia	4	Sri Lanka	6
Hong Kong	..	Nauru	3	St. Helena	2
Hungary	..	Nepal	..	St. Kitts & Nevis	2
Iceland	7	Netherlands	5	St. Lucia	4
India	6	Netherlands Ant.	1	St. Pierre & Miquelon	2
Indonesia	4	New Caledonia	1	St. Vincent & the Grenadines	4
Iran	4	New Zealand	5	Sudan	4
Iraq	7	Nicaragua	3	Suriname	2
Ireland	5	Niger	..	Svalbard & Jan Mayen Isl.	..
Israel	6	Nigeria	6	Swaziland	..
Italy	5	Niue	2	Sweden	4
Jamaica	3	Norfolk Island	..	Switzerland	..
Japan	7	North Korea	6	Syria	6
Jordan	5	Northern Mariana Isl.	1	Taiwan	7
Kazakhstan	..	Norway	7	Tajikistan	..
Kenya	6	Occ. Palestinian Terr.	..	Tanzania	6
Kiribati	3.0	Oman	3	Thailand	7
Kuwait	3	Pakistan	5	Togo	6
Kyrgyzstan	..	Palau	2	Tokelau	1
Laos	..	Panama	5	Tonga	2
Latvia	5	Papua New Guinea	2	Trinidad & Tobago	3
Lebanon	4	Paraguay	..	Tunisia	4
Lesotho	..	Peru	7	Turkey	6
Liberia	3	Philippines	6	Turkmenistan	..
Libya	3	Pitcairn	1	Turks & Caicos Islands	2
Liechtenstein	..	Poland	6	Tuvalu	1
Lithuania	5	Portugal	6	Uganda	..
Luxembourg	..	Puerto Rico	2	Ukraine	5
Macao	..	Qatar	2	United Arab Em.	5
Macedonia	..	Réunion	4	United Kingdom	4
Madagascar	4	Romania	4	United States	6
Malawi	..	Russia	4	U. S. Minor Outlying Islands	..
Malaysia	5	Rwanda	..	United States Virgin Islands	3
Maldives	5	Samoa	4	Uruguay	4
Mali	..	San Marino	..	Uzbekistan	..
Malta	3	Sao Tome & Principe	2	Vanuatu	3
Marshall Isl.	1	Saudi Arabia	3	Venezuela	5
Martinique	4	Senegal	6	Viet Nam	5
Mauritania	3	Serbia & Montenegro	..	Wallis & Futuna Islands	1
Mauritius	3	Seychelles	2	Western Sahara	..
Mayotte	2	Sierra Leone	4	Yemen	3
Mexico	5	Singapore	5	Zambia	..
				Zimbabwe	..

Pilot 2006 EPI Indicator Methodological Descriptions

Indicator: OZONE
Policy Category: Air Quality
Description: Regional Ozone
Data Source: Data on ozone concentrations up to an altitude of 70 meters above ground level from the global chemical tracer model (Mozart-2) were processed by Jungfeng Liu under the overall supervision of Denise Mauzerall, Princeton University. MOZART was developed at NCAR, the Max-Planck-Institute for Meteorology, and NOAA/GFDL. Available at: http://gctm.acd.ucar.edu/mozart/models/m2/index.shtml. There are currently 3 versions of the model. MOZART-2 is the tropospheric version that was published in Horowitz et al. [JGR, 2003]. For documentation on MOZART-2, please refer to: Horowitz, L. W., Walters, S., Mauzerall, D. L., Emmons, L. K., Rasch, P. J., Granier, C., Tie, X., Lamarque, J.-F., Schultz, M. G., Tyndall, G. S., Orlando, J. J., and Brasseur, G. P., "A Global Simulation of Tropospheric Ozone and Related Tracers: Description and Evaluation of MOZART, Version 2," J. of Geophys. Res., 108 (D24), 4784, doi:10.1029/2002JD002853, 2003. Full text (PDF) at: http://www.gfdl.noaa.gov/~lwh/mozart/moz2_paper.pdf.
Methodological Notes: We used the Mozart Model to output daily ozone concentration estimates on a global grid measuring approximately 1.9 degrees, for a 14-year time period. For each grid cell, we calculated the average of the 10 highest daily concentrations. We then calculated two national aggregations. First, we averaged the 10 highest daily concentrations across all grid cells within a country. Second, we calculated the maximum of these maximum highest daily averages across all grid cells within a country. We then averaged these two national values to arrive at a single composite measure of ozone concentration.

Indicator: PM10
Policy Category: Air Quality / Environmental Health
Description: Urban Particulates
Data Source: Global Model of Ambient Particulates (GMAPS), World Bank (http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20785646~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html), reference papers: Kiran Dev Pandey, David Wheeler, Bart Ostro, Uwe Deichmann, and Kirk Hamilton, Katie Bolt (forthcoming 2006, available at above link) *Ambient Particulate Matter Concentrations in Residential and Pollution Hotspot areas of World Cities: New Estimates based on the Global Model of Ambient Particulates (GMAPS)*, Aaron J. Cohen, et al. 2004. Chapter 17: Urban air pollution. In: Ezzati et al. (eds). *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Health Risks*, Geneva: World Health Organization (http://ehs.sph.berkeley.edu/krsmith/publications/Chapt%2017%20Urban%20outdoor%20air.pdf); More recent data were obtained for Albania (2002, Ministry of Environment), Bulgaria (2002, European Environment Agency), Czech Republic (2002, EEA), Hungary (2002, EEA), Romania (1998, AMIS) and Slovakia (2002, EEA).
Methodological Notes: A population weighted PM10 concentration estimate was calculated by country. Population weighting was used to account for exposure. Only cities larger than 100,000 population and national capitals were considered.
Indicator: INDOOR
Policy Category: Environmental Health

Methodological Notes: Indoor Air Pollution
Data Source: Desai, Manish A., Sumi Mehta, Kirk R. Smith. 2004. *Assessing the environmental burden of disease at national and local levels.* Geneva: World Health Organization. Available at: http://www.who.int/quantifying_ehimpacts/publications/9241591358/en/ (accessed December 2004).
Methodological Notes: Solid fuel use is defined as the household combustion of coal or biomass (such as dung, charcoal, wood, or crop residues). The approach taken in this guide is based on a binary classification scheme for exposure levels, separating the study population into those exposed to solid fuel use and those not exposed followed by the application of relative risks derived from a comprehensive review of the current epidemiological literature on solid fuel use. Central estimates used. For China, original data provided separately for children and adults. These values were averaged. A single value was provided covering both Ethiopia and Eritrea. This was applied to both countries.

Indicator: WATSUP
Policy Category: Environmental Health
Description: Drinking Water
Data Source: Millennium Indicator: 'Water, percentage of population with sustainable access to improved drinking water sources, total (WHO-UNICEF).' Data last updated on 10 November 2004. Found at: http://millenniumindicators.un.org/unsd/mi/mi_series_results.asp?rowId=665. Accessed on 23 September 2005. Additional source information: World Health Organization and United Nations Children's Fund. Water Supply and Sanitation Collaborative Council. Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York. Updated data available at http://www.childinfo.org
Methodological Notes: Solid fuel use is defined as the household combustion of coal or biomass (such as dung, charcoal, wood, or crop residues). The approach taken in this guide is based on a binary classification scheme for exposure levels, separating the study population into those exposed to solid fuel use and those not exposed followed by the application of relative risks derived from a comprehensive review of the current epidemiological literature on solid fuel use. Central estimates used. For China, original data provided separately for children and adults. These values were averaged. A single value was provided covering both Ethiopia and Eritrea. This was applied to both countries. We assigned the value of 0 for both Iceland and Malta.

Indicator: ACSAT
Policy Category: Environmental Health
Methodological Notes: Adequate Sanitation
Data Source: Millennium Indicator: 'Sanitation, percentage of the population with access to improved sanitation, total (WHO-UNICEF).' Data last updated on 10 November 2004. Found at: http://millenniumindicators.un.org/unsd/mi/mi_series_results.asp?rowID=668. Accessed on 23 September 2005. More source information: World Health Organization and United Nations Children's Fund. Water Supply and Sanitation Collaborative Council. Global Water Supply and Sanitation Assessment, 2000 Report, Geneva and New York. Updated data available at www.childinfo.org
Methodological Notes: "Improved" sanitation technologies are: connection to a public sewer, connection to septic system, pour-flush latrine, simple pit latrine, ventilated improved pit latrine. The excreta disposal system is considered adequate if it is private or shared (but not public) and if

hygienically separates human excreta from human contact. "Not improved" are: service or bucket latrines (where excreta are manually removed), public latrines, latrines with an open pit. The total population of a country may comprise either all usual residents of the country (de jure population) or all persons present in the country (de facto population) at the time of the census. For purposes of international comparisons, the de facto definition is recommended. Source: United Nations. Multilingual Demographic Dictionary, English Section. Department of Economic and Social Affairs, Population Studies, No. 29 (United Nations publication, Sales No. E.58.XIII.4). 2002 Values for Argentina and Malaysia are 1990 values. The following OECD countries had missing values that were set to 100: Belgium, Czech Rep., Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, New Zealand, Norway, Poland, Portugal, Korea, Spain, and Great Britain. Liechtenstein and Slovenia were also set to 100 on the basis that their per capita incomes exceeded US$14,000, which is the empirical threshold beyond which all countries have 100% coverage.

Indicator: NLOAD
Policy Category: Water Resources
Description: Nitrogen Loading
Data Source: University of New Hampshire, Water Systems Analysis Group (http://www.watsys.sr.unh.edu). Nitrogen loading was computed based on the methodology described in Green, P. A., C. J. Vörösmarty, M. Meybeck, J. N. Galloway, B. J. Peterson, and E. W. Boyer. 2004. Pre-industrial and contemporary fluxes of nitrogen through rivers: a global assessment based on topology, *Biogeochemistry*, 68:71-105. It accounts for the following: atmospheric nitrogen deposition; nitrogen fixation; nitrogenous fertilizer loads; livestock nitrogen loading; and human nitrogen loading. Global discharge fields were computed by blending mean annual discharge observations (where available) with a climatology (1950-1995) of discharge output from the Water Balance Model described in Vörösmarty, C. J., C. A. Federer and A. L. Schloss. 1998. Evaporation functions compared on US watershed: Possible implications for global-scale water balance and terrestrial ecosystem modeling, *Journal of Hydrology*, 207 (3-4): 147-169. It includes the following: gridded precipitation fields (annual precipitation per grid cell); gridded temperature fields (annual temperature per grid cell); gridded runoff fields (annual runoff per grid cell).
Methodological Notes: Total basin outflow for each river basin was redistributed as runoff equally across all 1/4 degree grid cells within each basin. Nitrogen loading and redistributed runoff were summed within the partial river basins that fell within each country. Summed nitrogen loading within each partial basin was divided by the summed runoff within the same partial basin resulting in a nitrogen concentration (NLOAD, in kg/m^3) per partial basin. The average nitrogen loading in a country's rivers is an areally-weighted average of the NLOAD values for all partial basins within each country. Kg/m^3 values were then converted to mg/liter to render an average concentration. Values above 660,000 mg/L were adjusted to the maximum of 660,000, which reflects the concentration at which nitrogen is no longer soluble and any additional nitrogen will remain in its solid form.

Indicator: OVRSUB
Policy Category: Water Resources
Description: Water Consumption
Data Source: University of New Hampshire, Water Systems Analysis Group (http://www.watsys.sr.unh.edu). Human water demand was computed using the following data sources: population per grid cell; per capita country or sub national level domestic water demand; per capita country or sub national level industrial water demand; irrigated land extent per grid cell (according to Döll, P., Siebert, S. 2000. A digital global map of irrigated areas. *ICID Journal*, 49(2), 55-66); and country or sub national level agricultural water demand (irrigation). Global discharge fields were computed by blending mean annual discharge observations (where available) with a climatology (1950-1995) of discharge output from the Water Balance Model based on Vörösmarty, C. J., C. A. Federer and A. L. Schloss. 1998. Evaporation functions compared on US watershed: Possible implications for global-scale water balance and terrestrial ecosystem modeling, *Journal of Hydrology*, 207 (3-4): 147-169.
Methodological Notes: An indicator of relative water demand (RWD) for each 1/4 degree grid cell was computed by dividing total human water demand (domestic + industrial + agricultural water or DIA) by renewable water supply (Q). RWD = 0.4 was established as the threshold for water stressed conditions. The percentage of territory in which water resources are oversubscribed was computed by summing the area of grid cells in each country where RWD >= 0.4. Details on the computation and use of RWD (alternatively known as the Relative Water Stress Index or RWSI) can be found in Vörösmarty, C. J., P. Green, J. Salisbury and R. B. Lammers. 2000. Global water resources: vulnerability from climate change and population growth, Science, 289:284-288 and Vörösmarty, C. J., E. M. Douglas, P. Green and C. Revenga. 2005. Geospatial Indicators of Emerging Water Stress: An Application to Africa, Ambio, 34 (3): 230-236.

Indicator: HARVEST
Policy Category: Productive Natural Resources / Biodiversity and Habitat
Description: Timber Harvest Rate
Data Source: Data on volume of standing forests was taken from the FAO publication State of the World's Forests 2005, accessed at: http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/007/y5574e/y5574e00.htm (accessed 6 December 2005). Data on timber harvest was taken from the FAO forestry database FAOSTAT, available at: http://faostat.fao.org/faostat/collections?version=ext&hasbulk=0&subset=forestry (accessed 7 December 2005).
Methodological Notes: Timber harvest is represented by FAO data on Roundwood. This term is defined by the FAO's Joint Forest Sector Questionnaire Definitions as follows: All roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses during the period, calendar year or forest year. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form e.g. branches, roots, stumps and burls (where these are harvested) and wood that is roughly shaped or pointed. It is an aggregate comprising wood fuel, including wood for charcoal and industrial roundwood (wood in the rough). It is reported in cubic metres solid volume underbark (i.e. including bark). Standing forest is represented by total wood volume in forests measured in millions of cubic meters

Indicator: AGSUB
Policy Category: Productive Natural Resources
Description: Agricultural Subsidies
Data Source: The data on agricultural subsidies for this indicator are drawn from two sources. For countries other than the 15 original European Union member states, the data are derived from a conversion of WTO-US Department of Agriculture/Environmental Resource Service online data. See: http://www.ers.usda.gov/db/Wto/AMS_database/Default.asp?ERSTab=3 Table DS-4 (accessed October 2005). For the 15 member states of the European Union, the data are taken from the Annexes to the Commission Staff Working Document [SEC(2004)1311 – 27.10.2004] Accompanying the 33rd Financial Report on the European Agricultural Guidance and Guarantee Fund, Guarantee Section - 2003 Financial Year [COM(2004)715 final], online at http://europa.eu.int/comm/agriculture/fin/finrep03/annexe_fr.pdf (accessed 17 November 2005). The subsidies are adjusted for environmental payments, which in many cases constitute positive subsidies, and then standardized by agricultural value added. The agricultural value added figures for the EU15 countries are drawn from Eurostat online http://epp.eurostat.cec.eu.int/portal/page?_pageid=0,1136206,0_45570467&_dad=portal&_schema=PORTAL (accessed 17 November 2005), for the remaining countries the source is WTO_US Agriculture/Environmental Resource Service online (see above). Environmental Payments are drawn from Table DS-1 from the WTO-US online source (see above). For Taiwan we used an agricultural tariffs figure from the Taiwan Yearbook at http://english.www.gov.tw/Yearbook/index.jsp?categid=160&recordid=83352.
Methodological Notes: For each country, available information on governmental or supra-governmental (EU15) agricultural payments were converted to US dollars using the average applicable currency exchange rate for the corresponding year. Although quite varied over countries, these are the subsidies that have been linked in the scientific literature to more intensive agricultural production patterns and associated environmental damages. The resulting data are then adjusted for environmental payments in US dollars ("Green Box" subsidies) taken from Table DS-1 of the WTO-US source and divided by agricultural value added in US dollars. Only environmental payments were used since they represent the cleanest measure of positive environmental payments in the Green Box category. This may therefore exclude some other positive environmental payments such as land conservation programs. Some countries have negative values, which represent either net taxes, more likely from administered prices than actual taxation of producers or cases where Green Box payments exceed total AMS payments.

Indicator: PWI
Policy Category: Biodiversity and Habitat
Description: Wilderness Protection
Data Source: Indicator calculated by CIESIN from the following data sets. Protected areas data: 2005 World Database on Protected Areas (http://maps.geog.umd.edu/WDPA/WDPA_info/English/WDPA2005.html); Wilderness areas data: The Human Footprint, v.2, 2005, CIESIN, Wildlife Conservation Society (http://www.ciesin.columbia.edu/wild_areas/)
Methodological Notes: For each biome in a country, the following were calculated: the mean and standard deviation of Human Influence Index values, the sum of the footprint of human habitation (settlements, land use), infrastructural development (transportation and electric grid) and the population density. The wildest parts of that biome were identified as those areas whose Human Influence Index

values were less than one standard deviation below the mean. This resulted in a grid for each country that included the wildest areas by biome. Protected areas were then overlaid on the wildest areas in the country to determine the percentage of wild areas that are protected. Protected areas in the World Database on Protected Areas (WDPA) that did not include boundaries were attributed boundaries by drawing a circle around the protected area's centroid equal to the area of the protected area. Cultural heritage and urban protected areas were not removed from the protected areas layer.

Indicator: PACOV
Policy Category: Biodiversity and Habitat
Description: Ecoregion Protection
Data Source: Indicator calculated by CIESIN from the following data sets. Protected Areas data: 2004 World Database of Protected Areas (http://maps.geog.umd.edu/WDPA/WDPA_info/English/-WDPA2005.html); Ecoregion data: World Wildlife Federations map: Terrestrial Ecoregions of the World (http://worldwildlife.org/wildworld/).
Methodological Notes: The global target for protected areas coverage is 10% of national territory. Thus, the target is for every country to have 10% of the land area in each of its biomes under protected status. For each biome in each country we calculate 10% of its total area, and then calculate the actual land area under protected status for that biome. We then take the ratio of the land under protected status to the target of 10% of the biome's area. If the area protected is equal to or greater than 10% of the biome, then the country receives a score of 1 for that biome. If only 5% is protected, the country receives a score of 0.5. The ratios for each biome are then averaged using a simple arithmetic average.

Indicator: MORTALITY
Policy Category: Environmental Health
Description: Child Mortality
Data Source: United Nations, Department of Economic and Social Affairs, Population Division: World Population Prospects DEMOBASE extract. 2005. Age Specific Mortality Rate by Age (mx) - Medium variant, Revision 2004. Available at: http://esa.un.org/unpp/
Methodological Notes: This variable was incorporated from the UN Population Division's DEMOBASE. These data form part of the Population Division's consistent time series estimates and projections of population trends and, as such, are adjusted data derived from empirical data on mortality reported in survey results or vital statistics.

Indicator: ENEFF
Policy Category: Sustainable Energy
Description: Energy Efficiency
Data Source: For energy consumption data: Energy Information Administration, *International Energy Annual 2003*, which is available online at: http://www.eia.doe.gov/emeu/iea/wecbtu.html (Table E.1) and was posted on 1 July 2005. Accessed on 5 October 2005. For GDP data: World Bank, World

Development Indicators 2003, GDP in PPP, http://devdata.worldbank.org/dataonline/ accessed 5 October 2005. Alternative GDP data as follows: Afghanistan, Bhutan, Cuba, Democratic Republic of Congo, Iraq, Liberia, Libya, Myanmar, Romania, Serbia & Montenegro, Somalia, and Suriname: CIA World Factbook 2004 adjusted to 2000 Dollars using GDP deflator from NASA GDP Deflator: http://www1.jsc.nasa.gov/bu2/inflateGDP.html.
Methodological Notes: Notes from *IEA 2003*: Data for the most recent year are preliminary. Total primary energy consumption reported in this table includes the consumption of petroleum, dry natural gas, coal, and net hydroelectric, nuclear, and geothermal, solar, wind, and wood and waste electric power. Total primary energy consumption for each country also includes net electricity imports (electricity imports minus electricity exports) from Table S.6 . Electricity net imports are included because the net electricity consumption by energy type data noted above are really net electricity generation data that have not been adjusted to include electricity imports and exclude electricity exports. Total primary energy consumption for the United States also includes the consumption of geothermal, solar, and wood and waste energy not used for electricity generation from Table E.8. The original data are in quadrillion BTU (10^15 BTU), which are converted to Terajoule using the conversion factor: 10^15 BTU=1055055.9 Terajoule. Conversion factor taken from http://www.onlineconversion.com/energy.htm (accessed 17 November 2005).

Indicator: RENPC
Policy Category: Sustainable Energy
Description: Renewable Energy
Data Source: Renewable production and total energy consumption data: Energy Information Administration's *International Energy Annual 2003*, available online at: http://www.eia.doe.gov/emeu/iea/wecbtu.html (data posted on 24 June 2005. Accessed on 5 October 2005.)
Methodological Notes: Hydroelectric, biomass, geothermal, solar and wind electric power production were calculated as a percent of total energy consumption. Some countries exceed 100 percent because they are net exporters of renewable energy. Note that biomass energy utilized locally (e.g., fuelwood or dung burned by low income households in the developing world) are not included in these figures.

Indicator: CO2GDP
Policy Category: Sustainable Energy
Description: CO_2 per GDP
Data Source: For CO2 emission data: Carbon Dioxide Information Analysis Center (CDIAC), http://cdiac.esd.ornl.gov/trends/emis/tre_coun.htm; For GDP data: World Bank World Development Indicators 2004, GDP in constant 1995 US dollars. Alternative GDP data as follows: Peoples Republic of Korea: from United Nations Statistics Division Common Database (UNCDB), GDP at market prices, current prices, USD for 2000 (UN Estimates), http://unstats.un.org/unsd/cdb/cdb_help/cdb_quick_start.asp; Cuba, Libya, and Myanmar: CIA World Fact Book 2001 GDP USD (PPP), http://www.cia.gov/cia/publications/factbook/ and deflated to 1995 dollars using NASA GDP Deflator: http://www1.jsc.nasa.gov/bu2/inflateGDP.html. Additional or updated

country data as follows. Taiwan: CO_2 data from CDIAC, http://cdiac.esd.ornl.gov/ftp/ndp030/nation00.ems, GDP data from US Energy Information Administration (EIA), B.2 World Gross Domestic Product at Market Exchange Rates, 1980-2002, http://www.eia.doe.gov/pub/international/iealf/tableb2.xls (in constant 1995 USD).
Methodological Notes: Total annual CO_2 emissions in metric tons have been normalized by million GDP in constant 1995 US dollars for each country. For the People's Republic of Korea World Bank GDP data were not available and UN estimates of GDP at market prices, current prices, US$ for 2000 were used instead.

Indicator: OVRFSH
Policy Category: Productive Natural Resources
Description: Overfishing
Data Source: Environmental Vulnerability Index, Indicator 34 "Productivity overfishing". Available from: http://www.sopac.org/tiki/tiki-index.php?page=EVI (accessed December 2005). For Fisheries data: Food and Agriculture Organization (FAO), United Nations, 1993-1998; For Productivity data: University of British Columbia.
Methodological Notes: This measure is drawn from the Environmental Vulnerability Index (EVI) prepared by the South Pacific Applied Geoscience Commission (SOPAC) in partnership with UNEP and other support. The indicator's categories are based on the ratio of fisheries productivity to fish catch, or specifically the ratio of tonnes of carbon per square kilometer of exclusive economic zone per year to tonnes of fish catch per kilometer square of shelf per year. The score ranges represent the following: 1=[>=3.2 millions], 2=(3.2-1.2 millions], 3=(1.2 millions - 442 thousand], 4=(442-163 thousand] ,5=(163-60 thousand], 6=(60-22 thousand], 7=(<=22 thousand]. Taiwan provided its own data.

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PLACE	Population, Land, and Climate Estimates (CIESIN dataset)
PM	Particulate Matter
PPB	Parts Per Billion
PPP	Purchasing Power Parity
PWI	Protected Wilderness Indicator
SO_2	Sulfur Dioxide
SOPAC	South Pacific Applied Geoscience Commission
UA	Uncertainty Analysis
UBC	University of British Columbia
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNH	University of New Hampshire
UNICEF	United Nations Children's Fund
USDA-ERC	United States Department of Agriculture-Economic Research Service
VOC	Volatile Organic Compound
WCD	World Commission on Dams
WEHAB	Water, Energy, Health, Agriculture and Biodiversity
WHO	World Health Organization
WMO	World Meteorological Organization
WSAC	Water Systems Analysis Group
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund

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Acronyms

Acronym	Name
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
AU	African Union
CDIAC	Carbon Dioxide Information Analysis Center
CDM	Clean Development Mechanism
CERC	Center for Environmental Research and Conservation at Columbia University
CIESIN	Center for International Earth Science Information Network
CLRTAP	Convention on Long-range Transboundary Air Pollution
CO_2	Carbon Dioxide
CSD	United Nations Commission on Sustainable Development
EEZ	Exclusive Economic Zone
EIA	Energy Information Administration
EPI	Environmental Performance Index
ESI	Environmental Sustainability Index
EU	European Union
EVI	Environmental Vulnerability Index
FAO	Food and Agriculture Organization of the United Nations
FTAA	Free Trade Area of the Americas
GATT	General Agreement on Tariffs and Trade
GCI	Growth Competitiveness Index
GDP	Gross Domestic Product
GEMS/Water	UN Global Environment Monitoring System
GHG	Greenhouse Gas
GLASOD	Global Assessment of Human Induced Soil Degradation
HDI	Human Development Index
IAEA	International Atomic Energy Agency
ICOLD	International Commission on Large Dams
ITQ	Individual Tradable Quota
IUCN	The World Conservation Union
IWPDC	International Water Power and Dam Construction
JRC	Joint Research Centre of the European Commission
LADA	Land Degradation Assessment in Drylands
LDC	Least Developed Country
MDG	United Nations Millennium Development Goal
MOZART	Model of Ozone and Related Chemical Tracers
NO_2	Nitrogen Dioxide
NGO	Nongovernmental Organization
NIS	Newly Independent States (former Soviet republics)
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of the Petroleum Exporting Countries
PA	Protected Area
PCA	Principal Component Analysis
PDF	Probability Distribution Function