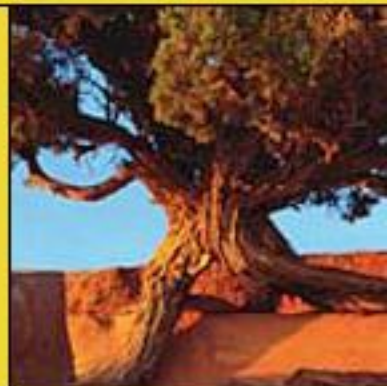


How Can Guatemala Improve Its Position in the Environmental Performance Index?



Christine Kim

Research &
Program Director

Co-author,
Environmental
Performance Index

FUNDESA

Environmental
Performance in
Guatemala:
Threats and
Opportunities

Guatemala City

19 August 2010



Partners



EUROPEAN COMMISSION
DG Joint Research Centre



EPI Foundations

- **Born out of a recognition that environmental policy-making needs to be more**
 - Data-driven
 - Science-based
 - Analytically rigorous
- **“What gets measured matters”**
- **Need a revolution in policymaking**
 - Good data, indicators, and metrics provide foundation
 - Underpinning for analysis – scientific, statistical, benefit-cost, and economic



EPI Goals

- **Make environmental decisionmaking more data-driven and empirical**
- **Establish context for evaluating policy results**
- **Facilitate benchmarking of performance**
- **Identify leaders, laggards, and best practices**
- **Provide counterpoint to GDP growth and competitiveness rankings**
- **Intended to stimulate debate about appropriate metrics and methodologies for evaluating environmental performance (work in progress)**

EPI Impact

- **Over 1000 news stories in dozens of languages**
 - Released directly to the media and public
 - NY Times exclusives, Newsweek Intl feature, National Geographic Special
- **Over 2 million web hits / downloads**
 - All reports and data are posted online for FREE
- **Government reaction**
 - South Korea, China, Japan, India, USA, Mexico, Belgium, Finland, Norway, Netherlands, UK, New Zealand, UAE, Saudi Arabia, Egypt, Israel, Chile, Columbia, Costa Rica, Brazil, and many more...
 - United Nations Development Programme, Environment Programme
- **NGO and Business reaction + Public At Large**



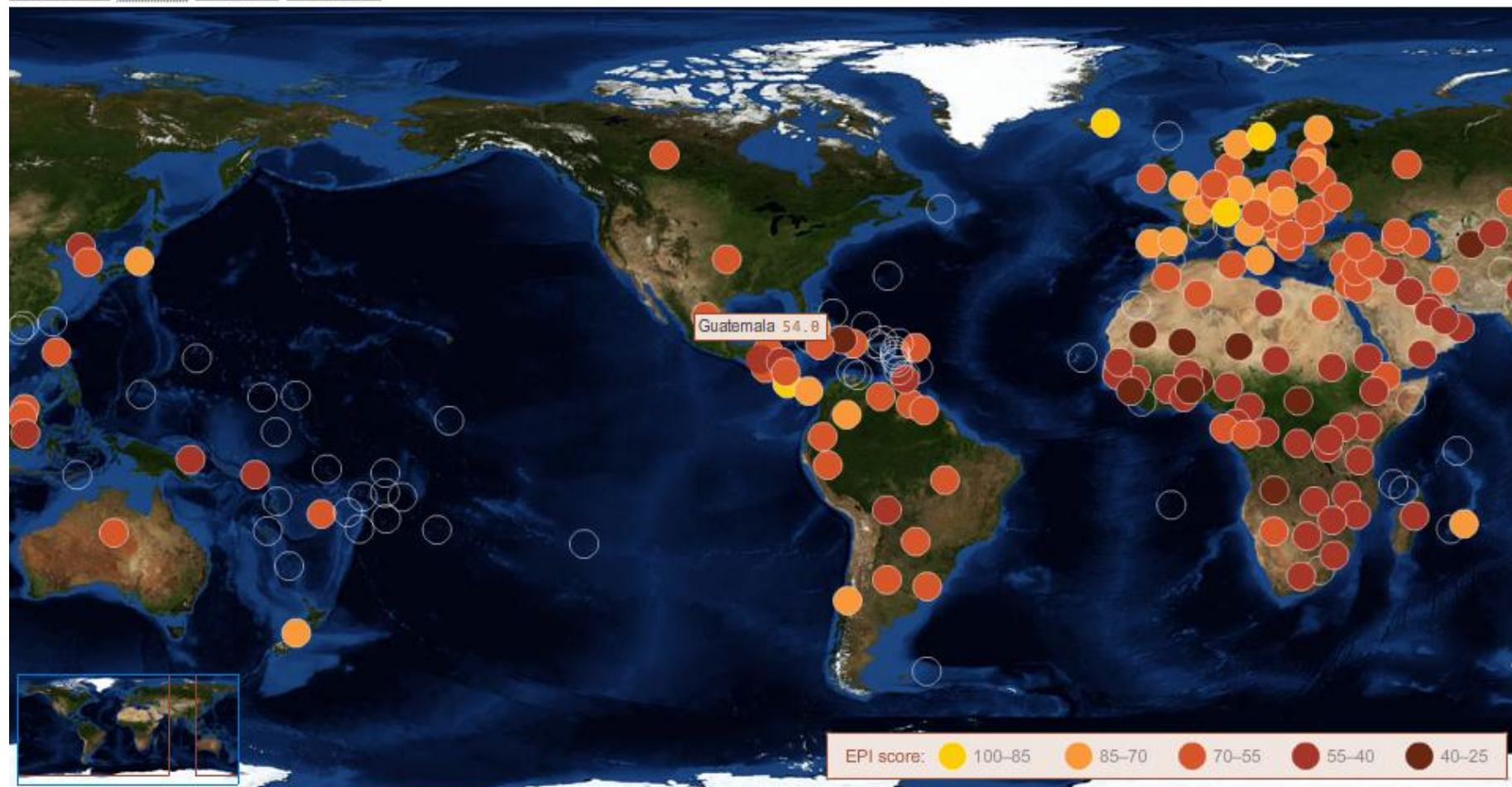
ENVIRONMENTAL PERFORMANCE INDEX 2010

The 2010 Environmental Performance Index (EPI) ranks 163 countries on 25 performance indicators tracked across ten policy categories covering both environmental public health and ecosystem vitality. These indicators provide a gauge at a national government scale of how close countries are to established environmental policy goals.



HOW IS THE EPI WEIGHTED?

Zoom in/out Political Metrics ▼ Scale by ▼



ENVIRONMENTAL PERFORMANCE INDEX 2010

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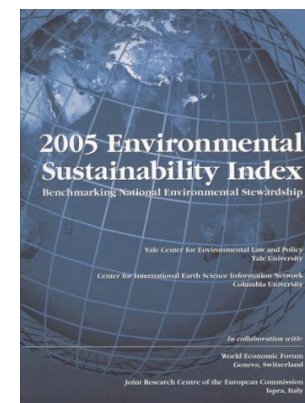
HOW IS THE EPI



ESI and EPI – 2 different approaches

ESI: Environmental Sustainability Index

- Pilot 2000, 2001, 2002, and 2005 versions
- <http://www.yale.edu/esi>

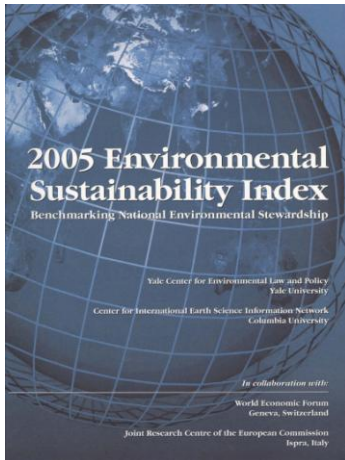


EPI: Environmental Performance Index

- Pilot 2006, 2008, 2010
- <http://epi.yale.edu>



ESI Approach



- Measures the relative progress towards environmental sustainability of 146 countries
- The ESI score quantifies the likelihood that a country will be able to preserve valuable environmental resources effectively over the period of several decades.
- Takes a broad view: Gauges society's natural resource endowments, environmental history, pollution stocks and flows, resource extraction rates, and social and institutional capacity

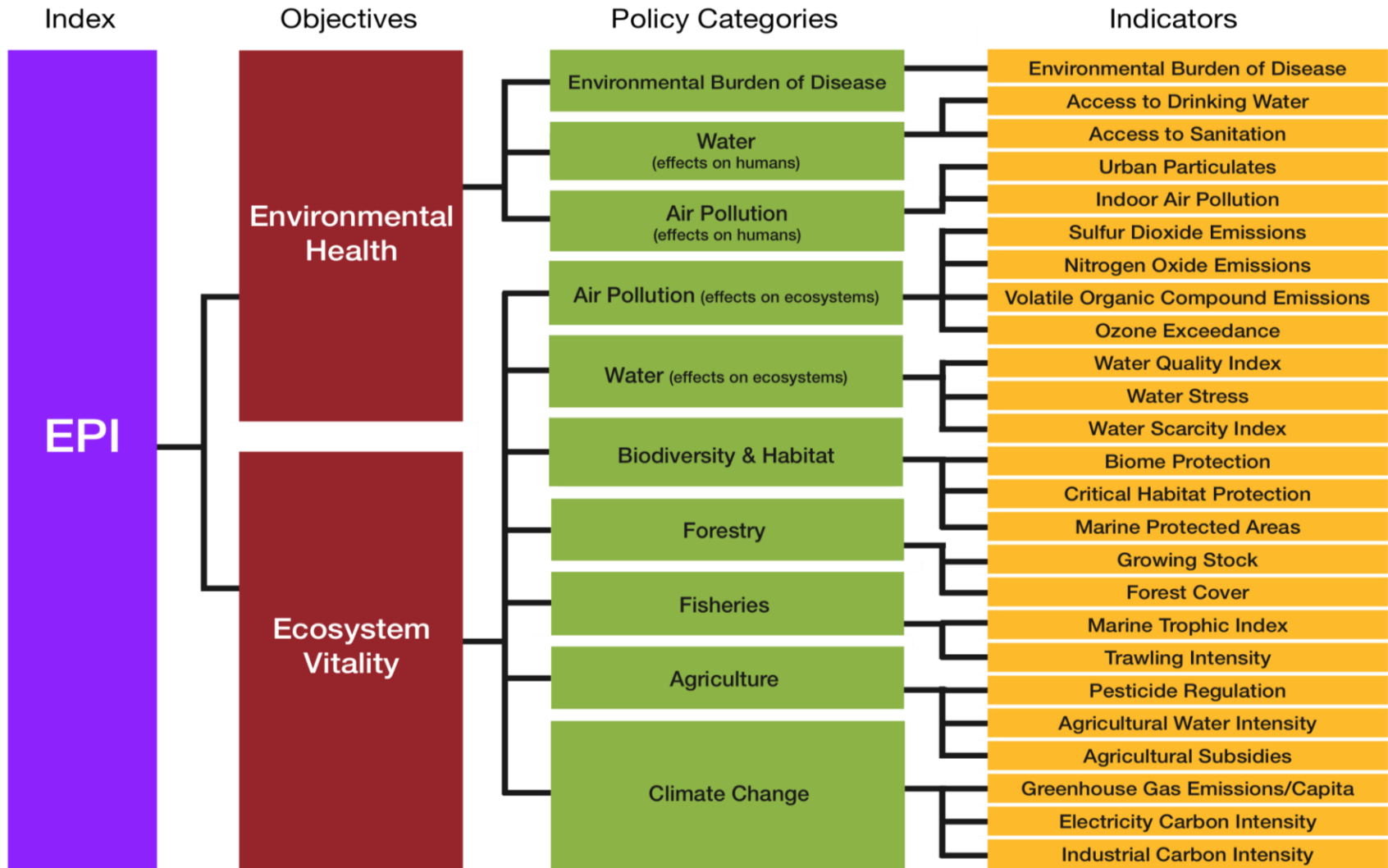
76 Variables		21 Indicators		5 Components	
<ul style="list-style-type: none"> Nitrogen dioxide concentration Sulfur dioxide concentration 	<ul style="list-style-type: none"> Particulate concentration Indoor air quality 	Air Quality		Environmental Systems	
<ul style="list-style-type: none"> Ecoregions at risk Threatened birds Threatened mammals 	<ul style="list-style-type: none"> Threatened amphibians National Biodiversity Index 	Biodiversity			
<ul style="list-style-type: none"> Wilderness area 	<ul style="list-style-type: none"> Developed area 	Land			
<ul style="list-style-type: none"> Dissolved oxygen Electrical conductivity 	<ul style="list-style-type: none"> Suspended solids Phosphorus concentration 	Water Quality			
<ul style="list-style-type: none"> Surface water availability 	<ul style="list-style-type: none"> Groundwater availability 	Water Quantity			
<ul style="list-style-type: none"> Coal consumption Nitrogen oxide emissions Sulfur dioxide emissions 	<ul style="list-style-type: none"> VOC emissions Vehicles in use 	Reducing Air Pollution			Reducing Stresses
<ul style="list-style-type: none"> Forest cover change 	<ul style="list-style-type: none"> Acidification 	Reducing Ecosystem Stress			
<ul style="list-style-type: none"> Population growth 	<ul style="list-style-type: none"> Total fertility rate 	Reducing Population Pressure			
<ul style="list-style-type: none"> Ecological Footprint Waste recycling rates 	<ul style="list-style-type: none"> Hazardous waste generation 	Reducing Waste & Consumption Pressures			
<ul style="list-style-type: none"> Industrial organic effluents Fertilizer consumption 	<ul style="list-style-type: none"> Pesticide consumption Area under water stress 	Reducing Water Stress			
<ul style="list-style-type: none"> Overfishing Sustainably managed forests Market distortions 	<ul style="list-style-type: none"> Salinization due to irrigation Agricultural subsidies 	Natural Resources Management			
<ul style="list-style-type: none"> Deaths from intestinal infect. diseases Child mortality rate 	<ul style="list-style-type: none"> Child mortality due to respiratory infections 	Environmental Health		Reducing Human Vulnerability	
<ul style="list-style-type: none"> Malnutrition 	<ul style="list-style-type: none"> Safe drinking water supply 	Basic Human Sustenance			
<ul style="list-style-type: none"> Casualties due to environmental disasters 	<ul style="list-style-type: none"> Environmental Hazard Exposure Index 	Exposure to Natural Disasters			
<ul style="list-style-type: none"> Gasoline price Corruption Government effectiveness Protected land area Environmental governance Strength of rule of law 	<ul style="list-style-type: none"> Civil and political liberties Sustainable development data gaps International environmental engagement Environmental knowledge creation Democratic institutions Local Agenda 21 initiatives 	Environmental Governance		Social and Institutional Capacity	
<ul style="list-style-type: none"> Energy efficiency 	<ul style="list-style-type: none"> Renewable energy production 	Energy Efficiency			
<ul style="list-style-type: none"> Corporate sustainability (Dow Jones) Corporate sustainability (Innovest) ISO 14001 certified companies 	<ul style="list-style-type: none"> Private sector environmental innovation Participation in Responsible Care Program 	Private Sector Responsiveness			
<ul style="list-style-type: none"> Innovation capacity Digital Access Index Female primary education 	<ul style="list-style-type: none"> University enrollment Research scientists 	Science and Technology			
<ul style="list-style-type: none"> Intergovernmental environmental activities Role in intl. environmental aid 	<ul style="list-style-type: none"> Participation in intl. environmental agreements 	Participation in International Collaborative Efforts		Global Stewardship	
<ul style="list-style-type: none"> Greenhouse gas emissions / GDP 	<ul style="list-style-type: none"> Greenhouse gas emissions / capita 	Greenhouse Gas Emissions			
<ul style="list-style-type: none"> Transboundary sulfur dioxide spillovers 	<ul style="list-style-type: none"> Polluting-goods imports 	Reducing Transboundary Environmental Pressures			

EPI Approach



- Focuses on **measurable outcomes** in ten core policy areas for 163 countries (2010)
- Employs a **proximity-to-target** approach
- Targets are identified through **international consensus** or scientific expert consultation
- Seeks to answer the question: **How close** is a country to **globally agreed upon** environmental policy **objectives**?

2010 EPI Framework



Indicator construction

- **Policy Relevance**
 - Degree to which the variable matches the issue of interest
 - Use “proxy” where actual metric is not available
- **Quality**
 - Reliability of the data source.
 - Methodological rigor of indicator
 - Availability of other data to cross-check indicator accuracy
 - Methodology for data collection and indicator construction is adequately documents
- **Coverage – spatial and temporal**
 - Recent data is readily available
 - Data is updated regularly in accordance with reliable procedures
 - Underlying assumption are made clear

2010 EPI Overall Rankings

Top Ten

1	Iceland
2	Switzerland
3	Costa Rica
4	Sweden
5	Norway
6	Mauritius
7	France
8	Austria
9	Cuba
10	Colombia

Other Countries

20	Japan
43	Mexico
61	United States
62	Brazil
69	Russia
104	Guatemala
115	South Africa
121	China
123	India
134	Indonesia

Bottom Ten

154	Benin
155	Haiti
156	Mali
157	Turkmenistan
158	Niger
159	Togo
160	Angola
161	Mauritania
162	Central African Republic
163	Sierra Leone



EPI Peer Groupings

- **Similar levels of development**
 - OECD, Least developed countries (LDCs)
- **Regional groupings**
 - Americas, Russia and newly indep. states (NIS) of the former Soviet Union
- **Political associations or free-trade areas**
 - EU, FTAA, African Union, ASEAN, APEC, OPEC
- **Similar climatic circumstances**
 - Desert countries
- **Demographic structures**
 - High population density countries

Guatemala: 2010 EPI Profile



Geographic Group:
Latin America and
Caribbean



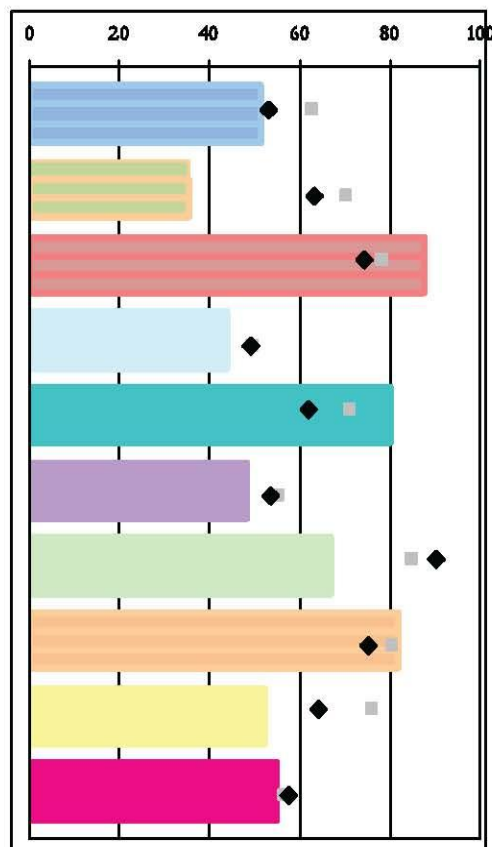
GDP/Capita 2007 est
(PPP): \$4,333

Income Group: 6th^t
decile

Rank: 104 (out of 163)
Score: 40.7

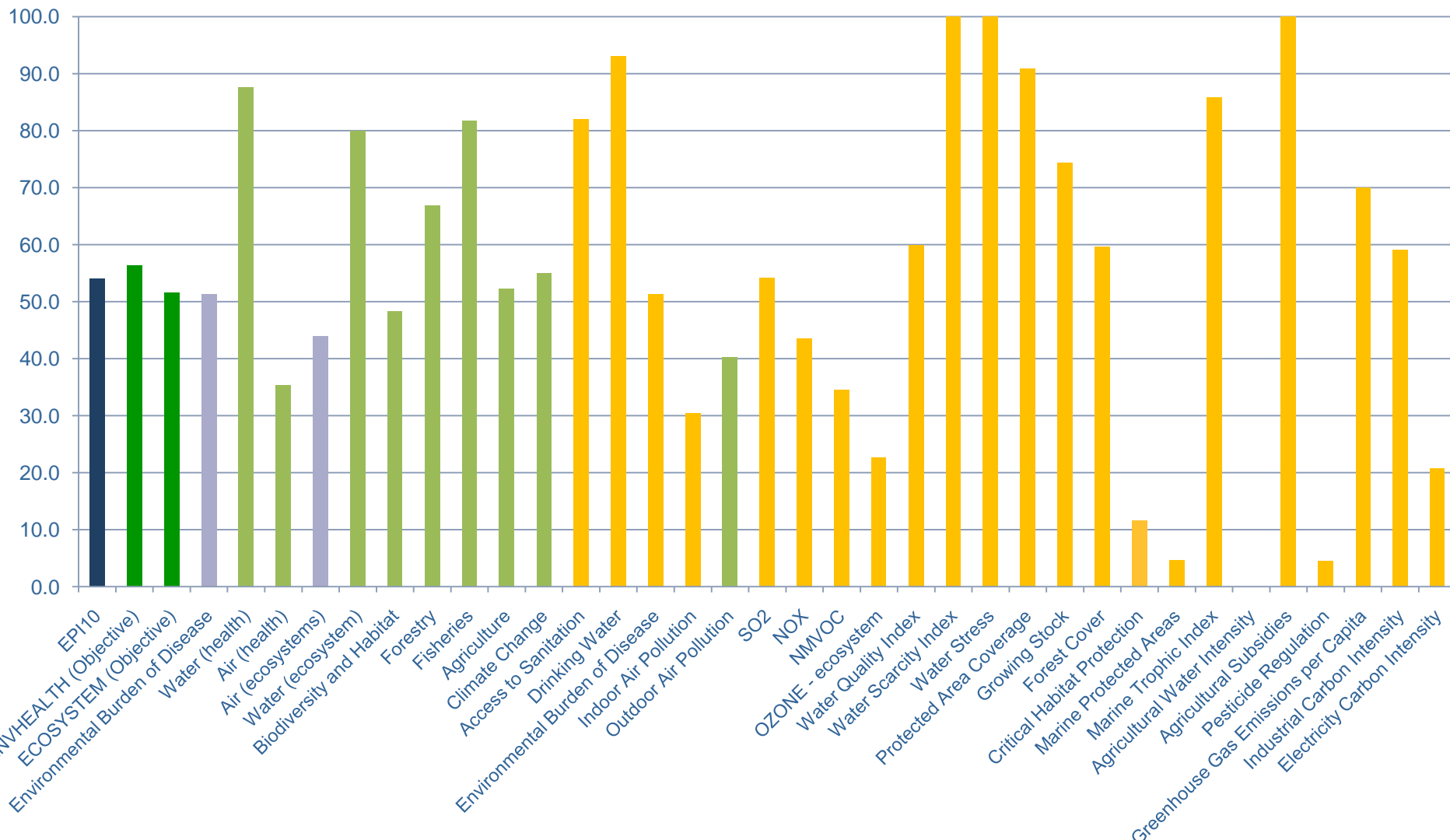
Policy Categories

Environmental Burden of Disease (DALYs)
Air Pollution (impact on humans)
Water (impact on humans) *
Air Pollution (impact on ecosystem)
Water (impact on ecosystem) *
Biodiversity
Forestry
Fisheries
Agriculture
Climate Change *



Country	Income Group	Geographic Group
51.27	53.3	62.6
35.4	63.4	70.2
87.6	74.5	78.3
43.9	49.0	49.8
79.9	61.9	71.4
48.3	53.7	55.4
66.9	90.4	85.1
81.8	75.4	80.6
52.3	64.3	76.26
55.0	57.3	56.6

Guatemala 2010 EPI Components



Balance Sheet: Guatemala Strengths

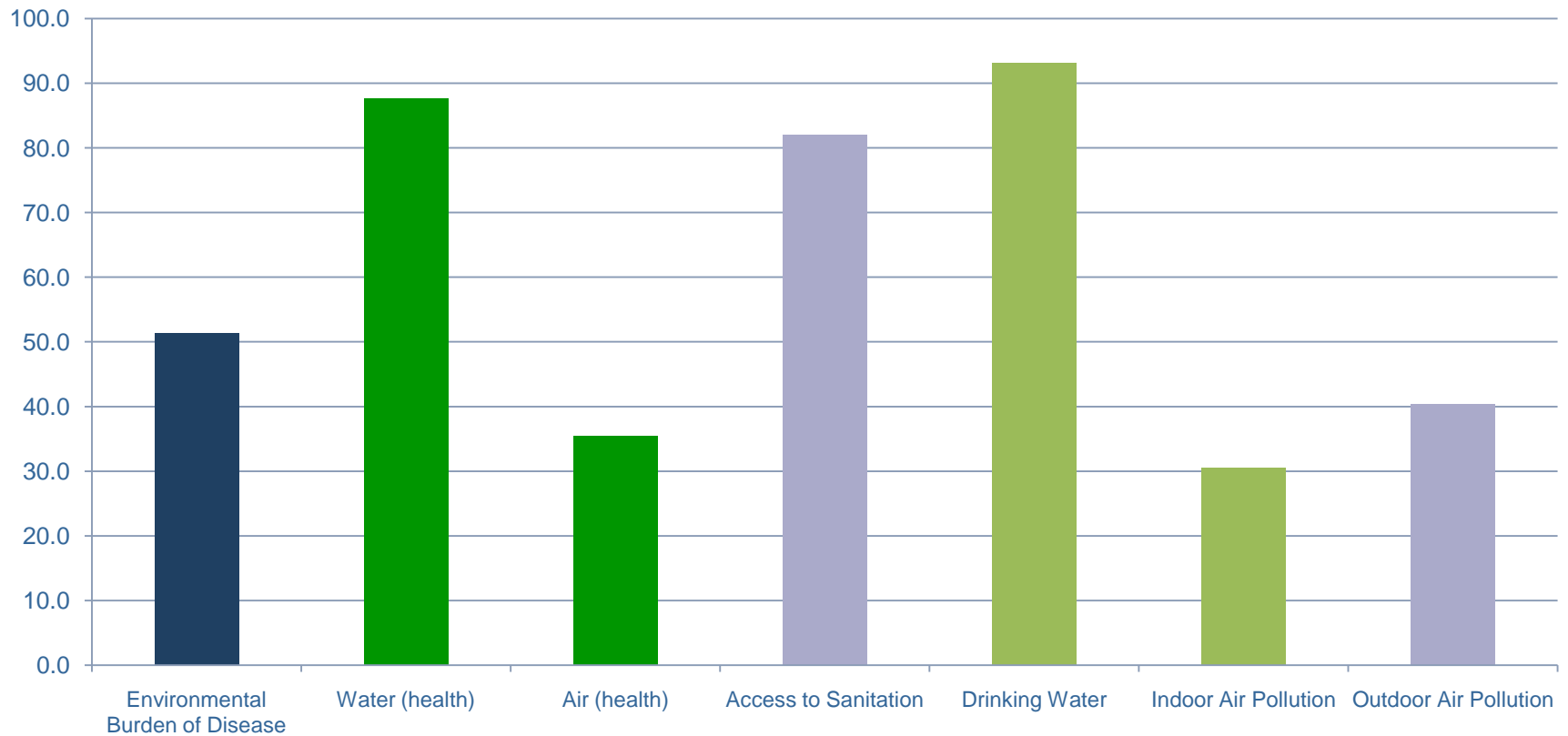
- Access to Sanitation
- Access to Drinking Water
- Water Scarcity Index
- Water Stress Index
- Biome Protection
- Agricultural Water Intensity
- Agricultural Subsidies



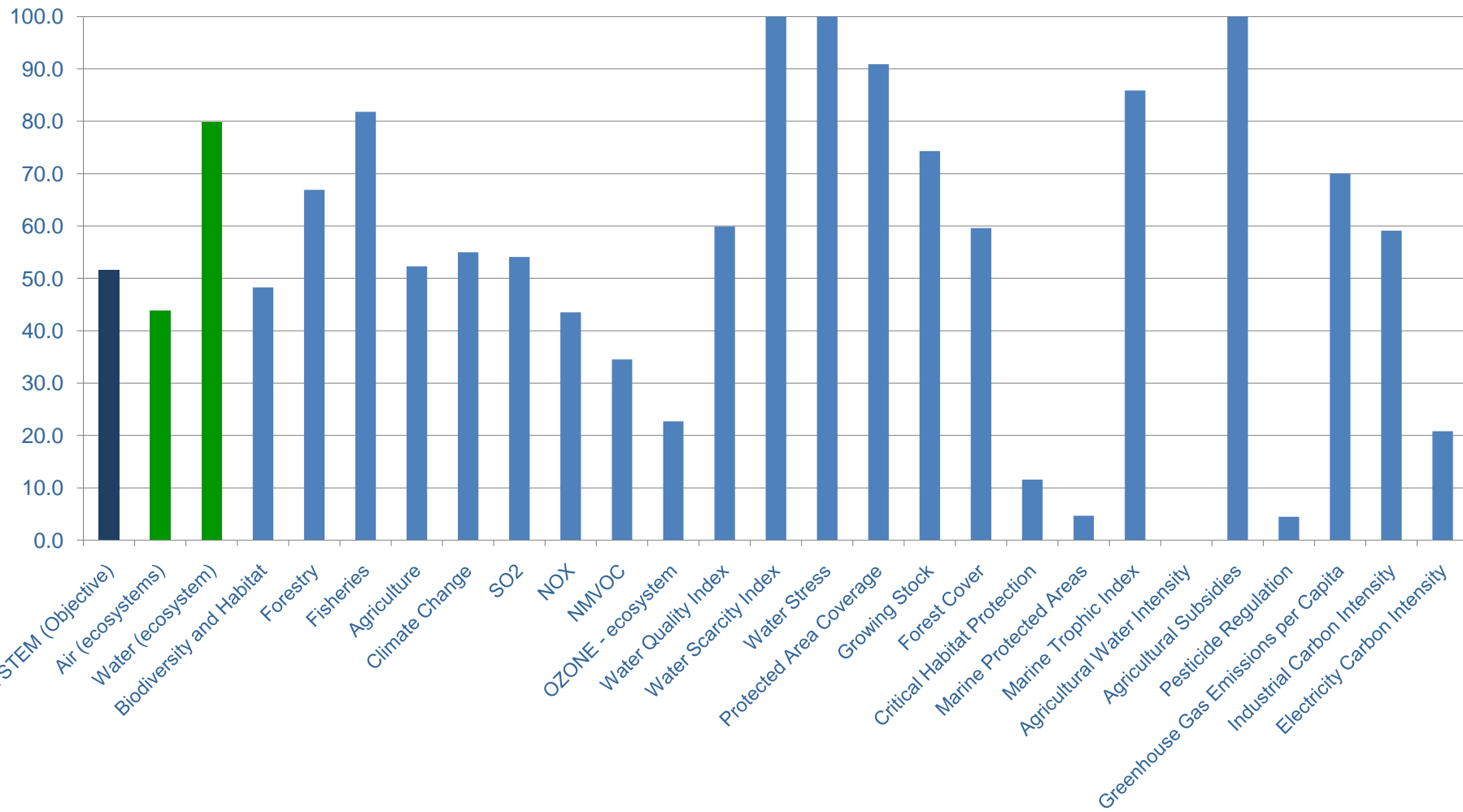
Balance Sheet: Guatemala Challenges

- **Environmental Burden of Disease**
- **Indoor & Outdoor Air Pollution (health)**
- **Air Pollution (ecosystem)**
- **Marine and Critical habitat (AZE)
Protection**
- **Pesticide Regulation**
- **Industrial GHG Emissions Intensity**
- **CO2 Emissions per Electricity Generation**

Guatemala 2010 EPI Indicators

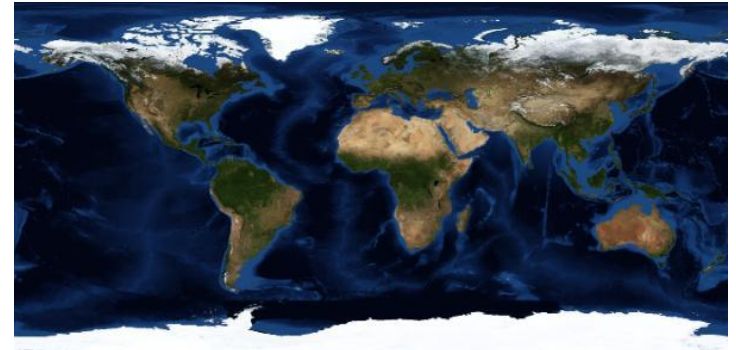


Guatemala 2010 EPI Indicators

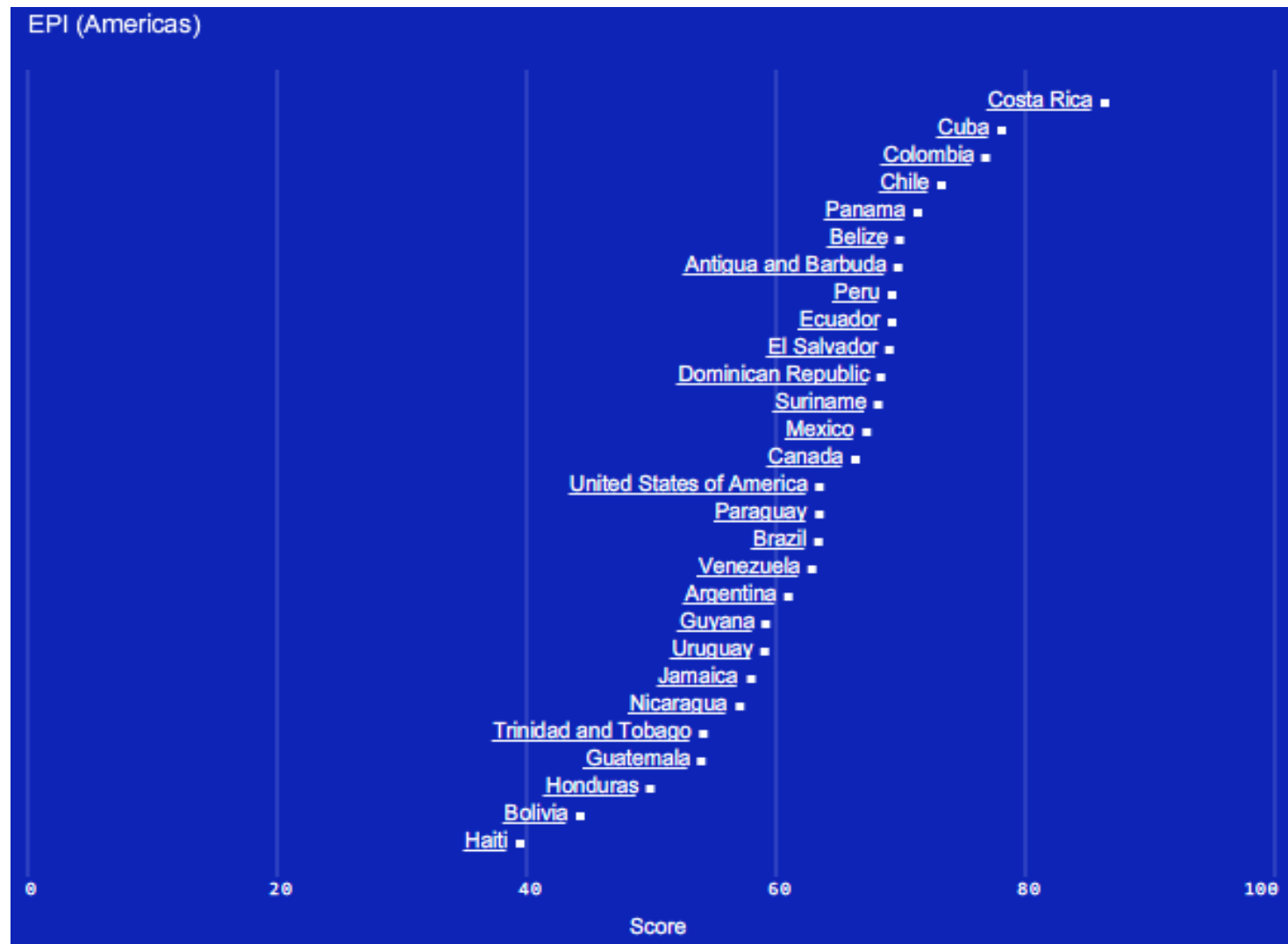


Benchmarking Across Peer Groupings

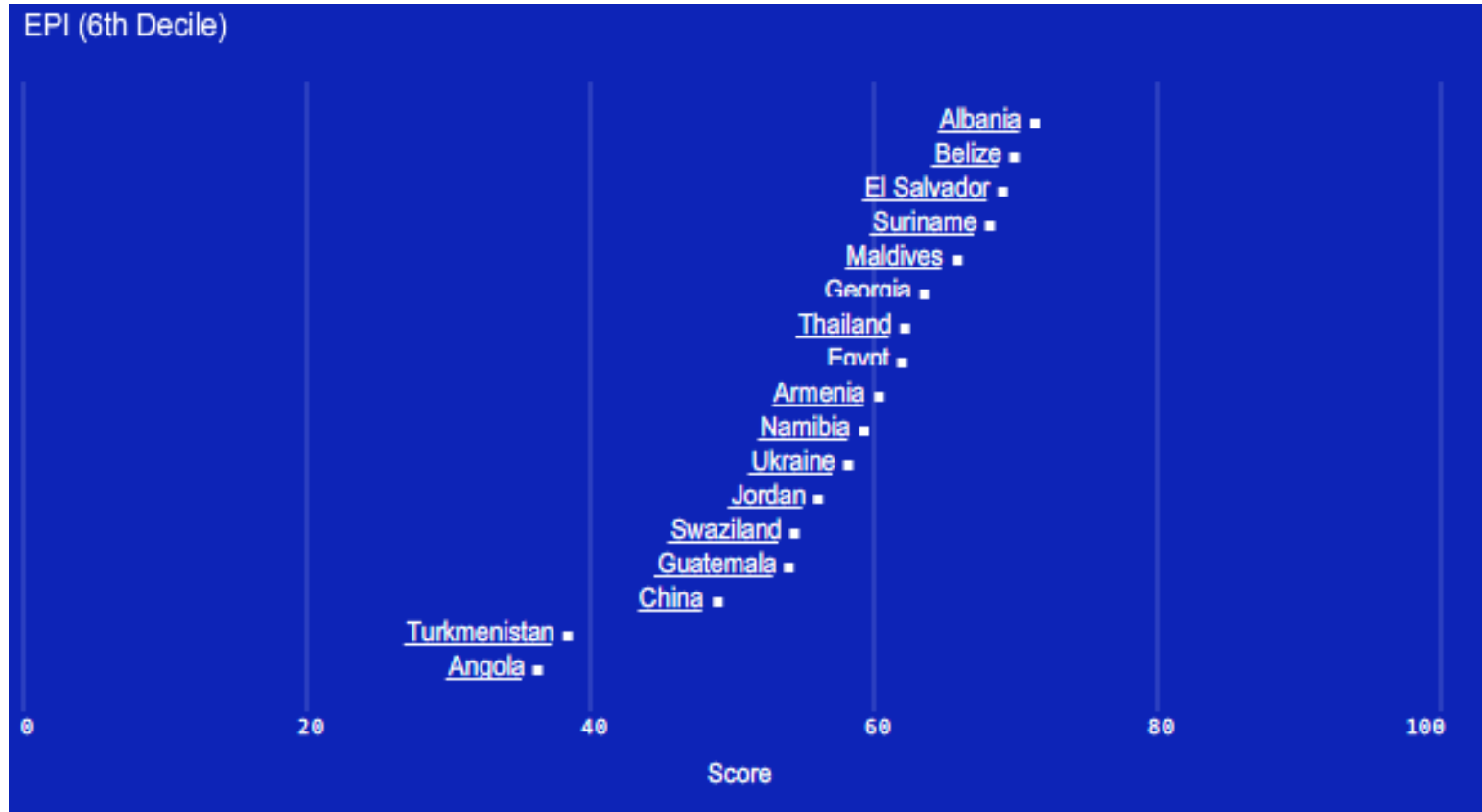
- Peer groups provide most useful analytic framework
- EPI uses various peer groupings
 - Income or levels of development (GDP/capita)
 - Regional groupings
 - Political associations
 - Free-trade areas
 - Geographic circumstances
 - Demographic structures



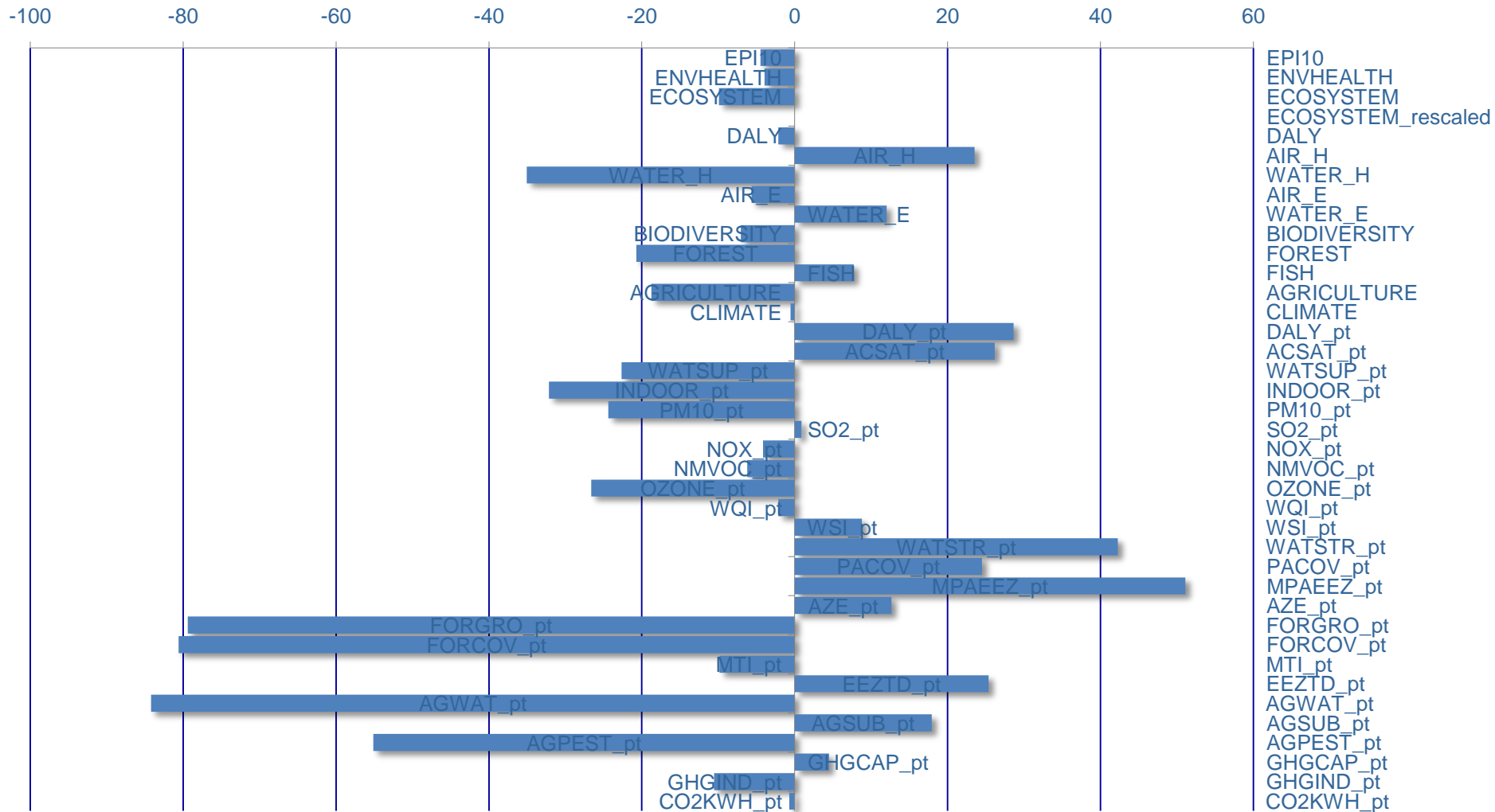
Americas



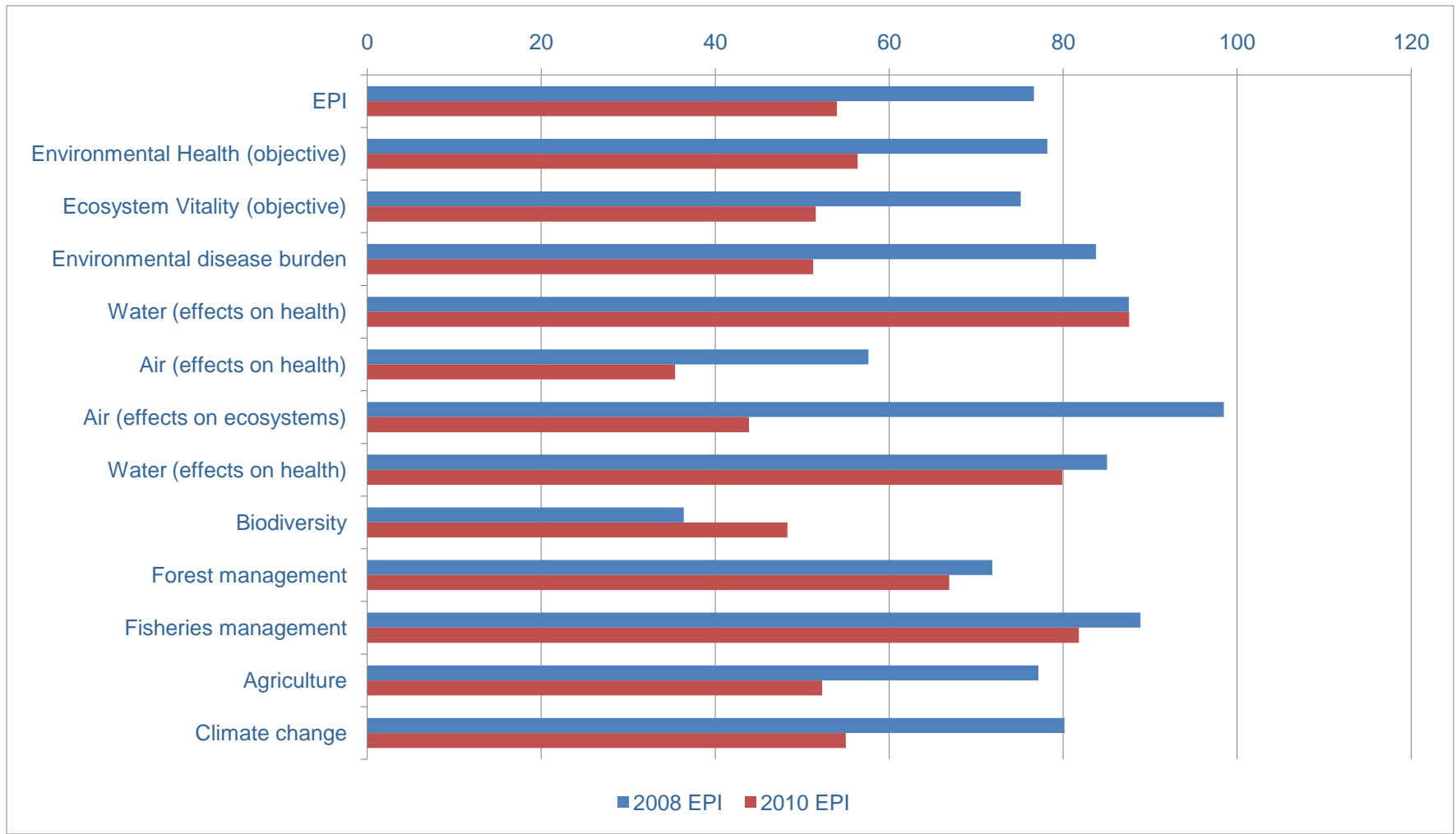
6th income decile



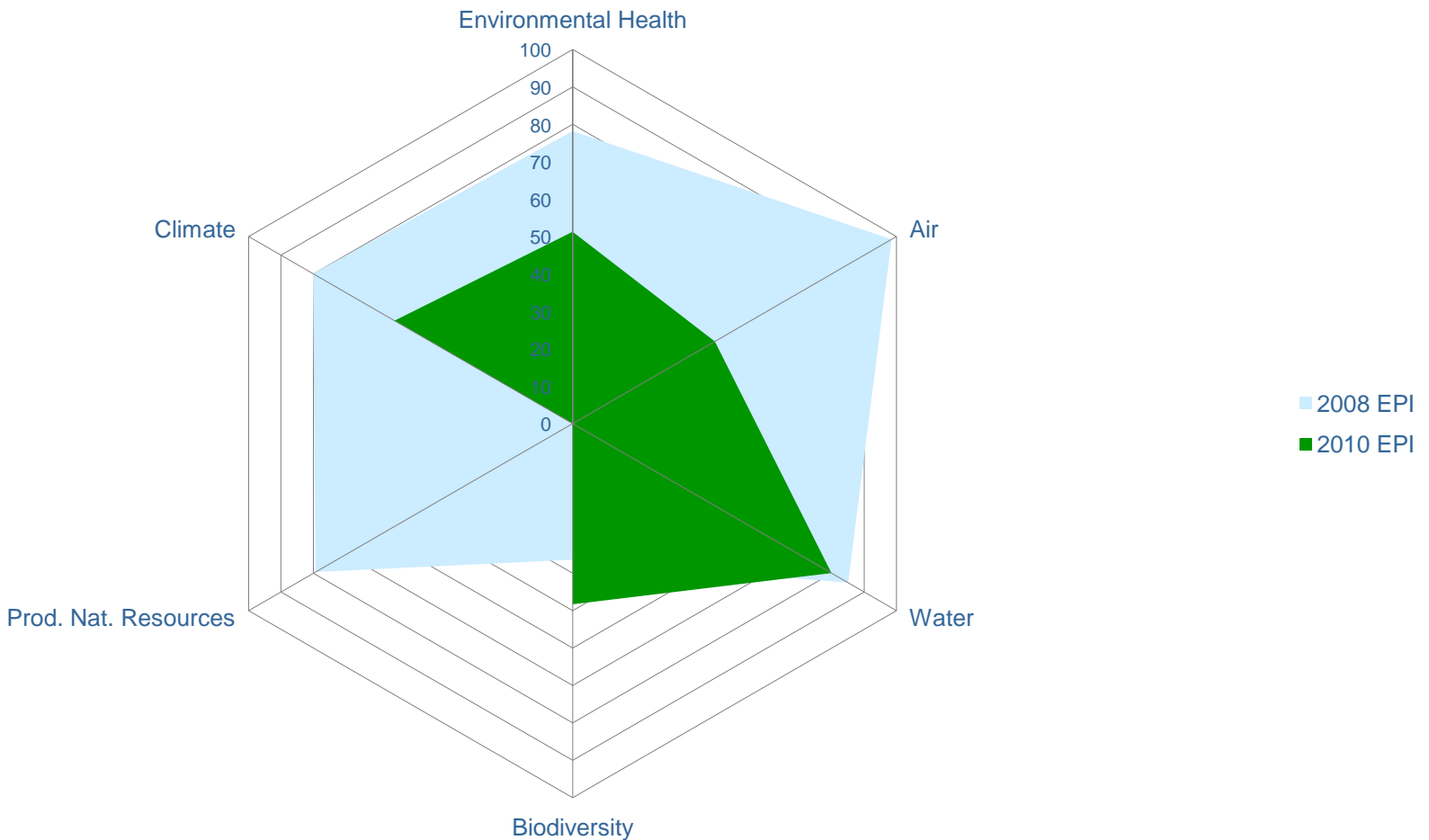
Deviation of Guatemala Scores from the Indicator Global Average



Comparison of 2008 and 2010 EPI for Guatemala



Comparison of 2008 and 2010 EPI for Guatemala



Recommendations

- **Focus and priority on a shift to data-driven environmental policy**
 - Check existing data with international data providers
 - National set of environmental indicators
 - Investment in environmental monitoring
 - Communication of information – transparency
 - Learn from best practices

Recommendations

Indicator/Sector	Policy Recommendations
Environmental Burden of Disease	Investment in health care and prioritization of environmental burden of disease as a basic health risk (air pollution, clean water)
Indoor Pollution	Eradicate using biomass and solid fuel for household fuel use
Outdoor Air Pollution (health)	Integrated air quality management strategy in urban areas, including cleaner fuels for mobile sources, ambient air quality monitoring, emissions tests
Air Pollution (ecosystem)	Regulation of industrial emissions of sulfur dioxide and other air pollutants

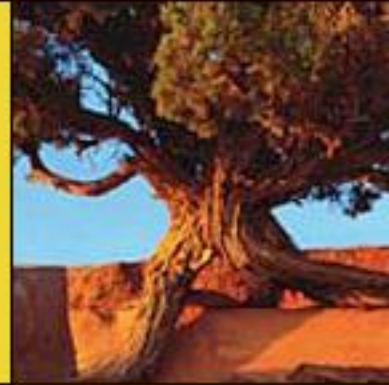
Recommendations

Indicator/Sector	Policy Recommendations
Marine and Critical habitat (AZE) Protection	Establishment of marine and coastal protected areas with adequate enforcement, buffer zones with limited allowed activities to allow rebound of flora and fauna. Set up protected areas in AZE areas.
Pesticide Regulation	Ratify the POPs and PICs treaties

Recommendations

Indicator/Sector	Policy recommendations
Industrial GHG Emissions Intensity CO2 Emissions per Electricity Generation	Implementation of policy mix using cap-and-trade, carbon taxes, and technology mandates to reduce emissions, promotion of voluntary industry standards and consumer changes; education programs in schools and universities; investment in CDM projects and R&D, education, and science to educate next generation of leaders

**Thank
you!**



Gracias

<http://epi.yale.edu>

<http://www.yale.edu/envirocenter>

