

2005 Environmental Sustainability Index

Benchmarking National Environmental Stewardship

Appendix E ESI Values in Small States

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Appendix E – ESI Values in Small States

Five small states meet all but the size inclusion criteria for the ESI. As we discuss below, their size makes their environmental challenges fundamentally different from the rest of the countries in the index. We cannot impute missing values for these countries because including them with larger countries would generate inaccurate results. Therefore, we rely solely on available data. Nevertheless, individual scores can provide a starting point for small countries to benchmark their performance against each other as well as to use their indicator scores as a policy tool.

The architecture of the ESI, in which all indicator scores are calculated in relative terms and then averaged to generate the composite scores, presumes that the countries are fundamentally comparable. It also assumes that the significance of a very low or a very high score for any one variable is comparable across countries, and that it relates directly to practical concerns for environmental sustainability in each country.

For very small states this assumption is violated for several variables and indicators. This is especially true for the landscape and biodiversity related measures. The status of endangered species, for example, is problematic as a relative indicator. Many very small states are islands, which have different biodiversity constraints than other countries. For example, the 5,000 square kilometer cutoff for inclusion in the ESI is considered by

the World Conservation Union (IUCN) to be the minimum habitat range for a species to avoid being on the Red List of threatened species.

In addition, the ESI architecture assumes that an environmentally sustainable country is one which generates the bulk of the most valuable environmental services – such as clean air, plentiful water, arable land, biodiversity, and so on – from internal resources. Yet for countries that are extremely small this assumption makes little sense. A country such as Singapore, for example, must rely on its neighbors for some environmental resources. Similarly, the ESI assumes that a sustainable country sets aside a significant portion of its land as protected wilderness. Yet in very small countries the relevance of this metric differs from that of other ESI countries and is not comparable.

Many indicators, however, are equally relevant in small and large countries. Air and Water Quality, the vulnerability measures, and most of the capacity measures easily translate to the small country context. Because many of the data sets in the ESI that are relevant for countries of any size are not available and cannot be plausibly imputed (see Table E.1), we only report available component scores for small countries excluded from the ESI. Comparisons to larger countries should be undertaken with caution for the reasons given above.

Table E.1: Small States ESI Scores (based on available data – no imputations generated)

Country Name	ESI Score	SYSTEM	STRESS	VULNERABILITY	CAPACITY	GLOBAL
Mauritius	56.69	91.87	81.63	15.03	48.32	51.76
Luxembourg	49.56	40.93	13.95	34.06	57.85	85.46
Malta	47.13	40.93	76.93	13.15	49.85	50.94
Singapore	41.84	59.66	49.21	13.15	55.14	13.11
Barbados	..*	85.04	85.82	..	44.79	20.11

* We cannot calculate an ESI score for Barbados due to the lack of complete indicators in the vulnerability component.

