Competitive Enterprise Institute
1001 Connecticut Avenue, NW
Suite 1250
Washington, DC 20036

Proposal for a Natural Resource Indicator
The Competitive Enterprise Institute
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The Competitive Enterprise Institute (CEI) appreciates the opportunity to submit a proposal for a natural resource indicator or index to the Millennium Challenge Corporation (MCC).

CEI is a non-profit public policy organization dedicated to advancing the principles of free enterprise and limited government. Founded in 1984, CEI works on a range of policy issues both domestically and internationally.

This document is divided into three sections. In the first part, we explain our skepticism regarding MCC's search for a natural resources indicator and why such an indicator is superfluous given MCC's other indicators and mission. In fact, we regard the push to move in this direction as counter-productive and contrary to the goals of the MCC legislation. The conversations we've had with the MCC staff indicate that some in the policy community and some in Congress have urged this diversion. We see no reason why MCC should heed these requests. In the second part, as a 'second best' option, we propose that MCC adopt the Heritage Foundation's Property Rights Index (a component of its Index of Economic Freedom) as its natural resource indicator. We describe how the index is constructed and why it would meet the MCC criteria. In the third part, we explain why the Property Rights Index is an appropriate measure of 'the sustainable management of natural resources'

Comment

First, as stated in our June 16th, 2005 comments regarding MCC's "Interim Environmental Guidelines", we believe that focusing separate attention on a "natural resource indicator" goes against the spirit and the letter of the Millennium Challenge Act of 2003 (MCA). Section 607(b) of the MCA lists the criteria under which candidate countries may become eligible for MCC grants. These include that "the country has demonstrated a commitment to . . . economic freedom, including a demonstrated commitment to economic policies that promote private sector growth and the sustainable management of natural resources". The linkage between growth and sustainable

management in the MCA is very significant because it clearly demonstrates that the proponents of this legislation reject the thesis that sustainable development conflicts with economic growth, as proponents of the "limits to growth" literature maintain. But, in fact, economic growth, and its hand-maiden, poverty reduction, are preconditions to sustainable development.[1]

In 1972, the Club of Rome published *The Limits to Growth*, a report on "five major trends of global concern – accelerating industrialization, rapid population growth, widespread malnutrition, depletion of nonrenewable resources, and a deteriorating environment". This report concluded that

> "if the present growth trends . . . continue unchanged, the limits to growth on this planet will be reached sometime within the next one hundred years".
>
> But "it is possible to alter these growth trends and to establish a condition of ecological and economic stability that is **sustainable** far into the future. . . Indeed there would be little point even in discussing such fundamental changes in the functioning of modern society if we felt that the present pattern of unrestricted growth were **sustainable** into the future. All the evidence available to us, however, suggests that of the three alternatives--unrestricted growth, a self-imposed limitation to growth, or a nature-imposed limitation to growth--only the last two are actually possible." [emphasis added]

Given the belief in an inverse relationship between economic growth and a sustainable future in the Club of Rome report (and in a great many subsequent environmentalist writings), MCC should reject the thesis that private sector economic growth might threaten the sustainable management of natural resources. **Thus CEI recommends that MCC abandon the search for a separate natural resources indicator and instead focus on the existing measures of economic freedom which, as a group, already demonstrate a candidate country's "commitment to economic policies that promote private sector growth and the sustainable management of natural resources".**[2]

Second, we believe that that a separate indicator for natural resource management is superfluous and duplicative, considering that MCC already employs sixteen indicators to characterize a country's performance in terms of "ruling justly", "investing in people" and "economic freedom". If countries do well on these indicators they are likely not only to advance economic growth and reduce poverty, but also to meet the goals of sustainable development as outlined in the World Summit on Sustainable Development in Johannesburg in 2002 and the Millennium Development Goals (such as increasing access to safe water, sanitation and public health services, reducing hunger and mortality,

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[1] See the World Bank's *2004 Annual Review of Development Effectiveness: The Bank's Contributions to Poverty Reduction*. (Operations Evaluations Department, 2005).

[2] Are the forests, the mineral reserves, the fisheries, etc. under private or political control? That question is already addressed in MCC's basic criteria. A further improvement would be for MCC to disaggregate its indices to indicate ownership by resource type (water, land, forests, etc.).

advancing education). In fact, analyses indicate that many of these indicators of sustainable development improve with the level of economic development (as measured by gross domestic product per capita). This is because the institutions that advance economic growth (e.g., property rights, rule of law, etc.) also foster improvements in these indicators of sustainable development (Goklany 2002a, 2002b).[3]

Not surprisingly, therefore, Goklany (2002a, 2002b) has shown that as the level of economic development increases, crop yields and food supplies per capita (both inversely related to hunger and malnutrition) increase; access to safe water and sanitation improves; mortality rates drop; educational attainment increases; and life expectancies lengthen.

In addition, from the point of view of developing countries, land and water are the two most critical natural resources that have to be managed. This is because land and water are the two most critical inputs for agriculture, which is a mainstay of their economy and, more importantly, employs the majority of their populations. But one of the major threats to sustainable development is the increased pressure on terrestrial and freshwater biodiversity as a result of the diversion of land and water to human use, mainly for agricultural activities. To alleviate these pressures while also meeting human needs, it is critical to produce more food per unit of land and water; in other words, sustainable yields need to be increased (Goklany 1998, McNeely and Scherr 2001, McNeely 2001, Green et al. 2005). But, as already noted, higher yields are associated with higher levels of economic development. Moreover, property rights are integral to increasing not only sustainable yields but also economic growth (see Section III, below). Thus economic development, sustainable yields and lower pressures on biodiversity are all part of the same equation (as is reducing hunger). The institutions and factors that would bring progress toward these various goals already exist among MCC's current indicators.

If MCC nonetheless elects to go ahead with a separate natural resources management indicator – a step that we urge MCC not to take and one that we think undermines support for the MCC project – we suggest that you adopt the Property Rights Index component of the Heritage Foundation's Index of Economic Freedom as an objective measure of the sustainable management of natural resources.

The Property Rights Index

The Property Rights Index (PRI) is a partial index that forms part of the Heritage Foundation's Index of Economic Freedom, an annual index ranking the economic freedom of countries around the world (Heritage Foundation, 2005). Economic Freedom is defined as "the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for

[3] It might be objected that some indicators seen as critical by some – biodiversity, extent of forested lands, clean water – might decline during the early days of development. But, of course, that was true for the United States during its development era. Any snap shot picture of the static quantitative level of some physical indicator would thus be misleading.

citizens to protect and maintain liberty itself." A country's ranking is determined by first tabulating values for 50 economic variables that fall into ten, broad, categories (or "factors") of economic freedom. 'Property rights' is one of these categories while 'Trade policy' – which is already used by MCC as an objective indicator of economic freedom – is another. The Heritage Foundation grades each category along its own scale with a score between 1 and 5 based on the relevant economic variables. Lower numbers mean less government intervention and hence more economic freedom. All ten factors are then added together and averaged (equally weighted) to achieve the final index of economic freedom number for a particular country. One hundred and sixty-one countries are covered in the 2005 Index of Economic Freedom. The Index of Economic Freedom was first published in 1995.

The following is the Heritage Foundation's explanation of the methodology for determining the PRI:

> [The Property Rights] factor scores the degree to which a country's laws protect private property rights and the degree to which its government enforces those laws. It also accounts for the possibility that private property will be expropriated. In addition, it analyzes the independence of the judiciary, the existence of corruption within the judiciary, and the ability of individuals and businesses to enforce contracts. The less certain the legal protection of property, the higher a country's score; similarly, the greater the chances of government expropriation of property, the higher a country's score.

The economic data used as the basis for assigning scores in the 2005 Index of Economic Freedom come from several independent sources, which, moreover, update their data regularly:

- Economist Intelligence Unit, Country Commerce, 2003 and 2004
- U.S. Department of Commerce, Country Commercial Guide,
- U.S. Department of State, Country Reports on Human Rights Practices, 2003 and 2004

For Fiscal Year 2006, MCC lists 66 'low income candidate countries' and 29 'lower middle income candidate countries'. The Heritage Foundation's Index of Economic Freedom includes 56/69 countries or 81% of the former list and 22/28 countries or 79% of the latter list.

The PRI and the larger Index of Economic Freedom are highly transparent. An Excel file containing country-level data for all factors of economic freedom (including the PRI) and the overall index of economic freedom covering the years 1995-2005 are available for downloading at http://www.heritage.org/research/features/index/index.cfm . Explanatory essays and charts as well as a detailed description of the methodology used to construct the index are also available for free downloading. The entire *Index of Economic Freedom*, which includes profiles of all countries listed in the index in addition to data

and explanatory essays, may be purchased online as a book, CD-ROM or downloadable file. Footnotes and bibliography point the reader to the raw data sources used in creating the index. We foresee minimal costs, if any, in using the Heritage Foundation's Property Rights Index as the natural resources indicator.

The Heritage Foundation has published the Index of Economic Freedom annually since 1995. The methodology has remained consistent over the years allowing for a meaningful comparison of countries' economic freedom over time. Data coverage has improved since the index was first published allowing for the inclusion of more countries in the index and fewer breaks in the data series. The Index of Economic Freedom allows researchers to compare the extent to which property rights are secure across countries and across time.

The PRI is consistent with MCC criteria. It is worth repeating that another factor of economic freedom from the Heritage Foundation's Index, 'Trade Policy', was selected by MCC as a useful indicator of economic freedom that measures "a demonstrated commitment to economic policies that encourage citizens and firms to participate in global trade and international capital markets".

The Heritage Foundation is a public policy research organization, a "think tank", that believes in individual liberty, free enterprise, limited government, a strong national defense, and traditional American values. It is a 501(c)(3) charitable organization under the U.S. tax code.

The following chart illustrates how the PRI treats five MCA candidate countries (three 'low income' and two 'lower middle income').

Ratings on Property Rights and Economic Freedom for Five MCA Candidate Countries
Heritage Foundation's *Index of Economic Freedom*

	Bangladesh		***Egypt***		***Peru***		***Tunisia***		***Ukraine***	
	PRI	IEF	PRI	IEF	PRI	IEF	PRI	IEF	PRI	IEF
Year										
2005	4.0	3.95	3.0	3.38	4.0	2.78	3.0	3.14	4.0	3.21
2004	4.0	3.70	3.0	3.28	4.0	2.83	3.0	2.94	4.0	3.49
2003	4.0	3.69	3.0	3.39	4.0	2.86	3.0	2.91	4.0	3.59
2002	4.0	4.0	3.0	3.53	4.0	2.88	3.0	2.89	4.0	3.84
2001	4.0	4.05	3.0	3.53	3.0	2.61	3.0	3.04	4.0	3.88
2000	4.0	4.04	3.0	3.58	3.0	2.64	3.0	2.94	4.0	3.75

PRI = Property Rights Index
IEF = Index of Economic Freedom

Median value for PRI = 3 for all years

Property Rights and "the sustainable management of natural resources"

How do property rights demonstrate economic freedom while promoting economic growth, poverty reduction and the sustainable management of natural resources?

The importance of property rights in the history of economic thought has a long history.[4] But for our purposes, the argument made by Demsetz in his classic 1967 article is a good starting point and worth quoting at length:

> If a single person owns land, he will attempt to maximize its present value by taking into account alternative future time streams of benefits and costs and selecting that one which he believes will maximize the present value of his privately-owned land rights. We all know that this means that he will attempt to take into account the supply and demand conditions that he thinks will exist after his death….
>
> In effect, an owner of a private right to use land acts as a broker whose wealth depends on how well he takes into account the competing claims of the present and the future….
>
> The resulting private ownership of land will internalize many of the external costs associated with communal ownership, for now an owner, by virtue of his power to exclude others, can generally count on realizing the rewards associated with husbanding the game and increasing the fertility of his land. This concentration of benefits and costs on owners creates incentives to utilize resources more efficiently. (Demsetz, 1967: 355-356)

It is interesting to compare this statement of the economic value of property rights to a standard definition of "sustainable development":

> Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. (World Commission on Environment and Development, 1987)

Besides the logic of Demsetz' argument, the key thing to note is that a system of private property rights necessarily creates an incentive for owners to consider both their long-term and short-term needs, as well as the costs that would be imposed if in pursuit of the latter, they compromise the former (and vice versa) . Thus, private property rights transform the vague hope of 'sustainable development' into a working method for the efficient (i.e. not wasteful but sustainable) management and use of all resources,

[4] For a good survey of the philosophical issues involved, see the working paper by Edwin West titled "Property Rights in the History of Economic Thought: From Locke to J.S. Mill" (http://www.carleton.ca/economics/cep/cep01-01.pdf).

including 'natural resources'. It allows for the rational balancing of the trade-offs that must be made in meeting these often competing objectives.

Robert Solow (1992) similarly argues that 'sustainability' does not mean 'preservation':

> …a sustainable path for the economy is thus not necessarily one that conserves every single thing or any single thing. It is one that replaces whatever it takes from its inherited natural and produced environment, its material and intellectual endowment. What matters is not the particular form that the replacement takes, but only its capacity to produce the things that posterity will enjoy. Those depletions and investment decisions are the proper focus (Solow, 1992: 15).

The institution of private property rights is what allows for those "depletion and investment decisions" to be made rationally. Thus private property rights are a necessary condition for an economic decision to be truly sustainable in any meaningful sense of the term.[5]

Economists have conducted many studies examining how property rights - and institutions more broadly - affect economic growth. Gerald Scully (1988) compared countries' economic growth rates of per capita income with measures of political, civil and economic freedom over the period 1960 to 1980. Scully used country rankings of political and economic freedom from Gastil (1982) and comparable measures of per capita income from Summers and Heston (1984). Scully found that "the average growth rate in societies in which these freedoms [political, civil and economic] are restricted is one-third of that of free societies" (Scully, 1988: 658). Unfortunately, Scully's study does not address the causal mechanism – the incentive created by the property right to invest in one's property and reap the profit – by which property rights contribute to economic prosperity.

Besley (1995) investigates the causal link between property rights and investment incentives by using empirical evidence from two regions of Ghana, Wassa in the west and Anloga in the southeast. In Wassa, a cocoa growing region, Besley focuses on the decision by farmers to plant trees. He concludes that "the findings for tree planting in Wassa found investments significantly related to land rights. Moreover, this is robust to attempts to control for farmer heterogeneity and instrumenting for land rights." (Besley, 1995: 926). In Anloga, "farmers specialize in growing shallots (a small type of onion on very small plots of land" (905). For this part of the study, Besley focuses on transfer rights, "rights to sell, rent, bequeath, pledge, mortgage and gift" one's land (905). He

[5] Put another way, resource use is "sustainable" if the use of that resource today creates incentives to regain the equivalent supply of that resource in the future. This can happen through one of three ways: 1) by finding new sources of that resource (more drilling, deeper wells, replanting trees), 2) by finding ways of using the remaining quantity of the resource more efficiently, thereby offsetting the physical decline in the quantity of the resource, and 3) by finding technological substitutes that meet the needs provided by the original resource. These three responses are, of course, the natural result of a market economy. Again, there is no need for a separate criterion – meaningful property rights allow exchanges which create both the information and the incentives to ensure sustainability.

concludes that "the rights variables have a positive and significant effect on the probability of investing" (927) but cautions that "rights should properly be regarded as something that farmers affect, not as exogenously given conditions, which reinforces the importance of studying the determinants of rights, effective and nominal, and not just their consequences" (931). This conclusion is supportive of the Heritage Foundation's methodology in constructing the PRI, namely measuring the extent to which a country's laws reliably protect private property rights.

Seth Norton (1998a) uses both Heritage Foundation data on property rights as well as Fraser Institute/Cato Institute data on property rights to investigate the impact of property rights on people's welfare. To measure welfare or human well-being across countries, Norton uses the United Nations' Human Development Index (HDI) and Human Poverty Index (HPI), a measure of "the most deprived people in the community" (United Nations in Norton, 1998a). Norton finds that "there is compelling evidence that strong property rights significantly reduce the deprivation of the world's most impoverished people and there is some evidence that weak property rights increase the deprivation of those people" (Norton, 1998a: 239).

Norton (1998b) looks at the relationship between property rights, economic growth (not income levels) and measures of environmental quality. Using the property rights measures of the Fraser Institute/Cato Institute, "Norton found that in countries where property rights are well protected, much higher percentages of the people have access to safe drinking water and sewage treatment. Norton proposes that well-defined and protected property rights lead to increased economic growth, which in turn leads to better environmental quality" (Brown & Shaw, 1999).

Yandle and Morriss (2001) expand on the link between property rights and environmental quality:

> . . . to obtain efficiency in environmental management, economic agents must be allowed to truck and barter as they juggle access to and use of environmental resources. Sometimes use of scarce environmental assets requires ownership of particular land parcels, membership in some specified community or tribe, or citizenship in some political unit. At other times, access and use is simply a matter of engaging in mutually beneficial exchange of fee simple rights with rights holders. The degree to which property rights can be alienated determines the wealth creation potential for the resource in question. The limits of efficiency are found when defined and defended environmental rights can be completely alienated. (144-145).

Thus the efficient management of environmental resources is dependent upon the recognition of property rights. Moreover, as noted earlier, land and water are the two most critical natural resources for developing countries because they are essential for meeting food and nutritional needs, reducing hunger and malnutrition, and conserving

biodiversity. Private property rights are an essential part of the framework necessary to manage these resources rationally and to ensure that the sometimes competing goals of land and water management are met efficiently.

Conclusion

The political pressures on MCC to deviate from its original vision - to pursue a distinct non-wealth related measure of the "sustainable management of natural resources" - should be resisted. If the MCC model proves effective – if its grants actually achieve its goals, if wealth is created - then we should not fear any harm to the environment. Adding a new and separate criterion dealing with natural resources confuses, rather than advances, the MCC goal. In contrast, a measure based on the nation's protection of property rights offers a theoretically sound and empirically valid method for doing this. Property rights are a necessary condition for the rational use of resources. This means that long-term and short-term considerations will be weighed each time an economic decision is made involving the use of those natural resources. Private property rights are also an important institutional factor explaining, on a microeconomic level, the decision to invest in and improve one's resources, and, on a macroeconomic level, a country's rate of economic growth. Finally, a property rights criterion is policy-linked. As much of the force of property rights derives from their stability and widespread recognition, governments have the ability to affect the protection of these rights. By formalizing property rights, eliminating corruption in the legal system and enforcing contracts, governments can increase the security of private property rights thereby promoting both "private sector growth and the sustainable management of natural resources".

The Competitive Enterprise Institute therefore recommends that MCC embrace its original intent, reject the pressures of the neo-Malthusians and abandon the search for a separate natural resources indicator. As a second best solution, we recommend that MCC adopt the Heritage Foundation's Property Rights Index as its objective and quantifiable indicator of natural resources management.

Isaac Post
Competitive Enterprise Institute
1001 Connecticut Ave. NW Suite 1250
Washington, D.C. 20036
(202) 331-2270
ipost@cei.org

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