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Consensus by Design, Policy by Default: Implementing the Convention on Biological Diversity

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The Convention on Biological Diversity promotes an exceptionally broad array of policy goals pertaining to biotic resources, species extinction, ecological health, and human welfare. In practice, the relative emphasis given to one or another of these goals has been determined by the international institutions responsible for implementing projects under the convention. International donor agencies disagree as to whether they should target biologically rich areas for the benefit of the planet as a whole, or promote conservation equally in every country as a means to economic development. Regression analysis of expenditures by the U.S. Agency for International Development and the World Bank–led Global Environment Facility shows that the geographic pattern of conservation assistance corresponds with donors' political and institutional affiliations and with the occurrence of species richness. Development need does not influence the geographic allocation of conservation aid.

Keywords biological diversity, conservation policy, development, environment, Global Environment Facility, overseas aid, U.S. Agency for International Development, World Bank

Current rates of habitat destruction are committing an estimated 27,000 species to extinction every year in the tropical forests alone (Wilson 1992). In response to rising threats to the planet's diverse natural heritage, representatives from 156 nations signed the Convention on Biological Diversity at the Earth Summit in 1992. As part of this agreement, the industrialized nations promised to provide new sources of overseas aid to help developing countries use their biological resources in a sustainable manner. The Global Environment Facility (GEF) is the official multilateral funding mechanism under the treaty, while some nations have provided aid bilaterally through institutions like the U.S. Agency for International Development (U.S. AID).

The parties to the Convention on Biological Diversity incorporated a vast array of social and ecological concerns into the text of the treaty, while carefully avoiding any specific regulatory requirements. Although the convention's expansive mandate and timid regulatory regime helped to facilitate agreement among the parties, the normative emphasis and policy priorities of the convention remain an open question. In this article, I explore what happens when a vague international mandate is handed over to specific implementing institutions, with their own policy priorities and organizational biases. After reviewing some of the competing interpretations of the global biodiversity mandate, I conduct a quantitative analysis of donor expenditures to discern which part of this man-

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the globalist perspective, resources should be devoted to those countries with the highest diversity.

The national development perspective is embraced by many officials of U.S. AID, which claims to be the world's largest source of bilateral aid for biodiversity conservation (U.S. AID 1994). Despite the agency's official stance of supporting both globalist and national development goals (U.S. AID 1994), many U.S. AID officials express a strong bias for the latter approach. Some officials object to the very notion that species diversity should drive conservation priorities (Kux 1994, 1995). Megadiversity approaches ignore small countries, they argue, and the resultant investments provide scant benefits to those living outside the borders of the chosen few. From this perspective, biodiversity investments should be made in every country. This national development perspective is shared by senior policymakers in the U.S. AID–sponsored Biodiversity Support Program, who argue that the biodiversity of Egypt and Haiti should be valued on par with that of Indonesia and Brazil (Saterson 1994). Most Third World governments hold a similar view. Global prioritization was explicitly rejected in negotiations following the Earth Summit, because representatives from developing countries objected to the idea of a global panel identifying planetary priorities on the basis of species endowments (Thomas 1994).

The most prominent advocate of the globalist perspective is the GEF. Operating out of the World Bank in Washington, D.C., the agency has adopted an unambiguous stance on this issue: "Projects that benefit the global environment, as distinct from the local environment, qualify for funding under the GEF" (World Bank 1992a, 15). GEF officials argue that, "while developing countries are prepared to divert or borrow resources to improve their local or regional environments, few are willing to do so for programs and projects that they see as benefiting the rest of the world" (World Bank 1992b, 18). The GEF tries to circumvent the perhaps justifiable parochialism of developing countries with international funding.

Elsewhere I have argued for a modified version of the globalist approach, claiming that, when we conceive biodiversity conservation as primarily a development issue, neither the environment nor development causes are well served (Steinberg 1998). For the present discussion, the important question is not which perspective makes more sense but, rather, which perspective has prevailed in the process of "policy by default" that characterizes the implementation of the Convention on Biological Diversity.

Empirical Analysis of Donor Agency Priorities

To what extent have globalist or national development perspectives impacted the actual expenditures of the world's largest conservation donors? To answer this question, I ran multiple regression models examining the spending patterns of the GEF and U.S. AID. The analysis is based on the idea that the geographic pattern of agency expenditures, together with the characteristics of recipient countries, can tell us something about which part of the biodiversity mandate these donors emphasize in practice. Three hypotheses were tested using this approach. First, based on agency reports and the expressed opinions of U.S. AID conservation officials, I hypothesized that U.S. AID would devote conservation funds disproportionately to countries with the greatest development need. I left as an open question the extent to which U.S. AID favors species-rich countries; agency-sponsored publications often declare the importance of global species preservation (e.g., Johnson 1995), while some of its top officials strongly disagree with a species-oriented approach. Second, I hypothesized that the GEF would favor species-rich countries, irrespective of development need. Third, some observers have criticized the GEF for "piggy-

backing" biodiversity projects on preexisting development schemes (Mittermeier and Bowles 1993), and for choosing locations on the basis of political convenience (Wells 1994). Therefore, I hypothesized that both agencies spend more in countries where they have a history of institutional affiliation for reasons unrelated to conservation.

The dependent variable in each case is the amount of money that the donor agency has given to each country, while the independent variables measure recipient countries' species richness, development need, and their degree of institutional affiliation with the donor agency. I obtained data for 103 developing countries, and ran separate regression analyses for U.S. AID and the GEF. For U.S. AID, the dependent variable includes the total amount of biodiversity conservation grants allocated to each country from 1991 to 1995. Two data sets were combined for this figure: The first is a list of U.S. AID biodiversity expenditures provided by U.S. AID and compiled by the Environment and Natural Resources Information Center, a private consulting firm (ENRIC 1994). The second is from the Biodiversity Support Program, a small grants program funded by U.S. AID and implemented by a consortium of environmental organizations. The total amount of U.S. AID conservation assistance used in the regression is $283.7 million. I conducted follow-up interviews with agency personnel and implementing organizations to obtain country-specific breakdowns of any regional projects. This was feasible for the vast majority of regional projects. A few of these disaggregations relied on estimates from agency staff members, introducing greater measurement error.

For the independent variables, the biological richness of each country was measured according to its total number of flowering plant species and endemic mammal species, using data from the World Conservation Monitoring Centre (WCMC 1992). These variables were chosen from among six biological indicators (total and endemic plants, mammals, and birds) on the basis of their explanatory power and the completeness of the data set. There is strong multicollinearity among different measures of species richness, so I included only these two measures in the model. As a result, the biological variables used here are best interpreted as generic measures of species diversity, rather than as measures in diversity of plants or endemic mammals per se. (Principal components analysis of all six biological measures was not used, because it would have required complete data on all six indicators, which are only available for a much smaller set of countries.)

The level of development need for recipient countries was measured using the Human Development Index, (HDI), a composite of several socioeconomic indicators intended to provide a more complete picture of social welfare than that provided by gross national product alone (UNDP 1993). Again, only one development indicator is included, to avoid multicollinearity. None of the other development indicators examined (including life expectancy, infant mortality, and gross national product) had results substantively different from those reported below for the Human Development Index. Finally, I used three variables to measure a country's institutional affiliation with U.S. AID: the amount of general (nonconservation) assistance received from U.S. AID in 1987 (U.S. AID 1991); a dummy variable indicating the presence of a Peace Corps program in the country at any time during 1990–93; and a dummy variable for the Latin America/Caribbean region, which is of special geopolitical importance to the United States.

The dependent variable in the GEF model includes the total amount spent by the GEF on biodiversity programs in each country, from its inception in 1991 to 1995 (GEF 1995). The total amount of GEF biodiversity aid included in the regression is $338.6 million. For both the GEF and U.S. AID models, nominal dollars are used because it is very difficult to determine when designated funds were actually allocated or spent in the host countries; agency rosters typically specify a total amount to be allocated at some point

over a few years. The same biological richness and development need variables employed in the U.S. AID model are used for the GEF, to facilitate comparison between the two donors. Institutional affiliation in the GEF model measures the relationship between recipient countries and the organizations administering the GEF. Specifically, I used the dollar amount of general assistance that each country received from the World Bank and the United Nations Development Program (UNDP) in 1989 and 1990 (U.S. AID 1991). Although the United Nations Environment Program also plays a small role in managing the GEF, it is not included in the analysis because only the World Bank and UNDP identify and manage national-level GEF projects.

Multiple regressions were run using both ordinary least squares (OLS) and tobit analysis. A log-log specification was used so that the relative explanatory power of the independent variables could be compared directly; parameter estimates represent the percentage increase in agency expenditures associated with a 1% increase in the explanatory variable. Tobit analysis was used to confirm the OLS results: Because many countries received no conservation assistance, we cannot know the amount that they might have received had the amount been larger than zero. The dependent variable is thereby "censored" and we would expect parameter estimates from the OLS model to be biased (Roncek 1992). Tobit models have not yet been developed for cases where the dependent variable is logged (as it must be for agency conservation expenditures, which range from a few thousand to several million dollars), so only the *t*-statistics for the tobit are reported.

The regression results for U.S. AID are shown in Table 1. Flowering plant species and all three institutional affiliation variables have significant explanatory power in the U.S. AID model, while development need exerts no discernible influence over the pattern of agency expenditures. A 1% increase in the number of flowering plant species is associated with a 1.72% increase in U.S. AID expenditures ($p < 0.05$), while a 1% increase in general overseas aid (measuring institutional affiliation) is associated with a 0.28% increase in conservation aid ($p < 0.001$). The group of countries with Peace Corps programs received 4.42% more conservation assistance than those without ($p < 0.001$). Likewise, the countries of the Latin America/Caribbean region, on the whole, received 4.45% more biodiversity aid than those of other regions ($p < 0.001$). The *t*-tests in the tobit model confirm the significance results found with OLS.

Similar results were obtained for the GEF (Table 2). As in the U.S. AID case, richness in flowering plant species ($p < 0.01$) has the strongest explanatory power among the continuous variables, with a parameter estimate of 2.33. Here the HDI is significantly correlated with expenditures ($p < 0.05$), but in an unexpected direction: The more developed the country (the greater the index value), the more likely they are to receive GEF biodiversity grants. A history of affiliation with the World Bank has very significant explanatory power ($p < 0.001$), while prior affiliation with the UNDP has no effect. Whereas endemic mammal species richness is significant at the 10% level in the U.S. AID case, it has no explanatory power in the GEF model. The adjusted R^2 value is 0.32 for the GEF model, compared to 0.51 for the U.S. AID model. Again, the tobit results agree with the OLS significance tests for each variable.

It is intuitively plausible that the species richness variables employed simply reflect the influence of a country's total land area, which could affect the dependent variable for nonbiological reasons, such as geopolitical significance or development need. This possibility was ruled out by rerunning the OLS and tobit models with the log of each country's land area as an independent variable. Flowering plant species richness was still significant when controlling for land area, and in only one case (the tobit for the GEF) did land area show a significant correlation with agency expenditures. When the dependent vari-

Table 1
U.S. Agency for International Development conservation assistance: Relative importance of species richness, development need, and institutional affiliation in explaining which countries receive aid

		Ordinary least squares		
	Variable	Parameter estimate	*t*-Value	Tobit *t*-Value
Species richness	CONSTANT	−13.09	−2.31*	−2.40*
	1FLOWER	1.72	2.59*	2.68**
	1ENDMAM	0.83	1.76	1.82
Development need	1HDI	−0.53	−0.76	−0.78
Institutional affiliation	1AIDGEN	0.28	4.18***	4.32***
	PEACE	4.42	4.26***	4.41***
	LATIN	4.45	3.50***	3.62***

Sources: Biodiversity Support Program (1992–94), Deely (1994), ENRIC (1994), U.S. AID (1991), UNDP (1993), WCMC (1992).

Note: $N = 103$ developing countries; Adj. $R^2 = 0.51$; 1FLOWER = log of a country's total number of flowering plant species; 1ENDMAM = log of number of endemic mammal species; 1HDI = log of (100 × Human Development Index); 1AIDGEN = log of U.S. AID general (nonconservation) aid in 1987; PEACE = dummy variable for presence of Peace Corps, 1990–93; LATIN = dummy variable for Latin America/Caribbean region.

*$p < .05$. **$p < .01$. ***$p < .001$.

ables were run on flowering plant species and land area alone, the former was significant at the ($p < 0.001$) level for both GEF and U.S. AID, in both OLS and tobit, and the latter had no significance, even at the ($p < 0.1$) level, in any of the models.

It is also possible that the institutional affiliation variables used here are not measuring the bias of any *particular* institution, as I have asserted, but simply reflect the reality that some countries are more amenable to overseas aid projects of all kinds. For example, some countries are better able to manage large grants than others, and this could explain U.S. AID's propensity to give biodiversity aid to the same countries that it has worked with in the past. This possibility was disproved by regressing GEF biodiversity expenditures on U.S. AID's institutional affiliation variables, and regressing U.S. AID biodiversity expenditures on the GEF's institutional affiliation variables. No significant correlations were found in either case. Each agency's institutional affiliation variables help explain its own biodiversity expenditures, but are insignificant in explaining the other agency's biodiversity expenditures.

Two important findings emerge from the regression results. First, the strength of the institutional affiliation variables for both U.S. AID and the GEF is striking. For the GEF, it comes as no surprise that the World Bank, and not UNDP, shows this effect, given the World Bank's disproportionate role in setting GEF policy. There are several possible reasons for the observed patterns of institutional affiliation. It is entirely understandable for an agency to prefer initiating new conservation projects in a country where it already has established good working relationships and perhaps a local office. A less attractive, if equally plausible, scenario is that agencies often put a fresh coat of green paint on old projects, and "piggyback" biodiversity projects on preexisting development schemes on a

Table 2

The Global Environment Facility: Relative importance of species richness, development need, and institutional affiliation in explaining which countries receive aid

		Ordinary least squares		
	Variable	Parameter estimate	*t*-Value	Tobit *t*-Value
Species richness	CONSTANT	−23.68	−3.51***	−3.61***
	1FLOWER	2.33	2.81**	2.90**
	1ENDMAM	−0.15	−0.25	−0.25
Development need	1HDI	2.20	2.46*	2.53*
Institutional affiliation	1WORLDGEN	0.26	3.45***	3.55***
	1UNDPGEN	0.13	0.76	0.78

Sources: GEF (1995), U.S. AID (1991), UNDP (1993), WCMC (1992).

Note: $N = 103$ developing countries; Adj. $R^2 = 0.32$; 1FLOWR = log of a country's total number of flowering plant species; 1ENDMAM = log of number of endemic mammal species; 1HDI = log of (100 × Human Development Index); 1WORLDGEN = log of World Bank general (nonconservation) aid, combined 1989–90 total; 1UNDPGEN = log of United Nations Development Program nonconservation aid, combined 1989–90 total.

*$p < .05$. **$p < .01$. ***$p < .001$.

wide basis (Mittermeier and Bowles 1993). The more important point is that these results confirm the idea that institutional choice matters when implementing global agreements. (On the design and impact of international environmental institutions, see Keohane and Levy 1996; Haas, Keohane, and Levy 1993; Young 1994.) When vague mandates are handed over to implementing agencies to work out the details, the relative emphasis given to one or another policy goal will be shaped in important ways by agency priorities and affiliations.

The second major point arising from the regression results is a methodological one. Had I drawn conclusions merely on the basis of *stated* priorities found in agency documents and in interviews, I would have concluded (falsely) that U.S. AID directs conservation funds disproportionately to countries where human needs are most pressing, in accordance with my first hypothesis. It may be the case that agency officials do their best to focus on development priorities within the political constraints laid down by the U.S. State Department. But analyzing *revealed* agency priorities, in this case agency expenditures, shows the end result of these internal dynamics—and results are what matter most from a policy standpoint. The revealed preference approach may be especially useful when analyzing the activities of institutions facing intense public scrutiny and political pressure from a variety of competing interests—precisely the atmosphere characterizing the implementation of international environmental treaties.

Conclusions

As an ever greater number of environmental treaties are negotiated, signed, and ratified, research on international environmental policy increasingly is focusing on the implementation and impact of these agreements (e.g., Chayes and Chayes 1993; Haas, Keohane,

and Levy 1993; Jasanoff 1991). More than ever, scholars and practitioners want to know what happens after the ink dries.

This trend is similar to the proliferation of implementation studies in the American policy sciences that began in the early 1970s, following the perceived failure of the Great Society programs (e.g., Mazmanian and Sabatier 1989). In one of the more influential of these studies, Majone and Wildavsky (1984) concluded that vague mandates are more likely to be implemented, and their effects are less likely to bear any relation to the problem that motivated government action in the first place. My analysis of activities carried out under the Convention on Biological Diversity does not suggest the presence of such an "implementation monster"; species conservation still carries normative weight in the decisions of donor institutions. But the equally weighty influence of agency bias on policy outcomes shows that institutional choice is no trivial matter in the implementation of international agreements.

It is probably unrealistic (and certainly inefficient) to ask these agencies to fund projects without regard to their own institutional networks. An alternative approach is simply to not rely on the same few institutions to implement the diverse environment and development mandates emerging from international fora with increasing regularity. Parties to a treaty can also mitigate the impact of agency bias by firming up the original mandate with the use of protocols. In the international effort to halt ozone depletion, the Montreal Protocol helped shape the vague commitments of Vienna into an ambitious plan of action specific to the task. Parties to the Convention on Biological Diversity have been considering a protocol on the transboundary movement of living modified organisms, although this has very little to do with the core concerns of the treaty (Raustiala and Victor 1996).

Finally, while I have emphasized the impact of international organizations on treaty implementation, this is only part of the implementation picture. An important topic in need of further study is whether and how the policy norms embodied in international environmental agreements are incorporated into political understandings and public policies at the national level, especially in the Third World. The literatures on ideas and institutions (Goldstein and Keohane 1993; Sikkink 1991), social movements (Escobar and Alvarez 1992; Rochon 1998), and policy change (Baumgartner and Jones 1993; Grindle and Thomas 1991; Sabatier 1989) would serve as useful launching points for this task.

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