

APPENDIX F: ENVIRONMENTAL PORTFOLIO REVIEW

The World Bank's ENRM portfolio is composed of all projects approved between fiscal 1990 and 2007, in which the task team leaders indicated that the project at least partially contained one or more of the following subthemes:

- (1) Biodiversity
- (2) Climate change
- (3) Environmental policies and institutions
- (4) Land administration¹ and management
- (5) Pollution management and environmental health
- (6) Water resources management
- (7) Other environment and natural resources management.

As a cross-cutting theme (and not a sector like education, health, and transport), ENRM projects are “mapped” to many different sector boards, including one specifically for environment. This review considers both the broader ENRM and much smaller environment portfolios. It should be noted at the outset that different Regions map projects to sector boards in different ways. As a result, similar projects can be mapped to different sector boards, depending on the originating Region.

ENRM Portfolio Characteristics

From fiscal 1990 through 2007, a Bank database recorded 6,792 projects with various sources of funding (loans, credits, grants, and the like). Of this number, 2,401 are included in the ENRM portfolio, representing 35.4 percent of the total; 563 were in the environment portfolio,² representing 8.3 percent of the total and 23.4 percent of the ENRM subtotal. Therefore, less than one-quarter of all ENRM projects were mapped to the Environment Sector Board.

Both the environment and ENRM portfolios are comparatively younger—that is, they had higher shares of all projects still under implementation (46 percent and 41 percent, respectively) at the end of fiscal 2007—than that for the Bank as a whole (36 percent). This reflects the fact that Bank financial support for ENRM purposes is comparatively more recent than that for many other themes or sectors. This is especially the case for grant operations for global environmental purposes and carbon finance projects.

Commitments for projects in the ENRM portfolio approved from fiscal 1990 through 2007 were \$140.1 billion, representing 34.9 percent of the total in all Bank projects during this period. The vast majority of ENRM commitments were in the form of International Bank for Reconstruction and Development (IBRD) loans and International Development Association (IDA) credits (95.3 percent), followed by regular GEF grants (1.8 percent), with Bank guarantees, carbon finance projects, Montreal Protocol operations, and other small grant projects accounting for the rest. Commitments in Bank-administered GEF projects between the early 1990s and the end of fiscal 2007 were estimated to be \$4 billion, while those for carbon-offset operations were about \$1.1 billion—dominated by a single \$931 million operation in China, approved in fiscal 2006—and those for Montreal Protocol projects were \$500 million.

The share of ENRM commitments was greatest, by far, in East Asia and Pacific at 28.3 percent, followed by Latin America and the Caribbean at 19.8 percent, and South Asia at 16.9 percent. Shares were lowest in the Middle East and North Africa at 6.7 percent of the total, followed by Europe and Central Asia at 13.3 percent, and Sub-Saharan Africa at 15 percent.

The East Asia and Pacific Region (mainly China) accounted for 88.5 percent of all commitments for carbon offsets through fiscal 2007, while Latin America and the Caribbean had just 7.4 percent and Europe and Central Asia had the remainder. In contrast, Latin America and the Caribbean (with 25.4 percent) had a slightly larger share of total commitments in regular GEF projects than East Asia and Pacific (24.7 percent), followed by Africa (20.6 percent), Europe and Central Asia (18.8 percent), and, at a considerable distance, the Middle East and North Africa (5.7 percent) and South Asia (3.7 percent). More than half of all Montreal Protocol commitments, in turn, were in East Asia and Pacific (53.4 percent)—again, most notably in China—followed by South Asia (34.8 percent)—mainly in India—and Latin America and the Caribbean (9.6 percent).

ENRM operations were mapped to 16 different sector boards, but were mainly concentrated in 6 (see table F.1 below), which collectively accounted for 86.7 percent of all such projects and 87.5 percent of total commitments in these operations. This wide distribution of ENRM projects across a number of sector boards suggests that considerable mainstreaming of environment-related investments—a major objective of both the 2001 Environment Strategy and the earlier fourfold agenda of the 1990s—has,

in fact, occurred over the past two decades. ENRM projects mapped to the Environment Sector Board, however, are much smaller in terms of commitments (\$20.3 million), on average, than those mapped to other sector boards (\$70 million).

ENRM operations were both investment and policy-based (including Adjustment Loans and Poverty Reduction Support Credits), with investments accounting for roughly 90 percent of total commitments. Altogether, 132 policy-based operations were coded by their task team leaders as being at least in part ENRM in nature. The bulk of these were in Africa (43.9 percent), followed by Latin America and the Caribbean (22 percent) and Europe and Central Asia (14.4 percent),³ and included a number of Poverty Reduction Support Credits—more specifically, 15 in Africa, 3 each in East Asia and Pacific and Latin America and the Caribbean, 2 in Europe and Central Asia, and 1 in South Asia (Sri Lanka).⁴

Only a small number of all Development Policy Loans that reportedly had some ENRM content were primarily for environmental purposes. These were mainly in Latin America and the Caribbean (one for Brazil and two each for Colombia and Mexico). Only eight such operations (6.1 percent) were mapped to the Environment Sector Board,

Table F.1: Distribution of ENRM Projects by Sector Board, Fiscal 1990–2007

Sector Board	ENRM projects	Share of total projects (percent)	Share of total commitments (percent)
Environment	563	23.4	8.2
Agriculture & Rural Development	531	22.1	21.9
Energy and Mining	362	15.1	20.1
Water Supply & Sanitation	351	14.6	12.5
Urban Development	225	9.4	12.1
Transport	150	6.2	12.7
Others ^a	219	9.1	12.5
Total	2,401	100.0	100.0

Source: World Bank.

a. Among the remaining 339 ENRM operations (13.3 percent), the largest number were mapped to the Social Protection Board (85), followed by the Private Sector Development (51), Economic Policy (46), Public Sector (42), Social Development (24), and Health (21) Sector Boards. The remainder was mapped to the Financial Sector (17), Education (16), Poverty Reduction (15), and Global Information/Communications Technology (1) Sector Boards.

indicating that relatively little use has been made to date of policy-based loans and credits for the purpose of advancing ENRM objectives. Most of the operations that have attempted to do so have been quite recent, with six of the operations mapped to the Environment Sector Board being approved between fiscal 2005 and 2007, and all of them since fiscal 2000.

Environment Portfolio Characteristics

ENRM projects mapped to the Environment sector board differed from those mapped to other sector boards in that IBRD/IDA operations accounted for just 28.4 percent of the total. Regular and mid-size GEF grants represented a much larger share, 39.8 percent, while very small Institutional Development Fund (IDF) grants constituted 14.9 percent and Montreal Protocol, carbon offset, and Brazil Rainforest Trust Fund operations accounted for 5.5 percent, 5.2 percent, and 1.4 percent, respectively. Taken together, GEF, Montreal Protocol, carbon finance, and Rainforest projects represent more than half of all operations mapped to the Environment Sector Board, a share that rises to nearly two-thirds when IDF grants are excluded. The preponderance of grant-funded projects also explains why average commitments are much lower for ENRM operations mapped to environment than those mapped to other sector boards.⁵

The Regional share of total (including IDF and GEF mid-size) operations mapped to the Environment Sector Board was highest in Latin America and the Caribbean (35.7 percent) and lowest in South Asia (5 percent), with Europe and Central Asia (21 percent), Africa (20.4 percent), East Asia and Pacific (12.1 percent), and the Middle East and North Africa (5.7 percent) falling in between. Latin America and the Caribbean's relative shares of carbon-offset projects (62.1 percent) and GEF mid-size grants (45.3 percent) were particularly striking, but Latin America and the Caribbean also led the Bank both in IBRD/IDA operations mapped to the Environment Sector Board (35 percent, followed by Africa with 25 percent) and regular GEF projects (30 percent, again followed by Africa with 28.8 percent, then Europe and Central Asia with 26.3 percent). It should be recalled, however, that many

of the same types of IBRD/IDA operations mapped to the Environment Sector Board by the Latin America and the Caribbean Region were mapped to different sector boards by other Regions, especially East Asia and Pacific and South Asia.⁶

Latin America and the Caribbean's predominance in the environment portfolio is even higher in terms of commitments, where it accounted for 41 percent of the total from fiscal 1990 through 2007. East Asia and Pacific was second, with 23.4 percent.⁷ These two Regions were followed at a distance by South Asia (12.4 percent of total commitments), Africa (10.7 percent), Europe and Central Asia (8.9 percent), and the Middle East and North Africa (3.3 percent). Latin America and the Caribbean and East Asia and Pacific alone accounted for nearly two-thirds of total commitments in projects mapped to the Environment Sector Board.

ENRM Portfolio Performance

Outcome ratings for all closed (and evaluated) ENRM and environment projects approved between fiscal 1990 and 2007 can likewise be compared. They can also be broken down by lending/grant source (IBRD/IDA, GEF, Montreal Protocol, and so on), Sector board mapping,⁸ Region, and subtheme (see the final section of this appendix). Altogether, there were 1,014 such projects, of which 89.3 percent were financed with IBRD and/or IDA funds, 7.5 percent with GEF resources, and the rest with funds from other sources.⁹ In Regional terms, Africa, Latin America and the Caribbean, and East Asia and Pacific together accounted for more than three-fifths of the total.¹⁰

Overall, 75.6 percent of all evaluated ENRM projects were rated satisfactory on completion. The average for all IBRD/IDA-financed ENRM projects (74.9 percent satisfactory) was slightly below that for all ENRM operations, compared with 100 percent satisfactory for the handful of Montreal Protocol and Brazil Rainforest Pilot Projects that were rated.¹¹ Closed full-sized GEF projects also had an above-average success rate (82.9 percent). Therefore, operations devoted to global environmental improvement have performed better in

terms of overall outcome ratings, on average, than the ENRM portfolio as a whole.

The same percentage of satisfactory projects (75.6 percent) was found for the much larger universe of all completed and evaluated Bank operations approved from fiscal 1990 through 2007 (2,815). However, there were some fairly minor differences among these projects when considered according to their environmental assessment classification, with Category A projects performing slightly less well, on average (74.5 percent satisfactory), than Category B (75.5 percent) and Category C operations (75.8 percent).¹²

In terms of sector board mapping, the highest share of satisfactory ENRM projects was recorded by the Transport Sector Board (89.9 percent), followed by those mapped to the Rural Development (76.1 percent), Energy (74.2 percent), Environment (74 percent), other (74.1 percent), and the Urban Development and Water Sector Boards (73 percent each). With the sole exception of operations mapped to the Transport Sector Board, performance of ENRM projects mapped to various sector boards was close to the average for the portfolio as a whole (and to one another).

There is considerably greater variation across Regions, however, with the highest share of satisfactory projects in Europe and Central Asia (84.6 percent) and the lowest in Africa (66.8 percent). Two other Regions—Latin America and the Caribbean (with 79.8 percent) and East Asia and Pacific (78.1 percent)—were also above the average, while the Middle East and North Africa (72 percent) and South Asia (70.8 percent) were not.¹³ These figures are consistent with project performance differences across Regions more generally.

Finally, even though relatively few operations approved after fiscal 1998 had been evaluated by the end of fiscal 2007, and there are some notable year-to-year variations, there appears to be a clearly improving trend in ENRM project performance over time, which is consistent with the trend for Bank operations as a whole. The

lowest average outcome ratings were recorded for projects approved in fiscal 1990 (56.3 percent satisfactory), 1991 (69.6 percent), and 1994 (71.3 percent). ENRM project performance was much better, on average, for those approved in the latter part of the 1990s and first half of the 2000s than in the early to mid-1990s.

Environment Portfolio Performance

The above ratings do not necessarily convey much about project environmental performance, especially for infrastructure and many rural development operations. Unfortunately, as noted in appendix A, project environmental performance is not systematically evaluated at the time of completion. However, there is more likely to be a close association between overall project performance and the environment for the approximately 15 percent of all completed ENRM operations mapped to the Environment Sector Board. But even here there may be exceptions, because actual project environmental impacts are frequently not assessed in Bank Implementation Completion Reports.

Overall performance of completed environment projects differs both by funding source and Region. By funding source, 100 percent of the small numbers of Montreal Protocol (9), Rainforest Pilot Program (1), and special financing (1) projects were rated satisfactory, as were 81.3 percent of all regular GEF projects (48). However, just 68.4 percent of those financed with IBRD/IDA resources (95) were rated satisfactory, compared with 74.9 percent for all IBRD/IDA-funded projects in the ENRM portfolio as a whole.

Regional performance differences are also noteworthy, with Europe and Central Asia having the highest percentage of satisfactory projects (88.9 percent) and Africa the lowest (60.7 percent), thereby mirroring the situation with the ENRM portfolio overall. However, there were differences in this regard for the other Regions, with South Asia (86.7 percent satisfactory) and the Middle East and North Africa (81.8 percent) performing comparatively better when environment and ENRM project outcomes are compared, and Latin America and the Caribbean

(69.4 percent) and East Asia and Pacific (66.7 percent) doing less well.¹⁴ There were also performance differences among the case study countries.¹⁵

The vast majority (80 percent) of unsatisfactory projects mapped to the Environment Sector Board were approved between fiscal 1992 and 1997, with the largest number (7) approved in fiscal 1994.¹⁶ Among all unsatisfactory environment projects, the highest shares were in Latin America and the Caribbean (38.5 percent) and Africa (28.2 percent), followed by East Asia and Pacific (12.8 percent) and Europe and Central Asia (10.3 percent). More than three-quarters (31) were IBRD or IDA operations and the remainder (9), including three of the five unsatisfactory projects approved after fiscal 1997, were GEF-financed. Many of the unsatisfactory projects, especially in Latin America and the Caribbean and Africa, were institutional development operations for environmental management, although some involved natural resource management and biodiversity conservation. Country political and economic factors affected performance in a number of these operations.¹⁷

Finally, as with the ENRM portfolio as a whole, environment project performance was better among those approved in the late 1990s and (thus far) in the first half of the present decade, than those approved in the first half of the 1990s; the worst years were fiscal 1992 (when just 45.5 percent of the total were rated satisfactory) and

1994 (61.1 percent). As was the case for the larger ENRM portfolio, GEF and Montreal Protocol projects performed better than IBRD/IDA operations throughout the period.¹⁸ The improving trend over time suggests that the Bank has learned from its ENRM and environment project experience, which is reflected in the discontinuation (for the most part) of design approaches that have proven less successful.

Performance by ENRM Subtheme

In accordance with the Bank's current coding system, each project can have from one to five subthemes, which, in turn, fall under broader single or multiple themes. Altogether, there are 11 themes¹⁹ and 70 subthemes, including the 7 for ENRM identified at the beginning of this appendix. Among all projects approved by the Bank between fiscal 1990 and 2007, ENRM subthemes were indicated 3,051 times in a total of 2,281 projects (excluding IDF grants). Many projects, therefore, had two or more ENRM subthemes.

Table F.2 shows the relative importance of the various ENRM subthemes, with the first subtheme generally receiving the highest weight, followed by the second subtheme, the third, and so on. In some cases, however, more than one subtheme was given the same weight, in which case the relative ranking is somewhat arbitrary. This information nonetheless gives a fairly good picture of the relative importance of the various subthemes within the ENRM portfolio.

Table F.2: Thematic Composition of Bank ENRM Projects, Fiscal 1990–2007 (number of projects)

Subtheme	First	Second	Third	Fourth	Fifth	Total
Biodiversity conservation	220	73	36	19	21	369
Climate change	144	50	40	46	30	310
Environmental policy and institutions	125	255	129	104	50	663
Land administration and management	101	87	62	70	50	370
Pollution management/environmental health	179	203	156	83	54	675
Water resource management	122	129	106	72	30	459
Other ENRM	59	51	44	37	14	205
Total	950	848	573	431	249	3,051

Source: World Bank database.

In terms of total mentions, the most significant subthemes were pollution management/ environmental health (22.1 percent) and environmental policy and institutions (21.7 percent), followed by water resource management (15 percent), land administration and management, and biodiversity conservation (12.1 percent each), climate change (10.2 percent), and other ENRM (6.7 percent). However, among projects whose highest-ranking subtheme was ENRM-related, the largest shares were in projects involving biodiversity conservation (23.2 percent), pollution management/ environmental health (18.8 percent), and climate change (15.2 percent).²⁰

Examined another way, nearly three-fifths (59.6 percent) of all ENRM projects having biodiversity conservation as a subtheme identified it as the primary one, the same being true for 46.5 percent of all projects with climate change as a subtheme. These subsets largely consisted of GEF and carbon-offset operations, respectively, while those under the other five ENRM subthemes (that is, projects not focused primarily on global environmental concerns) were largely funded by IBRD loans or IDA credits.²¹ In contrast with the biodiversity and climate change subsets, many of those involving environmental policy and institutions, pollution management/ environmental health, and water resource management

indicated that these were more important as secondary than as primary subthemes.²²

The shares of commitment amounts, by ENRM theme, for all projects for which one of these subthemes is identified as the primary one can also be determined, together with total commitments for all ENRM-related purposes in these projects. Doing so highlights the numerous cases in which multiple ENRM subthemes were identified for the same operation. These figures (see table F.3) reveal that, among the 950 projects in which ENRM subthemes were the highest ranking, the largest aggregate commitments were for pollution management/ environmental health (\$3 billion) and water resource management (\$2.7 billion), followed by climate change (\$2.2 billion) and environmental policy and institutions (\$1.9 billion). As previously noted, however, the climate change subset contains one very large carbon finance project in China that accounts for a substantial share of this total. Similarly, the environmental policy and institutions category includes seven Development Policy Loans²³ (which, if excluded from the calculations, would reduce the overall commitment amount for this subtheme from \$1.9 to \$1.4 billion, and the total ENRM commitments among this subset of projects from close to \$4.2 to just under \$3 billion).²⁴

Table F.3: Commitment Amounts and Averages, by ENRM Subtheme, Fiscal 1990–2007

Subtheme	Subtheme amount (\$ millions)	ENRM amount (\$ millions)	Total commitments (\$ millions)	Average subtheme commitments (\$ millions)	Average total project commitments (\$ millions)
Biodiversity conservation	775.0	1,823.9	2,583.7	3.5	11.7
Climate change	2,224.8	3,594.7	4,995.7	15.5	34.7
Environmental policy and institutions	1,885.8	4,175.5	5,908.9	15.1	47.3
Land administration and management	1,467.9	2,135.8	4,179.2	14.5	41.4
Pollution management/ environmental health	3,019.0	5,865.8	7,892.0	16.9	44.1
Water resource management	2,697.8	5,036.1	8,314.4	22.1	68.2
Other ENRM	560.8	1,024.1	1,604.0	9.5	27.2
Total	12,640.1	23,655.8	35,477.9	13.3	37.3

Source: World Bank database.

When including the seven Development Policy Loans, however, projects in which environment policy and institutions was the first-ranking ENRM subtheme accounted for 17.7 percent of all ENRM-related commitments among the 950 projects considered. This is exceeded only by the subsets for pollution management/ environmental health (24.8 percent of the total) and water resource management (21.3 percent). The smallest shares of such commitments were for “other ENRM” projects (4.3 percent), followed by those focusing on biodiversity conservation (7.7 percent); land (including watershed) management–related (9 percent) and climate change (15.6 percent) projects fell in between.

The overall outcome ratings of the 355 completed and evaluated projects of which the highest-ranking subthemes were ENRM ones can also be compared.²⁵ Table F.4 indicates that project subsets that had pollution management/environmental health, land administration and management, and water resource management as their first ENRM subthemes had above-average overall satisfactory outcome ratings. In contrast, projects focusing on environment policy and institutions had, by far, the lowest such rating, followed by those focusing on biodiversity.²⁶ Projects concentrating on climate change and “other ENRM” activities performed slightly below the average for all evaluated ENRM operations.

Several observations should be made in relation to these patterns, however. Some thematic portfolios are comparatively much less evaluated than others, reflecting the fact that these subsets are still relatively new (that is, a relatively larger share of their total operations was approved in more recent years and, therefore, is still under implementation). This is particularly evident with respect to the climate change subset, in which less than 14 percent of all projects approved since fiscal 1990 (in recent years most have been operations under the Prototype Carbon Fund) have been completed and evaluated. But it is also the case to a lesser extent for the biodiversity subset.

Each subtheme may contain projects with quite different objectives, designs, and/or emphases, many of which also have different outcomes. A case in point is the pollution management/ environmental health subset, which includes 21 Montreal Protocol and 5 GEF operations designed to help countries phase out ozone-depleting substances. Thirteen (or 50 percent) of these projects have been evaluated, all with satisfactory outcome ratings. Separating out these projects from the total for this subtheme would reduce its share of satisfactory projects from 80.2 percent to 76.7 percent. In short, the non-ozone-related pollution management/environmental health projects performed less well, on average. Six industrial pollution control projects (two in

Table F.4: Overall Outcome Ratings, by ENRM Subtheme

Subtheme	Percent satisfactory	Percent unsatisfactory	Number of projects evaluated	Percent of projects evaluated
Biodiversity conservation	71.2	28.8	66	30.0
Climate change	75.0	25.0	20	13.9
Environmental policy and institutions	64.8	35.2	54	43.2
Land administration and management	80.0	20.0	45	44.6
Pollution management/environmental health	80.2	19.8	86	48.0
Water resource management	79.7	20.3	64	52.5
Other ENRM	75.0	25.0	20	33.9
Total	75.5	24.5	355	37.4

Source: World Bank database.

Note: Ratings shown are for evaluated projects approved since fiscal 1990.

India and one each in Algeria, Brazil, China, and Egypt), for example, also fall under this subtheme; half were rated unsatisfactory.²⁷

Performance trends over time and space should also be considered. In the biodiversity subset, for instance, all but one of the 20 projects assessed as unsatisfactory, to date, were approved before fiscal 1998, and all but six of them before fiscal 1996. Therefore, biodiversity project performance has improved significantly over time—as has that for the Environment Sector Board and larger ENRM portfolios more generally—suggesting that learning has taken place from the uneven performance of the first generation of such operations approved in the early and mid-1990s.

Finally, it is important to consider where unsatis-

factory projects are located. In the biodiversity subset, eight of these projects were in Sub-Saharan Africa (40 percent), four in Latin America and the Caribbean, three in East Asia and Pacific, two in the Middle East and North Africa, and one in Europe and Central Asia. Five countries—Kenya (four projects), Algeria, Brazil, Indonesia, and Malawi (two each)—accounted for 60 percent of the unsatisfactory biodiversity projects, suggesting that country, as well as project design and implementation, factors may have played a role in their poor performance.²⁸ All of the above comments suggest that a case-by-case assessment of the elements associated with good and poor project performance—whether in terms of environmental results or overall outcomes—is also desirable, but such an assessment is beyond the scope of the present review.