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**TAKING STOCK OF TRENDS IN SUSTAINABLE DEVELOPMENT FINANCING
SINCE RIO ***

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DRAFT SUMMARY

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Taking Stock of Trends in Sustainable Development Finance Since Rio

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The United Nations Conference of Environment and Development in Rio in 1992 launched the concept of sustainable development, both as the interface between environment and development, and as the optimal path for social and economic activity. It also formulated Agenda 21 as the strategy whereby sustainable development can be attained and assessed the costs at US\$ 625 billion, of which \$125 billion was slated to be additional financial transfers from the North to the South. This paper takes stock of what has been accomplished in sustainable development financing since Rio and what needs to be done now. A number of caveats is in order. While we focus on financing, it must be remembered that financing is merely an input (or cost), not an output (benefit). The ultimate objective is sustainable development, and the more of it that is accomplished with the least financial resources, the better. Financing is an issue because developing countries face serious financial constraints arising from inadequately developed capital markets and pressing competing needs. Abject poverty and environmental degradation have irreversible consequences, and the earlier they are arrested, the better. In many ways, investment in sustainable development is a global investment to which the wealthy nations are expected to contribute in proportion to their ability. Yet, developing countries are also expected to mobilize resources at home and, perhaps more importantly, to realign existing resource allocation with sustainable development objectives and to create a policy environment for the efficient use of additional resources, both internal and external. Therefore, redeployment of existing resources and removal of barriers to sustainable development are very much part of sustainable development financing.

A second caveat concerns attribution. The virtual coincidence of UNCED (and its preparatory meetings) with the end of the cold war makes it nearly impossible to untangle the effects of the two important historical events. The end of the cold war and military build-ups has refocused the world's attention on development and environment issues, and the peace dividend made additional resources available at about the same time as the Rio conference. At the same time, the political and economic reforms that accompanied the end of the cold war have opened up societies to change and economies to massive inflows of foreign capital that swamp other, milder needs. Therefore, we do not have the conditions for a proper with-and-without-Rio analysis, since we cannot control for other influences. By necessity, the analysis is before-and-after-Rio. Another complicating factor is that no statistics are being collected separately for the sustainable development sectors as identified by Agenda 21. National and international statistics are generally too aggregated into sectors that have both positive and negative sustainable development elements, and therefore it is difficult to deflect redeployment or to characterize them as contributing to sustainable development. Yet another problem has to do with data availability. For many variables the most recent data is for 1994—only two years after Rio. It is difficult to establish trends with such a short time span.

With these caveats in mind, we proceed to take stock of trends in sustainable development financing in recent years and to examine whether any post-Rio shift of the trend can be detected even if it cannot reliably be attributed to Rio itself.

- (a) Domestic resource mobilization: Evidence from East Asia, the world's highest saver, indicates no shift in savings in investment rates, which remain in the range of 35% of GDP. It is being examined whether saving rates in low-saving regions (e.g., Latin America and Africa) have shifted in the post-Rio era (less under Rio's impact and more under the impact of economic reforms).

- (b) Public savings: There has been a discernible increase in countries' undertaking reforms where money-losing state enterprises have been privatized and public expenditures were curtailed to reduce public sector deficits. However, not all increases in public savings can be considered favorable for sustainable development. When the increase in public savings is accomplished through reductions in social and environmental expenditures, sustainable development may actually suffer. Evidence comes from around the world but especially Africa.
- (c) Redeployment of domestic budgetary resources: In all regions except Latin America, there has been a significant increase in the share of government budget allocated to sectors that may be deserted—relatively low environmental impact sectors—such as education, health, housing and community activities, and agriculture and forestry. It occurs, however, at different years in different regions. In industrial countries and non-industrial Europe, there was a rise in the share of these sectors by 4 percentage points, and has been maintained since. In the Middle East, there was a similar increase, but it was not sustained; it dropped by 9 percentage points by 1994. In Africa, the rise came in 1993 and continued, while in Asia, it did not occur until 1994. During the same period, 1990-94, there was considerable reduction of subsidies in many parts of the world. For example, in India fertilizer subsidies were reduced from US\$ 2.83 billion in 1990 to \$1.69 in 1994, a 40% reduction.
- (d) Net long-term resource flows to developing countries have continued their upward trend throughout the 1990s to reach US\$ 231 billion by 1995. They received their largest boost in 1993, just after Rio, but remained unchanged during 1994, resuming their upward trend with a 15% rise in 1995. The share of the private capital flows in aggregate resource flows

rose steadily from 43% in 1990 to 74% in 1993, but changed very little since.

- (e) Official finance flows declined steadily from \$65.5 billion in 1991 to \$48.6 billion in 1994, a 26% drop in the four years straddling the Rio conference. The drop is even larger in real (constant dollar) terms. It recovered in 1995 at least in nominal terms, reaching \$64.2 billion. It was, however, the loan component that recovered; grants remained unchanged.
- (f) Foreign direct investment accounts for over 50% of total private flows to developing countries and rose steadily throughout the 1990s to reach \$90 billion in 1995. Private debt flows account for about one-third of the total private flows, and followed the same trend, reaching \$55 billion in 1995.
- (g) Post-Rio financing institutions and mechanisms: Global Environmental Facility, Montreal Protocol (established earlier but provided most of its financing post-Rio), National Environmental Funds, a preexisting institution that received a post-Rio boosting, and Activities Implemented Jointly, a by-product of commitments undertaken by industrial countries under Framework Convention on climate change.

While these trends fall far short of Rio expectations and commitments, it is appropriate to ask how much of these trends is attributable to Rio. Statistical analysis of these trends indicates that this was the case of the world as a whole; Rio did have a significant impact on financing trends. When we broke down the trends by region, Rio turned out to be a significant positive factor for industrialized countries and Africa, but not for the other regions of the world. In the case of Asia this could be the result of a long lag and even a longer one in the case of Latin America. It is still too early to tell, as much of the data stops in 1994.

In conclusion, the trends in sustainable development financing are qualitatively in the right direction but quantitatively fall considerably short of the hopes raised and targets set at Rio. To increase sustainable development financing in the future, three sets of actions would be necessary. First, policies must be developed to improve access of developing countries to external finance by developing a more realistic and constructive approach to ODA, by assessing and improving the contribution of foreign direct and portfolio investment to sustainable development, and resolving remaining debt issues. Second, policies must be adopted to develop a more comprehensive approach to domestic resource mobilization by continuing the phasing out of environmentally harmful subsidies, accelerating the practical application of economic instruments, and increasing the private sector participation in sustainable development. Third, innovative financial mechanisms should be promoted by sharing successful national experience, by resolving political and technical issues concerning the implementation of international financial instruments, and by developing mechanisms for compensating developing countries for the provision of global environmental services. Lastly, there should be monitoring and data base development for tracking progress in mobilizing financial resources and in attaining milestones on the road to sustainable development.

Taking Stock of Trends in Sustainable Development Financing Since Rio

Introduction

It has been five years since the first Earth Summit. It was an Earth Summit both in terms of its truly global reach and in terms of its concern for the health and future of the earth and the humanity that inhabits it. It was the first time that it was acknowledged on a global scale that human efforts to tame nature (development) may have reached a scale and intensity that begins to undermine its integrity (environmental degradation). This is not an entirely new idea. What was new was the recognition that achievement of higher living standards is not intrinsically inconsistent with the protection of the environment but, in many ways, a prerequisite for it.

The United Nations Conference of Environment and Development in Rio in 1992 launched the concept of sustainable development, both as the interface between environment and development, and as the optimal path for social and economic activity. It also formulated Agenda 21 as the strategy whereby sustainable development can be attained. The costs were assessed at US\$ 625 billion, of which \$125 billion was slated to be additional financial transfers from the North to the South. This paper takes stock of what has been accomplished in sustainable development financing since Rio. It also explores the extent to which Rio has shaped the trends that followed it and speculates on the reasons for the shortfall of performance compared to the promise. Finally, a set of actions is outlined for doing better in the future.

Caveats and Disclaimers

While we focus on financing, it must be remembered that financing is merely an input (or cost), not an output (benefit). The ultimate objective is sustainable development, and the more of it that can be accomplished with

the least financial resources, the better. Financing has become an issue because developing countries face serious financial constraints arising from inadequately developed capital markets and pressing competing needs. Abject poverty and environmental degradation have irreversible consequences, and the earlier they are arrested, the better. In many ways, investment in sustainable development is a global investment to which the wealthy nations are expected to contribute in proportion to their ability. Yet, developing countries are also expected to mobilize resources at home and, perhaps more importantly, to realign existing resource allocation with sustainable development objectives and to create a policy environment for the efficient use of both existing and additional resources, both internal and external. Therefore, redeployment of existing resources and removal of barriers to sustainable development are very much part of sustainable development financing.

A second caveat concerns attribution. The virtual coincidence of UNCED (and its preparatory meetings) with the end of the cold war makes it nearly impossible to untangle the effects of the two important historical events. The end of the cold war and military build-ups has refocused the world's attention on development and environment issues, and the peace dividend made additional resources available at about the same time as the Rio conference. At the same time, the political and economic reforms that accompanied the end of the cold war have opened up societies to change and economies to massive inflows of foreign capital that swamp other, milder trends. Therefore, we do not have the conditions for a proper with-and-without-Rio analysis, since we cannot control for other influences. By necessity, the analysis is before-and-after-Rio.

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that have both positive and negative sustainable development elements, and therefore it is difficult to detect redeployment or to characterize them as contributing to sustainable development. Yet another problem has to do with data availability. For many variables the most recent data is for 1994—only two years after Rio. It is difficult to establish trends within such a short time span. On the other hand, the preparatory meetings for Rio that took place during the preceding years and the building anticipation of the Earth Summit catalyzed a change of mindsets and budgets even before Rio. In a sense, the influence of Rio was as strong, if not stronger, in the immediately preceding years, than in the years that followed. Understanding the leads that shape expectations and the lags that separate word from actions is essential to understanding the financing trends that unfolded over the past five years and the ones that lie ahead.

Aggregate Resource Flows

Aggregate net long-term resource flows to developing countries have increased from US\$ 102 billion in 1990 to \$231 billion in 1995, a 125% increase (Table 1). They received their single largest annual increase (34%) in 1993 just after Rio but remained unchanged during 1994, resuming their upward trend with a 15% rise in 1995. The share of the private capital flows in the aggregate resource flow rose steadily from 43% in 1990 to 74% in 1993 (and that of official development assistance fell correspondingly). These shares have remained fairly stable since 1993.

Official Finance Flows (ODA)

Despite calls for increase in ODA at Rio and the assessment of the need for an additional \$125 billion in transfers from North to South, official finance flows continued their downward trend through 1994 when they fell below \$50 billion (Table 1). In 1995 they almost recovered their nominal 1991 level, but in real terms (constant dollars) were lower in 1995 than in 1990.

Table 1 Aggregate Net Long-Term Resource Flows to Developing Countries

(\$1,000 millions)	1990	1991	1992	1993	1994	1995
<i>Aggregate net</i>						
Resource flows	101.9	127.1	155.3	207.2	207.4	231.3
Official finance	57.9	65.5	55.0	53.0	48.6	64.2
Official grants	29.4	37.5	31.9	29.4	32.5	32.9
Official loans	28.5	28.0	23.1	23.6	16.1	31.3
Bilateral	13.5	13.2	10.8	9.4	6.1	18.8
Multilateral	15.0	14.8	12.3	14.2	10.0	12.5
Total private flows	44.0	61.6	100.3	154.2	158.8	167.1
Private debt flows	15.3	19.0	39.6	40.3	43.8	54.8
Commercial banks	1.7	2.5	13.8	-4.9	9.2	17.1
Bonds	3.0	12.8	13.2	38.3	32.2	33.7
Others	10.6	3.7	12.6	6.9	2.4	4.0
Foreign direct investment	25.0	35.0	46.6	68.3	80.1	90.3
Portfolio equity flows	3.7	7.6	14.1	45.6	34.9	22.0

Source: World Bank

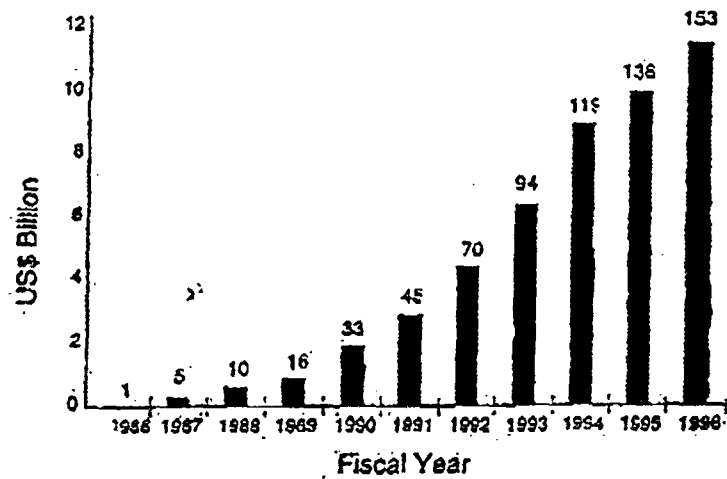
Moreover, it was the loan component that recovered; grants remained unchanged in nominal terms, their share falling to just about 50% of the total. Bilateral assistance fell steadily after 1990 from \$13 billion to \$6 billion in 1994 but tripled in 1995. Multilateral assistance has also been on decline and partially recovered immediately after Rio and declined by 30% in 1994—small recovery in 1995 cannot be considered as a new trend. In general, official development assistance fluctuates from year to year, but on average, the trend is downward, despite commitments by the developed countries to reach the accepted UN target for ODA of 0.7% of their GNP. It is now under 0.3% of GNP. Around 5% of Official Development Assistance commitments are said to be specifically targeted for environmental projects.

Multilateral Development Banks: The Case of the World Bank

The World Bank is the largest single source of official development assistance. The Bank has increased its environmental project portfolio exponentially from one project in 1986 to 153 active projects in 1996, with the largest increases taking place during 1992-94 (Figure 1). The Bank's active environmental portfolio is now spread across 62 countries and stands at \$11.5 billion. Sixty-three percent of this funding, or \$7.2 billion, has been made available since Rio. Environmental projects make up 8% of the Bank's total lending at \$87 billion since Rio. The World Bank estimates that its lending for the environment has leveraged an additional \$14.5 billion from other sources, "bringing total investment in the environment to \$26 billion," (Steer 1996). Perhaps more important than the Bank's increased environmental lending is the conscious effort made, especially since Rio, to take environmental concerns into account in all of the Bank's projects. The Bank estimates that almost a quarter of its lending since Rio has been directed to win-win projects that are good for both the environment and development, such as education, health, population, and targeted poverty reduction (Table 2). A further 16% of the Bank's lending is directed to projects with environment-growth trade-offs (category A in the Bank's E-A classification), such as energy or transport infrastructure projects that undergo rigorous environmental assessment to minimize, assess, and mitigate environmental impacts (Table 3). In its efforts to make its projects environmentally sustainable, the Bank has increasingly incorporated cleaner technology, maintenance, and demand management as well as institutional strengthening in its projects and sectoral programs.

More than 60% of the Bank's environmental portfolio is directed at pollution control and 32% at natural resource management, the balance going for institution building (Table 4). The Bank is also the implementing agency for the Global Environment Facility (GEF) and Montreal Protocol (see below).

Figure 1 World Bank Financing for the Environment: The Active Portfolio



Note: The height of the bars shows the size of the active portfolio (i.e. loans currently disbursing) of projects whose primary objective is to improve environmental conditions. The numbers of active projects are shown at the top of the bars.

Table 2 World Bank Lending since Rio—A Simple Accounting World Bank Commitments, Fiscal Years 1993-96

Type of lending	Billions of dollars	Percentage
Total lending	87.0	100%
Environment projects ¹	7.2	8%
"Win-win" projects	24.2	28%
Category A projects	16.0	18%
All other lending	39.6	46%

¹ See companion volume to this magazine for a listing of environmental projects.

Table 3 World Bank Project Requiring Full Environmental Assessment (1993-1995)

Sector	1993	1994	1995
Agriculture	3	7	4
Energy/Power	10	9	7
Industry	0	0	0
Mining	0	1	0
Tourism	1	0	0
Transport	3	4	5
Urban	0	4	4
Water/ Sanitation	2	0	3
Total	19	25	23

Source: The World Bank

Table 4 Active Portfolio of World Bank Environmental Projects (as of June 1995).

Focus of Projects	Number of Projects	Number of Countries	Loan or Credit (\$billions)	Total Project Cost (\$billions)	Average Size of Loan or Credit (\$millions)
Pollution management (Brown Agenda)	58	31	6.9	17.3	118
Natural resources (Green Agenda)	69	41	3.6	7.0	52
National institution building	26	23	0.9	1.6	36
Total	153	62*	1.4	25.9	73**

Notes: * Total number of borrowing countries; some countries have more than one. Figure as of June 1995.

** Average size of loan for the whole portfolio. Figure as of June 1995.

Source: World Bank

Global Environmental Financing Institutions

The most important of the global environmental financing institutions is the Global Environmental Facility (GEF) established in 1990 with \$1.3 billion to provide grants and concessional funds over a three-year pilot phase. GEF is now an established institution with regular capital replenishment through individual country contributions (mainly from developed countries). The facility assists developing countries to address four areas of global environmental concern: global warming, loss of biodiversity, pollution of international waters, and depletion of stratospheric ozone. The latter is addressed by an associate "institution," the Montreal Protocol. GEF draws on the expertise and experience of three global institutions: UNDP, UNEP, and the World Bank. The Global Environmental Facility and Montreal Protocol investment program implemented through the World Bank during 1991-96 stood at \$725 million. On the average, GEF is funding 20% of the total costs (\$2.8 billion) of projects in developing countries with global benefits (see Table 5). The GEF contribution varied from a low 7% in climate change projects to a high of 65% in biodiversity protection projects. Almost half of GEF funding went to the protection of biodiversity. GEF funding for biodiversity leveraged additional funding (as seen in Figure 2). The cumulative funding for biodiversity-related activities managed by the World Bank increased from under \$50 million in 1989 to over \$1.2 billion in 1995; since Rio it doubled.

GEF has increasingly been using its funds to leverage additional funds, especially from the private sector. The IFC/GEF Poland Efficient Lighting Project and the IFC/GEF Small and Medium Enterprises Project are two examples.

The Framework Convention on Climate Change (FCCC) has established a pilot phase for Activities Implemented Jointly (AIJ) through which parties

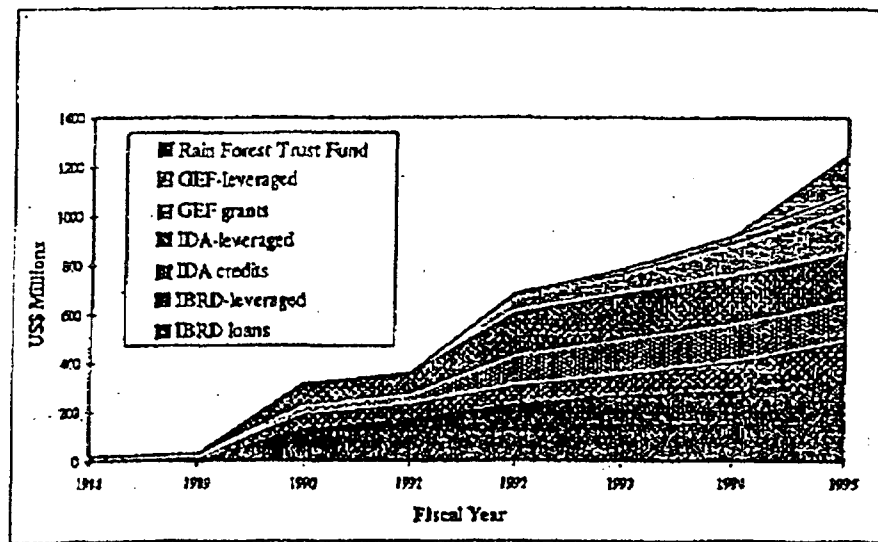
Table 5 Global Environmental Facility and Montreal Protocol Investments (1991-96)

	<u>Global Environmental Facility</u>				
	Biodiversity	Climate change	International waters	Ozone protection	Total
Africa	42	6	35	—	83
	(65)	(66)	(78)	—	(209)
East Asia & Pacific	65	52	30	—	147
	(125)	(1545)	(65)	—	(1735)
South Asia	10	26	—	—	36
	(20)	(186)	—	—	(206)
Middle East & N. Africa	14	12	21	—	47
	(17)	(71)	(33)	—	(121)
Europe & Central Asia	42	35	—	35	112
	(52)	(197)	—	(57)	(306)
L. America & Caribbean	72	14	18	—	104
	(101)	(36)	(56)	—	(193)
Total	245	145	104	35	529
	(380)	(2101)	(232)	(57)	(2770)
Ratio of GEF funding to total funding	0.65	0.07	0.45	0.61	0.19
					—
					—
					101
					248
					24
					60
					6
					53
					14
					12
					124
					53
					157
					196
					725

Note: Figures in parentheses are total project costs.

Source: World Bank "World Bank Environmental Projects July 1986-June 1996."

Figure 2 Cumulative Financing of Bank-Managed Biodiversity Activities



Source: World Bank

in one country (usually a developed country) contract with parties in another country (usually developing) to reduce that country's GHG emissions. AIJ is a potentially very important source of additional financial flows for sustainable development investments with both local and global environmental benefits. Table 6 lists activities implemented jointly since Rio. While this is only a partial list, the amounts involved are substantial as are the GHG reduction and the local environment and development benefits. Whether AIJ would develop into a major source of financial resources and technology transfers from North to South for sustainable development depends critically on whether such offsets and credits across borders would receive the official sanctioning by the conference of the parties to the FCCC beyond the pilot phase.

External Debt

According to the World Bank, the aggregate external debt of developing countries rose by 8% in 1995 to reach \$2,068 billion. This reflects partly the large inflow of private debt-creating financing and the Mexican rescue plan.

Table 6 Examples of Activities Implemented Jointly between Developed and Developing Countries

Country	Project type	GHG offset (tons of carbon)	Total project cost	Foreign sponsor contribution
Malaysia	Improved forest management	80,000-160,000	\$600,000	\$600,000
Malaysia	Reforestation	6,300,000	\$16,500,000	\$1,300,000
Czech Republic	Fuel switching and energy efficiency	3,500 per year	\$1,500,000	\$600,000
Czech Republic	Reforestation	3,100,000	\$29,500,000	\$5,700,000
Amazon Basin	Forest protection	64,000,000	\$3,400,000	\$3,000,000
Guatemala	Tree planting, forest protection	16,500,000	\$15,800,000	\$2,200,000
Paraguay	Forest protection	14,000,000	\$3,900,000	\$2,000,000
Ecuador	Reforestation	9,700,000	\$17,000,000	\$1,100,000
Belize	Forest protection, improved forest management	1,300,000	\$2,600,000	\$2,600,000
Russia	Reforestation	35,000	\$250,000	\$250,000
Costa Rica	Various	200,000	\$2,000,000	\$2,000,000

Sources: AES Corporation, USIJI.

The ability of indebted developing countries to service their debt improved because of 17% increase in exports that lowered the debt to export ratios from 163% in 1994 to 150% in 1995. East Asia had the lowest (and falling) ratio at 83%, while Latin America and sub-Saharan Africa had 254% and 270% ratios respectively. For the poor countries, the debt-to-export ratio was even higher at 476%. Most of Africa and Latin America actually have negative net transfer of financial resources since the payments they make to service their debt exceed the financial assistance they receive.

Private Capital Flows

Private capital flows rose sharply from \$44 billion in 1990 to \$100 billion in 1992 and \$154 billion in 1993. Since 1993 private capital flows slowed down, but at \$167 billion in 1995 they still account for 72% of total resource flows to developing countries, up from only 44% in 1990. Private direct investment accounts for over 50% of the total private flows to developing countries. It rose steadily throughout the 1990s to reach \$90 billion in 1995 (Table 1). Private debt flows account for about one-third of the total private flows; they also followed the same upward trend, reaching \$55 billion in 1995, expanding significantly the financial resources available to developing countries but also increasing their debt-export ratios.

While on the aggregate, private capital flows have more than tripled in the past five years and are today three times as large as ODA, several potential problems are associated with these flows:

- (a) They are highly concentrated in a small number of developing countries, especially those in East Asia. In 1994 capital flows into Asian developing countries amounted to \$73 billion or 46% of total private capital flows to the developing world as a whole (Table 7). China is the largest recipient of FDI; in 1995 it attracted \$38 billion; in India FDI

Table 7 Capital Flows into Asian Developing Countries¹

(unit: billion US\$, percentage)

Year	1988	1989	1990	1991	1992	1993	1994	1990-94 ²
FDI	9.96 (51.7) ³	10.1 41.2	12.9 (36.2)	15.8 (35.2)	18.2 (48.5)	36.4 (50.6)	42.7 (58.3)	25.2 (47.9)
Portfolio	0.1 (0.5)	1.2 (4.9)	-1.3 (-3.6)	2.6 (5.7)	7.7 (20.4)	24.0 (33.3)	17.7 (24.1)	10.1 (19.2)
Equity	0.2	1.3	0.8	-0.7	3.4	9.6	3.9	3.4
Bonds	-0.1	-0.3	-2.1	3.4	4.4	14.5	14.1	6.6
Loans	6.4 (33.3)	11.2 (45.5)	17.2 (48.3)	29.3 (65.5)	10.5 (28.1)	12.4 (17.2)	23.9 (32.7)	18.7 (35.5)
Others	2.8 (14.5)	2.0 (8.3)	6.8 (19.1)	-2.9 (-6.4)	1.1 (3.0)	-0.8 (-1.1)	-11.1 (-15.1)	-1.4 (-2.6)
Total net flows	19.3 (100.0)	24.6 (100.0)	35.6 (100.0)	44.8 (100.0)	37.5 (100.0)	72.1 (100.0)	73.1 (100.0)	52.6 (100.0)

¹ Asian developing countries include Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Kiribati, Korea, Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, The Philippines, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu Western Samoa, and Asia not specified.

² Yearly averages.

³ Figures in parentheses indicate shares of total net flows.

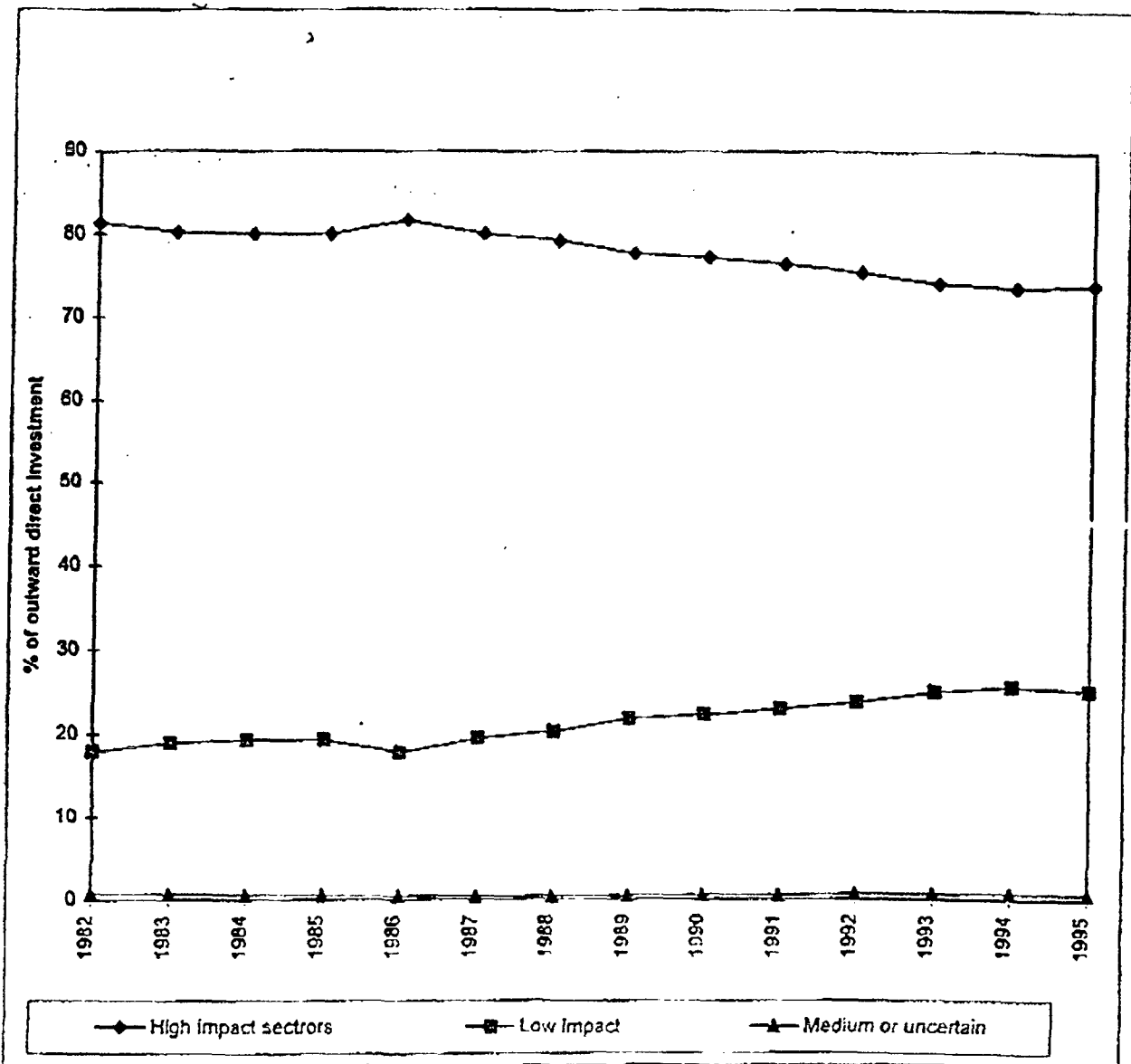
Source: International Monetary Fund, *Balance of Payment*, 1995.

doubled; and in Eastern and Central Asia it grew by 50% to reach \$12 billion. In sub-Saharan Africa where it is needed the most, FDI dropped by one-third to only \$2 billion.

- (b) Private capital flows are highly volatile in both depth and duration and create new risks for developing countries as Mexico's experience demonstrates.
- (c) There is little information, and even less scrutiny, on which sectors the capital flows go to or on whether they promote sustainable or non-

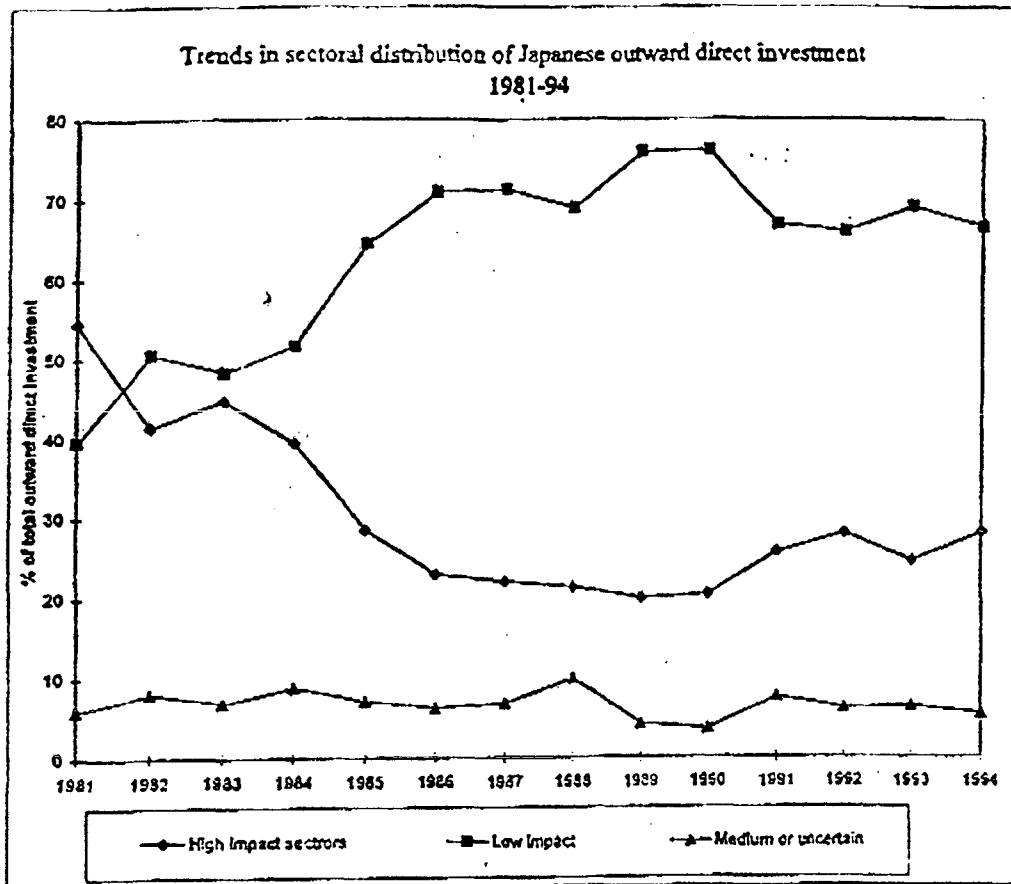
sustainable development. Figures 3 and 4 show the trends in US and Japanese outward direct investment in low and high environmental impact sectors. The US shows favorable trends while Japan's trends are neutral in the post-Rio years.

Figure 3 Trends in Sectoral Distribution of US Outward Direct Investment 1982-95



Data Source: U. S. Direct Investment Position Abroad, 1982 - 95 (Diskettes)

Figure 4 Trends in Sectoral Distribution of Japanese Outward Direct Investment 1981-94



Data Source: Naoko Ishii (1996)

It is believed that less than 12% of the current investment in infrastructure in developing countries is actually financed by the private sector. Incentives are needed to attract more foreign investment but also to direct it away from environmentally damaging to sustainable development sectors. The growing contribution of private capital flow into developing countries and their skewed distribution in favor of a few emerging markets with attractive policy environment raises two questions: (a) how to redeploy and focus official development assistance to help the poor countries that are not attractive to private capital, and (b) how to create the conditions to attract more private foreign capital in these countries in the future.

The International Finance Corporation (IFC)

IFC, the World Bank's private sector arm, is providing loans, equity, and other financial instruments and services to private companies in developing countries. With the governments in developing countries giving the private sector a larger role in infrastructure financing, development, and management, IFC has been increasing its role in financing private sector infrastructural projects in developing countries. As seen in Table 8, IFC doubled its infrastructure project approvals and funding in the year following Rio and doubled them again in 1994. In 1994 prices, the total project size in which IFC has participated was \$16 billion, IFC's gross investment \$2.9 billion, and net investment \$1.7 billion. The regional and sectoral distribution of IFC funding is shown in Table 9. Power and telecommunications in Asia and Latin America received the bulk of IFC financing. Perhaps more important than the scale and scope of IFC financing is its post-Rio commitment to integrating environmental consideration into the mainstream of its activities through detailed environmental review, involvement of the civil society, consultation, and disclosure. In 1996, IFC and MIGA project sponsors dealt with environmental problems, ranging from pollution control, land rights, and biodiversity protection. Examples include the Kasese Cobalt Project in Uganda, the Refineria San Lorenzo in Argentina, and Kunda Cement Factory in Estonia. For the latter a cost-benefit analysis by IFC showed a 25% rate of reform for environmental investments (\$8.7 million) to control local and regional pollutants.

Domestic Resource Mobilization

While foreign capital is important for sustainable development, domestic resource mobilization is absolutely critical. Based on figures that go only to 1994 for some regions and to 1993 for others, there is no indication whatsoever that resource mobilization has increased, either in anticipation or

Table 8 Infrastructure Project Approvals, 1966-June 1994

FY	No.	\$m, current prices		
		Project	IFC gross	IFC net
1966-87	7	517	81	78
1988	2	409	56	56
1989	6	704	149	109
1990	4	1,279	179	129
1991	6	1,103	204	152
1992	8	1,384	251	103
1993	15	3,699	667	355
1994	30	5,512	1,143	594
Total	78	14,607	2,730	1,575
Average		187	35	20

Source: IFC.

Note: In 1994 prices, total project size was \$16.0 bn, IFC's gross investment \$2.9 bn and net \$1.7 bn.

Table 9 IFC Infrastructure Project Costs by Sub-Sector and Region, 1966-June 1994.

	Total		Project costs, \$m, current prices				
	No.	Cost \$m	FY66-90	FY91	FY92	FY93	FY94
Total	70	12,360	2,909	1,103	1,384	3,499	3,465
Sub-sector							
Power	28	5,706	789	1,009	548	1,742	1,618
Telecoms	21	4,861	1,955	89	350	1,586	880
Ports	9	222	75	5	-	109	34
Pipelines	6	1,092	90	-	432	-	571
Railroads	3	117	-	-	55	62	-
Water	2	362	-	-	-	-	362
Roads	1	313 ¹	-	-	313 ¹	-	-
Region							
Latin America	38	5,980	1,260	157	688	2,407	1,469
Asia	20	4,947	1,582	927	548	1,005	886
Europe	7	1,007	68	-	82	-	857
Sub-Sah. Africa	3	102	-	19	67	-	16
CAMENA ²	2	323	-	-	-	88	236

Source: IFC.

Note: This table, and those following, excludes IFC investments in infrastructure funds.

[1] Exempted from the totals, as IFC did not provide finance directly, but underwrote a bond issue.

[2] Central Asia, Middle East and North Africa.

as a follow up to Rio. Low savers such as Africa and Latin America continue to save around 15% and 19% of their GDP respectively, while high saver Asia further increased its savings rate from 28% in 1992 to 30% in 1994. Remarkably, Europe reduced its savings rate from 29% in 1991 to 19% in 1994 (see Table 10). This consumption orientation and underinvestment do not bode well for sustainable development. High rates of savings and investment are needed to (a) offset natural resource depletion, (b) alleviate poverty, (c) expand infrastructure, (d) offset population growth, and (e) improve the environment.

National savings are composed of private and public sector savings. Excessive public expenditures on programs and distortionary subsidies result in low public sector savings and budget deficits. These in turn lead to low growth rates (Sachs and Radelet 1996), which in turn perpetuate poverty and natural resource dependence that result in further resource degradation. There has been a discernible trend to increase public sector deficits in countries undertaking reforms such as the privatization of money-losing expenditures. However, not all increases in public sector savings can be considered favorable for sustainable development. When the increase in public sector savings is accomplished through reductions in non-wasteful social and environmental expenditures, sustainable development actually suffers. (For evidence from Africa and Latin America, see Reed 1996.)

Table 10 Domestic Savings as % of GDP

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Africa	16.9	17.0	18.2	17.6	18.5	18.6	16.8	15.0	15.3	15.5
Asia	25.2	26.4	27.0	28.2	28.2	28.5	28.3	28.2	28.0	30.1
Latin America	23.5	20.7	23.1	23.8	24.4	22.0	19.9	19.5	19.2	18.7
Middle East	20.4	18.7	20.1	18.1	20.5	23.6	23.8	25.2		
Europe	27.4	27.4	27.1	28.1	30.4	26.9	29.1	23.8	21.0	19.4
OECD	21.0	21.2	21.3	22.1	22.4	21.8	21.5	21.1	21.1	
WORLD	22.1	22.0	22.4	23.2	23.7	22.9	22.7	22.1	21.9	

Redeployment of Domestic Budgetary Resources

In all regions except Latin America, there has been a significant increase in the share of the government budget allocated to sectors that may be thought of as relatively low environmental impact sectors, such as education, health, housing and community activities, and agriculture and forestry. It occurs, however, at different years in different regions. In industrial countries and non-industrial Europe, there was a rise in the share of these sectors by four percentage points, and has been maintained since. In the Middle East, there was a similar increase, but it was not sustained; it dropped by nine percentage points by 1994. In Africa, the rise came in 1993 and continued, while in Asia, it did not occur until 1994 (see Table 11).

Table 11 Redeployment of Government Expenditures by World Region, 1988-94

Expenditures on low impact sectors, %							
	1988	1989	1990	1991	1992	1993	1994
Industrial countries	23.2	23.6	23.1	23.7	27.2	28.2	28.5
Africa	48.3	48.8	51.2	44.4	43.8	53.6	58.5
Asia	29.8	32.1	32.5	32.5	32.4	30.9	37.0
Non-industrial Europe*	20.8	22.2	27.5	28.7	33.5	33.2	32.5
Mideast	34.5	35.4	36.0	32.3	36.8	31.7	28.0
Latin America	32.7	34.3	33.9	34.9	35.5	34.8	34.8

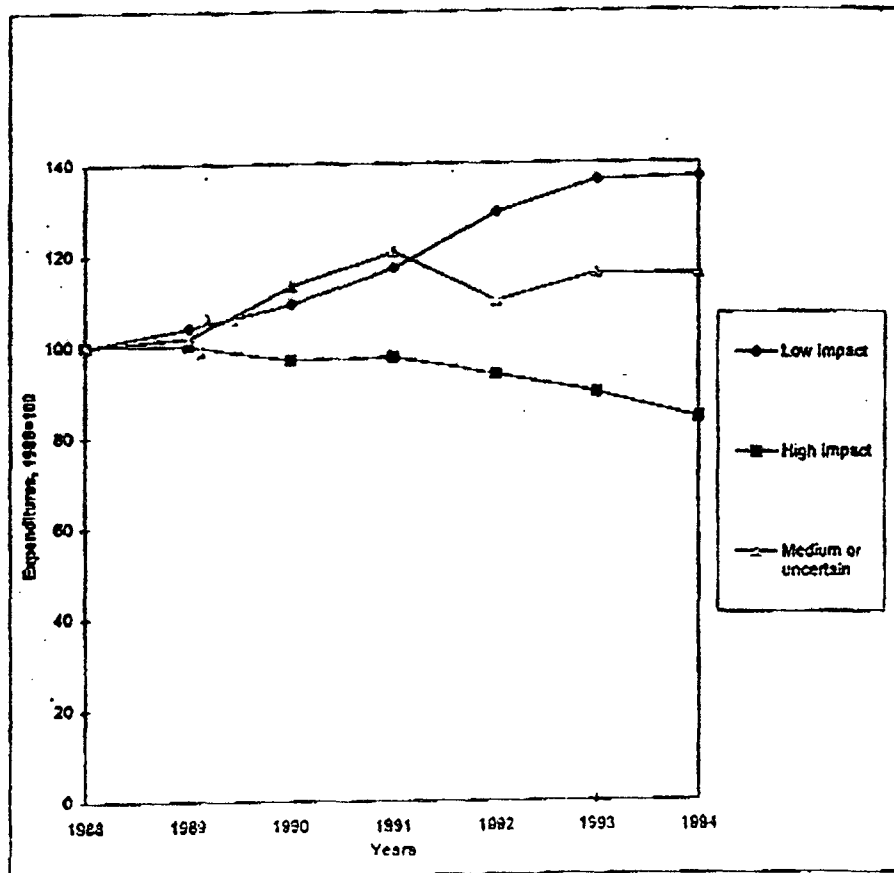
Expenditures on high impact sectors, %							
	1988	1989	1990	1991	1992	1993	1994
Industrial countries	26.3	25.8	23.5	22.5	22.3	20.6	19.4
Africa	2.1	2.5	2.3	2.0	2.7	2.3	1.9
Asia	28.5	28.2	26.6	25.8	25.5	25.7	23.0
Non-industrial Europe*	23.8	23.1	24.2	22.8	24.7	21.5	22.2
Mideast	27.4	25.7	22.3	20.2	17.4	17.6	20.3
Latin America	13.1	12.7	12.9	11.8	11.2	9.8	10.3

*: Europe not including industrial countries

Source: Government Finance Statistics Yearbook, 1995

Public expenditures are plotted in Figure 5 for the years immediately before and immediately after Rio. For the world as a whole, government expenditures to low environmental impact sectors shows a steep rise between 1990 and 1993 while expenditures on high-impact sectors declined steadily since 1991. How sustained were these shifts? The decline of expenditures on high-impact sectors continued for as long as data are available (1994). The rise of expenditures on low-impact sectors, however, leveled off in 1994, although the higher levels achieved through the earlier shift were sustained. It remains to be seen whether the leveling off is an exception or a new trend (Figure 5).

Figure 5 World: Governments' Expenditures on Different Sectors



Did Rio Make a Difference?

In order to examine the role played by the Rio Conference in the redeployment of resources, we estimated expenditure growth equations with a dummy variable for Rio. Since the Earth Summit may have had both a "lead" and a "lag" effect, we tested for this by using different "response" years for different regions. For the world as a whole, we used the actual year of the conference (1992). The findings are reported in Table 12. Low environmental impact activities (which presumably make a positive contribution to sustainability) rose at the annual rate of 4.6% per year, of which 1.8% was due to redeployment of existing resources away from high-impact activities to low-impact ones, and 2.8% was due to economic growth and corresponding increases in government resources, a figure that corresponds closely to world average rate of economic growth over the past seven to ten years.

Did Rio make a difference in the global redeployment of resources? The effect of Rio was positive and statistically significant but small. It has contributed about 0.6% to the growth rate of low environmental impact activities. It has basically shifted 0.6% of government expenditures from sectors like the military and energy and industrial subsidies to sectors like education, health, and environment. Assuming a world GDP of \$20 billion, and a government share of 95%, we can roughly estimate Rio's annual contribution to sustainable development at around \$30 billion.¹ This is about 50% of the current ODA level. In this sense Rio was worth the expense.

The question is whether these gains can be sustained over the long haul. Regionally, low-impact government expenditures grew faster over the

¹ Actually, this is likely to be an over-estimate since not all expenditures we characterized as conducive to sustainable development are in fact so. For example, government expenditures on agriculture and forestry are likely to be damaging unless they focus primarily on resource conservation.

Table 12 Growth Rate of Government Spending on Low and High Environmental Impact Sectors and Rio's Impact

(Regression models based on a 30-country sample)

Region	Expenditures on low impact sectors				Expenditures on high impact sectors			
	Parameters	t-statistics	r-squared	df	Parameters	t-statistics	r-squared	df
Asia								
Growth rate, %	3.82	3.26			Growth rate, %	3.55	3.24	
Rio, 94	0.25	3.96	0.94	4	Rio, 91	-0.10	-2.20	0.75 4
Intercept	8.42	1.77			Intercept	9.41	2.13	
Industrial countries								
Growth rate, %	4.07	4.82			Growth rate	-2.03	-2.61	
Rio, 92	0.08	2.26	0.98	4	Rio, 93	-0.08	-2.36	0.94 4
Intercept	9.89	2.90			Intercept	34.59	11.00	
Africa								
Growth rate, %	-4.42	-1.12			Growth rate, %	-2.08	-1.07	
Rio, 93	0.51	2.96	0.76	4	Rio, 92	0.16	2.12	0.63 4
Intercept	37.58	2.35			Intercept	25.06	3.18	
Non-industrial Europe								
Growth rate, %	0.73	0.27			Growth rate, %	-7.30	-5.91	
Rio, 91	0.21	1.87	0.82	4	Rio, 91	0.13	2.65	0.94 4
Intercept	19.69	1.78			Intercept	52.11	10.45	
Mideast								
Growth rate, %	12.69	6.76			Growth rate, %	0.64	0.51	
Rio, 94	-0.33	-3.14	0.92	4	Rio, 93	0.24	4.43	0.94 4
Intercept	-27.64	-3.66			Intercept	20.29	3.97	
Latin America								
Growth rate, %	6.92	4.67			Growth rate, %	1.94	4.21	
Rio, 92	0.10	1.68	0.97	4	Rio, 94	0.12	4.59	0.96 4
Intercept	-6.20	-1.04			Intercept	12.95	6.92	
World								
Growth rate, %	4.58	6.93			Growth rate, %	-1.84	-2.84	
Rio, 92	0.06	2.42	0.99	4	Rio, 93	-0.06	-1.99	0.93 4
Intercept	7.99	2.99			Intercept	33.94	12.96	

Note: 1. Regression models are based on a 30 country sample and the following specification is used:

$\ln(\text{Expenditures}) = A_0 + A_1 \ln(\text{Time}) + A_2 \text{Rio}$, Time = 88, 89, 90, 91, 92, 93, 94; Rio, 92 = 1 if Time = 92, 93, 94, otherwise Rio = 0

2. Growth rates are converted from parameter A1.

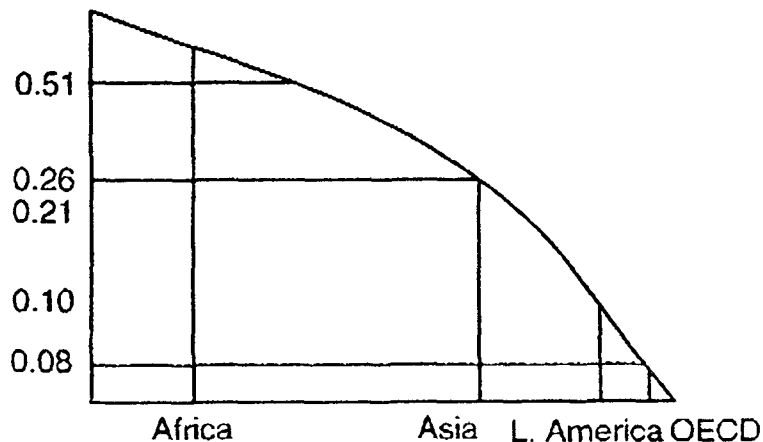
Data source: Government Finance Statistics Yearbook, 1995

years 1988-94 in the Middle East. This was also the only region for which Rio had a negative sign. This is not surprising considering the emphasis of Rio on the global warming threat and the need for fossil fuel reduction. Another factor in the Middle East was the transfer of massive bilateral aid (especially US) to the region. Rio had its greatest positive impact on Africa where government expenditures on low-impact sectors were falling by 4.4% and in high-impact sectors by 2%. Rio contributed, thus, a 0.51% increase in the low-impact sectors, and only a 0.16% increase in the high-impact sectors.

Moreover, other factors appear to be critical in Africa since the model explains only 63% of the variation across countries and over time.

In non-industrial Europe (mostly Eastern Europe), government expenditures remained virtually constant because of slow growth following the economic decline of the early 1990s. In Asia, both low- and high-impact sectors received increased government expenditures at 3.82% and 3.55% respectively, because of rapid economic growth. There was little redeployment, and it was well captured by Rio's contribution (26%). The impact of Rio on Latin America and on the industrialized countries was rather modest, not exceeding 0.10%, although the growth of low-impact government expenditures was 35% higher in Latin America. One big difference between industrialized countries and Latin America is that the former reduced their expenditures on high-impact sectors by 0.8%, while Latin America increased it by 0.12%.

In conclusion, Rio has had a positive influence on all parts of the world except for the Middle East, which is to be expected considering their resource endowment (fossil fuels). Rio had by far its largest positive influence on Africa and the smallest on the industrialized countries, and an intermediate one on Asia and Latin America, indicating an inverse relationship with the level of development (income per capita).



Subsidy Removal as a Financing Source

A special case of resource redeployment is the removal of economically distortionary and environmentally damaging subsidies on polluting inputs, such as energy and pesticides, and resource-depleting activities such as logging and land conversion. It is known that such subsidies are pervasive throughout the developed and developing world, and according to various estimates, they range between \$0.5-1.0 trillion. Table 13 reports some preliminary and partial estimates of the level of subsidies. Not included are transport, agricultural, and logging subsidies, which could easily double the total figure. Their removal will save budgetary resources and increase public savings while reducing environmental damage and economic distortions. Even if no part of the budgetary savings is spent on the environment or other sustainability-enhancing investments, sustainable development would still be advanced by virtue of the reduction of the environmental damage and the shift of resources from high to low environmental impact activities, which is equivalent to resource redeployment and to securing additional financial resources.

Table 13 Preliminary Estimates of Environmental Subsidies

<i>Subsidies</i>	(\$)
OECD energy subsidies	40-60 billion (55-75)*
Non-OECD energy subsidies	270-330 billion
Water subsidies	22
Poor road maintenance	21
<i>Ratios</i>	(%)
Ratio of water prices charged by private vendors to public utility prices	50
Ratio of domestic to world energy prices	25-75
Ratio of road user charges to road spending	19-47
	(217)

Source: Earth Council "Economic Incentives for Sustainable Development"

Has there been a trend towards reduction of subsidies in recent years? The answer is "yes," but the process has been very slow. Table 14 shows, as an example, a general trend towards reduction of fertilizer subsidies, starting in the mid-1980s, and gathering momentum in the 1990s. However, despite significant reduction over the past five to seven years, India in 1994 was still spending \$1.7 billion on fertilizer subsidies. The experience of countries such as Indonesia and Pakistan supports a faster schedule of phasing out agrochemical subsidies throughout the world.

Privatization

Where state enterprises are inefficient and/or loss-making, privatization is equivalent to subsidy reduction, which in turn generates additional resources for sustainable development. A privately provided service would try to recover costs by charging users for its use. A private company is more likely to elicit the users' preferences as to the type and level of service and their willingness to pay for it than a state enterprise or public

Table 14 Government Expenditures on Fertilizer Subsidies; Selected Asian Countries 1982-1984 (million 1995 US\$)

	1982-84	1985-87	1988-90	1991-93	1994
Bangladesh	56	21	68	19	0
India	1,194	2,006	2,833	2,010	1,685
Indonesia	732	530	515	333	96
South Korea	106	387	15	NA	NA
Nepal	9	6	13	17	NA
Pakistan	178	156	102	33	2
Philippines	48	46	20	0	NA
Sri Lanka	64	44	12	0	NA
Thailand	5	3	3	NA	NA

Source: FADINAP database, except Indonesia 1991-94, from Indonesia Center for Policy and Implementation Studies.

bureaucracy. Charging users full cost for services like water supply sanitation and solid waste collection means better cost recovery, smaller budget deficits or larger public sector savings, better service, and wider coverage. The health benefits so derived are equivalent to those achieved through larger public health expenditures.

Over the past five to seven years, there has been considerable interest and action to privatize power generation, telecommunications and transport infrastructure, and services. See Figure 6 for two examples of the growing role of the private sector in infrastructure from the Philippines and Vietnam. It is notable that the private sector plays an important role not only in the economic but also the environmental infrastructure, such as water supply, waste water management, solid waste and sanitation, flood control and drainage, and road and traffic management.

Five years ago, such participation was minimal—more the exception than the rule, but in five to ten years, it is likely to be more the rule than the exception. Table 15 lists a number of government strategies for encouraging private sector participation in the provision of economic and environmental infrastructure. The key question that remains to be answered is how can the government encourage private sector capital to gravitate towards the more environmentally sound and sustainable activities and technologies.

Resource and Environmental Taxation

In the past, natural resource exploitation was generally undertaxed by a large margin. For example, during the 1960s and 1970s, stumpage taxes in the Philippines captured only 7% of the resource rents available. In Indonesia, it was only marginally better at 20%. Today resource taxation has increased to capture over 50% of the rents. Yet, huge amounts of funds that can be used to finance sustainable development are not captured. The case is similar with pollution and congestion pricing. Table 16 shows that the government of

Figure 6 Expenditure on Low-Impact Sectors

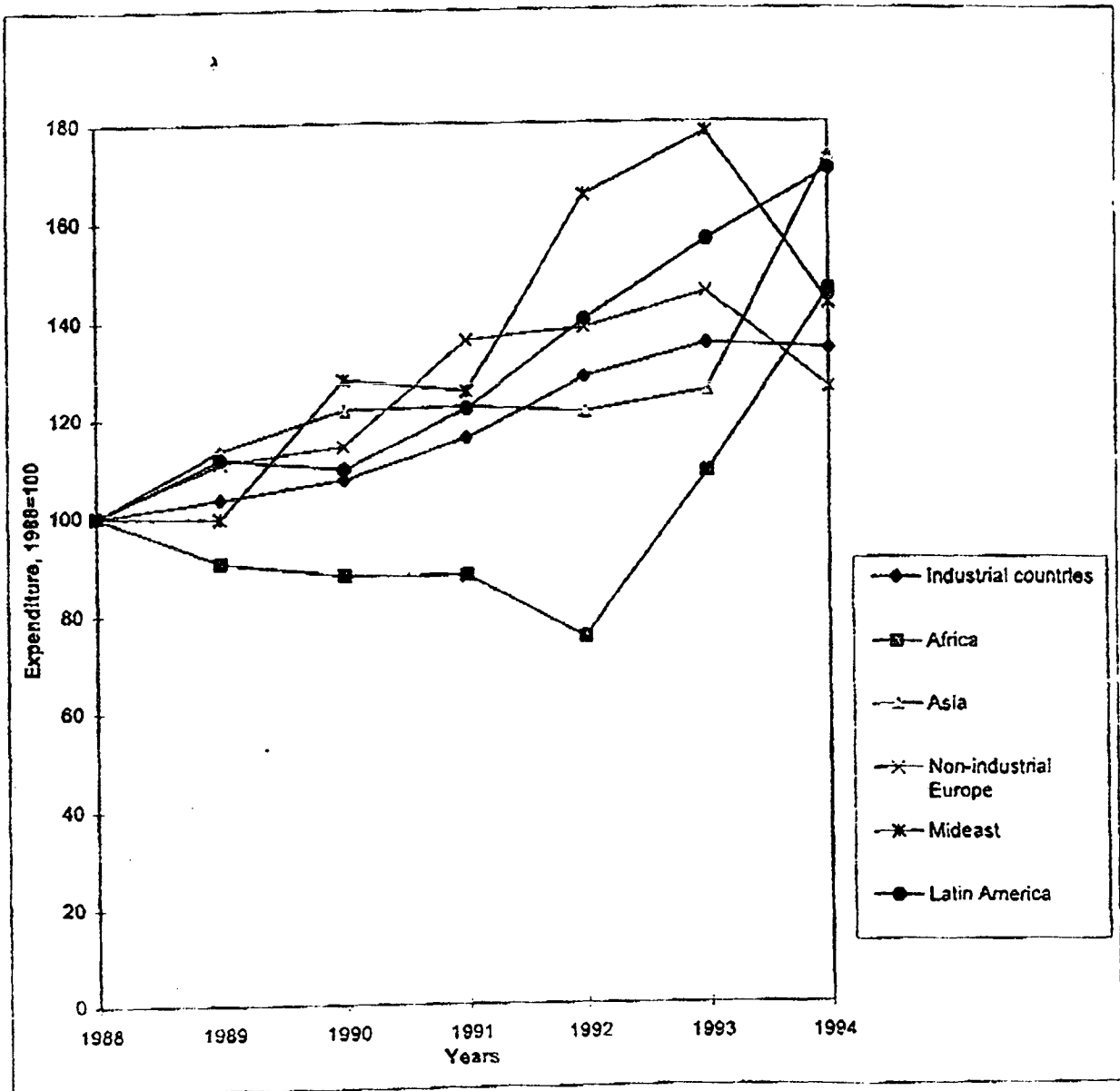


Table 15 Government Strategies for Encouraging Private Infrastructure

	Encourage initial private entry	Some private participation	Extensive private participation
Overall	Prudent macroeconomic management, including currency convertibility, is a priority. A sound institutional/legal framework is necessary to ensure contracts can be implemented.		
Sectoral	Demopolitize niche sectors, allowing entry to cellular telephones, power generation, ports etc. Use concessions and BOOs as appropriate to sector and political acceptability	Broaden the scope of private entry and competition. Initiate overhaul of regulatory framework	Extend private sector participation and contestability to sectors where regulatory issues may be more difficult.
Size	Focus initially on small projects. Break large projects into components	Medium-sized projects should be financeable	Project size should not be a constraint
Sectoral and regulatory issues	Start process of removing subsidies, preferably by announcing (and adhering to) a phased program. Allow tariffs to be automatically adjusted to reflect changes in costs	Assess regulatory options. Increase competition within and for markets; regulate natural monopolies	Review regulatory experience. Convert BOTs to concessions by announcing that they will be so-bid. Maximize competition
Privatization of SOEs	Consider (partial, if appropriate) privatization of most financially viable SOEs (eg telecoms)	Privatize a broader range of SOEs	Complete privatization process. Make tariffs fully commercial
Foreign participation	Remove or minimize barriers to foreign capital and expertise	Encourage foreign participation in privatization	Remove remaining constraints to foreign participation
Sponsors	Ensure strong sponsors, technically and financially. Ensure that they make significant equity contributions	Seek for greater participation by technically and financially sound local sponsors, and demonstration effects	
Financial issues	Adjust regulations to allow foreigners to repatriate dividends. Allow use of escrow accounts if that gives extra comfort to foreign investors	Access international capital markets. Strengthen local capital markets: public share issues, investments by local pension and insurance funds	Improve access to intern'l capital through better country risk rating. Encourage private rating agencies, re-insurance industry, full use of foreign and local capital markets
Government and risk	Where really necessary, guarantee SOE contractual obligations, and build in buyout provisions for private sponsors. Do not subsidize finance to private or public enterprises.	Assume less risk as private participation increases; adapt regulatory framework on the basis of experience	Limit commercial presence of government. Focus government involvement on providing enabling environment

Indonesia, for example, has unexploited forestry and externality potential in the range of \$2-3 billion, or 9-13% of 1993 government domestic revenues. Others have shown that the US can raise \$2.8 billion through a congestion toll system, pay-by-the-back solid waste system, water effluent fees, and recreation charges for visits to national parks, among other (Table 17). Markandya has estimated huge savings in moving from current command and control to least-cost reductions in China and India (Table 18). Savings of 3-10 times or over \$5 billion can be achieved through least-cost reduction methods, which can be approximated by economic instruments such as pollution charges.

In recent years (especially post-Rio), there has been a growing interest in economic instruments, such as pollution charges and environmental taxes, which is likely to continue to increase in the coming years. A growing

Table 16 Governments' Spending on Low and High Environmental Impact Sectors

(Regression models based on samples)

Region	Expenditures on low impact sectors				Expenditures on high impact sectors			
	Parameters	t-statistics	r-squared	df	Parameters	t-statistics	r-squared	df
Asia								
Growth rate	8.91	2.71			1.90	1.34		
Rio	-0.15	-1.03	0.78	4	-0.03	-0.48	0.48	4
Intercept	-16.16	-1.09			15.21	2.40		
Industrial countries								
Growth rate	3.66	4.82			-2.59	-2.01		
Rio	0.08 ²	2.26	0.98	4	-0.03	-0.47	0.85	4
Intercept	9.89	2.90			38.06	6.55		
Africa								
Growth rate	5.55	0.72			-1.87	-1.07		
Rio	-0.07	-0.19	0.24	4	0.16	2.12	0.63	4
Intercept	-5.24	-0.15			25.06	3.18		
Non-industrial Europe								
Growth rate	5.01	1.50			-4.20	-2.30		
Rio	-0.02	-0.12	0.66	4	0.01	0.12	0.83	4
Intercept	0.14	0.01			41.50	5.07		
Mideast								
Growth rate	4.26	0.97			3.89	1.15		
Rio	0.20	1.02	0.78	4	0.03	0.22	0.64	4
Intercept	4.14	0.21			5.41	0.36		
Latin America								
Growth rate	6.23	4.67			2.39	1.48		
Rio	0.10	1.68	0.97	4	0.03	0.36	0.76	4
Intercept	-6.20	-1.04			10.03	1.38		
World								
Growth rate	4.12	6.93			-2.08	-2.15		
Rio	0.06	2.42	0.99	4	-0.02	-0.57	0.87	4
Intercept	7.99	2.99			35.87	8.24		

number of countries are beginning to experiment with tradable pollution permits (Chile, Kazakhstan, and Poland), pollution charges (most of Eastern Europe) and differential taxes (e.g., between leaded and unleaded gasoline in Thailand). A major variation on the experience of developed countries, especially in Europe, is the establishment of National Environmental Funds as earmarked financing mechanisms. While this instrument is now used widely in many developing countries, Central and Eastern European countries have formulated their entire environmental policy around these funds (see Table 19).

Table 17 Potential Revenues from Environmental Charges, US, Early 1990s

<i>Kind of charge</i>	<i>Likely revenue (billion \$/yr)</i>
Congestion toll system	10.8
Solid waste pay-by-the-back system	4.7
Charge on toxic releases	0.3
Fee on vehicle hydrocarbon emissions in regions not	0.5
Water effluent fee	2.4
Recreation fees in national forests	5.0
Tax on ozone-depleting substances	0.5
Charge on pesticide and fertilizer use	1.0
Reducing depletion allowance for fuel and non-fuel	1.2
Increasing royalties for hardrock mining on public lands	0.6
Full-cost pricing of Bureau of Reclamation water	0.5
Full-cost pricing of Forest Service timber	0.4
Total	12.5

Source: Repetto, Doweer, and Gramlich (1993)

Table 18 Comparison of Actual (Proposed) and Least-Cost Reductions for PM and SO₂ for China and India (millions US\$)

	<i>Present</i>	<i>Least-cost</i>	<i>Present/Least-Cost</i>
China	4,744	494	10 times
India	1,180	366	3 times

Source: Markandya (1996).

Trends in Willingness to Pay for the Environment

A Gallup global survey of people in 30 major countries found that 50%-75% of the respondents were prepared to pay higher prices for goods and services to protect the environment (see Table 20). In the case of an irreconcilable trade-off between the environment and economic growth, an equally high percentage choose to protect the environment over economic growth. In the same survey, industrialized country sample citizens, by a majority of 70%-90% favored contributing money to an international

Table 19 Main Characteristics of Environmental Funds in Selected Transition Economies in 1993

	Sources of revenues (% of total revenues)	Size of revenues (U.S. \$M)	Contribution to total environmental expenditures (%)	Main expenditures (% of total expenditures)	Disbursement mechanism (% of total disbursement)
Bulgaria	pollution fines (58); import tax on used cars (33); other (9);	23	7	monitoring (40); loans to enterprises (32); public services (19);	grants (68); interest-free loans (32);
Czech Republic	water charges (41); air emission charges (30); waste charges (13); land charges (12);	107	10	water projects (58); air pollution control (33); other (9);	grants (71); soft loans (29);
Estonia	water pollution charges (35); waste disposal charges (35); air pollution charges (18); other (12);	17	10	public environmental services (50); loan guarantees for enterprises (25); other (education enforcement) (25);	grants (50); soft loans (25); loan guarantees (25);
Hungary	fuel tax (44); traffic transit fee (20); PHARE grant (19); pollution fines (17);	277	11	air pollution control (70); waste management (15); water pollution control (11); other (4); ¹	grants; interest-free loans; other soft loans;
Poland	air pollution charges; water pollution charges; water use charges; waste charges;	515	58	air pollution control (47); water pollution control (35); other (soil protection, monitoring, education, etc.) (18);	grants (17); soft loans (77); loan interest subsidies (6);
Russia	pollution charges (83); claims for damages (7); fines (2); other (8);	84	NA	capital expenditures for pollution control (24); current expenditures (11); R&D (7); institution building (28); bank deposits (22); other (8);	grants;
Slovak Republic	state budget (37); water pollution charges (30); air pollution charges (25); other (8);	347	20	water pollution abatement (48); air pollution abatement (27); waste management (8); other (17);	grants (99); loan interest subsidies (1).

Sources: Averchenkov, 1994; REC, 1994; Personal interview with Eva Krav, Chairperson of the National Board of the Estonian NEF.

¹ Doesn't include the Water Management Fund.

Table 20 Environmental Protection vs. Economic Growth

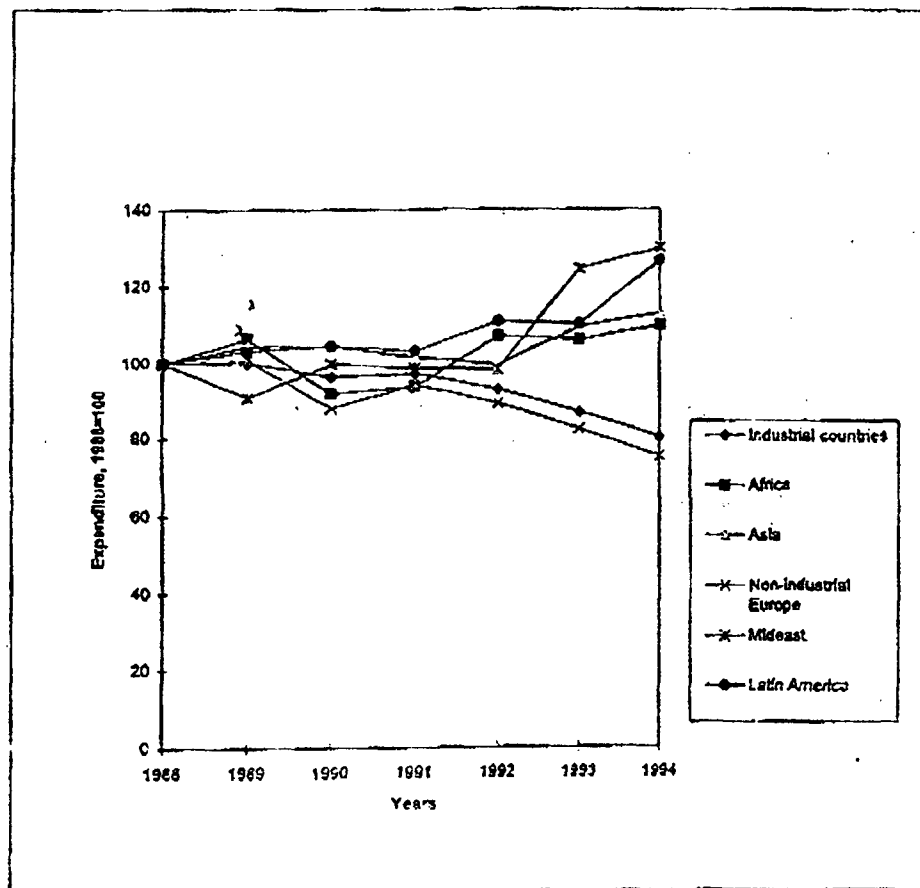
<u>Economic Level¹</u>	<u>Choose Protecting The Environment Over Economic Growth (%)</u>	<u>Say They Are Willing to Pay Higher Prices to Protect the Environment (%)</u>
Low income		
Nigeria	30	28
India	43	56
Philippines	59	30
Turkey	43	44
Poland	58	49
Chile	64	64
Middle income		
Mexico	71	59
Uruguay	64	54
Brazil	71	53
Hungary	53	49
Russia	56	39
Portugal	53	61
Korea (Rep.)	63	71
High income		
Ireland	65	60
Great Britain	56	70
Netherlands	58	65
Canada	67	61
United States	58	65
Denmark	77	78
Germany (West)	73	59
Norway	72	72
Japan	57	31
Finland	72	53
Switzerland	62	70

¹ Per capita Gross National Product

Source: Dunlap, Gallup and Gallup (1993)

environment agency (Figure 7). Over two-thirds of the respondents expressed support for such a global institution and indicated willingness to let their own governments grant it the necessary authority. The survey also found that developing country citizens are as concerned about the environment as are citizens of the industrialized countries. This is also a new trend that took root in the early 1990s. A final trend that increasingly affects financing of sustainable development is the growing role of NGOs and the civil society in general.

Figure 7 Expenditure on High-Impact Sectors



Conclusion

In conclusion, the trends in sustainable development financing are moving qualitatively in the right direction but quantitatively fall considerably short of the hopes raised and targets set at Rio. To increase sustainable development financing in the future, three sets of actions would be necessary. First, policies must be developed to improve access of developing countries to external finance by developing a more realistic and constructive approach to ODA, by assessing and improving the contribution of foreign direct and portfolio investment to sustainable development, and resolving remaining debt issues. Second, policies must be adopted to develop a more comprehensive approach to domestic resource mobilization by continuing to phase out of environmentally harmful subsidies, to accelerate the practical application of economic instruments, and to increase the private sector participation in sustainable development. Third, innovative financial mechanisms should be promoted by sharing successful national experience, by resolving political and technical issues concerning the implementation of international financial instruments, and by developing mechanisms for compensating developing countries for the provision of global environmental services. Lastly, there should be monitoring and data base development for tracking progress in mobilizing financial resources and in attaining milestones on the road to sustainable development.

