

FINANCIAL MARKETS DO IMPACT THE ENVIRONMENT

Overview for New America Foundation Project The Environment and International Finance

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INTRODUCTION

1. The relation of financial flows and the environment has received much less attention than the impacts of trade, energy programs, sprawl, or pollution creating projects. Perhaps that is not surprising since activities in each of those areas are known to have direct and usually detrimental impacts on environment through changes in land use, soil degradation, pollution emissions, and contributions to global warming, etc. In contrast, both international and domestic financial markets appear relatively clean and detached from environmental impacts – dealing in paper or electronic transactions, consuming few resources, creating little waste.

2. A welcome break from this tradition was the first project on Environment and the International Environment undertaken by the New America Foundation in 2000-01.¹ That project covered a range of topics relating financial markets to sustainable development. The environment was identified as a critical pillar to achieving sustainable development and a number of recommendations were proposed. This program will look in more detail at how much progress has been made in a number of areas identified in that earlier project. Most of the issues are well known. The questions are how much has been achieved, what are the obstacles to further progress, and what can be done.

3. It is true that the business functions of financial markets create little impact on the environment. It is not true that the operations of financial markets have little impact on the environment. The operations of financial markets determine the conditions under which individuals and firms earn incomes and invest. They determine where capital moves and what projects are undertaken; shape development options and long-term growth paths, and influence the direction of technological innovation. And they help create markets in new activities. All of these operations and activities do have direct impacts on the environment and on the long term sustainability of development paths.² Furthermore, there are some segments of the financial market that institutionally have a longer term horizon that is more commensurate with environmental decision-making than most other markets. These include the insurance and pension sectors.

4. Decisions and actions in international finance do not have any intrinsic bias to harm or help the environment, like say mining or energy use. Depending on the circumstances, financial flows can be either positive or negative, and the kind of effect they are likely to have depends a great deal on the practices followed by decision makers,

¹ Sherle Schwenninger, *A Financial Architecture of Sustainable Development*, New America Foundation, 2001, Washington DC. This report was supported by the C. S. Mott Foundation

² David Friedman, *Using Financial Incentives and Market Based Schemes to Promote Global Environmental Goals*, New America Foundation, Project on International Finance and the Environment, Washington, DC 2000

as well as on the overall framework within which decisions are taken. Too little attention has been paid to the potential impacts of financial decisions on the environment in the past. The rest of this paper will present several areas where there are significant impacts and then identify opportunities for institutional reforms to encourage more favorable attention to environmental impacts in the area of international finance. This overview will highlight a number of issues where finance and environment intersect, some of which will be addressed in more detail in subsequent seminars and papers.

5. Five areas stand out where international finance impacts the environment:

- ✍✍ *Financial stability*, especially in developing economies, is a critical factor contributing to environmental sustainability. Achieving sustainable environmental goals generally requires making long-term decisions about resource allocation that typically have a relatively long pay-off period. Without stability decision-makers are focused on immediate crisis issues and agents are struggling for day to day survival. The environment then too often becomes a low priority.
- ✍✍ *Financing mega projects* almost always involves major international funding. The amounts are too large and the risks too great not to seek a diversity of financing. The bulk of medium and longer-term international financial flows go to fund direct investment activities. Many of these projects are related to resources extraction – mining, hydrocarbon production, timber, large scale agriculture – which have direct environmental impacts. Others are related to manufacturing or services which have more mixed impacts on the environment.
- ✍✍ *Financing programs determine development paths* by establishing the leading sectors, shaping the requirements for infrastructure, and creating dependence of certain sectors, such as petroleum or plantation agriculture. How these investment activities evolve has lasting impacts on the environment, on the structure of the economy, and on the stability of a country.
- ✍✍ *Influencing technical change* through the transfer of technology, both directly and indirectly, and through introducing international standards and practices to the recipient country. Direct investments often introduce more modern production methods and practices, which are usually more environmentally sound, due both to technological improvements that increase efficiency and those that result from more strict environmental standards in more advanced countries.
- ✍✍ *Creating environmental markets* offers an innovative way to give marketable value to environmental goods and services that have heretofore been accepted as free goods. These markets are beginning to develop internationally and are generating the potential for substantial volumes of trading transactions and for major financial flows to invest in the new environmental goods entering into markets. Carbon trading is the largest opportunity in the future.

FINANCIAL STABILITY

6. Until recently, it was generally accepted that financial stability is a macro-economic issue quite distant from the environment. This point has been emphasized by institutions such as the IMF and World Bank in their support for structural and macro reforms in developing countries and echoed in most developed countries. The argument is that the causal links between macroeconomic policies and reforms and any possible environmental impacts are too tenuous to be established. World Wildlife Fund (Macro Policy Office), Conservation International, and other concerned NGOs have amply demonstrated the contrary, showing how macro policies do impact the environment and how the maintenance of stability is critical to achieving sustainable environmental programs. The international agencies are responding and beginning to take a more comprehensive view of environmental impacts of macro policy, as indicated by the recently issued World Bank Environmental Strategy.³

7. In a modern economy, especially a developing economy, stability is a critical factor contributing to environmental sustainability. Efforts to assure a more sustainable environment generally require making long-term decisions about resource allocation. And more often than not, decisions to promote environmental sustainability have a relatively long pay-off period. Financial stability, and the lower interest rates that usually accompany it, make it easier to make longer-term decisions in favor of the environment. Since many of the benefits to environmentally sound decisions are not readily monetized, the lower interest rate makes it easier to pass criteria for selection. In a stable financial environment, decision-makers are more willing and able to take long-term risks.

8. Stability also reduces the time and effort people have to devote to managing their money, other assets, and even survival compared to volatile and inflationary periods. This gives them more time to concentrate on other important, but less immediate issues, such as the environment. In a stable financial environment, long-term investments in preserving the physical and natural environment and its amenity values become more important.

9. For most smaller and developing economies, the volume and type of international financial flows can have a significant impact on their financial stability. Volatility in these flows, particularly in portfolio investment flows, can disrupt and demolish financial stability in many markets, as the events of the 1997-8 Asian crisis have demonstrated. Subsequent crises from Russia to Argentina have underlined the potential impacts of such volatility. The resulting losses, uncertainty, and need for incomes in the very short term create tremendous pressures to exploit natural resources and to reduce efforts at environmental mitigation.

10. When countries face problems of financial instability and rapid financial outflows, domestic incomes tend to fall, interest rates rise, and people scramble for whatever immediate source of income they can find. Domestically, layoffs and other impacts from the crisis often lead people to try to cultivate marginal land or clear forests

³ World Bank, Making Sustainable Commitments. An Environmental Strategy for the World Bank, Washington DC, 2001

to produce food – with negative environmental effects. And there is usually pressure to increase exports to make up for shortfalls in foreign exchange. Increasing natural resource exports is often the quickest and easiest way to do this.

11. Both of these reactions occurred in Indonesia after the 1997-8 crisis, and have happened elsewhere. Even prior to the crisis, Indonesia's resource exploitation policy was flawed and contributed to unsustainable levels of deforestation and degradation. The initial impact of the crisis was to slow some exploitation as enterprises were in shock and markets in turmoil. However, the drive to restore exports and incomes soon led to a very rapid increase in the rate of exploitation of forests, conversion to plantations, and other clearing of land. One result of the financial meltdown and slow restoration of stability has been to reduce the controls that existed on rates of logging, leading to a vast increase in the level of illegal logging. Timber production now stands at about three times the sustainable, 'legal' level.⁴ Output of other extractive industries also increased. The impact of the financial crisis on the environment has been widely documented.⁵

12. There are two sets of policy implications of this. The first is that maintaining financial stability and reducing the volatility of international financial markets is important for environmental reasons in addition to the normal economic considerations. Second and more important is that policy responses to financial crises need to take environmental impacts more directly into consideration. Simple prescriptions to increase exports, reduce costs, and lay off public workers to restore financial balance need to be moderated with regard to the environmental consequences. There is now enough analysis available to understand how the conventional policy prescriptions need to be modified.

13. The most important steps that need to be taken are to undertake more comprehensive analyses of the impacts of macro and financial policies on the environment and to make sure such findings are taken into account when policies are made. In developing countries, this would involve careful preparation of national environmental strategies to identify the most sensitive areas and the appropriate structure for stabilization policies that are environmentally sound, as proposed in the World Bank's Environmental Strategy, and application of those recommendations in formulating macro policies. Even in developed countries, national financial policies can have important environmental effects. The impacts of the US's mortgage finance policies, while

⁴ As part of the stabilization program, IBRA was established to manage the assets of banks and other major corporations that went bankrupt and had to be taken over by the government. IBRA holds but does not manage the vast majority of timber processing assets. They are still run by former owners who are trying to maximize their take and eventually regain control over the assets. Capacity greatly exceeds sustainable yields, and the financial crisis has contributed to the expansion of unsustainable cutting.

⁵ Fulai Sheng, *Liberalizing the Forestry Sector in the Name of Conservation: A Review of Indonesia's Experience*, December, 2001, Conservation International.; IMF, *Recovery from the East Asian Crisis and the Role of the IMF*, June, 2000, Washington, DC; Christopher Barr, *Banking on Sustainability, Structural Adjustment and Forestry Reform in Post Suharto Indonesia*, CIFOR, Bogor, Indonesia, 2001; Timothy Lane et.al., *IMF-Supported programs in Indonesia, Korea, and Thailand, A Preliminary Assessment*, IMF, Washington DC, 1999

successful in promoting home ownership, have resulted in serious environmental impacts that could have been avoided with more care in designing the policies.⁶

FINANCING SPECIFIC MEGA PROJECTS

14. With the internationalization of most capital markets, few if any major projects are now undertaken without significant involvement of international financing. In developed countries, the structure of the financing may or may not involve direct international flows. The majority of large projects in developing countries involve international finance, whether from multilateral agencies, such as the World Bank; from Foreign Direct Investment (FDI) by private firms or consortia of firms (with or without guarantees of a public agency), or from portfolio investment in bonds or other financial instruments supporting such projects. Many of these projects are related to resource extraction – mining, hydrocarbon production, timber, large scale agriculture – which have direct environmental impacts. Others are related to manufacturing or services which have more mixed impacts on the environment. But there is no doubt that there is a direct correlation between these flows and the environment.

15. The financiers inevitably undertake a thorough review of a project and its risks, based on available information. Their prime concern is, of course, the financial viability of the project. Are revenues likely to be as high as expected and are costs fully controlled? In some cases, this also entails trying, through lack of disclosure or outright claims of exemptions, to reduce costs related to protecting the environment or remediating damage done by the project. In most developed countries, their own environmental protection regulations are adequate to prevent such behavior and to enforce sound environmental practices in such projects.

16. But in many developing countries, particularly poor countries eager for foreign investment, such regulations are too often deficient or not enforced. Projects financed by multilateral banks and public institutions are usually subject to Environmental Impact Assessments. These are usually adequate to avoid serious environmental harm, and often have positive impacts. But even within these institutions, there have been deficiencies, and public pressure is needed to maintain standards. Privately funded projects are not subject to the same standards. Some investors adhere to environmental practices based on own country standards. These are usually investors subject to public scrutiny and exposure. Others ignore or minimize the environmental damage from their investments. This is more often the case in extractive industries than for manufacturing investment.

17. Increasingly, however, other forces are coming into play to encourage more attention to environmental impacts. The risks of failure to do so are increasing and financiers are looking at the environmental risks much more carefully. This is not due so much to direct concern about the sustainability of the environment – although that is growing in many companies – as to real concerns about risks, such as public criticism or

⁶ Jane D'Artista and James K. Boyle, Where Credit is Due, *Allocating Capital to Advance Environmental Goods*, New America Foundation, Project on International Finance and the Environment, Washington, DC 2000.

project delays. The threat of severe environmental impacts have led to protests against firms in egregious cases, sometimes resulting in court cases or boycotts that have been expensive to the firms involved.⁷ Protest actions have occurred in both the recipient and investor countries. To reduce these risks, investors are paying more attention to the potential environmental impacts of mega projects.⁸

18. This concern is enhanced by the increasingly tight environmental policies of the public agencies that support international investments, such as the World Bank Group, Overseas Private Investment Corporation (OPIC), and national Export-Import Banks. These agencies have adopted policies to reduce the environmental impacts of projects that they support, and the criteria are becoming more rigorous. The World Bank Group (which included the International Finance Corporation, IFC, for private sector investment) has become a leader in applying these policies to projects with major private participation.⁹ Ex-Im Banks have been less rigorous, though that is slowly changing.¹⁰ The potential for public criticism is influencing their behavior ahead of formal policy actions. They too try to avoid the risks of public embarrassment.

19. At present, more public international financial institutions and the more enlightened international financial and project firms are adopting more sensitive environmental practices. But there is as yet no generally accepted common environmental standard for international capital flows. A dual investment criteria assuring that investments are sustainable both financially and environmentally was proposed here at NAF last year. That could be the basis for such a standard.¹¹

20. Nor is there any mechanism to assure that major international financial flows meet any environmental standard. As the better institutions apply higher standards, projects that fail to meet these standards may seek financing from lower quality sources or try to get by with lower rates of capitalization. Both of these alternatives are likely to increase both financial and environmental risks. At a minimum, more information about these flows and the potential impacts should be made public.

21. Properly addressing the environmental impacts of these financial flows for mega projects is important for several reasons. First, of course, is mitigating the direct impacts of the projects in their construction and operation. This is particularly true for resource extraction projects. Second, a large majority of these projects produce goods that enter into world trade. There has been a lot attention to the environmental impacts of trade, but many of these are really a concern about the production process used. And that is a function of the investment decision about which production process to use. Hence the

⁷ In addition to direct PR and court costs, firms have often faced delays in production or been forced retroactively to undertake remediation, usually at much higher costs than proper planning and prevention would have entailed.

⁸ See the discussion of the Antimina mine in Shilling's paper cited below.

⁹ These activities have not been without controversy, such as the Chad-Cameroon Pipeline. And external pressure has been an important factor in motivating the policies and actions of the World Bank Group

¹⁰ See Bruce Rich, *Trading in Global Negligence: The Need for Reform of Export Credit Agencies*, New America Foundation, Project on International Finance and the Environment, Washington, DC 2000, for a discussion of the problems with Ex-Im Banks.

¹¹ John D. Shilling, *The New Financial Architecture and the Old Environment: Do We Need a Double Standard?*, New America Foundation, Project on International Finance and the Environment, Washington, DC 2000

importance of making sure the investment flows take full account of the environmental impacts of the processes invested in. Third, by assuring more environmentally friendly investments from international flows, higher standards will be set that may provide a model for domestic investments in the recipient countries.

22. To address these issues, efforts much be made to assure that public agencies in developed countries apply high environmental standards to projects financed internationally. Ex-Im banks in particular should adopt higher standards for investments supported overseas. This could be done by assuring that the national policies of Ex-Im Bank's own country are applied, or that some internationally agreed standard, such as that applied by the World Bank be used. Major firms financing international investment should be required by their home government to apply either home national environmental standards, or an agreed international standard. Finally, some mechanism would have to be established to independently monitor application of the appropriate standards, seek improvements from the investor, and ultimately call infractions to the attention of some appropriate authority. This will be a difficult, but important process.

FINANCING PROGRAMS DETERMINE DEVELOPMENT PATHS

23. International financial flows supporting smaller projects over some period of time can play a very important role in determining longer term develop paths of recipient countries. These investment patterns help establish the leading sectors, the demand for infrastructure, and the economic stability of a country. In so doing, they have a major influence on the longer term environmental sustainability of a country.

24. Initially there was a great deal of concern that lower environmental standards in developing countries would lead to a 'race to the bottom' with dirty industries relocating to the poorer countries where they could pollute without regulations faced in the developed countries. While there have been instances of this occurring, most studies have found that there is no overall trend, and the 'race to the bottom' did not happen. In part this was due to the fact that most polluting industries needed supporting infrastructure, supplies, and market access that was too expensive or unavailable in most developing countries. And the costs of moving would have been high.

25. In fact, it was found that in some cases, direct foreign investment brought in cleaner processing investment. The was partly because the foreign investors could afford the latest technology; partly because such investments were for export markets, which required high production standards that involved cleaner technology; and partly because many international firms adhered to their own higher standards wherever they operated.

26. Of more longer term interest is the pattern of development that may be established as a result of international capital flows over time. The most obvious case is where investment create dependence on natural resource exploitation, which can have lasting detrimental impacts on the environment and on the stability of a country. For example,

most oil exporters, recipients of substantial international investment flows, have fared poorly on both accounts. The same is true of many other exporters of natural resources.¹²

27. Investments in other industries may establish concentrations of industry and require certain kinds of supporting infrastructure, roads, ports, power supplies. These are all very long-term investments that help determine much future complementary infrastructure investments, locations of industry and urban areas, demands for resources such as water, and population movements for decades. Once initiated, many of these trends are difficult if not impossible to reverse.

28. They obviously have many impacts on the environment, many of which are hard to predict over such a long-time horizon. For example, the foreign investment in electronics in Singapore and Malaysia has shaped much of the development of infrastructure and urban patterns in these countries as well as their industrial structure. Whether the impacts on the environment are positive or negative depends a great deal on the specific circumstances, however, these impacts are not often taken into consideration in planning large-scale investments. As the world becomes more congested and the environment more endangered, more attention needs to be paid to the long-term implications of major investment on development paths. Furthermore, in many of these cases, the foreign investment creates a pattern of dependence on trade in certain products, and economic stability then depends on continued export demand. The recent economic crises in East Asia are partly the result of their dependence on electronic exports to the US, which have fallen dramatically.

29. The whole debate over urban sprawl in the US illustrated the cumulative impacts of investments on development paths. Highways opened up new areas for inexpensive, low-density development. Suburban areas expanded, creating more demand for roads and more extensive development, to the point where public transport is not economic and most of the country is not only totally depended on auto transport and relatively long commutes, but is also locked into this pattern because the cost of change is so extraordinarily high. This creates problems of CO2 emissions, extensive land conversion, etc. Whether the life-style benefits outweigh the environmental costs may be an open question, the point is that the pattern of investment has long-term impacts on development paths and their environmental impacts.

30. Current international capital flows are similarly influencing development paths in recipient countries. It is important to try to identify critical decisions points in development paths and undertake adequate planning. One good example in an urban environment is Curitiba, Brazil, where outstanding urban planning has created a viable public transport, environmentally sound urban expansion, and lower pollution levels. It has received a great deal of favorable international acclaim, but much less emulation.

31. That example suggests that much more effort needs to be applied to the planning of development efforts, infrastructure designs, and urban expansions to take into account their environmental impacts. This is primarily a national issue, but since international capital flows are becoming a major source of finance for a lot of infrastructure and since the design and location of foreign investment is a critical factor in shaping the

¹² See for example Carlos Leite and Jens Weidmann, *Does Mother Nature Corrupt? Natural Resources, Corruption, and Economic Growth*. IMF, Washington DC. July 1999

development program of many countries, there should be more effort by both international and national bodies to improve this sort of planning. Given the potential profits from this kind of investment, recipient countries should hold the investors to higher standards of long-term planning and hold them accountable for the results.

INFLUENCING TECHNICAL CHANGE

32. Direct foreign investment flows bring technology directly with the investment. As noted above, early concerns about a race to the bottom have not been born out. In some cases, the investment is state of the art and embodies the best environmental techniques. In other cases, developing countries have acquired used or aging equipment at low prices for domestic production. This has not carried the latest technology, with less desirable environmental results.

33. Successful international investment flows also encourage domestic investment, and where possible, the adoption of the superior technologies. The extent to which this occurs is in large part a function of intellectual property laws and licensing agreements. There is currently no program to facilitate and encourage the rapid dissemination of environmentally superior production techniques, although a number of firms and NGOs are trying to promote use of better technology on individual projects.

34. Deeper concerns have arisen about international intellectual property rights and the impacts of current programs to extend patent protection. The arguments about the necessity of protecting property right to promote innovation and the need to disseminate beneficial knowledge widely are well known and will not be reviewed here. However, the outcome of these arguments as they are applied in different countries affects international capital flows. Countries with good protection are likely to attract more international capital flows related to the implementation of technology. However, that also depends on the profitability of their markets. So on the other hand, poor countries may not benefit from protected technology if they do not represent a profitable market, due to levels of demand or scale. And incentives to develop potentially beneficial technologies may be inhibited if the markets are not perceived to be profitable.¹³

35. Indirectly, financial flows and the projects they support help set technological standards to be followed in the recipient countries. They set examples to be followed by local firms, both by imitation and as nationals work in the international firms and then leave to work in domestic firms. These practices tend to extend the successful experiences gains in the international firms.

36. Thus it is important to encourage international investments to transfer appropriate technology that supports high quality environmental standards. This not only benefits the firms directly, but sets positive examples in recipient countries. Investors can play an important role in encouraging this kind of behavior. Beyond these obvious benefits, it is important to examine more carefully the policies that encourage transfers of appropriate

¹³ Compare for example the research expenditures on Viagra compared to cures for malaria.

technology to developing countries and arranging appropriate financing to support the transfers.

CREATING ENVIRONMENTAL MARKETS

37. One of the most interesting and exciting developments in integrating environmental concerns more directly into economic activity has been the creation of markets for environmental goods and services.¹⁴ Successful national markets for some environmental goods, or reductions in bads (such as pollution) have been established. There have been major discussions about creating carbon trading markets as part of the solution to global warming. Despite the controversy over the Kyoto Convention, a number of institutions and agents are experimenting with carbon trading in both reduced emissions and increased carbon sequestration.¹⁵ Many problems of validation and market creation remain to be addressed, but the prospects for developing international markets with accompanying capital flows are enticing.

38. Creating these markets in a complex process that requires creation of virtual goods. Creating these markets requires both regulatory structures to define and monitor the market and substantial financial backing for the trading. Environmental goods have significant public good characteristics. They tend not to have rivalry and exclusivity, i.e. one person's use of a good does not preclude another from using it (non-rivalry) and normally people cannot be prevented from using it (non-exclusivity).¹⁶ Environmental goods like clean air and water, natural wonders, etc. possess these properties. In some cases, the environmental problem is the abuse of an environmental service to the detriment of others, such as pollution emissions which diminish access to clean air or water.

39. Conventional command and control approaches have been to regulate emissions, access to environmentally sensitive areas, etc. These methods sometimes work well, and sometimes are terribly inefficient. To overcome the inefficiencies, ways have been developed to create markets for some environmental services and let competition lead to the best allocation of resources to achieve the desired environmental result. Trading permits for various emissions in a water shed or air shed are successful examples. In these cases, an external agent, usually the government, sets a limit on the allowed emissions and allocate permits to actual or potential emitters for that limited level of emissions.¹⁷ By setting the limit on the number of permits issues and enforcing those limits on emissions, the government creates virtual scarcity in the right to emit pollutants.

¹⁴ Glenn Yago, *Financing Global Environmental Futures: Using Financial Markets and Instruments to Advanced Environmental Goals*, New America Foundation, Project on International Finance and the Environment, Washington, DC 2000

¹⁵ Ricardo Bayon, *More Than Hot Air: market-based Answers to the World's Climate Change Woes*, May 2001

¹⁶ A classic case is a lighthouse. Once it is operating, one ship's using it to avoid a hazard does prevent another from doing the same, and no ship can be prevented from seeing the light and avoiding the hazard.

¹⁷ How these permits are allocated has very important distributional effects since the permits are valuable assets, as the ensuing market validates. This issue will not be addressed in this paper.

Rivalry is introduced and markets can function. Permits are traded so that emissions can be reduced by those able to do so at least cost.

40. Creating these markets nationally depends on both the government structure to manage the permits and the existence of financial and good markets to support the trading in the virtual goods represented by the permits. There are now movements to introduce such trading internationally in CO₂ and perhaps other pollutants. So far, they are on a very small scale, but are likely to grow once international agreements are reached about the creation of permits.¹⁸

41. When international trading is allowed, there will be substantial incentives for international investment flows to support emission reductions in the least cost manner. Real opportunities will arise for international financial flows with a positive environmental impact as a primary profitable objective. In one early case, the Nature Conservancy along with three US energy companies and the Bolivian government raised \$10 million to set aside 1.5 million hectares for carbon sequestration. Other such deals are in the making.¹⁹

42. Markets can be created by similar mechanisms in other environmental goods. These include paying upstream users to prevent pollution so that downstream users can avoid water purification. There are a growing number of examples of this within countries. But given the number of international waterways and the growing need for clean water, there is no reason to believe that more of these arrangements will not occur internationally and be supported by international capital flows. Already a number of NGOs and private organizations are initiating such investment.²⁰

WAYS TO INFLUENCE INVESTMENT FLOWS

43. Decisions of investors are likely to be influenced by three critical factors: the profitability of the investment, taking account of risks and uncertainties; the governing regulatory structures and their degree of enforcement; and the impact of public opinion of their larger investment strategies. Obviously, we would also like to believe that investors are sensitive to sustainability issues on their own merits and would take them into account, but I wouldn't count on it.

44. Different investments have different time frames for estimating profitability. Those with a longer-term payout period are more likely to be concerned about environmental and sustainability issues as such risks are more likely over the longer term. Insurance and reinsurance companies are taking environmental factors much more into account in their decisions about what to insure or not and about what to invest in.

¹⁸ There are a few cases where national permit trading allows reductions in CO₂ to be satisfied by investment in other countries.

¹⁹ Ricardo Bayon, *A Bull Market in Woodpeckers? Making Money in Environmental Derivatives*, Milken Institute Review, February 2002,

²⁰ See also, John D. Shilling and Jennifer Osha, *Making Markets Pay for Stewardship: Opportunities to Reduce Rural Poverty and Enhance Conservation through Innovative Property Right Regimes and Markets for Environmental Services*, WWF Macro Policy Office, Washington DC, 2002

Pension funds are also taking these factors into account as they have long-term horizons and value sustainability in their investments. Several major energy corporations have begun to take these factors into account as they do their long term investment planning. Shell and BP have made strategic decisions to move more into renewable energy.

45. These investment decisions are greatly influenced by the progression of science and information about the extent and source of risks due to potential environmental changes and their impacts on various investments. Enhancing the underlying science about the potential environmental impacts and their costs is very important in this regard. So is increasing the monitoring of information and the publication of results. As investors learn more about the risks involved and the impacts of various investments, the more likely they are to make more environmentally sound investment decisions. And as the public finds out more about the impacts, the more likely they are to insist on such decisions. So doing the science and monitoring and publicizing the results is very important so investors learn the implications of their decisions. Learning about the environmental impacts also leads to cost saving. In the early 1990s, Nortel pledged to find a way to reduce dioxin emissions resulting from the manufacture of electronic components. It learned that by maintaining cleaner labs and using water, it could eliminate any use of dioxin and save money!

46. Investments take place within regulatory frameworks. These govern many aspects, including many of the environmental impacts of the investment and its later operation. Most countries have environmental policies governing impact statements, mitigation or prevention activities, and the like. The degree of enforcement varies widely, and tends to be less in developing countries. It is important to make sure that the environmental regulations are sound and enforced. For international investments, investors are subject to the laws of the countries where the investment takes place. They are also influenced by the regulations of agencies that provide assistance and guarantees that they chose to use, such as those of the World Bank Group, national guarantee programs, such as OPIC, and other such agencies. These rules only cover a small percentage of international capital flows, but they tend to set standards.

47. Efforts to improve the rules governing international capital flows are an important means of improving the environmental impacts of these flows. A variety of different rules are applied by different organizations and national governments. Standardizing these rules and extending their application to a broader range of investments would be desirable. Encouraging countries that receive these investment to follow common approaches with serious enforcement should be encouraged, possibly with the assistance of international agencies. Voluntary regulations developed and imposed by the investment institutions themselves would be preferred if they were strong enough.

48. Ultimately, public opinion is a very important instrument in influencing investments. At a broad level, major firms are sensitive to public opinion and respond to pressure. Such pressure needs to be based on sound evidence and facts about the impacts being addressed. So dissemination of information on environmental impacts is important, as is the capacity to organize public protests. In Indonesia, the government and the World Bank developed the PROSPER scheme, where levels of certain pollution emissions were publicly posted for a number of plants, along with an overall grade. The plants began to clean up their act under public pressure.

49. In many cases, the pressure will be applied in the country of origin of the investment, not in the recipient country. This is particularly true where the investment flows from developed to developing countries. The pressure need not be through public demonstrations, but through informed presentation to the investors of the potential risks then are running. (cite Antimina)

50. In addition to such public pressure, information about the environmental impacts of many investments have led far-sighted investors to seek investments in environmentally sound activities. This combines an understanding of the potential benefits from environmentally sound investment and a desire to influence the direction of investment. Already there are a number of investment funds that concentrate on investments in firms that follow environmentally sound policies and that promote investments in new technologies that promote environmental sustainability. These funds are proving to generate rates of return comparable to or better than the normal funds and beginning to redirect the flow of investment. More growth along these lines is to be expected.

WHERE THIS SERIES OF SEMINARS IS GOING

51. There many ways in which international finance affects the environment. Too many to cover in this seminar series. We have identified several experts in a number of areas where investment and the environment interact, and they will present thoughtful papers on several critical topics. Our initial program is as follows, although the order is not yet determined:

Overview of the range of issues where international capital flows have an impact on the environment and where interventions can have an impact. This would include macro-economic stability, risk management, regulatory climates, investor incentives, targeted investment funds and programs, partnerships with non-profits, and focused interventions in the market (such as carbon trading) and discussion of the potential intervention points.

Examination of actual and possible regulations governing environmental impacts of international capital flows, including national and international regulatory structures, relations of source and recipient country regulations, and their impacts on investment decisions. This would address issues affecting financial market stability and the regulatory factors influencing international investment programs and institutional investors. (Tim Gulden, U. of Maryland and Brookings)

Analysis of implicit and explicit standards for disclosure and their role in encouraging transparency, including requirements of transparency and public information, self imposed rules for insurance, public relations, or strategic reasons. This would address how major financial institutions and money managers react to pressures for disclosure and how that affects their investment decisions. (Michelle Chan-Fischler, Friends of the Earth)

Analysis of how public international institutions that encourage international investment can influence decisions about environmental issues in their investments, looking at OPIC, other Ex-Im Banks, the IFC. This would address issues of managing the environmental impacts of mega projects. (Harvey Himberg, VP OPIC)

Discussion of green funds and their impacts and potential for influencing international investment. How successful are these funds, what to they invest in, what is the scope for their growth. This would look at how investor preferences affect the international flows of funds into environmentally friendly projects (TBD)

Investigation into the impacts of firms oriented toward sustainable development in transferring sustainable approaches through business practices, technology transfer, and encouraging innovations that are environmentally friendly. This will address elements of encouraging international technology transfer through investment programs and the intellectual property issues involved in making the transfer more effective and more rapid may also be addressed. (TBD)

Review of experiences in promoting environmentally friendly businesses internationally with external assistance for investment, knowledge transfer, provision of green markets, purchases of environmental stewardship. This will address ways to encourage international investors to invest in more sustainable projects. (Glenn Prickett, Executive Director, CI)

Analysis of market structures for encouraging better environmental stewardship, beyond carbon trading. This will look at how to create more markets for environmental services and attract investors to these activities. (John Shilling and Ricardo Bayon, NAF)