

Designing Environmentally Sound Development Projects*

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Environmental concerns in the developing countries of the Pacific Rim are widespread and challenging. The region combines some of the world's most rapidly growing economies with some of its most delicate ecosystems. Issues of concern in the region include global climate change, tropical deforestation, urbanization and its effects on the environment, energy use and the environment, and the disposal of solid and hazardous wastes.

The overriding question, however, is how to find an optimal trade-off between the environment and economic development? To strike such a balance, environmental consequences clearly must be carefully weighed against the financial benefits, proven or potential, of development projects.

That environment and development are inextricably linked makes the design of environmentally sound development policies highly complex. It is thus difficult to generalize about them. The individual economic and environmental circumstances of each project must be understood in isolation and in how they relate to one another and to the overall economy. I will therefore discuss general areas of environmental concern in the developing countries of the Pacific Rim, the relations between economics and the environment, and suggest ways in which new projects could be designed to more effectively address these concerns.

ENVIRONMENTAL CONCERNS IN DEVELOPING COUNTRIES OF THE PACIFIC RIM

Global climate change has become a topic of international preoccupation. It is generally accepted that the emission of "greenhouse gases," in particular carbon dioxide, is producing a warming of the earth's atmosphere. The release of such gases occurs largely due to the burning of fossil fuels for economic production in industrialized countries and deforestation in developing countries. Global warming will affect all nations, but to extremely different degrees.

Within the developing countries of the Pacific Rim a warming of the atmosphere may cause changes in rainfall and humidity. It might also raise the sea level through thermal expansion and melting of the polar ice caps. These changes could affect agriculture, human settlements, and, in some cases, the very existence of small island nations, such as the Maldives. The Pacific Rim developing nations are ill-equipped to deal with the massive social and ecological disruptions which might result from global warming. Meanwhile, development projects in these same countries enhance the likelihood of global warming. Both newly emerging industries and the increasing use of cars and trucks, reflecting the increasing affluence of the region, contribute significantly to fossil fuel usage and therefore the volume of green-house gas emissions.

Significant deforestation has occurred as a result of infrastructure development, shifting cultivation, and commercial logging. The contribution of these activities to economic development is clear, but their environmental costs are far reaching and unsettling. In addition to releasing greenhouse gases, deforestation reduces the water-retention capacity of soils thereby causing flooding. It also destroys the natural habitat of highly valuable diverse tropical plant and animal species which now survive, by and large, only in the world's vanishing tropical forests.

Explosive urbanization is occurring all across the Pacific Rim. Growing population combined with ever lower death rates contribute to the concentration of large populations in urban areas. The environmental

consequences of urbanization include greater traffic congestion; insufficient and unsafe water supplies; inadequate sewerage and solid and hazardous waste disposal systems; and increasingly hazardous air emissions from cars, buses, motorbikes and industrial plants. All these factors combine to lower the quality of life and reduce the population's productivity. In addition, lack of proper urban infrastructure discourages both local and foreign investment. Urbanization has generally been associated with progress, but unless the urban environment is properly managed, it may damage the well-being of the population.

By the year 2000, if traditional paths are followed, energy requirements may increase by as much as 85 percent in some developing countries. The developing nations' increasing capacity to generate energy will require enormous expenditure for administration, training, construction, and maintenance costs. Energy conservation, therefore, should be a primary goal for all Pacific Rim nations. Tax and subsidy policies should create incentives to both encourage greater energy-efficiency, which would decrease the need for additional power generation, and to encourage the choice of less-polluting energy sources where capacity must be increased.

With increased industrial output invariably comes greater waste generation. The present management facilities in most developing countries are inadequate to deal with the rapidly growing problem. As countries in the Pacific Rim shift from agricultural to industrial production, their wastes quickly shift from organic to chemical compounds. Proper disposal of industrial wastes requires treatment that these countries cannot yet provide. Emerging industries and development projects should be studied with close attention to their waste generation and treatment capacities. Pollution and waste-control laws are often politically unpopular, difficult to enact, and even more difficult to enforce, yet both effective control and enforcement are prerequisites for any form of sustainable development.

The time has come for Pacific Rim nations to recognize and act upon the fact that economic development is not something apart from a society's other problems. Environmental management is an integral part of development, particularly as these nations face a transition from agriculture to industry. A forward-looking strategy is therefore clearly needed. By acting now, costly technological adjustments and "clean-up" costs can be held to bearable levels. As countries develop their industrial bases and encourage increased foreign investment, they must do so in such a way as to reap the highest possible benefits for their people at the lowest and least painful costs.

ENCOURAGING ENVIRONMENTALLY SOUND DEVELOPMENT

Sustainable Development—For Whom?

Sustainable development is a concept of great importance and yet of even greater ambiguity. The very term means many different things to so many different people. Groups with different priorities will offer different opinions as to whether a development pattern is sustainable. It is therefore important to solicit the opinions of all concerned groups.

In the past, it was the accepted practice to consult only development planners and governmental authorities on the merits of any given development project. This is no longer true. Even in developing countries, well-analyzed projects with high financial returns are being put on perpetual hold because of strong objections from local people whose day-to-day living and lifestyles may be jeopardized by the proposed "development." In many cases, the rural poor have literally taken up arms to protect their interests, often backed by NGOs who have established connections with the media.

The viability of a project should be carefully thought through first, before it is announced publicly. This would avoid unnecessary confrontations. While the experience of government technocrats responsible for charting the course of development should not be dismissed, equal say should be given to the common people whose livelihood, after all, is at stake. In the developing countries, unfortunately, this is seldom the case. But if "sustainable development" is to take place, then local communities have to have a say in any decision affecting their own welfare.

Open Access to Information

In developing countries public hearings on environmental issues are rare. Instead committees are formed to analyze, discuss and make recommendations on proposed development projects. Projects to conserve the environment, however, can be controversial and difficult to sustain. To be successful, they must, therefore, be supported by the public.

To increase awareness of environmental issues, it is crucial to make information easily accessible and comprehensible to the general public. Such information should also instill a sense of the public's own responsibility in protecting the environment.

Reliable information is basic to sound development planning. Without adequate data on the number of farmers encroaching into a forest, their land use patterns, and their living conditions, for example, it would be difficult to properly design land reform programs. To cite another example, modern information technology makes possible the monitoring of hazardous chemicals usage within a given country. Using such information is prerequisite to the formulation of a rational management plan for the proper storage, transport, use and disposal of these hazardous chemicals and wastes.

Reliable information can also often dispel doubt and suspicion among negotiating partners. For example, information on land use and land holding patterns will not only help governmental authorities in their decision making, but may also make governmental schemes more palatable to local farmers. For environmental issues, often quite technical, the dissemination of information in a manner comprehensible to the general public has often gained the public confidence and support vital to producing workable solutions.

Global Issues from a Local Viewpoint

Differences unfortunately exist in the priorities of local and international communities when viewing the same environmental problems. In the case of global warming, the international community calls for slowing rates of deforestation and decreased consumption of fossil fuels. For the rural poor, however, deforestation driven by shifting cultivation may provide the villagers' only subsistence. Unless alternative sources of income can be made available, the costs to the community of a program to reduce deforestation would be prohibitive. Similarly, for countries on the verge of industrialization, increasing use of fossil fuels for development will likely take precedence over decreased emissions of global greenhouse gases.

The value of environmental programs differs widely according to priorities. If the cost of these programs falls on those whose priorities lie elsewhere, or who can least afford them, they are likely to be ignored.

Thus the challenge is to try to reconcile the differences, and to achieve common objectives. For example, if reforestation is considered a potential carbon sink, which absorbs carbon dioxide and turns it into wood products, then the promotion of reforestation programs in tropical countries may be the ideal solution, providing income and employment to the rural poor, as well as contributing to the global effort to arrest carbon dioxide emissions.

Unless and until the divergence between the call for action of the international communities and the needs of the rural villages is narrowed, the ongoing negotiations to serve global interests will indeed be hollow, resulting in confrontations between two opposing forces—one bent on protecting its sovereign interests, while the other is futilely attempting to solve global environmental problems.

Investment in Environmental Projects

In the newly industrializing countries, the stage is now set for investing in rehabilitating environmental degradation. In Southeast and East Asia in particular, developing countries have recognized the perils of uncontrolled industrial pollution, resulting in industrial hazards and urban pollution. Moreover, the destruction of tropical forests and the degradation of natural resources such as top soil erosion have

become too evident to ignore.

However, due to the multi-sectoral nature of environmental issues, successful environmental management programs require a concerted effort from more than a few governmental agencies. "Program" planning and execution are naturally more difficult to implement than a "project by project" approach.

In the past, environmental planning exercises have often been undertaken with external technical assistance, either from bilateral or multilateral sources. Past environmental studies, however, have often fallen short of their goals due to the lack of funding resources required to make their recommendations implementable.

Environmental projects, whether watershed management, coastal resource management or the like, all aim at raising the quality of life for the majority of the people. Many of the foreseeable benefits, however, are non-quantifiable, and thus difficult to express in monetary terms. Due to this fact the lack of a clear benefit-cost advantage should not become a deterrent. It is often the case that environmental projects must therefore be considered on a concessional basis, either by lending institutions or by governments using public funds.

If we believe that now is the time to act on improving our environment, the challenge lies with transferring recognition of the environment to field projects where the success or failure of an environmental program will be decided.

Investment Incentives and the Environment

Most developing countries seek to encourage private investment, both local and foreign, as an effective means of growth and technology transfer. To induce such investment, governments offer prospective investors various combinations of tax holidays, duty incentives, and special arrangements for joint ventures.

In designing investment incentives and evaluating applicants for investment, environmental criteria should be considered. If government-sponsored incentives are to be given to certain industries, the targeted industries should be those which contribute productively to both the economy and the environment. Privately operated central waste or sewage treatment facilities are examples of industries for which incentives should be provided. If the private sector could profitably provide waste disposal facilities on a fee basis, environmental services could be markedly expedited, to the benefit of all.

In addition to targeting those specific industries whose services satisfy unfulfilled environmental demands, "green" companies in general should be encouraged. "Green" companies are those supplying environmentally-friendly products, or relying on environmentally sound manufacturing processes and technology. Such practices would encourage the private sector to take the leading role in protecting the country's environment.

Finally, provisions could be made requiring investors to commit themselves to rehabilitating the environment to an extent commensurate with their use of natural resources and level of waste generation. An escrow fund established for this purpose would make financial resources available for defensive and regenerative investments in the environment.

CONCLUSION

In much of the world, priorities are shifting toward the environment. In the developing countries, however, there is increasing belief that the environment cannot wait until the economy has developed, and that protecting the environment cannot be regarded as a luxury reserved for other, richer nations. The truth is that most developing countries depend to a greater extent on their natural resources than do developed countries, making the stakes of environmental management higher due to the fact that their economic development is more closely tied to the environment.

For developing countries, investment in implementing environmentally sound development and the creation of an appropriate incentive structure for industrialization will help to shape their emerging industrial bases into cleaner, more efficient and more sustainable sources of growth.

The fact remains that for even the most enlightened developing countries environmental programs are costly, and their returns are often not financial. Since government budgets are limited, funds may simply be unavailable, despite the fact that it is in the interest of these countries to begin to plan environmentally sound industrialization. Establishing incentives for cleaner industries and better designed programs now will alleviate the need for expensive clean-ups and technological retrofitting in the future, and perhaps avoid irreversible damages.

For these same reasons, it is also in the interest of development banks to make investments of this type an area of priority for funding. Funding for the prevention of environmental degradation and the establishment of environmentally sound industrial bases in newly industrializing countries is a sound investment for the future of all countries.

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