
An APEC Environmental Agenda

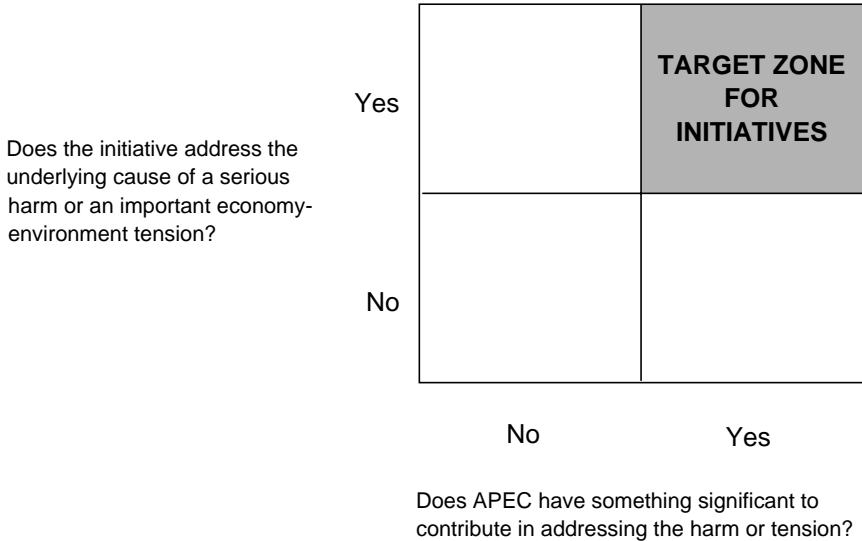
The dramatic economic success of many of the Pacific Rim nations over the last 30 years is unparalleled in history. Unfortunately, serious environmental effects—many negative—have accompanied the region’s economic growth. These adverse ecological and public health impacts have not diminished the appetite for further growth in the region, as evidenced by ongoing efforts to advance an ambitious program of trade and investment liberalization. But growth is not—and must not be—APEC’s sole concern. Its members aspire to “stability, security and prosperity for [their citizens]” (APEC 1996)—in other words, the maximization of social welfare more broadly and over time. The member countries can achieve this goal only if they improve their environmental performance through a commitment to sustainable development. Environmental progress not only contributes to social welfare but also builds domestic support for continuing economic integration at a time when citizens are concerned that important social goals—environmental quality among them—are being sacrificed at the altar of free trade.

If “sustainable development” is to be anything more than an empty slogan, however, APEC must move beyond the limits of its existing unfocused environmental work program and make a fresh start. This chapter provides a menu of ideas with which to begin the process.

Criteria for an Effective Environment Program

For an APEC environment agenda to be durable and have high impact, each initiative on the agenda must have sound analytic and theoretical

Figure 9.1 Dimensions of a sound APEC environmental initiative



underpinnings. In particular, when considering any initiative for inclusion on APEC’s agenda, two questions must be asked (figure 9.1).

First, does the initiative address the underlying cause of a serious pollution harm or resource management issue, or an important tension at the economy-environment interface? If the answer is “yes,” we know that the initiative offers either the prospect of a measurable improvement in environmental performance, and thus social welfare, or an important opportunity to sustain the commitment of APEC’s members to freer trade.

Second, does APEC have something significant to contribute in addressing the harm or tension? An affirmative response indicates that the proposal either takes advantage of APEC’s unique regional scale to address regional problems or compensates for deficiencies in environmental management at the national or global levels.

Only where we can answer “yes” to both questions has an initiative made it onto our short list of proposals for APEC. Of course, it may not make sense to pursue all these initiatives—or, at least, not all of them immediately. In selecting the final roster of initiatives, the following questions must be asked: Will the proposal engage APEC’s leaders? Does the proposed program have broad political appeal? And, most important, is the initiative practical and achievable?

Political Leadership and Appeal

APEC's leaders must be engaged by any proposed environmental agenda item because only they can ensure success. The current program—which has been driven “down” from APEC's environment ministers and been allowed to percolate “up” from its working groups—has manifestly failed to translate APEC's environmental rhetoric into measurable progress. Moreover, APEC's track record shows that the group's most important advances owe their success to the efforts of the leaders at their annual summits.¹

Of course, if the leaders are to become excited about environmental action, “big ticket” initiatives that spark their interest must be identified. Leaders look for something spectacular that will deliver headlines, as did the comprehensive Bogor free trade commitment and the sectoral information technology agreement announced in Manila.² While the existing efforts to gather and disseminate information, support research efforts, and enhance regulatory capacity are important components of better long-term environmental policymaking, “soft” initiatives will not get high-level attention.

Beyond the need for individual environmental initiatives to attract attention, APEC's environmental program as a whole must meet two important criteria to ensure its appeal. First, the program cannot consist solely of initiatives that build on further trade liberalization. While there are important environmental projects that coincide with this core trade mission³—for example, the reduction of agricultural subsidies—a number of APEC's Asian members, especially Indonesia, Malaysia, and Singapore, are concerned that the focus to date on liberalized trade has crowded out attention to “facilitation” and “ecotech” activities, which they view as equally critical to the APEC goal of creating an Asia Pacific “community.” Our agenda has thus been designed to include initiatives that cover all of APEC's three pillars—liberalization, facilitation, and ecotech.

Second, to succeed, the proposed environmental agenda for APEC must respect the differing, and often conflicting, priorities of APEC's developed and developing members (UNDP, *Human Development Report 1991*; Beckerman 1996). For an APEC environmental agenda to command consensus, APEC's developed members will need to be sensitive to the need to

1. Numerous studies have shown the central role of charismatic, committed leaders (e.g., Keohane 1996, 26).

2. As Krause (1997) has noted, however, it “may not be possible to pull a rabbit out of the hat every year.”

3. While some APEC members—Canada and Japan among them (*Japan Times*, 2 July 1997)—have proposed liberalizing trade in environmental goods, such an initiative misses the mark. With barriers to trade in these goods already low, little measurable improvement in environmental performance can be expected to result.

devote some energy and resources to addressing the pressing concerns of developing nations—namely, issues relating to food security, to the provision of environmental infrastructure for water supply and sanitation, and to localized air pollution. At the same time, APEC’s developing members must understand that, in return, conservation and regional and global transboundary harms, issues of importance to developed countries, must also be addressed.

Recognizing what it will take for an environmental agenda to have a chance of success—the commitment of APEC’s leaders and political appeal—by no means denies the significant political obstacles to substantive environmental progress. The greatest difficulty lies in convincing APEC countries that cooperating regionally on environmental issues is in their national interest, just as they are convinced of the need to pursue trade liberalization regionally and globally.⁴ Toward this end, each of the major environmental initiatives that we have developed has not just an environmental logic but an economic logic that provides compelling reasons to cooperate through APEC.⁵

Practical and Achievable

To give APEC’s environmental effort momentum and to convince critics of its value, the agenda will need to be practical and achievable.⁶ Primarily, the focus must be on action and on results-based performance. If actual impact is the measure of success, APEC’s proposal to focus on the Food, Energy, Environment, Economic Growth, and Population (FEEEP) project

4. Boer, Ramsay, and Rothwell (1997) argue that the Asia Pacific countries are already beginning to see that environmental cooperation is to their mutual benefit.

5. Even when the net economic benefits of a policy reform are clear, entrenched interests that believe they will be affected adversely will resist change. The elimination of environmentally damaging agricultural subsidies in APEC countries (a measure proposed below), for example, faces an uphill battle because Japanese, South Korean, and Taiwanese farmers, as well as American sugar growers, will likely resist elimination of agricultural price supports. APEC can, however, help to keep the focus on the broad public gains to be had and can serve as a forum in which linkages across issues can be made. In the case of farm subsidies, the countries that might oppose this reform are those that have benefited the most from an open trading system. Discussions in the APEC context might serve to remind these nations of the benefits they have obtained from freer trade and thereby encourage them to make the tough domestic political decisions necessary to ensure reform. APEC can employ a variety of tools and mechanisms to facilitate the making of these hard political choices. For example, deadlines for action can be spread across time, with countries being allowed to “back-load” their efforts.

6. At the time of the 1995 Leaders’ Summit in Osaka, for example, *The Economist* (11 November 1995) impatiently proclaimed that “[i]f this year’s APEC summit comes out with more grand commitments, deferred into the distant future, it will be hard to take them, or APEC, seriously.” In a similar vein, the *Financial Times* (25 November 1996), the day after the Manila Leaders’ Summit, renamed APEC “A Perfect Excuse to Chat.”

in Vancouver and Malaysia cannot help but fail, since the initiative incorporates no commitment to action. Each of our proposals, in contrast, lends itself to the development of a clear action program with identifiable performance indicators.

Advancing a practical and achievable agenda requires not only a clear program of implementation but also an understanding of the capacity constraints that many APEC members face. Since budgets are tight everywhere and APEC's industrializing nations feel considerable development pressures, the demands of economic efficiency as well as environmental improvement must be kept in mind. Our program, furthermore, responds to the regulatory incapacity that characterizes the environmental efforts of many of APEC's developing members. Finally, careful attention has been paid to questions of legal capacity, particularly the limited "fast-track" authority of the current US administration.

The need for practicality is also evident in our judgment about how to make progress in getting countries (and their citizens) to pay for the pollution harms they cause. While numerous supranational or multilateral bodies and instruments have proclaimed the polluter pays principle (OECD 1975; 1994) to be the foundation of better environmental policy,⁷ the principle is honored largely in the breach (Bodansky 1995).

Talking about—and declaring support for—the polluter pays principle has not translated into real efforts to impose costs on polluters, at least as far as emissions with regional and global effects are concerned. Advancing this principle as the cornerstone for an APEC environmental program requires a sophisticated multistep approach. First, programs that *pay the polluter* should be stopped. Thus we emphasize reducing subsidies for energy consumption and agricultural production. The next step should be *partial implementation* of the polluter pays principle, phased in over time in recognition of the inability or unwillingness of many countries to make the leap to full implementation immediately. Initially, countries might be required to pay for a portion of the costs of their activities, determined by their capacity to pay, with support from a multilateral fund to soften the blow. Over more time (perhaps 20 years), countries should move to *full implementation* of the principle.⁸

Initiatives for Vancouver and Beyond

We offer below four major environmental initiatives for the 1997 APEC Summit in Vancouver or for subsequent summits in Malaysia (1998),

7. Forcing polluters to pay for the environmental harms they cause not only minimizes externalities but imposes costs on those responsible for incurring them, which is appealing from an equity perspective.

8. At every step, the focus must be on private-sector action and the potential to harness market forces to environmental goals.

New Zealand (1999), Brunei (2000), or China (2001). By pursuing these initiatives in parallel, APEC's members could both demonstrate a serious commitment to sustainable development and provide a firm environmental foundation for continuing economic integration.

Joint Implementation Program

Because the parties to the 1992 Climate Change Convention are meeting again in Kyoto, Japan, two weeks after the Vancouver Leaders' Summit,⁹ APEC's leaders are likely to ask each other how a successful outcome at Kyoto can be assured. With the heads of so many of the world's largest and fastest growing greenhouse gas contributors sitting around the table in Vancouver, the ensuing discussion could profoundly influence the Kyoto outcome.

The Kyoto conference is attracting significant attention, for among the many transboundary environmental issues, climate change towers above the rest in its potential impact—environmentally and economically (Cline 1992)—and its political urgency. But the deep divide between developed and developing countries—over how to stem the growth of greenhouse gas emissions, who should be required to take action, and what the distribution of costs should be—has made progress in changing policy slow. APEC might help to bridge the gap with a regional initiative designed to get North and South to pull together on “joint implementation” (JI) projects to reduce emissions at the lowest possible cost.¹⁰

Our theory of structural sufficiency and optimal environmental governance suggests that global “super externalities,” such as climate change, should be dealt with by institutions that are worldwide in scope. To date, however, multilateral efforts to stabilize “greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous (human-induced) interference with the climate system” (United Nations Framework Convention on Climate Change, Article 2) have progressed slowly (UNEP 1997; World Watch Institute 1996). With global efforts faltering, APEC could, and perhaps should, step in to fill the breach.

No matter what else is agreed on in Kyoto, it will be important to establish a mechanism by which industrialized countries are able to meet some or all of their emissions reduction obligations through projects undertaken in the developing world—where most of the high-return (maximum emissions reduction per dollar invested) opportunities exist. Since the planet does not care where the reductions come from, why should we? In this regard, it makes sense to stretch the world's inevitably

9. The Conference of the Parties to the United Nations Framework Convention on Climate Change will hold its third session 1-10 December 1997.

10. As we noted in chapter 6, joint implementation is designed to facilitate emissions reductions where they will be cheapest by allowing developed countries to pay for emissions reductions in developing countries and receive credit for doing so against any commitments they make to reduce their own greenhouse gas emissions.

limited budget for climate change controls as far as possible with a major commitment to joint implementation.

Toward this end, APEC should develop a JI program which could be presented for multilateral approval in Kyoto. Some developing countries have been hesitant to back JI, suggesting that it lets industrialized countries off the hook by allowing them to buy their way out of making reductions at home. But the benefits of joint implementation are too great to be obscured by political grandstanding. The chance to attract investment and to obtain efficiency-enhancing and less-polluting technologies has already made converts of a number of developing Latin American and Eastern European countries and, similarly, is likely to find support among Asian policymakers.

By securing a JI agreement in Vancouver, APEC's members could set the stage for a broader multilateral commitment to such projects. Even if the Kyoto conference fails to secure agreement on a global JI initiative, APEC should offer itself up as a laboratory for climate change policy experimentation and proceed with a set of JI projects on its own. Success within APEC would have a powerful demonstration effect and might well convince skeptics that joint implementation offers a critical step forward in addressing climate change.

Subsidies Reduction or Elimination

The reduction or elimination of energy and agriculture subsidies promises a win-win outcome for APEC's members. Cutting subsidies would deliver substantial economic welfare gains and would significantly reduce the environmental impact of many subsidies programs (K. Anderson 1992; World Bank 1997).¹¹ And given that APEC's members have already committed to free trade in the region by 2010/2020, the elimination of subsidies fits perfectly into the basic APEC strategy—it simply involves implementing the already agreed on goal of freer trade.

Agricultural Subsidies

A focus on farm subsidies not only is a logical component of the Bogor commitment to trade liberalization but also would build on the steps taken during the Uruguay Round of global trade negotiations.¹² While

11. It is important to note that not all subsidies have negative environmental impacts. On balance, however, the negative environmental impacts of "bad" subsidies far outweigh the positive impacts of "good" subsidies (OECD 1996).

12. The Uruguay Round agreement on agriculture commits countries to reduce farm export subsidies by 36 percent over six years, requires a 20 percent reduction in aggregate domestic support to farmers (exempting direct income payments), requires the conversion of nontariff barriers into tariff equivalents, and opens minimum access quotas for products whose trade was largely blocked by past protection (Schott 1994, 43-44).

Uruguay Round efforts “establish[ed] for the first time significant multilateral disciplines on trade-distorting farm programs” (Schott 1994, 11), much work remains to be done.¹³

The economic benefits of continued reform are significant. Agricultural production subsidies—both price and nonprice supports—in OECD countries exceeded \$300 billion in 1995 (Earth Council 1997, 23). Production subsidies in some countries—the United States, Japan, South Korea, and Taiwan (and to a lesser extent Australia and New Zealand)—remain significant. One study has estimated that if these subsidies were eliminated through agricultural liberalization in APEC countries alone, income in APEC would increase by \$106 billion annually (Dee, Geisler, and Watts 1996). In addition, governments would reap a windfall in reduced payouts, which now sometimes run as high as 1.5 percent of GDP.

The reduction of subsidies for agricultural inputs, particularly water, also promises large economic benefits. Subsidies for drinking water and irrigation in APEC’s developing countries are high—in the vicinity of \$45 billion per year in the developing world (Earth Council 1997, 15).¹⁴ In the United States, irrigation subsidies have been estimated at between \$2 billion and \$2.5 billion,¹⁵ and in Australia, water charges are largely nominal in the major agricultural region, the Murray-Darling river basin. Eliminating these subsidies would not only save governments money but would deliver economic efficiency gains by promoting wiser use of water.

The economic benefits alone of reforming agricultural subsidies provide the basis for action. When the environmental benefits of subsidy reform are also figured in, the case for reform becomes irrefutable (Charnovitz 1996a; Hammer and Shetty 1995). Removing production subsidies, for example, will reduce environmentally damaging chemical-intensive farming on marginal lands. And reducing water and irrigation subsidies will make water use significantly more efficient. In many of APEC’s developing countries, as little as 30 percent of the water made available for irrigation is actually consumed (Xie, Kuffner, and LeMoigne 1993). Once irrigation subsidies have been removed, governments may be able to take actions to reverse the long-term deterioration of irrigation systems—particularly in Mexico and China—that they were previously unable to

13. The need to keep attention focused on the liberalization of trade in farm products was highlighted by the recent Cairns Group Ministerial Meeting in Brazil, which called for a new round of WTO agricultural negotiations prior to the year 2000.

14. In many developing countries, water users are not even charged an amount that covers the operating and maintenance costs of supplying water, let along the capital costs of constructing and upgrading water delivery facilities (Repetto 1986). In Thailand, for example, user fees amount to only 28 percent of operating and maintenance costs.

15. Irrigation subsidies in the United States take the form of “ability to pay” pricing and interest-free loans for construction of irrigation infrastructure.

afford because their limited budgets were expended on subsidies (World Bank 1997).¹⁶

Energy Subsidies

An “APEC Subsidies Initiative” that eliminates fossil fuel energy subsidies is the single biggest measure APEC could take to protect the environment and human health. Moreover, energy subsidies reform, like agricultural liberalization, promises substantial economic gains. Not only would governments be able to pocket their former multibillion-dollar outlays, but national incomes would grow as a result of the economywide efficiency gains that would follow the removal of price-distorting subsidies.

The economic cost of energy subsidies is enormous (*The Economist*, 14 June 1997). Worldwide fossil fuel subsidies stood at \$330 billion in 1985 (Burniaux, Martin, and Oliveira-Martins 1992) and \$250 billion in the early 1990s (Larsen 1994; IEA 1995a).¹⁷ These subsidies, which equal 20 to 25 percent of the value of world fossil fuel consumption at world prices, indicate massive price distortions (Larsen and Shah 1992). Fossil fuel subsidies are of particular concern in a number of APEC countries, including Japan,¹⁸ the Philippines, China,¹⁹ Australia, and Canada.

Reducing energy subsidies would both take the pressure off governments fiscally and deliver significant economic benefits to consumers, households, and industry. First, reductions in energy subsidies are likely to spur significant improvements in energy efficiency. In China, for example, efficiency jumped by over 30 percent as the coal subsidy rate was reduced from 37 percent in 1984 to 29 percent in 1995 (World Bank 1997). Similar results could be achieved across APEC. Second, energy consumption falls by an estimated half a percentage point for each percentage point increase in price (K. Anderson 1995a),²⁰ with significant cost savings from lower energy use. Third, as the public health effects traceable to fossil fuel emissions decline, multibillion-dollar savings in health care expenditures will be generated.

16. While many of APEC’s members have achieved significant reductions in subsidies for pesticides and fertilizers, continued reductions will limit environmental damage to agricultural lands—which ultimately affects agricultural productivity—lessen dangerous runoff in waterways, and reduce harms to human health.

17. Figures are in constant 1995 dollars.

18. In Japan, effective producer subsidies for coal amount to around \$160 per ton (Michaelis 1996; IEA 1995).

19. As a result of market reforms since 1995, “preliminary findings indicate that coal prices in China are now close to international prices” (de Moor 1997; see also Earth Council 1997, 47; World Bank 1997). Of course, world prices still reflect subsidies in other nations and do not include the cost of externalities arising from coal consumption.

20. Exact estimates vary from country to country (e.g., Hope and Singh 1995; Julius 1986; Tybout and Moss 1992; Eskeland 1994).

The most disturbing feature of fossil fuel subsidies is that the more environmentally damaging the fuel, the bigger the subsidies (Earth Council 1997, 32). Coal receives the highest subsidies, followed distantly by oil and then natural gas. Because of this skewing, a reduction in subsidies will have a dramatic and positive impact on the environment. Higher prices for the most environmentally damaging fossil fuels will, by increasing energy efficiency and reducing consumption, significantly reduce particulate, NO_x, SO₂, and CO₂ emissions. Reducing coal subsidies in the OECD countries alone would cut global greenhouse emissions by between 1.5 and 5 percent (US Department of Energy 1989; Okugu and Birol 1992; K. Anderson and McKibbin 1997). Other analysis indicates that the elimination of global fossil fuel subsidies could reduce CO₂ emissions by about 10 percent in China and 12 percent in Indonesia (Larsen and Shah 1992). Reductions in emissions will deliver significant environmental benefits, including reductions in, or at least slower growth of, greenhouse gas emissions; less damage to buildings, forests, and lakes from acid rain and particulate emissions; a lower incidence of serious health problems due to the inhalation of air pollutants; and reduced habitat destruction and biodiversity loss from coal mining.

The proposal to eliminate or reduce subsidies has a strong analytic and theoretical basis. In particular, it addresses the need to minimize the effects on the environment of price-distorting policies in the agriculture and energy sectors.

Because many of the effects of subsidies—both physical and economic—spill across national boundaries, collective action on the part of APEC would be especially helpful. Since subsidies are a global problem, worldwide action by the WTO might seem to be preferable to an APEC initiative. Successful multilateral efforts, however, seem unlikely in the immediate future, which is precisely why APEC can and should act. As this study argues, APEC has an important role to play in ratcheting up multilateral efforts where they are unsatisfactory. An APEC Subsidies Initiative could pave the way for global subsidy reductions. Given that the WTO is scheduled to review agricultural protection with a view to further liberalization prior to the year 2000, the pursuit of the agricultural component of our APEC subsidies proposal in 1997, 1998, or 1999 would be particularly timely.

While substantial economic and environmental gains can be achieved by reducing or eliminating subsidies—programs that pay the polluter—doing so must be seen as just a first step toward full implementation of the polluter pays principle. Further policy reforms will be required to fully internalize the costs of agricultural production and energy consumption. Removing coal subsidies, for example, will not produce socially optimal fuel pricing, because coal would still be underpriced to the extent that market prices do not reflect the pollution that arises as a result of burning

coal. Once APEC's members have eliminated subsidies they should turn their attention to ensuring that the full social costs of agriculture and energy-related activities are internalized.

Sustainable Pacific Fishing

An initiative designed to return the Pacific fisheries to sustainability and to ensure a steady and reasonably priced supply of fish would be big political news in many APEC countries and could be APEC's contribution to the 1998 Global Year of the Oceans agenda. Seafood is already an important component of the diet across the Asia Pacific region, but as incomes increase, demand for seafood as a source of protein is increasing further (Smithers and Dua 1994). APEC's nations now account for about half the world's consumption of seafood, at among the world's highest per capita rates, with several members exceeding 40 kg/per person per year. Many APEC members cannot meet domestic fish demand from local supplies. Import dependence typically ranges from 15 to 25 percent of demand and in some cases exceeds 50 percent (APEC 1995b). With nearly all the Pacific fisheries overfished or at risk of depletion, a failure to pay attention to the Pacific fisheries could threaten food security in the region.

The depletion of fisheries in the Pacific Ocean represents a classic "tragedy of the commons." The lack of private property rights leads to overexploitation of a common resource. Because there are few restrictions on fishing catches,²¹ there is little incentive for a country or any single fishing boat to curb its catch when no one else does. APEC's members must engage in collective action to solve this problem. Where a problem is regional in scale, as is the case here, a cooperative regional undertaking is the optimal response.²² The problem of overfishing can be alleviated by simulating a private property regime that creates rights in the fish. Toward this end, tradable fishing allowances for the Pacific Ocean should be created and allocated to each APEC country,²³ with the total catch allowed by these permits set at levels that would bring the Pacific fisheries

21. There are some minor exceptions to this. For example, both Australia and New Zealand have adopted systems of individual transferable quotas for selected species (UNESCAP 1995).

22. Of course, an APEC fishing regime would not cover some important fishing countries in the region, including Russia. But this problem can easily be rectified by inviting Russia into the regime. In fact, APEC already has in place a mechanism by which nonmembers can be invited to participate at the working group level.

23. Serious attention will need to be paid to the initial distribution of permits—not only because allocating the permits is likely to be politically sensitive, but because it will influence the magnitude of the efficiency gains that can be achieved through a tradable-permits system and the efficiency of the system as a conservation measure.

back to sustainability.²⁴ A starting point for such a proposal would be to allocate permits for the high seas beyond the Exclusive Economic Zone (EEZ) of each APEC country.²⁵ To have real impact, however, each country should also apply the permitting concept to its own EEZ, where a substantial proportion of seafood harvesting takes place.

For a tradable permit system to function efficiently, better information must be made available both to the authorities responsible for setting the level of the fishing catch and to the fishermen who will make commercial decisions about whether to buy or sell permits. Accurate projections of the supply and demand of fish will be essential to determine the overall catch ceiling for each species. APEC might also set up a “market” to facilitate the acquisition or disposition of fishing permits. Furthermore, a tradable permits scheme must be accompanied by an appropriate system for monitoring and compliance to prevent circumvention of the limitations imposed by the permit scheme.

APEC’s leaders have already set the stage for a major fishing initiative by placing a priority in the 1995 Osaka Declaration on “the conservation and sustainable use of fisheries resources” (APEC 1995a). The leaders also decided that in pursuing this goal, the organization should consider applying economic instruments to address fisheries challenges. It is vital that their directive not lose force as it moves down to lower bureaucratic levels.

If APEC proves to be a useful forum for negotiation over property rights in the context of fisheries, its members may want to move on to consider other pollution and resource problems that arise from the lack of clear property rights or from the inability of those who hold rights to vindicate their positions. In particular, tradable permit schemes may prove useful in combating acid rain and climate change.

Environmental Standards and Trade Facilitation

Divergent views about the appropriate stringency of environmental standards represent a major potential flash point within APEC. As earlier chapters spelled out, APEC’s developing nations see the prospect of hav-

24. Given the complexity of trying to bring all fishermen within the scope of such a system, it would make sense to focus initially on the comparatively smaller number of trawlers employed by large-scale fishing enterprises, rather than attempting to focus on the many small-scale subsistence fishermen.

25. The EEZ is the region of open sea extending 200 miles seaward from coastal states, in which the state maintains sovereign rights “for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the seabed and subsoil and the [ad]jacent waters” (UN Convention on the Law of the Sea 1982). The coastal state is therefore given freedom to determine the allowable seafood catch in its EEZ, and it is also charged with conservation of EEZ resources.

ing to meet high (developed-country) environmental standards, especially production process or method (PPM) requirements, as an obstacle to market access. More important, they view such standards as a violation of their sovereignty and a breach of their right to set their own standards consistent with their own judgments about how to trade off environmental quality against other goals.

Officials in some of APEC's industrialized nations fear that lax standards will confer an unfair competitive advantage on enterprises operating in low-standard countries, resulting in a "political drag" on their environmental policymaking process that will make it hard to maintain or elevate standards (even if it is clear that higher standards would be socially optimal) and difficult to sustain the momentum for deeper integration. Similarly, they worry that "mutual recognition" obligations related to product standards will expose their consumers to environmentally harmful goods that happen to meet developing-nation requirements.

APEC's members might limit conflicts over both PPM and product standards through an "Environmental Standards and Trade Facilitation Initiative" that carefully attends to cross-country differences in values and environmental programs. The first component of a facilitation initiative should be a renewed commitment by all APEC members—particularly APEC's developing members—to enforce their existing environmental standards and regulations. This seemingly minimal step is important because lax enforcement in APEC has widened the real differential between developing- and developed-country environmental standards.²⁶ With the integrity of existing environmental standards providing a baseline for economic interaction within APEC, attention might then be turned to a carefully structured program of standards "convergence" or "harmonization"²⁷ as a way of defusing market access and unfair competition concerns.²⁸

26. The need to ensure the enforcement of existing environmental regulations was a central component of efforts to satisfy those critics of NAFTA who believed that lax enforcement would encourage industrial migration (P. Johnson and Beaulieu 1996).

27. Esty and Geradin (1997) explain that "harmonization" need not mean identical standards across all jurisdictions.

28. The difference between product and PPM standards is important. *Product* standards relate to the environmental performance and design attributes of goods. *PPM* standards affect how goods are made or obtained. Historically, trade rules permit countries to establish whatever product requirements they want so long as their rules do not result in arbitrary or unjustified discrimination against imports and are not a disguised restriction on trade. Thus, countries can require imported cars to have certain pollution control devices such as catalytic converters, imported fruits to be free of pesticide residues, and imported chemicals to be labeled with specified warnings. In contrast, GATT rules traditionally forbid PPM standards as an infringement of sovereignty, based on the theory that it is inappropriate for one country to tell another what production processes to employ. Thus, even nondiscriminatory PPM rules are considered illegal nontariff barriers to trade.

Product Standards

The challenge of environmental product standards is to find ways to differentiate between legitimate ecological and public health requirements and those constructed with an intent to favor domestic producers. Trade rules permit countries to determine their own preferred level of risk but forbid them from structuring their standards in ways that are not scientifically defensible.²⁹ A further challenge emerges from the need to balance the business advantages of harmonized standards (which permit producers to enjoy economies of scale with a single product that can enter every market) against the welfare gains of diverse standards (which allow each jurisdiction to tailor its rules to its own circumstances and citizen preferences).

APEC's current approach to this market access/regulatory sovereignty dilemma is to encourage "mutual recognition" by its members of each other's national standards (APEC 1995a; APEC 1996).³⁰ But in the environmental realm, a focus on negotiating "mutual recognition agreements" (MRAs) is misplaced. Mutual recognition does not work unless all participants have roughly comparable standards—so that no nation feels that its environmental precepts are violated by a commitment to allow unfettered entry to the products of others.³¹ Because environmental product standards vary widely across APEC, MRAs would enable low-standard goods to be transmitted throughout the region to the distress of those whose environmental requirements are more stringent. MRAs are thus not an appropriate course to pursue here.

In many cases, formal harmonization of product standards will not be necessary. Producers learn to meet the requirements of overseas markets they wish to enter (Sykes 1995).³² APEC might, however, facilitate this process by maintaining a database on standards in each country to assist exporters.

29. A WTO dispute resolution panel recently concluded, for example, that the European Union's ban on beef treated with hormones constituted a violation of GATT rules because the union permitted the sale of meat with scientifically indistinguishable naturally occurring hormones.

30. J. S. Wilson (1995) also advocates this approach to product standards.

31. Uniform standards set at high levels may cause those who would have chosen lower requirements to feel that they are being unfairly burdened. Conversely, standards set at low levels will distress those who prefer more strict environmental controls and who must let products they consider to be subpar enter their markets.

32. High product standards in large and lucrative jurisdictions such as California, for example, create an incentive for producers in other jurisdictions to meet the higher standards voluntarily to ensure market access (Vogel 1995). But this dynamic generally cannot be relied on when goods are being produced mainly for domestic consumption—thus, because most of the cars produced in China are for the domestic market there is no need for them to meet the higher, more environmentally friendly standards set by other jurisdictions.

In some circumstances, consumption of a product has transboundary—regional or global—environmental effects. For example, vehicle emissions and efficiency standards affect the amount of carbon dioxide emitted and thus efforts to combat climate change. In such cases, economic efficiency demands harmonization (Bhagwati and Hudec 1996; Nordhaus 1994)³³—and APEC might well be able to play a role in fashioning appropriate requirements.³⁴

Production Process or Method (PPM) Standards

Differences in process standards lie at the heart of complaints in developed countries that lax environmental rules in developing countries create unfair competitive advantages and downward pressure—political drag—on the environmental programs in high-standard countries. These arguments have validity. In some cases, low standards cannot be justified because of their transboundary impacts—either physical pollution spillovers or potential for triggering a race-toward-the-bottom dynamic.

But, at the same time, developing countries argue that to hold them to high standards that do not comport with their own circumstances and values is unfair and deprives them of a point of legitimate comparative advantage. In fact, because countries have different environmental endowments and preferences, absolute uniformity in PPM standards would likely be neither efficient nor advisable (K. Anderson 1996).³⁵ The policy goal must be to maximize the opportunity for legitimate differences to play out in welfare-enhancing divergent standards without permitting the competitive pressures thereby unleashed to cause a welfare-reducing regulatory race toward the bottom.

In striking this balance, APEC should consider adopting a multitiered system of PPM standards. Tiered standards would minimize the unconstructive competitiveness pressures that might otherwise lead to a loss of enthusiasm for trade and investment liberalization. At the same time, having standards set at a high level for developed APEC countries, at a modest level for industrializing countries, and at a baseline level for

33. Given differences in circumstances, and the costs involved, complete harmonization of emissions and efficiency standards might not be possible; other options, as suggested by Esty and Geradin (1997), could be pursued.

34. Skeptics might argue that harmonization negotiations would be better carried out on a worldwide scale under the auspices of the UN Environment Program or the World Trade Organization. But UNEP seems incapable of such tasks and the WTO appears unwilling to reach beyond a narrowly defined trade management role.

35. Mendelsohn (1986) demonstrates that the welfare loss from uniform standards rises as circumstances and preferences become more heterogeneous. If, in contrast, conditions and values are relatively homogeneous, the welfare loss from a harmonized standard will be relatively small—and might be worth bearing to obtain market access benefits and greater control over the race toward the bottom.

the least-developed members of APEC would ensure that the economic efficiency gains of differentiated standards would not be entirely lost.

An Environmental Standards and Trade Facilitation Initiative should appeal to those APEC members desiring an expanded commitment to trade facilitation. More important, this initiative gets to the heart of one of the central tensions in APEC—market access versus national regulatory sovereignty—that otherwise threatens the fragile trade bargain between developing and developed nations (Bergsten 1996; Tay 1996), a tension that will only increase as economic integration deepens.

Institutional Support for APEC Environmental Protection

APEC's existing institutional structure has proven to be both ineffective and, at times, too complex, creating a need for reform (Bodde 1997). When reform takes place, the emergent institutional infrastructure should include an Environment Committee, an environmental advisory body, and a dispute mediation process sensitive to environmental concerns. Without this minimal investment in institutional support, regional environmental management efforts are unlikely to succeed.

Environment Committee

APEC needs an Environment Committee to serve as the institutional home for the organization's environmental initiatives.³⁶ While the concept of integrating economic and environmental considerations in the program of each working group is laudable, it does not work in practice.³⁷ Responsibility for APEC's environmental work program and the goal of sustainable development must be lodged with a single group.

Creation of an APEC Environment Committee need not entail a large bureaucracy nor should it be the precursor to a regional environmental protection agency. Like NAFTA's Commission for Environmental Cooperation (CEC) and the OECD's Environment Directorate—both of which

36. APEC itself has recognized that the management of its existing environmental program is deficient and is looking at options for a coordinating mechanism. But this effort is flawed because creation of a new overarching committee or group to manage APEC's environment program is not one of the options being considered. The decision to rule out new institutional structures neglects the fact that a certain degree of institutional capacity is essential to advance APEC's environmental agenda.

37. Similarly, although national governments can stress the need for their ministries of agriculture, transportation, trade, and energy to take environmental concerns into account, no country dares go without an environment ministry to coordinate and oversee these activities.

have small staffs—an APEC Environment Committee, supported by a small secretariat in Singapore, should be established to promote collaboration among national environmental officials to achieve APEC’s environmental objectives. In addition to bearing primary responsibility for coordinating and managing APEC’s major environmental initiatives, the Environment Committee would manage and provide support for the calendar of meetings—of ministers, experts, and senior environment officials—required to advance the environmental program. It could also take responsibility for tracking important environmental indicators and coordinating regional capacity building.

Environmental Indicators

APEC’s Environment Committee should define a set of “environmental indicators”—quantitative measures of environmental quality and public health—that each APEC country would track as a means of assessing progress in meeting environmental goals. Furthermore, to facilitate comparisons and policy refinement, each APEC country should accept responsibility for reporting on its performance, either annually or biennially. For the indicators to be successful, they should be user driven, policy relevant, and highly aggregated (Hammond et al. 1995). Scoring environmental progress numerically, in the same way that economic performance is tracked, would provide decision makers with useful information, highlight areas of concern, create pressures for countries to address issues requiring attention, and provide citizens across the APEC regions with the kind of information they need to understand environmental issues and thus articulate their concerns.

Capacity Building

A recurring theme of this study has been the need to help build environmental regulatory capacity among APEC’s developing members. In performing this function, an APEC Environment Committee should focus on developing three core elements: capable people, capable institutions, and an enabling environment (Needham 1997). *Capable people* are the human resource base of managerial and technical personnel directly responsible for environmental protection. *Capable institutions* are the structures, functions, information and communication systems, resources, strategic leadership, and systems required to promote good governance. An *enabling environment* is one whose social dimensions and legal framework promote better environmental protection. Each APEC member’s needs with regard to capacity building will vary. Some countries will require assistance across all three of these areas; others have weaknesses in only one or two.

Environmental Advisory Group

An APEC Environmental Advisory Group (AEAG) would strengthen APEC's environmental performance. A group of outside advisers could help to overcome several critical problems that are undermining APEC's environmental efforts.³⁸ At present, the lack of environmental expertise within many APEC forums means that the political commitment of the leaders to sustainable development gets lost as soon as the annual Leaders' Summit winds down. Even when innovative environmental initiatives are proposed at the working group or committee level, opposition from officials from just a few countries can scuttle them, preventing their transmission to APEC's senior officials, let alone to ministers and the leaders.

By preparing an annual report for presentation to APEC's leaders, outlining both APEC's progress in moving toward sustainable development and recommendations for further action, an outside advisory group could help to sustain the momentum for action. The group could also respond to requests from environment ministers and the Senior Officials Meeting for advice, ideas, and counsel on environmental issues, and issues at the economy-environment interface, as and when needed.

A procedure should be established by which the AEAG can elicit expert advice from both scientists and policymakers. It is also critical that there be an opportunity for NGO input into the work of the group.³⁹ If APEC is serious about building and fostering an Asia Pacific community, then the public needs to be engaged in and convinced of the value of the APEC process (Macaranas 1997). The need for public involvement through NGOs and civil society more broadly is especially critical in the environmental realm where uncertainties are significant, scientific knowledge evolves quickly, and public understanding of issues must be carefully cultivated. As we discussed in chapters 6 and 7, NGOs play a vital role both as intellectual competition to governments and as connective tissue, ensuring that distant international decision makers know what the thinking is at the grassroots level. This flow of information, both to and from supranational bodies such as APEC, is essential if the public's fears about the impact of regionalization—and the broader globalization process—on issues such as the environment are to be effectively addressed.

Dispute Mediation Service

In 1994, APEC's leaders noted the need for a "voluntary consultative dispute mediation service to supplement the WTO dispute settlement mecha-

38. D. Morgan (1996) and Hudson, Prudencio, and Forrest (1995) have similarly suggested the creation of an Environmental Eminent Persons Group. Shiroyama (1997), conversely, suggests an Environment Working Group.

39. APEC has taken promising steps to engage the business community, but no comparable effort has been made to include environmental NGOs or civil society more broadly.

nism" (APEC 1994a). This proposal builds on a desire to prevent the escalation of disputes that might negatively affect APEC liberalization efforts, the spirit of cooperation, and the process of community building.

The need to create an APEC mechanism to help mediate environmental disputes is particularly pressing because there are no established alternative forums for settling pollution or resource disputes. While the WTO actively adjudicates cases that involve environmental issues, it has proven largely unable to accommodate environmental concerns (Charnovitz 1996a). Deficiencies in the WTO dispute settlement procedure—and the GATT panel process that it replaced—can be attributed to the WTO's focus on trade objectives, the lack of transparency in its procedures, a failure to seek appropriate expert advice when environmental issues are implicated, and the prevailing GATT rules, which demand that environmental standards be the "least trade restrictive" option available, a nearly impossible hurdle to clear (Esty 1994a).⁴⁰

An APEC dispute mediation service would be especially valuable if it were innovatively structured to address trade-environment tensions. Toward this end, rather than examining whether domestic standards being used to further health or environmental objectives are the "least trade restrictive," the service should focus on assessing whether the measure is reasonably tailored to achieving a legitimate public health or environmental goal and whether it arbitrarily or capriciously restricts trade. An inquiry of this sort would ensure that misuses of environmental policy would be unveiled, but appropriate environmental, health, and safety programs would be allowed to stand (Andre Dua, *The Australian*, 13 January 1997; Esty 1994b). In addition, APEC members should address the use of trade measures—multilateral and unilateral—to achieve environmental objectives. Members should agree that trade provisions in multilateral environmental agreements (MEAs) are not to be regarded as a violation of trade obligations under GATT, while the unilateral and extraterritorial use of trade sanctions should be discouraged.

Without an APEC dispute mediation mechanism that is sensitive to environmental tensions, regional economic relations and the prospects for ongoing APEC trade and investment liberalization may be undermined. It is especially important that APEC provide its member nations a means of resolving disagreements before they escalate and spill over into the economic realm. The shrimp-sea turtle dispute between the United States and Thailand and the dispute over salmon in the Pacific Northwest between the United States and Canada are good examples of controversies

40. The deficiencies with the WTO procedure are coming into sharper focus since an increasing number of high-profile trade disputes have environmental components, chief among them the US-Mexico tuna-dolphin case, the US-Venezuela reformulated gasoline dispute, the US-EU beef hormone case, and the soon-to-be-adjudicated shrimp-sea turtle case between Thailand and the United States.

that would benefit from an informal process that draws together the relevant actors and is guided by third-party mediators.

While such mediated outcomes would be nonbinding, they offer the potential for creativity and flexibility. Access to relevant scientific and technical experts, as well as to industry and NGOs, would enhance the process. And a focus on cooperation and coordination would improve the odds of coming up with innovative resolutions to conflicts.

Funding

One of the biggest obstacles to general acceptance of an APEC environmental program is finding ways to pay for the proposals. But environmental progress does not have to be expensive. Many steps can be taken that actually save money. And when government resources are required, the up-front costs can often be recouped through fees charged to those who benefit from improved trade flows or resource management (e.g., fishermen).

In fact, all of the initiatives proposed in this study promise net economic gains. Joint implementation, for example, offers substantial cost savings. By allowing the funds that are available for climate change mitigation to be applied wherever the cheapest emissions reduction projects can be found, JI would substantially cut the costs of meeting any emissions reduction targets agreed on in Kyoto. Not only would the proposal to eliminate subsidies save governments the hundreds of billions of dollars currently spent on subsidies, but the removal of price distortions promises allocative efficiency gains of a similar magnitude. The fisheries initiative, which would take a very modest amount of government funding to develop and administer, would yield benefits manyfold greater. The harmonization of product standards, where appropriate, and the development of a multitiered structure of PPM standards would likewise deliver large welfare gains for a minimal government investment by substantially reducing the transaction costs of trade and the capital costs of environmental investments. In brief, these initiatives would require very modest APEC administrative expenditures.

Funding would, however, be required to support the proposed Environment Committee and pay for its capacity-building and indicator-tracking efforts. Yet these expenditures, too, would be comparatively small and could be supported by voluntary contributions to an APEC Environment Fund.⁴¹ Viewed as the overhead for economic integration, the costs of an

41. This proposal is along the lines of the suggestion to set up an APEC fund to support ecotech activities, made last year to President Ramos before the Manila Leaders' Summit by the "Friends of the Advisor" (made up of many members of the now-defunct Eminent Persons Group). Initial seed money might come from the \$100 million that is already available through Japan's "Muruyama Fund" (Bergsten 1997).

APEC environmental program would be trivial—perhaps a few hundred million dollars to support trillions of dollars of trade and investment activity.

Importance of Private-Sector Investment

The Asian Development Bank (ADB 1997, 257) estimates that environment-related funding needs for the Asia Pacific region⁴² are presently on the order of \$40 billion (1990 dollars) annually and can be expected to rise to over \$200 billion per year by 2020. Domestically sourced public- and private-sector funds have been able to meet only a small portion of these needs (O'Connor 1994). How can the funding gap be bridged? Certainly not through official development assistance (ODA), since only a few billion dollars are made available annually for environmental investments by the World Bank, the ADB, the Global Environment Facility (GEF), other international organizations, and bilateral foreign aid donors. Private-sector foreign direct investment (FDI) inflows to APEC's developing economies, however, now exceed \$70 billion per year.⁴³ FDI therefore represents the only realistic large-scale source of funding for the requisite environmental investments (Esty and Gentry 1997).

FDI can be a powerful mechanism for environmental protection. It provides a source of funds for investment in environmental infrastructure such as drinking water systems, sewage treatment plants, and waste disposal facilities. And when multinational companies set up new production facilities in developing nations—either alone or in a joint venture with a local partner—they often bring with them less-polluting and more resource efficient technologies, as well as transplanting environmental management systems, transferring environmental best practices, and training local personnel.⁴⁴

For a number of reasons, the environmental performance of multinational corporations from developed nations is often better than required by host country regulations. First, companies operating in multiple markets may adopt companywide technologies and procedures to achieve economies of scale and efficiency gains. Second, large foreign companies often take environmental stewardship seriously because they are highly visible and may present an attractive target for local enforcement officials

42. "Asia Pacific" in the ADB study includes East Asia, Southeast Asia, South Asia, and some of the former Soviet republics, but not North America, Australia, and New Zealand.

43. This figure compares to less than \$10 billion of FDI inflows in 1985.

44. Moreover, in many places the private sector is investing in environmental improvements as a competitive strategy, especially where governments are creating incentives for innovation by carefully constructing environmental performance standards (M. Porter and van der Linde 1995a, 1995b; G. Porter 1996).

who wish to demonstrate the efficacy and stringency of their regulatory programs. In addition, the prospect of liability for environmental harms—the specter of the Bhopal disaster—often motivates better environmental performance than required by local environmental standards (Schmidheiny and Gentry 1997).

FDI-induced environmental progress is, furthermore, likely to have a leveraged effect on the host economy because the improved practices introduced by foreign firms are often adopted across the domestic industry, associated customers, suppliers, and ultimately the FDI-recipient economy as a whole (Schmidheiny and Gentry 1997).

FDI will not always result in environmental improvements. Some companies set up operations abroad with the hope that they will be able to reduce costs, including environmental compliance expenditures.⁴⁵ In other cases, FDI recipients seek to eliminate pollution control measures from projects to reduce the capital cost of their investments. In China, for instance, foreign companies eager to build power plants have fallen over each other trying to meet the demands of municipal and provincial governments to strip pollution controls out of their proposals and thereby maximize the generating capacity installed per dollar invested (Esty and Gentry 1997).

Understanding the importance of FDI as a source of possible environmental progress—and alternatively degradation—has several important policy implications. First, while APEC countries should make themselves attractive to investment, being attractive does not require lowering environmental standards (Schmidheiny and Gentry 1997). On the contrary, investors are motivated by factors such as the rule of law, security of contracts, and the capacity to repatriate profits. APEC's members can provide guarantees to foreign investors against various forms of arbitrary or discriminatory treatment by upgrading their commitment to investment liberalization through adherence to APEC's own Non-Binding Investment Code. Additionally, APEC members should support efforts to liberalize investment through the Multilateral Agreement on Investment (MAI) negotiations at the OECD in Paris.

Second, APEC's members should help to develop a mechanism that prevents strategic setting of environmental standards and blunts regulatory races toward the bottom.⁴⁶ APEC's members can accomplish this task by developing a set of environmental investment guidelines to maximize

45. As we noted in chapter 5, when cost variables are salient, countries may compete with each other to offer the most attractive locale by promising lax environmental standards. Such a regulatory race toward the bottom can leave all jurisdictions with suboptimal environmental results.

46. APEC's Non-Binding Investment Code already has, and the OECD's MAI contemplates, a clause calling on governments not to lower environmental standards to attract foreign investment.

the environmental benefits of FDI—and by encouraging the inclusion of such guidelines in the MAI.

As private foreign capital becomes the central engine of growth, finding ways to channel these funds into environmental infrastructure projects and to ensure that every newly constructed industrial facility has appropriate environmental controls emerges as the key to sustainable development.

Conclusion

Inattention to the environmental issues confronting APEC's members stands in the way of a better life for APEC's citizens. While economic growth has improved the quality of life, the accompanying damage done to the environment and to human health detracts from these improvements. What's more, because many environmental harms arise from externalities, problems of the commons, and price-distorting government policies, environmental problems substantially impair the allocative efficiency of the emerging regional economic system. More troubling is the possibility that tensions over market access, competitiveness, the use of trade measures to achieve environmental objectives, the environmental impacts of trade and growth, and the environmental choices selected by other nations will cause key countries to retreat from trade and investment liberalization altogether or, worse, erect new protectionist barriers.

APEC's existing response to these problems can be characterized as at best half-hearted and lacking promise. APEC must change direction to address the environmental concerns. There are a range of tasks that no other institution can perform as well as APEC. Environmental problems of a regional scale in particular need an APEC-level response. In other cases, APEC can improve on the poor or nonexistent performance of national governments and international bodies. In these areas, APEC's contribution to environmental management will be unique. In fact, from an environmental point of view, if APEC did not exist, it would need to be created.

In setting their environmental priorities, we suggest that APEC's members pursue the following agenda:

Initiatives

- Commit to an Asia Pacific "joint implementation" initiative to mitigate climate change effects.
- Eliminate or reduce agricultural and energy subsidies.
- Develop a Pacific-wide tradable fishing permits program.
- Selectively harmonize or promote convergence of environmental product and process standards.

Procedural Improvements

- Create an APEC Environment Committee to provide ongoing institutional support for APEC's environmental program.
- Establish an APEC Environmental Advisory Group of nongovernmental experts.
- Develop an environmentally sensitive APEC dispute mediation service.

APEC's members are currently at a crossroads. Should they choose the wrong path—continued pursuit of a weak and unfocused environmental program—environmental degradation will worsen, economic losses will accumulate, and countries may retreat from their commitment to open trade. But should they choose the right path—and pursue a serious environmental agenda that undergirds and reinforces economic integration—their efforts will help to build an unprecedented community of diverse cultures, geographies, and peoples.