



Is NAFTA Working For Mexico?

NAFTA and its environmental side agreement were supposed to bring prosperity to Mexico and thus give it the money to improve public health and natural resource protection. So far, the treaties haven't done either. But that does not mean that environmentalists' criticism of the pacts was correct, just that proponents were wrong. It also means that new trade agreements being forged by the Bush administration could undermine the ability of its undeveloped-country trading partners to achieve sustainability

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In the 12 years since the passage of the North American Free Trade Agreement, environmental quality in Mexico has deteriorated at an alarming rate. However, without NAFTA's environmental side accord — the North American Agreement on Environmental Cooperation — the degradation would have been even worse. Rather than building on the limited success of the NAAEC, however, the Bush administration has been weakening the environmental provisions in the numerous trade agreements that it has been pursuing over the last five years.

One statistic from official government sources in Mexico sums it up: the environmental costs of economic growth in Mexico are running at 10 percent of GDP on an annual basis — more than \$50 billion in damages per year. Air and water pollution, soil erosion, and municipal solid waste are all at record highs. This article goes back to examine what the environmental predictions regarding NAFTA were, and what actually happened. The article then reviews the record of the environmental commission set up under NAFTA, the North American Commission for Environmental Cooperation, to monitor environmental problems related to the agreement in the three signatory countries, Canada, Mexico, and the United States. Although the commission has not been able to reverse Mexico's longstanding environmental problems, it has served as a pilot project to help us understand what it would take to adequately link trade and environment.

Negotiated in the early 1990s and entering into force in 1994, NAFTA is a free trade agreement that reduces tariffs and other barriers to trade among the three North

American countries. During the NAFTA negotiations, most proponents of the accord argued that free trade would lead to seemingly automatic improvements in environmental conditions in countries like Mexico. Opponents said that the environment would automatically worsen in Mexico, because its lower standards would attract highly polluting firms from the United States — that Mexico would serve as a pollution haven for U.S. industry. Both were wrong.

The proponents were generalizing from the so-called Environmental Kuznets Curve hypothesis. Among his many contributions, the Nobel Prize-winning economist Simon Kuznets (1901-1985) is well known for two in particular. First, he's the guy who brought us the concept of national accounts — the measurement of GNP and GDP. Second, he analyzed the relationship between income growth and inequality, portraying his data in what became known as the Kuznets Curve — the theory that social inequality first increases, then later decreases, as per capita income grows over time. Studies in the early 1990s reported a similar relationship between environmental degradation and levels of income: an inverted-U curve showing that environmental degradation may sharply increase in the early stages of economic development, but the rise in per capita income past a certain "turning point" seemed to gradually reduce environmental damage.

Economists hypothesized that environmental decline and then improvement beyond the turning point of the Environmental Kuznets Curve occurs for three reasons. First are so-called scale effects: increases in growth correspond with increases in pollution. However, scale effects can be offset by what are



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called composition and technique effects. Composition effects occur when economies shift toward services and other less pollution-intensive economic activities. Finally, technique effects occur when increasing income eventually leads to higher levels of environmental awareness, which translates into more stringent environmental policies as the growing middle class demands a cleaner environment.

In 1991 two economists at Princeton University, Gene Grossman and Alan Krueger, examined the relationship between income growth and air pollutants such as sulfur and particulate matter and suggested the turning point at which economies would begin to get less pollution-intensive in these emissions is a per capita income between \$3,000 and \$5,000 in 1985 Purchasing Power Parity dollars. Though the economists were cautious in drawing sweeping conclusions from their research, free trade proponents went wild. Indeed, these findings led to the policy prescription now heard in many negotiating rooms: that the environment can wait, since economic growth will eventually (and naturally) result in environmental improvement.

EKC studies have become a cottage industry, with close to 100 scholarly articles published since the original 15 years ago. What is ironic is the fact that, as the policy community has rushed to push the EKC into the political realm, the consensus in the peer-reviewed economics literature on the EKC has become much more cautious. Most importantly, the literature shows that the empirical evidence for the EKC is relatively weak. The economist David Stern reviewed this literature in a 2004 issue of the journal *World Development* in a paper suitably titled "The Rise and Fall of the Environmental Kuznets Curve."

In Stern's review, too vast to summarize here, two points stand out. First, whereas some air pollutants behave the way the EKC hypothesis would predict, other environmental problems like carbon emissions and deforestation increase in lock-step with income. Second, the EKC turning points

are much higher than original estimates. A number of articles have found turning points ranging from \$7,500 GDP per capita to \$15,000 (in 1985 PPP dollars) and higher. (Please remember these figures are per capita *national* income, not personal income.) What's more, 28 percent of the more than 100 EKC test cases found no turning points, and for those that did find an inverted-U the average turning point was \$12,749.

Turning points of \$3,000 to \$5,000 GDP per capita were conveniently at the world's mean income at the time NAFTA was negotiated, suggesting that a trade pact might just put you over the hump. But the much higher turning points that are more likely to occur

imply that pollution per capita (some of it irreversible) may continue for decades before dropping.

A 1991 study by two Princeton economists said some air pollutants fall off when per capita income reaches a certain level. Free trade proponents quickly declared that growth would automatically reduce emissions

Mexico once was the poster child of a closed economy. Dating back to the 1940s, it had high import tariffs to help create domestic industries. Since 1985, however, Mexico has embarked on a series of reforms that have made it one of the most open economies in the world. Mexico reached \$5,000 GDP per capita in 1985, precisely the year it began opening its economy. Since then, rises in income have been small and environmental degradation has been large. Statistics from Mexico's National Institute for Statistics, Geography, and Information Systems (whose Mexican acronym is INEGI) document that even though growth has been slow, environmental degradation has been extensive.

First, since 1985 real incomes have grown at approximately 1 percent per capita. But Mexico grew at a rate over 5 percent between 1950 and 1985. To make another comparison, China, with much more restricted markets, has grown at over 7 percent. So, despite massive increases in exports and foreign investment due in part to trade liberalization, such increases have not translated into raising the Mexican standard of living. Clearly, trade



Is Global Environmental Governance Working?

When a free trade agreement between Mexico and the United States was first proposed, a panoply of divergent scenarios exploded in the collective imagination. From the environmental perspective, the predictions centered on two opposing views brokering no intermediate position: either Mexico's environmental institutions and overall performance would move up to the level of the United States (and Canada) as a result of trade integration, or Mexico would become the dumping ground of both its partners' most polluting industries.

Neither has happened. Aside from some anecdotal cases, no discernible migration of dirty industries has occurred. However, this does not mean that the performance of our environmental institutions has improved. According to the Environmental Sustainability Index designed by the Yale Center for Environmental Law and Policy and Columbia's Center for International Earth Science Information Network, Mexico's environmental indicators have been going south since 2000.

Were both sides wrong? Obviously, the pollution-haven hypothesis has been shown to be completely flawed. The reasons for this have been analyzed repeatedly, so I will omit them here. Unfortunately, the improvement-in-institutions-and-performance hypothesis has not proven true either. The problem is that it has been impossible to use NAFTA to our environmental benefit here in Mexico. The World Trade Organization argues that free trade, with adequate environmental institutions, by definition benefits environmental performance. The truth is more complex. The process that led to NAFTA and its environmental side agreement (the North American Agreement on Environmental Cooperation) could have made a strong and positive impact on the environment of Mexico — if only its momentum had not fizzled.

As NAFTA entered the final stages of negotiation, environmental con-

sciousness in Mexico blossomed. Its roots had two sources: the strong, locally based environmental community and, more importantly, the influx of ideas and support from international NGOs, mostly in the United States. With this help and guidance, numerous Mexican environmental NGOs sprung up and quickly became legitimate stakeholders in trade liberalization. It was their organized involvement that led to the negotiations establishing the environmental side agreement and its North American Commission on Environmental Cooperation.



Gustavo Alanis

On paper, NACEC appeared to be an institution sufficiently strong to really change the way the environment would be regarded in a North America with liberalized trade. At least in the early stages of implementation, the two treaties and NACEC made their mark. The environmental agreement's citizen submission instrument fostered what appeared to be unstoppable popular involvement in the region's environmental wellbeing.

Along the way, unfortunately, something happened: support for and overview of NACEC by NGOs in the three NAFTA countries dwindled. The consequence was inevitable: all three governments followed the trend, disdaining the institution. Most recently, Mexico tried (and failed) to slash its contribution to NACEC by 60 percent. Almost no one in the environmental community spoke up. The one recognized positive link between the environment and NAFTA — the side agreement and its commission on environmental cooperation — was abandoned before it could get momentum. This neglect and downfall has had an impact on environmental stewardship worldwide. But it is also part of a worldwide trend.

It is clear that Mexico's environmental woes were not created by NAFTA. National priorities are influenced by other international issues besides trade liberalization. Look at what has happened to global envi-

ronmental governance generally and how it impacts the establishment and evolution of national environmental institutions.

After the 1972 UN Conference on the Human Environment, almost every country created an environmental agency, Mexico included. After the 1992 UN Conference on Environment and Development, Mexico's spending for environmental purposes rose to a peak. Not only did the prospect of NAFTA (which was signed the same year) intensify its efforts to achieve a better environmental scorecard, so did the wider ongoing trend in global environmental governance.

UNCED also produced some of the most successful multilateral environmental agreements now in force. Since then, however, newly negotiated MEAs have had little result, without ratification by key parties — most importantly, the Kyoto Protocol to the Climate Convention signed at UNCED. Kyoto was stillborn without U.S. participation. And does anyone even remember the outcomes of the 2002 World Summit on Sustainable Development?

There are no simple answers to this falling trend in worldwide environmental awareness. But surely something has happened. Almost 35 years after global environmental governance was born, each day it is getting harder and harder to be an environmental NGO. Other important (and unimportant) social issues have taken precedence. And government officials have taken note. Mexico may be a case in point, but it is not the only country in which spending on environmental protection has dropped over the last decade. Whether or not there has been progress in the global environment and environmental governance since 1972 and 1992 may be debatable, but back then people seemed to care and take action. Sadly, that is seldom true anymore.

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liberalization is not a guarantee of growth, and restricted markets like China's can grow at a rapid rate, contrary to the theories of the free trade cognoscenti.

Second, major environmental problems have worsened since trade liberalization began in Mexico. INEGI data covering the period of 1985 to 2002 (the last year of reported data) show that despite the fact that Mexico reached levels of income beyond the range of predicted EKC turning points, national levels of soil erosion, municipal solid waste, and urban air and water pollution have increased faster than both GDP and population growth. (Carbon dioxide emissions per capita have gone down.)

And environmental degradation has been costly to Mexico's prospects for development. The figure given earlier for the financial costs of Mexico's environmental degradation comes from the INEGI study. INEGI estimated that 10 percent of GDP from 1988 to 2002 — an average of more than \$50 billion per year — went down the drain (or up the stack, etc.). In other words, for every dollar that the Mexican economy grows, 10 cents is thrown away. In effect, environmental degradation is like an additional tax placed on the Mexican people, a tax that gives nothing in return. Wasting \$50 billion per year hurts a lot, given that close to half of Mexico's 100 million people live on less than \$2 a day.

Harvard University economist Theodore Panayotou has argued that because it may take decades for developing nations like Mexico to reach EKC turning points, the accumulated environmental damages may far exceed the present value of higher future growth. Thus, he says, environmental protection in developing countries may be justified on purely economic grounds.

In my 2004 book *Free Trade and the Environment: Mexico, NAFTA, and Beyond* (Stanford University Press), I evaluated whether Panayotou's hypothesis is justified in the case of air emissions in Mexico. I estimated the number of years it would take for the country to reach EKC turning points of \$7,500, \$10,000, and \$15,000 in 1985 PPP dol-

lars (based on the perhaps lofty assumption that income would grow twice as fast as it did from 1985 to 1999), the amount of environmental damage that would occur at each turning point (based on the pollution growth rate from 1985 to 1999), and the present value

of the economic costs of that environmental damage. I based the pollution and economic cost estimates on data from the INEGI report. According to these calculations, it would take Mexico until 2028 to reach \$7,500 GDP per capita, 2057 to reach \$10,000, and until 2097 to reach \$15,000 (all in 1985 PPP dollars). Depending on which discount rate is used for the calculations, the future costs of air pollution damages alone for Mexico could range from \$79-270 billion if viewed in present terms — or one fifth to three fifths of Mexico's GDP. These estimates are in no way precise, but they do make the point that Mexico

may be trading future growth for environmental degradation.

Since Mexico began opening its markets in 1985, growth of real income has stagnated while environmental quality has worsened

When NAFTA was being debated in the early 1990s, naysayers said Mexico would become a pollution haven for dirty U.S. firms. They may now look at the evidence showing that environment degradation is worsening and say, "I told you so." For them, too, the evidence is not on their side.

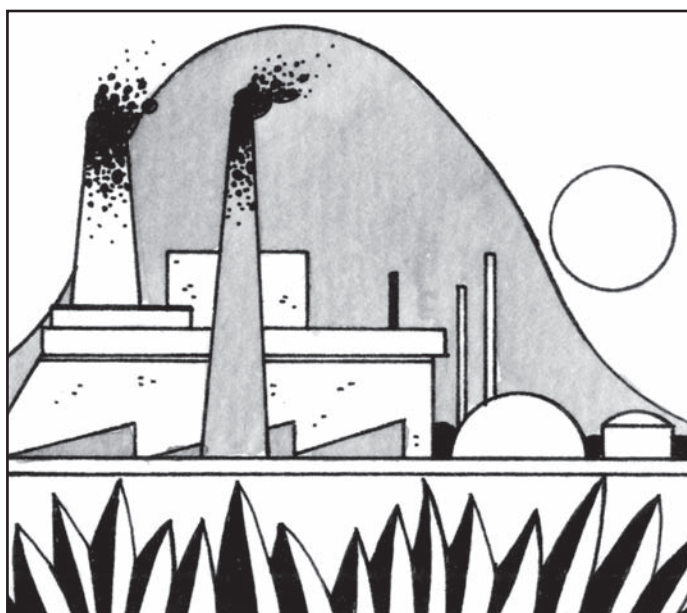
The case for free trade is a strong one. The British economist David Ricardo was perhaps the earliest proponent of unfettered global markets. In his 1817 book *Principles of Political Economy and Taxation*, Ricardo described his concept of comparative advantage. He showed that because countries face different costs to produce the same product, if each country produces, and then exports, the goods for which it has comparatively lower costs, then all countries benefit. But what happens when comparative advantage is derived from differences in environmental stringency?

Using the logic of Ricardo and his followers, trade liberalization should lead to an



expansion in pollution-intensive industries in developing countries with less stringent regulations. Like the EKC literature that found no evidence for turning points at initially predicted levels, here too the majority of the peer-reviewed literature has, ironically, found very limited evidence for pollution havens. The literature on pollution havens is even larger than the EKC literature. In 2003 European economists Jean-Marie Grether and Jaime de Melo assessed the literature on pollution havens for the U.S. National Bureau of Economic Research. Statistically examining the relationship between environmental stringency and trade flows while asking whether nations with weaker environmental laws tend to export the most pollution-intensive goods, Grether and de Melo say that (with a few exceptions) the overwhelming answer to this question is “no.”

Pollution havens were the core of environmentalists' concerns in the highly politicized NAFTA debates. The companies in the U.S.-Mexico border region were generally seen as an environmental disaster, California-based furniture makers had reportedly moved to Mexico to avoid installing air pollution equipment, Mexico's officials were said to have made statements attempting to lure U.S. firms by making low regulatory compliance costs part of their sales pitch. But if Mexico were to have become a pollution haven for dirty U.S. firms, then one would expect that the share of pollution-intensive industry would decrease in the U.S. and increase in Mexico. In other words, those industries that faced regulatory costs due to environmental laws would move to Mexico. In my book, I performed numerous statistical analyses to examine whether those industries that faced stiff environmental regulations in the United States indeed did begin to expand in Mexico while contracting in the United States. Interestingly, I found that the share of dirty industry in the United States is in fact declining, but that dirty industries in Mexico are declining as well, and even faster!



Environmental degradation costs the country \$50 billion a year. Mexico may be trading future growth for worsening public health and damaged natural resources

Between 1988 and 2000, in terms of total production, pollution-intensive economic activity as a share of total production in the United States decreased by three percentage points, and in Mexico by five.

The reason why I and so many others fail to find evidence for pollution havens in developing countries is that the costs of compliance with environmental regulations are relatively small compared to other factors of production — especially those that determine comparative advantage. Mexico is abundant in unskilled labor — important for manufacturing assembly plants. On average, such production processes are less pollution-intensive than more capital-laden manufacturing activities such as cement, pulp and paper, and base metals production. And the latter sectors have been contracting in Mexico. Even at the margin, the costs of pollution are too small (less than two percent of sales) to significantly factor into a typical firm's location decisions. In addition, many companies are simply too large and cumbersome to move to another location, and they need to stay close to their product markets. The marginal abatement costs are small relative to the transaction costs of decommissioning a plant and moving operations to another country.

Although this research shows that the majority of firms that move to Mexico do not move there because of low environmental standards, that does not imply that when firms move to Mexico they are model environmental corporations. After NAFTA, many U.S. high tech firms set up shop in Guadalajara, which has become Mexico's Silicon Valley because of its proximity to U.S. markets, new tariff and investment rules under NAFTA, and the relatively lower wages. Environmental considerations were not a factor in their choice to locate there. In March 2004 a lead explosion occurred in a U.S.-based contract manufacturer located in Guadalajara that supplies printed circuit boards to a brand name computer company. Just weeks earlier, the supplier had received certification for an environmental management system. More broadly, the World Bank conducted a survey of over 200 firms across



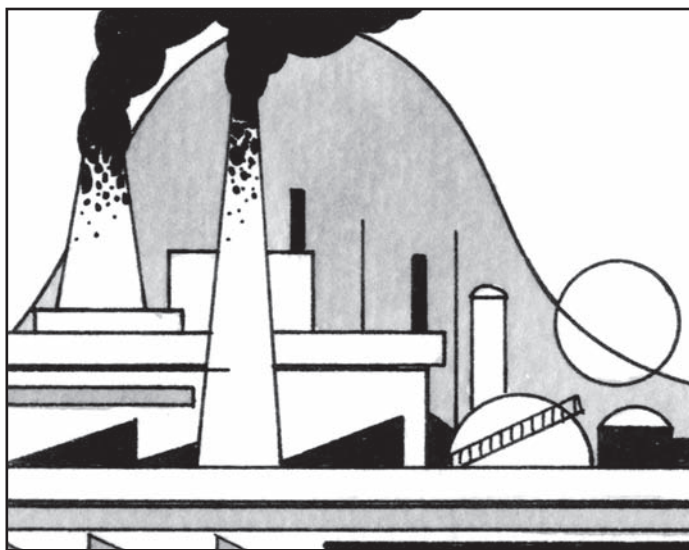
all of Mexico and found that, contrary to prevailing assumptions, foreign companies were no more likely than domestic firms to comply with Mexican environmental law.

If the Mexican environment is worsening, but not because it is a pollution haven, what is driving environmental degradation? Costly damage is occurring because the proper mechanisms were not put in place to help Mexico manage its economic growth in an environmentally sustainable manner. Successful environmental policy needs both carrots and sticks. The carrots are in the form of economic incentives such as taxes on environmental "bads" or subsidies for environmental "goods." Sticks come in the form of rigorous plant inspections to see if firms are complying with the law, and penalties when they are not.

In the lead-up to NAFTA, Mexico doubled spending on environmental protection and started a much-needed industrial environmental inspection program. However, shortly after NAFTA was signed, Mexico's fiscal and financial woes set in. Attention to the environment nose-dived. According to INEGI, since 1994 real spending on environmental protection has declined by 45 percent. Even at their highest levels, allocations for environmental protection were low in comparison to Mexico's counterparts in the OECD — one-fifth the size of other OECD nations measured as a percentage of GDP. Tellingly, the number of industrial environmental inspections has also decreased by 45 percent over the same period.

The North American Commission for Environmental Cooperation set up under the side agreement has not been enough to fill the gap. NACEC has a paltry \$9 million budget, which is dwarfed by the pressure from Mexico's budget shortfalls and buried by the \$50 billion price tag of environmental degradation in Mexico.

However, NACEC should be applauded for making the most of its limited mandate and budget. It has done a great deal by way of information gathering and sharing, and



Predictions that NAFTA would make Mexico a pollution haven have proven untrue. The country's worsening environment is a problem of its own making

cooperation among ministries. It has held numerous colloquiums where NACEC-supported researchers have documented the environmental impacts of NAFTA, and has empowered civil society organizations to watchdog governments in violation of environmental law in the three countries.

Perhaps its greatest achievement is the role it played in facilitating Mexico's adoption of a Pollution Release and Transfer Reg-

istry. Both the United States and Canada have PRTR laws that make polluters track and release their annual emissions and report the data to the public (the one in the United States is the famous Toxics Release Inventory). Civil society organizations and governments have then used that data to pressure the dirtiest firms to clean up their act. NACEC played a key role in fostering the cooperative dialogues among policymakers in the three countries that eventually led to Mexico passing its own PRTR. Indeed, Mexico's law was stronger than the

United States' or Canada's! Whereas in the United States and Canada only toxic pollutants are tracked, Mexico registers criteria pollutants (such as particulate matter and sulfur) as well.

The environmental side accord to NAFTA split the U.S. environmental community. Some organizations refused to support NAFTA even with the agreement, but for others the side accord captured their support. In any event, most thought that at the very least NAFTA's environmental provisions would serve as a minimum standard for future trade agreements. Wrong again.

Disgruntled with the reception it has been getting in the multilateral trade arena, particularly the WTO, the Bush administration has been signing bilateral and regional trade deals at a ferocious pace. To name a few, the United States has engaged in trade negotiations with Australia, Chile, Colombia, Ecuador, Morocco, Panama, Peru, and the Dominican Republic and Central American countries (known as CAFTA). The U.S.-Chile

and CAFTA agreements have even passed ratification in Congress, albeit narrowly.

Since the Constitution grants Congress the power to negotiate trade deals, Congress has to pass legislation to give the president the “authority” to negotiate on its behalf. This legislation, traditionally termed fast track trade authority, is now called trade promotion authority. When the Bush administration secured TPA in the spring of 2002, Congress mandated that all future trade agreements negotiated by the United States have an environmental component.

The administration has gone to great pains to interpret TPA in the narrowest of terms. The White House is quick to boast that the environmental provisions that do end up in an agreement are inside the trade agreement itself, not stapled on later as a separate pact. Recognizing that environmental concerns need to be dealt with on the same footing as the economic arrangements in these deals is big step forward.

But after that one small step forward the administration has taken a giant step back. All of these trade deals have environmental components that are even more limited than NAFTA and the North American Agreement on Environmental Cooperation. Rather than creating NACEC-like institutions for environmental cooperation, monitoring, and enforcement, at most these new agreements form poorly funded committees that will meet to monitor progress little more than once per year. Some of the agreements lack the citizen monitoring mechanism that is a key feature of the NAFTA environmental pact, and most also have provisions that some fear might allow private firms to sue national governments for enacting new environmental legislation that may cost those firms money to implement.

The case of Mexico and NAFTA presents three important lessons for negotiating future trade deals. First, if growth alone will not bring with it a long-term tendency toward environmental improve-



As the Bush administration negotiates trade agreements at a ferocious pace, it has interpreted the authority granted by Congress narrowly, reducing environmental protections.

ment, or if the turning points are so distant as to make the environmental costs of waiting unacceptable, then governments need to put in place carrot-and-stick mechanisms that can monitor environmental impacts and prevent unacceptable levels of environmental destruction. Without environmental laws, regulations, and the willingness and capacity to enforce them, trade-led growth will also lead to increases in environmental degradation.

Second, since the evidence from Mexico shows that such regulation and enforcement are not generally decisive in most firms’ location decisions (in other words, no pollution havens), governments should have little fear in strengthening safeguards. Governments will not be jeopardizing their access to foreign (or domestic) investment by enacting strong environmental legislation and enforcing it. Countries need to act to protect their peoples’ health and their natural resources, rather than wait for higher incomes to foster environmental protection. The costs of doing so, in terms of lost investment, are likely to be very low. The costs of inaction are likely to be very high.

Third, since many of the nations we are signing agreements with are developing ones, rather than reducing environmental strictures as the Bush administration is doing, we need to create international arrangements that build on the lessons from organizations like NACEC to fill the gap left by weaker national governments. Mexico is relatively rich and more developed in terms of environmental policy compared with Ecuador and Panama; more cooperation on the environment is needed, not less.

A July 2004 Gallup poll found that two out of three Americans believe that trade policy should not come at the expense of the environment. Until the administration recognizes that trade agreements must preserve this country’s ability to lead in environmental protection, and to provide incentives for trading partners to follow this lead, the White House will fail to harness the votes and public support needed for its trade initiatives. •