

Globalization and The Environment in Asia

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I. Introduction

Asia has changed dramatically over the past thirty years. Prior to the recent crisis which led to dramatic economic downturns in some nations, most Asian nations had experienced considerable economic growth over several decades. Much of this growth was driven by rapid industrialization and an outward orientation strategy that led to greater intra-regional integration as well as greater integration of Asian economies into the global economy. In addition to producing greater regional and global interdependence, this economic development has also lifted hundreds of millions of people out of poverty. But the gains have come at some cost. Along with the rapid economic growth of the past several decades, Asia has witnessed significant and worsening environmental problems as manifested by congested and polluted cities, increased greenhouse emissions, rapid deforestation, and less-than-optimal depletion of natural resources.

No one wants Asia's economic rise to come to a halt. Indeed, efforts are being made on a number of fronts to expand the Asian economic base with a broad program of trade and investment liberalization. This program is being advanced unilaterally by many Asian nations and also through regional institutions such as the ASEAN (Association of the Southeast Asian Nations) Free Trade Area and the Asia-Pacific Economic Cooperation (APEC) forum, as well as through the multilateral trading system centered on the World Trade Organization (WTO). To date the crisis has not led Asian leaders to reverse the strategy of opening up their economies. If anything the crisis may have accelerated the process, especially for those nations receiving International Monetary Fund (IMF) support.

But critics are starting to ask whether the region's development can continue on its

current trajectory. More specifically, some observers are asking whether the globalization of product and capital markets, production systems, corporations, and other organizations can be managed and channeled to support a “clean revolution” in Asia in which economic advancement continues but without (or with reduced) negative environmental repercussions. An added question is how participation in foreign markets and the role of foreign investors could be leveraged to promote such an outcome.

In recent months there has been added concern that the economic crisis faced by some Asia-Pacific economies and the general downturn in economic conditions will worsen environmental harms. The paramount issue is how the crisis will impact the quality of the environment and the priorities of environmental policy in Asian nations, especially those most affected by the crisis. On the one hand, the economic crisis may lead to increased poverty and unemployment, as well as faster rates of export-oriented resource depletion, all of which could have serious negative effects on the environment. Furthermore, for the policy-makers involved in day-to-day crisis management and the reconstruction of economies from shambles, environmental policy will be relegated to the back burner. However, the economic crisis may not be entirely bad from the environmental standpoint. As the World Bank notes, “[a]djustment and policy reforms responding to the crisis will potentially have a negative impact, especially in cases when market and policy failures are not addressed properly. On the other hand, the current situation may offer an *opportunity* to introduce environmental considerations into adjustment programs, prevent environmental risks, and to undertake reforms and measures to establish long-term environmental sustainability.” (World Bank, 1998, 5). Thus, an important question to ponder is whether the crisis also provides opportunities to address market and regulatory failures.

Also in the background are increased regional tensions produced by the attempts of some countries to require exporting Asia-Pacific nations to raise low domestic environmental standards that are perceived to create unfair competitive advantages. The use of market access as a tool, albeit a blunt instrument, to limit environmental harms threatens to further constrain the process of trade and investment liberalization throughout the region. Regional environmental conflicts have also emerged as it has become clear that existing regional mechanisms are inadequate to deal with a growing number of transboundary environmental problems.

The inescapable linkage between economic aspirations and environmental goals has emerged in full force over the last 10- 15 years. A focus on “limits to growth” (Meadows 1972) has given way to a recognition that economic development can promote environmental progress (Brundtland 1987) and that poverty is a source of serious environmental degradation. In practice the goal of achieving “sustainable development” still remains elusive. However, one key to achieving a clean industrial revolution in Asia (and more broadly) may lie in managing globalization generally, and trade and investment liberalization in particular.

This paper examines the linkages between economic integration and environmental protection in Asia and seeks to identify points of leverage within the globalization process that can be used to improve environmental sustainability throughout the region. Globalization is, of course, a multi-dimensional trend. At its core is an economic transformation linking capital and product markets across national borders. The emergence of a set of inherently global-scale pollution and resource-management issues (e.g., climate change, the thinning of the ozone layer, depletion of fisheries) is another dimension of globalization and highlights the ecological interdependence of all those on the planet. Globalization also encompasses other linkages,

including communications (e.g., the Internet), culture (e.g., global icons such as the Spice Girls), and media (e.g., the universality of CNN) that have begun to create a global “civil society.”

The paper is divided into three sections. In the first section the forms and trends of globalization in the Asia-Pacific region are discussed. The nature of the of economic integration process that has taken place in the region and the crucial environmental issues that have emerged are emphasized. The second section addresses the links between industrialization and environmental issues, with a specific focus on the market and regulatory failures that have caused many of the region's current environmental problems. The final section identifies the points of leverage within the globalization process that can be used to ensure that continued economic integration across Asia will not lead to unsustainable development and increased environmental degradation.

II. Forms and Trends of Globalization and Environment in the Asia-Pacific Region

Globalization takes many forms. In the economic sphere, the term refers to the linkages between economies through trade, investment, production, and financial markets. In the case of the Asia-Pacific region, rapid economic growth based on the universal process of liberalization has led to increased integration within regional and global economies. Recognition of the ecological interdependence of nations and the transboundary elements of many environmental harms is another concrete form of globalization. The impact that greenhouse gas emissions from Asia-Pacific nations may have on global warming is one example of this form of globalization. A broader understanding of globalization must also encompass the globalization of ideas, values, and culture made possible by the rapid and inexpensive dissemination of information through

improved communications, computers, and information management technologies. This form of globalization is an important source of changing views on such issues as the environment in the Asia-Pacific region. In this section, we examine the economic and environmental trends in the Asia-Pacific region over the last several decades and the role that the different aspects of globalization have played in these trends.

Economic Trends: Twin Processes of Industrialization and Economic Integration

Asia has experienced impressive economic growth over the past two decades (Table 1, Figure 1). During the 1980s and most of the 1990s, the Asia-Pacific region out-performed other developing regions of the world. The Asia-Pacific region experienced average GDP growth rates close to 8 percent between 1980-91 with nearly a 10 percent rate of increase during the 1991-97 period. Even the nations most affected by the recent economic crisis - Indonesia, Malaysia, Thailand, the Philippines and South Korea - grew at an average rate of 7 percent during the last two decades. In fact, virtually all of Asia has grown faster than all but the fastest growing European nation (Ireland) throughout the 1990s (Dua and Esty 1997, 14).

The economic crisis that began in mid- 1997 in Asia and subsequently spread across the world has, however, had a deeper impact than first expected and has created an uncertain outlook for developing nations and the world economy as a whole in the coming years. While domestic and international efforts have been made to deal with the economic crisis, recovery will take time and the short-term outlook calls for a slowdown in growth and even recession in some nations (Table 1). The prospects for the Asia-Pacific region, especially the nations worst hit, include continued economic contraction or very low growth over the same period of time. However, this

is a short-term prediction only. Assuming that appropriate policies and institutions are developed and a deeper global recession is prevented, these economies are projected to rebound within three years. While the Asia-Pacific region is not expected return to the high growth rates of the early 1990s, it may well return to growth rates higher than those of other developing regions by 2000 and into the next decade (2001-2007). The star performer will likely be China, which has maintained growth rates of about 7 percent in recent years. Even in the most greatly affected crisis nations, growth in the period from 2001- 2007 is expected to average 5 percent, which will be greater than or equal to that of other developing regions. (See Table 1 and Figure 1.)

As illustrated in Table 2, eight Asian nations have also sustained per capita growth rates of at least 4.7 percent over the last three decades. This growth has meant increased per capita incomes and reduced poverty, suggesting that the lives of individuals in these nations are improving as well. Such quality of life improvements can be quantified by the rise in life expectancy and the decline in infant mortality, as shown in Table 3. In some cases these changes have been dramatic. In Indonesia, for example, the number of people living in poverty fell from 70 million to 26 million over the 1978-95 period, a reduction from 60 percent to 14 percent of the population. (Dua and Esty 1997.)

Despite large absolute declines in poverty, poverty reduction has not been uniform within each nation. Within many Asia-Pacific nations regions with high incidences of poverty remain, such as the inland provinces in China and the eastern part of Indonesia (WRI 1998, 145). Furthermore, improvements in the equitable distribution of income have been slow. According to the World Bank (1998a) the income distribution in Asia-Pacific has, on average, remained

unchanged in the last fifteen years. In fact, inequality is rising in China and Thailand, and recent data for 1997 suggests a sharp increase in inequality in the Philippines as well (World Bank 1998a, 78). Furthermore, the social impact of the crisis is expected to reverse some of the positive achievements that have been made and in some nations the reversal is likely to be dramatic and lengthy (World Bank 1998a).

Structural Changes in Asia-Pacific Economies

Not only have the economies of the Asia-Pacific region been growing rapidly over the last three decades, their economic bases have been radically transformed through industrialization over the same period. The share of GDP made up by agriculture in the Asia-Pacific region declined from 35 percent to 20 percent during the 1970-96 period (Table 4). Indonesia, which is still industrializing, saw the share of GDP made up by agriculture decline from 45 percent in 1970 to 16 percent in 1996. Table 5 shows the changes that have occurred in South Korea's economy as it industrialized between 1960-1990. Japan, South Korea, Singapore and Hong Kong (China) are currently transitioning to post-industrial economies with a shift from manufacturing to service industries. In South Korea, for instance, the proportion of food in total manufacturing output fell from 37.8 percent in 1960 to 9.1 percent in 1990 (O'Connor 1994). While the industrialization and economic rise of the four "Asian Tigers" (Hong Kong, Singapore, South Korea, and Taiwan) is well known, the same pattern is emerging across the Asia-Pacific region. (See Table 4.)

Rapid growth and industrialization have also led to increased urbanization in the Asia-Pacific region. Over the 1970-96 period, the percentage of the population living in urban areas

nearly doubled from 19 to 32 percent. The changes are more dramatic in some nations, such as South Korea, where the urban population doubled to 82 percent over the period. Prior to the crisis it was predicted, based on a higher growth trajectory than is now being projected, that the rates of urbanization would continue to increase rapidly. In Indonesia, for instance, the urban population was predicted to reach 60 percent of the total population by 2020 (UN 1994).

The Asia-Pacific region's industrialization has clearly produced real benefits, especially, as noted above, by helping hundreds of millions of people to escape grinding poverty and life at a subsistence level. But the industrialization and accompanying urbanization has created new and serious public health and ecological problems (See discussion below).

Along with rapid industrialization, the Asia-Pacific region has seen a dramatic expansion in trade because much of the industrialization process has been export oriented. The region's share of trade as a percentage of GDP, a common measure of "openness," jumped from 19 percent to 58 percent over the 1970-96 period (Table 4). All of the major Asia-Pacific economies experienced a doubling or tripling of openness ratios during that period. In particular, the entry of China into the global economy is evidenced by the increase in the share of trade as a percent of GDP from 5 percent to 40 percent. While other regions of the world have similar openness ratios, trade increases in these regions have been less dramatic and based largely on primary exports rather than exports of manufactured and processed goods.

The growth in imports and, in particular, exports in the Asia-Pacific region has also generally been higher than other regions of the world, especially during the 1990s. (See Table 6.) Export growth in the 1991-97 period was 15 percent for the Asia-Pacific region and 13 percent for the crisis nations, much higher than the average for developing regions. Within the Asia-

Pacific Economic Cooperation (APEC) forum (excluding the United States and Japan) exports jumped from \$93 billion in 1965 to \$1.2 trillion in 1995 measured in constant dollars (Dua and Esty 1997, 22). This 160 percent increase represents an 88 percent compound annual rate of export growth.

Export growth in the Asia-Pacific region is projected to continue to accelerate in the short term, especially in the crisis nations where increased exports resulting from the currency advantage will be a source of growth crucial to the recovery scenario. (See Table 6.) Of course, a major constraint on further growth will be weak demand in Asian markets and falling prices in the face of efforts by other nations in crisis to maintain or expand their own exports.

Foreign Direct Investment

Inflows of Foreign Direct Investment (FDI) to the Asia-Pacific region have increased substantially in the last decade (Table 7). In 1997, the region accounted for slightly more than 50 percent of inflows to developing nations and 50 percent of the stock of FDI in developing nations. The Asia-Pacific FDI story is dominated by China, where FDI inflows expanded from an average of \$3.1 billion in the 1988-91 period to \$45 billion in 1997. As a result, China alone accounts for 30 percent of total FDI inflows to developing nations and for 21 percent of the stock of FDI in developing nations. FDI inflows alone make up 17 percent of China's gross capital formation. While the absolute amounts are lower, doubling and tripling of FDI inflows have occurred in the other Asia-Pacific nations as well. (See Table 7.)

It is important to note that the integration that occurs through capital flows is more controversial than that which is based on trade. In particular, while freer trade seems quite

clearly linked to higher economic growth (ADB 1999; Baldwin 1992; Sachs and Warner 1995), more open capital markets seem to create vulnerability as well as opportunity (ADB 1999; Cordella 1998; Stiglitz 1998). In fact, the response in some quarters, notably Malaysia, to the 1997-98 “Asian Crisis” was to blame foreign currency speculators (K S 1998). Nevertheless, most analysts believe that capital inflows provide a base for economic growth. In any case, while the recent economic slowdown has resulted in a slowing in capital flows to Asia, the longer term upward trend in FDI in the region remains clear (ADB 1999).

Trade Liberalization, Economic Integration, and Globalization

Trade expansion has also enhanced integration within the Asia-Pacific region. For most of the Asia-Pacific economies, nearly half of all exports are destined for the Asia-Pacific region with Japan being the most important market (Table 9). The Philippines and South Korea are exceptions to this rule, with around 40 percent of their markets located in the Asia-Pacific. While this percentage is lower than that of intra-European trade, which is above 60 percent, and close to the levels of intra-North American trade, it is occurring without the advantage of a formal trade agreement.

In addition to producing phenomenal economic growth, the liberalization of markets and foreign investment regimes has allowed for increased trade and investment linkages that have in turn produced market-driven economic integration within the Asia-Pacific region (Watabe and Yamaguchi 1996). Unilateral liberalization initially began as an adjustment in response to falling commodity prices and world recession. This process was also driven by the increased competition for markets and investment that resulted from the liberalization of former socialist

and communist nations after the end of the Cold War. The rise of “subregional economic zones”- highly economically integrated and geographically contiguous areas separated by political boundaries - throughout Asia occurred in response to such market forces and private-sector linkages (Chia and Lee, 1993).

The various regional agreements and Uruguay Round commitments (for the Asia-Pacific economies which are members), have not yet played a major role in opening up the Asia-Pacific markets. Instead, they have had a complementary and facilitating role, mainly because most began to take effect in 1995, while the process of unilateral liberalization began in the mid 1980s. These agreements, particularly participation in and commitments resulting from the Uruguay Round of negotiations on the Global Agreement on Tariffs and Trade (GATT), have reinforced unilateral commitments in the Asia-Pacific region and in some cases made them more binding. Asia-Pacific nations have actively participated in multilateral efforts to cut tariffs and to boost trade, and even though some nations fell short in their commitments, especially on binding tariffs, the region played a role in helping to bring the Uruguay Round of negotiations to a successful close (Bergsten 1994; Funabashi 1995, 107). It is interesting to note that the Asian crisis has not lead to a major retreat from trade liberalization on behalf of any country other than Malaysia (and even in Kuala Lumpur the backtracking has largely been focused on investment liberalization rather than on freer trade).

In addition to participation in the Uruguay Round, there has also been an acceleration in the development of regional agreements in the Asia-Pacific region. This acceleration as been, in part, a response to perceived competition from other regional agreements such as the European Union and the potential for a Greater Europe encompassing Western Europe and NAFTA. In

1992 the ASEAN Free Trade Agreement (AFTA) was signed, creating a target of limiting tariffs on intra-ASEAN goods to 0-5 percent over the following 15 years. Subsequently the deadline was moved up 10 years (to 2003), and discussions are currently going forward on widening the agreement to include services and investment (*Japan Econ. Newswire* 16 Dec. 1998).

The centerpiece of Asia-Pacific regional trade and investment liberalization is the Asia-Pacific Economic Cooperation (APEC) forum launched in 1989.¹ The APEC forum requires no formal negotiations or agreements and relies upon voluntary unilateral initiatives by its members. APEC is based on the concept of open regionalism in which liberalization is offered mainly on a most-favored-nation (MFN) basis. This structure is very much in line with the market driven integration which was already taking place in the region. APEC was meant to provide the framework and peer pressure necessary to ensure the continuation of liberalization. At the same time, given its unique membership of developing and developed nations, APEC also recognizes the need to include measures to facilitate economic and technical cooperation.

The APEC process took off in 1993 after endorsement and political commitment was given at the first informal meeting in Seattle, Washington. Since then APEC has moved ahead by setting specific goals for free trade and investment in the region by 2010 for developed nations and 2020 for developing nations (APEC 1994b); spearheading the Information Technology Agreement in negotiations at WTO in 1996 (Dua and Esty 1997, 105); developing various agreements on facilitation; and creating a program of individual and collective action in a wide range of areas, including the environment. In 1995, APEC economies accounted for 45 percent of global exports (as opposed to 34 percent in 1965) (Dua and Esty 1997, 122) and today APEC

includes 21 members.²

Various processes at the multilateral and regional levels have functioned to reinforce the unilateral process of liberalization in the Asia-Pacific region. The fact that many Asia-Pacific economies were already opening up eased the acceptance of these multilateral and regional agreements. Indeed, unlikely champions of free trade and investment arose, including ex-President Suharto of Indonesia. Without Indonesia's support in 1992, AFTA would have been stillborn and Indonesia's subsequent role as the host of APEC in 1994 played a key role in setting the goals for the organization.

Although some effort has been put into regional (and global) trade agreements, globalization and integration in the Asia-Pacific region has centered on market-driven trade and investment flows (Lawrence 1996). Appreciation of the currencies and rising costs in the more advanced Asia-Pacific economies, namely Japan and the Asia-Pacific newly industrialized economies (South Korea, Taiwan, Hong Kong and Singapore), led to a relocation of more labor-intensive industries and processes. Such a relocation of production was made possible by liberalization in the home and host economies, as well as technological advances. Thus, the globalization in product, service and capital markets that has occurred in the Asia-Pacific region, particularly since the mid-1980s, resulted largely from the universal process of liberalization and global commitments.

In fact, it now appears that the much vaunted "Asian Way" forward, advanced as a new

¹ For a detailed discussion of APEC's history, see Funabashi (1995).

² The majority of these nations are Asian. The member economies include: Australia, Brunei, Canada, Chile, China, Chinese Taipei, Hong Kong, Indonesia, Japan, Malaysia, Mexico, New Zealand, Papua New Guinea, the Philippines, Singapore, South Korea, Thailand, and the United States. In 1998 three more members, Peru, Russia and Vietnam, were added.

(purely economic) mode of integration, has failed. The strains of trying to deepen economic ties without building a base of political integration have proven to be significant. This flawed vision of regional economic cooperation, along with the ongoing economic struggles in a number of Asian nations, has meant that APEC has made little progress in recent years. Similarly, ASEAN has struggled with political turmoil that has kept attention off of the potential for economic advancement.

The role that APEC and ASEAN will play in regional environmental progress thus remains uncertain. If the need for political cooperation alongside economic integration is recognized, these regional bodies are poised to contribute to collaborative pollution control and resource management efforts. But that recognition has only just begun to emerge.

Globalization and Environmental Harms

As described above, the existing pattern of economic growth in the Asia-Pacific region has created or exacerbated a wide range of environmental problems. The expansion of exports made possible by increased integration and globalization of the Asia-Pacific economies is linked to many of these problems. For instance, along with the expansion of textile exports by Thailand and Indonesia has come an increase in the pollution of rivers by the textile industry. It has been estimated that in some West Java rivers the textiles industry is responsible for 70 percent of total pollution loadings (Intal 1996, 92).

In addition to local and national environmental harms, transboundary environmental problems - those which do not remain within the borders of their country of origin - are on the rise in the Asia-Pacific region. Transboundary air pollution, ranging from the release of sulfur

dioxide by China (which has caused acid rain problems in South Korea and Japan) to the recent forest fires in Indonesia (which have created serious haze problems for neighboring nations), can be traced to economic changes across the region including both a scale-up of industry and increased consumption of polluting goods (such as cars). On a global scale, as described above, the carbon dioxide emissions of the Asia-Pacific region threaten to create global warming impacts for the entire world. Such regional and global impacts demonstrate the ecological interconnectedness between nations within the Asia-Pacific region and throughout the world. In this way, transboundary environmental problems act as another dimension of international linkages and globalization.

The increased regional and global integration of Asia-Pacific economies has also led to increased pressure on Asia-Pacific nations from the major importing markets to conform to trade and investment related environmental standards. This increased pressure to meet the environmental standards of international importing markets is not terribly surprising. Just as increased globalization and integration of economies leads to some loss of autonomy over fiscal and monetary policy through the imposition of external conditions set by international markets (Cooper 1994; Greider 1997), some domestic environmental policy autonomy will be lost as well (Anderson 1995; Rodrik 1997). However, exporting nations express concern that the imposition of rigorous environmental standards by importing nations may actually be motivated by protectionism. In truth, it can be difficult to determine which environmental standards are legitimate and which are designed to protect domestic industries.³

The desire of importing nations to impose uniform environmental standards across global

markets stems not only from a concern about the environmental harms to the “global community” produced by imported goods, but also from the belief that lax environmental standards act as an unfair competitive advantage in the global market. There is also concern within nations with stricter environmental standards that a regulatory “race toward the bottom” may occur as nations lower their environmental standards to attract new industrial activity or to prevent domestic industries from leaving (Esty 1994, 51-2; Esty 1996, 607-9). While it is difficult to determine whether fears of a “race toward the bottom” are justified⁴, the potential for environmental standards and trade measures to impact the Asia-Pacific economies remains very real. The recent attempt by the United States to prohibit imports of Thai and Malaysian shrimp caught using fishing methods that harm endangered sea turtles is evidence of the kind additional complexity produced by the globalization of Asia-Pacific economies and environmental problems. The prospect of additional environmental-policy-based trade effects represents a serious threat to efforts to advance toward free trade and investment flows on a regional or global basis.

III. Environmental Issues in Asia: links to globalization and industrialization

Varying Scales of Environmental Harms and Responses

Asia’s environmental problems can be placed into three geographic categories:

³For a discussion on how to separate bona fide environmental policies from protectionist environmental policies, see Esty (1994a, 117-27).

⁴While most empirical studies have found little evidence of industrial relocation to nations with lower environmental standards (Dean 1992; Low and Yeats 1992; Jaffe et al. 1995; Eskeland and Harrison 1997), races toward the bottom can be difficult to detect, especially if the enforcement of environmental regulations is reduced in reaction to competitiveness concerns (Barron and Cottrell 1996). For further discussion of this issue, see Dua and Esty (1997, 88-91).

local/national, regional, and global (Dua and Esty 1997, 53-54).⁵ The impacts of local/national environmental problems are confined within the borders of the nation that creates the harm. Within the Asia-Pacific region, the pollution of internal water resources, the disposal of domestic waste, and the release of particulates and lead into the air can all be considered local/national environmental problems. While regional and global environmental harms originate within the borders of one or more nations, the impacts of these harms are transboundary. These impacts traverse national borders and affect other nations within the Asia-Pacific region (regional harms) and across the world (global harms). Specific regional harms include the depletion of Pacific fisheries, which may have detrimental impacts on a number of Asia-Pacific nations, as well as problems stemming from the release of sulfur dioxide (Dua and Esty 1997, 45). Global harms include greenhouse gas emissions from nations within the Asia-Pacific region that contribute to the climate change across the planet.

Classifying environmental harms by geographic scope aids in determining the level of government which should respond to various environmental issues. The optimal level of governmental intervention necessary to remedy environmental harms depends on the geographic scope of the harm (Esty 1996).⁶ As will be discussed below, the scope of governmental response should match the scope of the environmental harm at issue. From an economics point of view, this “matching principle” ensures that the scope of the regulating government’s authority or

⁵It is of course important to note that not all harms can be placed in only one of these categories. For instance, some environmental problems, such as deforestation, may have both local effects (soil erosion, land degradation, and water pollution) and global effects (reduction in the world’s supply of carbon sinks that can mitigate greenhouse gas emissions) (Dua and Esty 1997, note 18).

⁶Numerous authors have discussed the issue of optimal allocation of jurisdictional responsibility for environmental harms at the national and regional level, particularly within the United States federal system. For example, see, Fischel (1975), Stewart (1977), Gray (1983), Oates and Schwab (1988), Revesz (1992), and Krier and Brownstein (1992).

jurisdiction matches the scope of the externality being addressed. Accordingly, local/national harms, such as pollution of local/national watersheds and airsheds, will likely be best handled by national governments or their subdivisions. In contrast, the appropriate scale of responses to regional and global transboundary harms cannot be merely local or national, but should also include regional and/or global efforts.

The international action necessary to address transboundary harms (global or regional) can involve complexities not at issue in local/national problems. In particular, the principle of national sovereignty makes it difficult to obligate nations to remedy environmental harms originating within their national borders. At the same time, the causes and impacts of some transboundary harms, such as global warming, are geographically spread across the world. Combining this geographic spread with the diversity of views on how (and whether) to solve environmental problems makes it difficult to coordinate solutions. As is often the case within international governing bodies, the ability of laggards (the least-committed nations) to determine the level of action taken to solve problems (Susskind 1994) further limits progress in dealing with transboundary environmental harms. For these and other reasons the current global environmental regime has been largely ineffective in dealing with transboundary environmental harms (Dua and Esty 1997, 102-103).

IV. Points of Leverage for Clean Growth

President Clinton in his July 1998 visit to China urged the leaders of the world's largest nation to find a cleaner path to economic growth. "China has a unique opportunity ... to avoid

some of the terrible mistakes we've made," he told the Chinese.⁷ There are many ways to change the economic development trajectory of Asia - and many points of leverage that could be used to induce a clean industrial revolution. Globalized markets, liberalized trade and investment, improved responses to international pollution resource issues, conditionality in international assistance, enhanced private sector environmental stewardship, improved national government policies, more environmental leadership from NGOs, international reform, and the potential influence of globalized communication, culture, and the media all provide environmental opportunities.

The Role of Multilateral Trade, Investment, and Environmental Agreements

The globalization of trade and capital flows and the increasingly strong economic interrelationships between nations that facilitate trade agreements create an important opportunity for environmental policy influence. Incorporation of environmental conditions into trade agreements represents a critical dimension of modern trade policy-making (Esty and Geradin 1997). Simplistic neo-classical economic theory argues that differences in national and local environmental standards are to be welcomed as variations in comparative advantage that can serve as the basis for gains from trade.⁸ More nuanced recent analyses suggest that some differences in environmental policy choices will inevitably arise from variations in climate, weather, population density, background pollution levels, risk preferences, or level of development (Esty 1996). These differences represent "legitimate" bases for comparative

⁷President Clinton made this statement while visiting the scenic Guilin area along the Li River. AP Online. 7 Jul. 2 1998 (1998WL6690183).

⁸ See Esty (1996) discussing Revesz (1992), Oates and Schwab (1988), Tiebout (1986), and Fischel (1975).

advantage.

Other divergences in environmental standards, however, may arise from governmental regulatory incapacity, public choice failures (corruption, special interest lobbying, campaign contributions, or simply the short time-horizon of politicians), or market failures (un-internalized cross-border externalities or mismanaged shared resources). In these cases, the variation in standards is not “legitimate” and competition on environmental variables may induce a welfare-reducing “race toward the bottom” (Esty 1996).

How competition in environmental standards plays out in a globalized world is thus a critical pollution and resource management issue. Increasingly, government officials and business leaders recognize the need for some form of “convergence” or harmonization of standards between nations (Esty and Geradin 1998). This policy intervention need not - and should generally not - lead to uniform standards across all jurisdictions (Esty and Geradin 1998). Instead it may well entail the adoption of some set of agreed upon minimum standards. This set of standards can be multi-tiered so that standards can be tailored to nations at different levels of development or they may be refined in other ways to make harmonization more flexible.

The European Union’s experience in this regard provides an object lesson. In support of its “single market,” the EU has issued more than 200 environmental “directives” aimed at ensuring cooperation, and not harmful competition, among its member states in the environmental policy realm (Esty and Geradin 1998, 103). The WTO and the international trading system provide further opportunities to establish baseline environmental standards within multilateral trade agreements, including the GATT. While the WTO’s Committee on Trade and Environment has begun to focus on the need to address numerous environmental problems in the context of

deeper economic integration, it has also glossed over many of the most critical issues (Reiterer 1996, 109-28). Within the Asia-Pacific region, APEC has the potential to facilitate coordinated environmental policymaking in the context of trade and investment liberalization. But like the WTO, to date APEC has done little more than pay lip service to the environmental dimension of globalization (Dua and Esty 1997, 135-144).

The hesitation to address environmental standards, especially standards related to production processes or methods (PPMs), has clear origins. Many developing nations believe that harmonization will lead to mandated high standards that would violate their sovereignty, deprive them of opportunities for growth, block their products from export markets, and, perhaps, even constitute an overt act of eco-imperialism. Industrialized nations, on the other hand, are concerned that a lack of harmonization could lead to a regulatory “race to the bottom.”⁹ as developing nations compete to attract industries by promising lax pollution controls. Developed nations fear that such a “race to the bottom” could create development that is dirtier than it need be, leaving all nations worse off. If properly done, however, harmonization of PPM standards could permit legitimate differences in standards to exist, thereby allowing appropriate aspects of comparative advantage to be exploited without promoting an environmentally destructive “race to the bottom” (Esty and Geradin 1997).

Harmonization of standards could also produce a number of advantages beyond preventing welfare-reducing races to the bottom. The convergence of process standards can encourage economies of scale in regulation (Esty 1994, 173-174). In the United States, for instance, national standards for vehicle emissions allow Detroit to produce cars for the whole

nation from a single production line, streamlining the production process and achieving substantial cost savings. At the same time these regulations lifted the burden of identifying, setting, and monitoring tailpipe standards from the states.

Similar standards can also yield “network” externalities (Dybrig and Spatt 1983; Katz and Shapiro 1985). If one jurisdiction assumes the pollution standards of another, it can avoid the costly and time-intensive process of developing and implementing its own standards. The creation of appropriate standards in the environmental realm is often particularly difficult due to the technical and scientific expertise required. In addition, governments may face diminished political opposition to regulation when producers do not face a plethora of unique standards.

The convergence of standards also strengthens the incentives for companies to innovate. In small countries, companies can gain only relatively small benefits from researching and producing technologies that more effectively meet (or exceed) the local pollution requirements. When a single innovation has the potential to advance a company’s position in multiple markets, a firm is far more likely to invest in research and development efforts.

Harmonization of environmental standards need not lead to inflexible, one-size-fits-all regulation. By utilizing regulatory means that afford companies flexibility in meeting compliance standards, governing authorities can achieve many of the advantages of decentralized control (Esty 1996, 621-23). Performance- (or quantity-) based measures, such as tradable permits, allow jurisdictions to determine the level of pollution that is acceptable. Simultaneously, companies can decide on the compliance strategies which will yield the lowest possible total cost. Moreover, the use of ambient standards to account for geographic differences in pollution

⁹For further discussion of the “race toward the bottom” dynamic, see the earlier discussion in Section II: “Globalization

compliance can lead to more efficient, welfare enhancing outcomes.

The consideration of environmental issues that occurred on a parallel track with the North American Free Trade Agreement (NAFTA) negotiations could serve as a model for the incorporation of environmental issues into trade liberalization efforts elsewhere. This parallel track facilitated many meaningful accomplishments, including a Mexico-US Border Environmental Plan, an Environmental Review of the NAFTA, and an Environmental Side Agreement. In addition, the NAFTA preamble makes explicit references to environmental goals by calling for the pursuit of free trade consistent with “sustainable development” and in balance with “environmental protection and conservation.” During the negotiations themselves, environmentalists were given prominent roles. For example, the Office of the United States Trade Representative included an influential environmentalist on the Advisory Committee on Trade Policy and Negotiation, and top US Environmental Protection Agency (EPA) officials were included on the US negotiating team.¹⁰

Increased focus on environmental issues in the trade context seems inevitable. The pace at which actual progress occurs is, however, more uncertain. In March 1999, the World Trade Organization hosted a symposium on “trade and environment” issues in Geneva. The event drew more than 600 participants representing governments, businesses, environmental groups, research centers, and universities from around the world. While there was no consensus on a precise action plan, there was broad agreement on the need to better coordinate trade and environmental policymaking - and on the risk that environmental disputes could disrupt efforts to

and Environmental Harms.”

¹⁰For a further discussion of the integration of environmental considerations into the NAFTA, please see Daniel C. Esty, “Making Trade and Environmental Policies Work Together: Lessons from NAFTA,” *Aussenwirtschaft (The Swiss*

further open markets (IISD 1999).

Emphasis on “trade and environment” linkages and the possibility of convergence in environmental standards seems especially likely as plans are made to launch a new global round of trade negotiations. WTO officials recognize that a “Millenium Round” cannot succeed without some effort to address nagging environmental issues, including the relationship between trade commitments and multilateral environmental agreements.

Foreign Direct Investment

Efforts to promote the free flow of capital across the world provide another point of policy intervention at which environmentally-sound industrialization might be promoted. Fundamentally, foreign direct investment (FDI) offers great environmental promise. Private-sector FDI into APEC economies, prior to the economic crisis, exceeded \$70 billion annually (Dua and Esty 1996, 165). FDI, especially in the form of joint ventures between established firms (multinational corporations) in the developed world and partners in the developing world, often results in the transfer of modern plant equipment that is almost always less polluting than what otherwise would be available (Esty and Gentry; Gentry 1998, 275). FDI-based joint ventures frequently mean the transfer of environmental management systems and training programs as well.

However, not all flows of private capital bring environmental gains. In China, for example, the drive for economic development, and particularly for new electric generating stations, has led to environmentally harmful competition among various Chinese provinces and

Review of International Economic Relations), 1994.

the foreign suppliers seeking to build power plants (Esty and Mendelsohn 1995). The business and government leaders in many Chinese provinces and municipalities are so eager for new sources of electricity to power further economic growth that they insist that those supplying the plants strip out of their proposals pollution control devices and instead maximize the kilowatt hours of generating capacity per dollar invested. Any company refusing to go along is passed over in the bidding process - and with a nearly endless supply of foreign companies seeking to build power plants in China, there is always someone willing to build whatever the Chinese authorities want.

These welfare-reducing competitiveness pressures in the context of private capital flows could be addressed by establishing baseline environmental standards for foreign investments. But the requests by environmentalists to build such standards into the Multilateral Agreement on Investment (MAI), under negotiation at the OECD over the past several years, were rebuffed by the trade officials involved. As a result, environmental groups around the world rose up in objection, and the push to complete the MAI has faltered.

A future MAI could, however, contain environmental standards for all projects funded through foreign investment. If all investors were required to meet a common set of standards, none would be competitively disadvantaged. Similarly, if all recipients of foreign capital had to ensure that their development projects contained basic pollution abatement elements, the competition for foreign investment would not be affected. At the very least, controls on transboundary pollution spillovers should be built into all FDI-funded projects.

It is not yet clear whether there will be efforts made to revive a free-standing MAI. Some advocates of an investment treaty believe that such an accord could be developed through greater

consultation with those parties who felt excluded from the prior effort (e.g., developing countries, environmental advocates, consumer interests). Others see the issue being folded into a WTO Millennium Round - and therefore not really becoming a central point of policy leverage for another 4-6 years.

Multilateral Environmental Agreements

Multilateral Environmental Agreements potentially provide another powerful tool for promoting environmental responsibility. Where nations agree on environmental standards - such as prohibitions on the production of ozone-layer-destroying CFCs or the protection of endangered species¹¹ - these agreements should be seen as defining the acceptable bounds of behavior in the international economic realm. Nations (or companies) which fail to sign on to widely-accepted standards or that fail to comply with their obligations should be seen as “free riders” whose behavior is disruptive to the smooth functioning of international economic relations. Any competitive advantage obtained by non-compliance should be deemed an “unfair” trade advantage and therefore “countervailable” by other nations or punishable through multilaterally-defined trade measures.

Of course, there exists a need to avoid protectionism disguised as environmental regulation. For this reason, Multilateral Environmental Agreements raise numerous contentious issues, especially from the perspective of developing countries (Reiterer, 1996). First, Multilateral Environmental Agreements may be seen as unfair if they penalize non-parties by

¹¹The Montreal Protocol on Substances that Deplete the Ozone Layer prohibits the production of CFCs by developed nations, while the Convention on International Trade in Endangered Species of Wild Fauna and Flora strictly regulates trade in endangered species by its signatories.

forcing them to suffer trade penalties if they refrain from joining the agreement for legitimate reasons. Perhaps, for example, the non-signatory concluded that it had other priorities for its limited environmental budget. In judging the legitimacy of a nation that chooses not to sign on to an MEA, one variable is critical: the scope of the harm that is being addressed. Where harms are localized, it is reasonable for individual nations to set their own course. Where, however, harms spill across national borders, the claim to a sovereign right to set one's own standards breaks down. Once an agreement addressing a transboundary issue is widely endorsed, it is unclear whether holdouts can claim to be acting "legitimately."

Second, Multilateral Environmental Agreements may be seen as a form of eco-imperialism used to advance the environmental agendas of rich nations outside of their borders. Who determines what level of pollution or resource exploitation is optimal? Who decides how fast a problem should be brought under control? Whose values are used to make judgments? Many environmental issues are marked by deep uncertainties and the need for political judgments to set standards. Finding a fair and effective forum to resolve disputes arising from Multilateral Environmental Agreements will often not be easy.

The Montreal Protocol provides a model for addressing many of these issues. Although it contains the threat of trade restrictions against those in non-compliance, the Montreal Protocol attracted the support of developing nations (Brack 1996) through subsidies for the purchase of CFC substitutes and a commitment to technology assistance. Moreover, with more than 160 signatories, the Montreal Protocol now represents such a widespread consensus that no nation has dared to challenge its terms as over-reaching.

There exists considerable momentum for increased international environmental

cooperation. In the last several decades, more than 200 international agreements have been signed (Brown Weiss, Magraw, and Szasz 1992). More accords are under discussion. But the effectiveness of international efforts to advance environmental protection remains in doubt (Esty and Mendelsohn 1997).

Conditional Adjustment Programs

Multilateral and donor agencies have been involved in providing aid (sometimes conditional on “structural” reforms) since the 1970s. The Asia-Pacific nations have been the recipients of much of this assistance (WRI 1998, 232). Typically, structural adjustment programs focus on appropriate macroeconomic stabilization policies including tight monetary policies to curb inflation; managing fiscal deficits; flexible exchange rates; trade liberalization, removal of subsidies and other microeconomic distortions; and institutional reforms to ensure effective implementation of policies. The first generation of adjustment programs was much criticized by NGOs, because they did not address the social and environmental impacts of these adjustment programs (McAllister 1993, 14-35; Reed 1993, 191). The premise was that growth supported by appropriate economic policies would be sufficient to lead to sustainable environmental policies and, by reducing poverty, would significantly contribute to reducing environmental degradation. But while, in general, adjustment programs have had a positive impact on the environment by reducing poverty, removing price distortions and subsidies, making environmental services affordable, and generating resources to manage the environment, the institutional capacity and political commitment necessary for full success were often lacking. In many cases, after some initial reduction in environmental degradation, further improvements in environmental

conditions have not been achieved (World Bank 1998b).

Furthermore, given that these adjustments and reforms are undertaken in situations where market and regulatory failures still persist, the steps taken often have serious and negative short-term social and environmental impacts which are not fully accounted for. For instance, fuel price increases without concomitant adjustments to substitute products can lead to increased use of lower-priced but more environmentally damaging fuels. Fiscal cuts can affect social and environmental services. Many adjustment programs have not addressed the ability of privileged elites to access natural resources on a preferential basis. Moreover, macroeconomic crises, which increase unemployment and poverty, can exacerbate environmental harms. For instance, in Thailand large areas of forest have recently been converted to agricultural lands to support impoverished people.

Multilateral institutions have recently placed more direct emphasis on ensuring that the social and environmental dimensions are fully accounted for in the adjustment programs (Graham 1994). There has also been greater emphasis placed on the institutional aspects of adjustment programs. For example, the 1997 World Bank report on Indonesia, issued prior to the economic crisis, actually mentioned the need to address corruption and no longer made use of the euphemism “high cost economy” (World Bank 1997b). In recent years, most nations receiving International Monetary Fund (IMF) help have had specific environmental programs built into their adjustment programs, as well as into the loans provided.

The economic crisis itself offers opportunities to exert greater influence over the environmental policies of Asia-Pacific nations as several of the crisis nations are under comprehensive IMF reform packages for a three-year period. A close look at the various reforms

and deadlines required by these programs indicates that there has been an attempt to use the opportunity for structural reform to introduce desirable environmental policy changes. This is most evident in the IMF program for Indonesia and less evident in the Thai and South Korean programs. In the Indonesian program there are 10 reforms aimed at creating improved forestry and agriculture policies which, if implemented properly, will mean a better environmental outcome in the long run.

The Indonesian case suggests that important steps have been taken which would previously have been difficult due to the collusion between the private plywood industry and government. Disbanding the private plywood industry cartel, which had set prices and controlled export contracts, represents a major step forward both economically and environmentally. The other steps are typical of the reforms recommended to improve environmental sustainability: increased royalties, liberalized trade in logs, effective anti-trust policy, and, most importantly, effective regulatory action to control illegal logging. (See Table 9.)

The Role of the Market

The globalization of markets for goods and services heightens the potential role that private companies can play in making Asia's industrialization "greener." Increasingly (and especially as foreign aid declines), private capital flows are being recognized as the most promising engine for sustainable development across the developing world (Esty and Gentry, 1997). China, for example, received about \$3 billion in foreign aid in 1998 from both multilateral sources (such as the World Bank) and bilateral assistance (from Japan, the EU, and

the United States). More than \$40 billion in international private capital flowed into China in the same year, as overseas companies set up joint ventures and expanded businesses aimed at serving the Chinese market. How the \$40+ billion of foreign investment gets deployed - determining what factories, roads, dams, power plants, waste facilities, water systems are built, as well as what sort of infrastructure is constructed (i.e., whether pollution control investments are part of these projects) - will have a far bigger impact on China's future than how the \$3 billion in foreign assistance is spent.

In some cases, attention to environmental concerns improves competitiveness (Esty and Porter 1998). Where energy costs are an important factor in production, for example, investments in reduced energy use will generate both cost savings and environmental benefits. Just how far the corporate world can go with "eco-efficiency" is a matter of considerable debate. Michael Porter (1995) and Christopher Flavin (1996) see big opportunities. Others are more skeptical about how many "win-win" opportunities exist (Whalley and Whithead 1994; Portney et al. 1994).

In other cases, companies feel pressure to meet high environmental standards neither because they expect to save money nor because governments or international treaties require it, but because market forces demand it. Both the European Management and Auditing Scheme (EMAS) and the International Organization for Standardization (ISO) have developed environmental management standards in response to customer requirements, reflecting a voluntary approach to upgrading corporate environmental performance. ISO 14000, in

particular, has become an environmental benchmark¹² for many companies - and an environmental quality threshold that all of their suppliers must meet. A growing number of corporations today insist that their suppliers be ISO 14000 “certified.” Matsushita, for instance, plans to have all of its Indonesian plants conform to ISO 14000 standards by March 1999, exemplifying how the private sector certification process and the pressures of the marketplace can help to align a corporation’s self-interest with environmental aims (*New Straits Times*, 23 June 1998, 5).

While ISO 14000 is aimed at corporate consumers, other policy tools have been developed which aim to harness the purchasing power of the public for environmental ends. Some number of consumers prefer environmentally friendly products - and may be willing to pay a premium for them. In the United States, one study has suggested that consumers would be willing to pay an average of 20 percent extra for products manufactured in a manner that was more sensitive to environmental concerns (Salzhauer 1991). Books informing individuals about the numerous small steps that they can take to improve the surrounding environment sell remarkably well. The unexpected success of *The Green Consumer’s Guide* (Ellington and Halles) in 1998, which was a best-seller for nine months, is only one notable example (Salzman 1997).

Eco-labels represent another mechanism for steering the marketplace toward environmentally preferable products. These labels, which provide the consumer with information on the environmental attributes of a product, can come in many forms (Salzhauser 1991; Salzman 1997). Some focus on a single issue (e.g., dolphin-safe, recycled, recyclable). Others

¹²For more information on ISO 14000, see Pesapane (1998).

address a number of criteria and distill the results into a single signal of environmental quality (e.g., Germany's "Blue Angel," Scandinavia's "White Swan," Canada's "Environmental Choice"). Some labels are government-sponsored (such as the European and Canadian labels just mentioned); others are issued by private parties (such as the "Green Seal" program in the United States or most product attribute claims such as "dolphin safe" or "recyclable"). Many focus on positive product qualities, but some highlight harmful environmental effects (e.g., California's "Prop 65" labels on carcinogenic products). In addition, eco-labels can be mandatory or voluntary.

Eco-labels are attractive because they do not dictate consumer behavior, but rather educate buyers, allowing them to make more informed choices. The Marine Stewardship Council (MSC) has launched a labeling campaign to signal to fish buyers - in both supermarkets and restaurants - which supplies come from sustainably managed fisheries. Similarly, the Forest Stewardship Council (FSC) has developed a label for timber from sustainably managed forests.

Eco-labels can, however, be controversial. First, to accurately eco-label a product, an analysis of a product's full "life cycle" must be undertaken. Unless the environmental impacts of a product's raw materials, manufacturing, transportation, consumption, and disposal are all considered, it is possible that the overall environmental effect of the product will be inaccurately gauged (Salzman 1997). Currently, however, there are no agreed upon methods for life-cycle analysis. Second, who pays for the analysis and who monitors compliance can be contested. Organizations that eco-label products may have problems raising funds, but to accept funds from manufacturers lends at least an appearance of bias.

Third, some businesses may not apply to be evaluated due to their apprehension over a

perceived relationship with environmental groups that are actively hostile to business interests (Salzhauer 1991, 13-15). Fourth, questions persist over how consumers will actually react to eco-labels. While people express preferences for cleaner products in surveys, it is not clear that they will act on those preferences or necessarily believe that an eco-label (or proxy) is a legitimate means by which to differentiate products. Finally, there are may be concerns that eco-labels might be used to promote eco-protectionism (Salzman 1997). Whether the policy underlying an eco-label is sound is often a matter of debate. And those who seek to eco-label their products may be subject to economic pressure. For example, a 1992 Austrian law requiring that timber products made from tropical timber be labeled as such was eventually rescinded after several ASEAN countries threatened to bring a GATT challenge against the law (Salzman 1997 citing Sucharipa-Behrmann 1994, 55) and to prevent Austrian companies from entering their markets (Esty 1994).

Additional consumer-driven environmental information initiatives include boycotts and other mechanisms to publicize environmental analyses and rankings. The Internet provides a particularly powerful new means by which to share product information quickly and cheaply. Moreover, as an information (not material) intensive service, the Internet is itself contributing to a world of reduced environmental harms.

The power of price signals should not be gainsaid. In fact, while not flashy and not fast, market-based incentives are having positive environmental effects. Incremental improvements driven by both corporate and consumer pressures have sharpened the focus in much of the business world and environmental results.

Government Policies

Governments also shape how market forces play out in the environmental policy domain. In fact, ensuring that environmental externalities are internalized is a critical element of getting Adam Smith's invisible hand to be environmentally friendly. All environmental regulation should thus be geared toward promoting the Polluter Pays Principle so that producers and consumers pay fully for the environmental harms that they cause.¹³

On a practical basis, governments can - and should - move to eliminate environmentally harmful subsidies to farmers, fishermen, and certain energy sources. They can support eco-labeling schemes, mandate disclosure of corporate environmental performance measures (such as the US Toxic Release Inventory (TRI)), insist on accounting principles (FASB) that require disclosure of corporate environmental liabilities and demand SEC filings (or their equivalent) on environmental results. All of these initiatives would inject more information on environmental performance into the marketplace, giving consumers, investors, and communities a better basis on which to judge companies.

Role of Non- Governmental Organizations (NGOs)

NGOs can help to ensure that environmental objectives do not get forgotten in the context of economic development. NGOs have historically played an important role in keeping governments honest and they now are making international organizations more efficient and effective (Charnovitz: 1997, 8). Non-governmental organizations can provide services, mobilize public opinion, defend minority or inadequately represented perspectives, monitor enforcement

agencies, advise governments, contribute to ongoing policy debates, and bridge the divides between governments and grassroots efforts (Bebbington and Farrington 1993, 199-220; Princen and Finger 1994; Esty 1998a, 129). Giving NGOs a structured role in the institutions managing globalization and the processes of economic integration (e.g., WTO, NAFTA, EU, APEC) offers the promise of real environmental benefits. In fact, NGOs often play a critical role in the policymaking domain as “competition” to governments (Esty 1998a).

Some commentators, however, remain critical of NGOs,¹⁴ fearing they will act as manipulative special interest groups. In general, the fear that NGOs will distort outcomes is overblown. While NGOs may act as special interests to some extent, there are already many special interests at work within environmental policymaking bodies. Adding environmental groups to the mix may provide a valuable counterweight to industry views.

Government officials will feel a greater need to justify their decisions if they are subject to careful review. NGOs thus increase the accountability of regulators by providing the general public with a genuine idea of the factors influencing a given decision and the alternatives available. The value of having the prevailing wisdom constantly questioned is especially great in policymaking realms marked by high degrees of uncertainty, such as the environment.

The Role of Institutional Reform

The forces unleashed by globalization are often hard to control, either because they are very big and powerful (the demands of competitive markets), or because they exceed the

¹³Not only does the Polluter Pays Principle ensure that externalities are minimized, it offers the benefits in equity, as the costs of the harms are imposed on the individuals producing them.

¹⁴The criticisms and responses outlined below draw on Esty’s discussion of the role of NGO’s in the WTO. Please see

jurisdiction of any one nation (multinational corporations), or because they are hard to corral (financial flows given the fungibility of money). Global-scale governance must be strengthened if these forces are to be prevented from leading to unnecessary environmental harms.

In fact, one of the central features of globalization has been a broad-based international consensus in support of market economics and freer trade and investment flows. But the promise of a market economy remains in doubt if there exists a threat of “market failures” - such as uninternalized pollution harms or poorly managed common resources. Absent a regulatory structure able to contain failures at the scope at which they arise, including the global scale, market systems tend not to deliver their full potential for improved social welfare as market failures reduce the allocative efficiency of the international economic system, diminish the gains from freer trade, and lead to environmental degradation.

The international bodies charged with protecting the environment at the global scale, especially the UN Environmental Program (UNEP), are largely ineffectual (Hurrell and Kingsbury 1992; Haas, Keohane, and Levy 1993; Victor, Raustiala, and Skolnikoff 1997). The location of UNEP in Nairobi isolates it, and the lack of sufficient funding also limits its efforts. While some successful initiatives have been launched, such as the Regional Seas Program, UNEP has been largely incapable of leading more substantive responses to international environmental policy challenges. UNEP officials themselves recently admitted, “global governance structures and global environmental solidarity remain too weak to make progress a world-wide reality ... The gap between what has been done thus far and what is realistically needed is widening” (UNEP 1997).

Esty (1998a) and Esty (1998b).

A strong argument could be made for creating a Global Environmental Organization (Esty 1994a; Esty 1994b). Such an entity would facilitate data and information exchange, develop and evaluate current policy efforts. The OECD, WTO, and World Health Organization provide relevant models for setting up such an organization. In practical terms, however, such an effort is unlikely to occur in the near future because of sovereignty concerns.

Institutional reform and strengthening could, however, occur within some of the existing organizations. In moving toward a clean revolution in Asia, APEC could play an important role. To lead a meaningful effort, APEC itself needs to undergo some structural changes. The organization would benefit from the creation of an Environment Committee, an external Environmental Advisory Group, and an Environmental Dispute Mediation service (Dua and Esty 1997). By developing this structural capacity and a set of environmental performance indicators and measures, APEC could provide further leverage for a movement to ensure clean growth in Asia.

Conclusion

The past thirty years have changed life in Asia dramatically. While substantial economic development has occurred throughout the region, it has been accompanied by serious environmental problems. In the context of deepening economic integration efforts it is necessary to consider environmental concerns as well. As we attempt to reach sustainable outcomes, economic and environmental issues can mutually reinforce and support one another.

In trying to promote a clean revolution in Asia, points of leverage can be found in many policy realms. Institutional reforms in the WTO, UN, and APEC would further environmental

protection, as would the overt consideration of environmental issues in trade liberalization efforts. Impetus for “greener” products can also stem from business activities and the desires of consumers. There is fundamentally no need to sacrifice environmental interests at the altar of economic growth. In spite of many obstacles and complications that currently exist, real prospects for an economically and environmentally healthy Asia remain alive.

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Table 1: GDP Growth and Prospects in the Asia-Pacific Region

Region	1981-90	1991-97	1997	1998f	1999f	2000f	2001-7f
World Total	3.1	2.3	3.2	1.8	1.9	2.7	3.2
High Income	3.1	2.1	2.8	1.7	1.6	2.3	2.6
Developing Reg.	3.0	3.1	4.8	2.0	2.7	4.3	5.2
E. Asia and Pacific	7.7	9.9	7.1	1.3	4.8	5.9	6.6
<i>China</i>		11.8	9.1	7.2	n.a.	n.a.	n.a.
<i>Crisis Count.*</i>	6.9	7.2	4.5	-8.0	0.1	3.2	5.2
Indonesia		7.3	4.6	-15.3	-3		
Europe & C.Asia	2.6	-4.4	2.6	0.5	0.1	3.4	5.0
L.Amer. & Carrib.	1.9	3.4	5.1	2.5	0.6	3.3	4.4
M.East & N.Africa	1.0	2.9	3.1	2.0	2.8	3.1	3.7
South Asia	5.7	5.7	5.0	4.6	4.9	5.6	5.5
Sub Saharan Africa	1.9	2.2	3.5	2.4	3.2	3.8	4.1

Notes: GDP is measured at market prices and expressed in 1987 prices and exchange rates. Growth rates over historic intervals are computed using the least squares method.

f. forecast

* Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand

Source: Table 1-2, World Bank (1998c).

Table 2: Real per capita annual GDP growth, 1965-9 (percent)

Nation	Real per capita annual growth
South Korea	7.2
Singapore	7.2
Taiwan	6.2
China	5.6
Hong Kong	5.6
Malaysia	4.8
Thailand	4.8
Indonesia	4.7

Source: Dua and Esty (1997), 15. (derived from IMF International Statistics Yearbooks).

Table 3: Life Expectancy and Infant Mortality in Selected APEC Countries

Country	Life Expectancy at birth	Infant Mortality rate
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	(years)		(deaths per 1,000 live births)	
	1960	1993	1965	1993
China	47	69	90	30
Hong Kong	66	63	27	7
Indonesia	41	63	128	56
Malaysia	54	71	55	13
Philippines	53	67	72	42
Singapore	65	74	26	6
South Korea	53	72	62	11
Thailand	52	68	88	35
Industrial Economies	70	77	nc	nc

nc = not compiled

Note: Industrial economics refers to nations on the world with a GNP per capita of \$8956 or more in 1994

Sources: UNDP, *Human Development Report 1996*; World Bank, *World Development Report*.

Table 4: Long-term Structural Change in Asia-Pacific and Other Regions

	Agriculture Value Added		% Urban Population		% Trade of GDP	
	1970	1996	1970	1996	1970	1996
DEVELOPING REGIONS:						
Europe and C.Asia	n.a.	11	52	66	n.a.	64
Latin Am. & Carrib	13	10	57	74	23	33
M.East & Africa	n.a.	n.a.	41	57	n.a.	54
South Asia	45	28	19	32	44	56
Sub Saharan Africa	27	24	19	32	44	56
Asia-Pacific & Pacific	35	20	19	32	19	58
<i>China</i>	34	21	17	31	5	40
<i>Hong Kong</i>	n.a.	0	88	95	181	285
<i>Indonesia</i>	45	16	17	36	28	51
<i>Rep. Korea</i>	25	6	41	82	37	69
<i>Malaysia</i>	29	13	34	54	80	183
<i>Philippines</i>	30	21	33	55	43	94
<i>Singapore</i>	2	0	100	100	232	356
<i>Thailand</i>	26	11	13	20	34	83

Source: World Bank (1998a).

Table 5: Industrial Structure, South Korea, 1960 and 1990

Contributions of each industry to GDP (percentages)		
Industry	1960	1990
Agriculture, hunting, forestry, and fishing	38	9.2
Mining and quarrying	2.2	0.5
Manufacturing	14	29.5
Electricity, gas, and water	0.8	2.1
Construction	3.4	13.5
Wholesale and retail trade, restaurants, and hotels	12.9	11.2
Transport, storage, and communication	4.7	7.2
Finance, insurance, real estate, and business services	8.7	14.8
Community, social, and personal services	7.9	4.2
Production of government services	7.3	7.9

Note: This figure is indexed 1960 GDP to 100 and shows 1990 GDP calculated relative to that base year.
Source: O'Connor (1994).

Table 6: Global and Regional Trade Growth

Region	1991-97	1997	1998f	1999f	2000f	2001-7f
World Trade Growth	6.8	9.5	5.3	5.7	6.2	6.1
<i>Import Growth</i>						
High Income	6.2	8.8	5.8	6.4	5.9	6.1
Developing Reg.	9.2	8.8	2.8	4.4	6.2	6.2
E. Asia and Pacific	13.5	3.5	-5.2	5.7	8.2	7.3
Crisis Countries*	12.0	3.0	-17.0	4.9	9.8	5.8
Europe & C.Asia	5.8	9.1	5.7	5.1	5.2	5.2
L.Amer. & Carrib.	14.1	16.1	7.8	0.9	5.2	5.4
M.East & N.Africa	1.3	10.8	4.0	4.9	4.7	5.5
South Asia	12.1	7.9	6.1	7.6	8.3	8.4
Sub Saharan Africa	3.5	5.8	4.7	5.9	5.9	5.3
<i>Export Growth</i>						
High Income	6.4	10.1	5.3	5.3	6.3	5.9
Developing Reg.	8.7	9.8	6.4	6.3	7.0	6.9
E. Asia and Pacific	15.2	12.7	9.4	8.5	9.0	8.5
Crisis Countries*	12.6	7.9	15.3	8.1	8.2	8.3
Europe & C.Asia	5.3	6.2	3.4	5.1	5.5	5.5
L.Amer. & Carrib.	9.7	11.1	7.1	6.3	6.7	6.7
M.East & N.Africa	4.2	8.3	3.6	3.2	4.8	4.3
South Asia	11.1	8.7	5.6	7.3	9.0	9.9
Sub Saharan Africa	2.6	7.7	3.7	4.5	4.7	5.1

Notes: Growth Rates over intervals are compound averages.

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* Indonesia, Republic of Korea, Malaysia, Philippines, and Thailand

Source: Table 1-5, World Bank (1998c).

Table 7: Inward Foreign Direct Investment (FDI) Flows and Stock by Region and Asia-Pacific Nation

	1988-91 Average p.a.	1994	1997a	FDI Stock 1997	Inward FDI% Gross Fixed Cap. Formation 1996
World	159,331	242,999	400,486	3,455,509	5.6
Developed	129,583	141,503	233,115	2,349,442	3.6
Developing	29,090	95,852	148,944	1,043,666	8.7
Africa	2,869	5,693	4,710	65,177	7.3
Latin Am & Carrib	9,460	28,687	56,138	375,414	12.8
Asia	16,468	60,679	86,923	593,674	7.4
<i>East & SE Asia</i>	14,716	56,684	78,032	509,721	8.3
(% share developing)	51%	59%	52%	49%	
<i>China</i>	3,105	33,787	45,300	217,341	17.0
(% share developing)	11%	35%	30%	21%	
<i>Hong Kong</i>	1,711	2,000	2,600	26,869	5.2
<i>Indonesia</i>	746	2,109	5,350	62,147	8.5
<i>Rep. Korea</i>	863	809	2,341	14,832	1.3
<i>Malaysia</i>	1,605	4,342	3,754	45,203	11.1
<i>Philippines</i>	501	1,591	1,253	9,931	7.8
<i>Singapore</i>	3,592	8,368	10,000	78,062	27.5
<i>Taiwan</i>	1,034	1,375	2,248	19,848	3.2

Table 8: Intra-Regional Exports by Asia-Pacific Nation 1996

	China	Hong Kong	Indo.	Korea	Mal.	Phil.	Sing.	Thai.	Taiwan	Japan	East Asia
China	0	24	1	4	1	1	2	1	2	19	56
Hong Kong	27	0	1	1	1	1	5	1	3	5	47
Indonesia	4	4	0	6	2	1	8	2	4	27	58
Korea	7	8	2	0	2	1	5	2	3	14	45
Malaysia	3	5	1	3	0	1	20	4	3	13	53
Philippines	1	5	1	2	2	0	5	5	3	16	40
Singapore	2	9	1	3	19	2	0	6	4	8	53
Thailand	3	5	1	1	3	1	14	0	2	17	48
Taiwan	13	23	2	2	3	1	4	3	0	12	63
Japan	5	6	2	7	4	2	5	4	7	0	42
Asia Pacific	5	10	2	4	4	1	6	3	4	9	49

Table 9:Forestry-Related Policy Changes under the Stabilization and Adjustment Program in Indonesia

Policy Change	Effectiveness
Introduce new resource rent taxes on timber. Level: from 0 to 6% on timber sales (replaces the forest products fee)	May 5, 1998
Reduce export taxes on logs and rattan to a maximum of 30 percent ad valorem. The aim is to reduce export taxes to 20 percent by the end of 1998, 15 percent by the end of 1999, and 10 percent by the end of 2000.	April 15, 1998
Increase timber stumpage fees charge to forest concessions, implement auction system for new concessions, allow transferability of forestry concessions and delink ownership from processing for new concessions.	June 30, 1998
Reduce land conversion targets to environmentally sustainable levels and implement a system of performance bonds for forest concessions.	December 31, 1998
Eliminate the Indonesian Plywood Associations (APKINDO)'s monopoly over plywood exports.	March 30, 1998
Transfer control over all government-owned commercial forestry companies from the Ministry of Forestry to the Ministry of Finance.	Early 1998
Incorporate the reforestation fund into the national budget.	Early 1998
Remove restrictions on foreign investment in palm oil plantations.	Early 1998
Remove the ban on palm oil product exports and replace it with an export tax of 40 percent to be reduced to 10 percent by 1999.	April 22, 1998 [CITE from Mari]

Source: Sunderlin (1998).