Involving the DPRK in Northeast Asia: Regional Economic and Environmental Cooperation

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Contents

Page

Executive Summary.....1

I. Introduction.....6

II. Opportunities and Suggestions for the United States.....10

A. Constraints and Negative Implications of Cooperation.....15

B. Go Slow: Support Existing Initiatives.....16

III. Regional Economic Cooperation: The Vision, the Reality,the Possibilites 18

A. The Current Level and Composition of Northeast Asian Trade.....19

Northeast Asia Trade with the European Community (EC).....20

Intraregional Trade in Northeast Asia.....21

North Korea's Economic Situation.....24

B. Ongoing and Proposed Regional Economic Initiatives 25

The Northeast Asia Economic Forum.....26

An Association of Northeast Asian Provinces.....27

A Northeast Asia Economic and Social Commission.....27

A Northeast Asia Development Bank.....28

An International Free Trade Zone.....31

The Tumen River Area Development Project.....32

C. Sectoral Cooperation.....37

A Northeast Asia Labor Market.....37

Regional Transportation and Communication Planning.....38

Shipping: Transnational Issues and Possible Cooperative Responses.....40

Air Traffic Management.....43

Energy Cooperation: Joint Ventures in Petroleum Exploration and a Northeast Asia Energy Consortium.....44

Joint Ventures.....47

D. Motivations for and Obstacles to Regional Economic Cooperation.....48

IV. Environment Cooperation: Emerging Trends.....52

A. Issues.....52

1. Regional Economic Cooperation, Trade and the Environment.....52

2. Transfrontier Air Pollution (Acid Rain).....55

3. Marine Pollution.....56

Status of Marine Pollution in North Korea.....56

Transnational Issues and Possible Cooperative Responses.....63

Transboundary Oil Spill.....65

Nuclear Waste Dumping.....66

4. Fisheries.....67

The Issues.....67

Yellow/East China Seas.....67

Sea of Japan.....69

Existing International Regimes.....70

Cooperative Approaches.....71

5. Protection of Shared Vulnerable Marine Animals and Habitat.....75

B. Regional Environmental Initiatives.....76

1. Recent Developments.....76

The North-West Pacific Region Action Plan (NOWPAP).....77

UNDP/GEF Program on Prevention and Management of Marine Pollution in East Asian Seas

.....80

Intergovernmental Oceanographic Commission (IOC/WESTPAC).....82

Northeast Asian Environment Programme (ESCAP/UNDP).....87

UNDP's Environmental Components of the Tumen River Project.....89

INVOLVING THE DPRK IN NORTHEAST ASIA REGIONAL ECONOMIC AND ENVIRONMENTAL COOPERATION

Executive Summary The dissipation of Cold War tension and the convergence of emerging trends in Northeast Asia--economic regionalism, natural economic territories, cooperation on environmental protection, and in implementation of the Law of the Sea Convention--present opportunities for involving North Korea in regional economic and environmental cooperation. Ongoing regional economic initiatives that include North Korea are: the Northeast Asia Economic Forum--a highly successful NGO devoted to facilitation of research, dialogue and dissemination of information on economic cooperation in Northeast Asia. the Tumen River Area Development Project (TRADP)--an international free trade zone at the trijunction of Russia, North Korea and China which proposes to combine complementary factor inputs such as Russian and Mongolian resources, Chinese and North Korean labor, and Japanese and South Korean capital, technology, managerial expertise and markets. Proposed are: an Association of Northeast Asian Economies--a loose association of province level officials and their relevant staff mandated to establish the "rules of the game," set regional product standards, coordinate cross-border infrastructure development plans and help close the information gap constraining regional decision-making. a Northeast Asia Development Bank--a

regionally focused institution which would finance, arrange for financing of infrastructure and "start up" projects, and trade, upgrade financial capabilities and function as a clearing union. Sectoral cooperation might include: a regional labor organization to monitor and manage labor flows a transportation and communication planning forum to discuss, coordinate and prioritize national infrastructure projects necessary to enhance regional economic cooperation developing a mechanism to improve shipping safety, ship-sourced marine pollution, prevention and clean up, and contingency planning. coordinating air traffic management a Northeast Asia Energy Consortium--to promote a consensus on energy saving, diversification of supplies, integration of networks, nuclear safety, and environmental protection, and to enhance security of energy supply and demand, to examine the feasibility of large transnational energy projects, and to transfer technology and know-how joint ventures in petroleum exploration, production and refining, e.g., between North Korea and South Korea Regional cooperation on environmental issues might include: trade-environment linkages, e.g., setting and enforcing a common environmental regulatory framework for products, production processes and resource extraction methodologies, perhaps following the environmental principles of the TRADP, promotion of environmentally-friendly "green" industries, and common environmental negotiating positions vis-...-vis trade organizations monitoring, combatting and evaluating the impact of transboundary acid rain preventing marine pollution by harmonizing national policies, laws and regulations, and developing contingency plans for dealing with transnational oil spills monitoring and cleaning up dumped nuclear waste in the Sea of Japan ensuring sustainable development of fisheries through multilateral dialogue, research, and possibly establishment of a formal fisheries management mechanism protection of shared vulnerable marine animals and habitat Ongoing regional cooperative environmental initiatives which involve North Korea include: the United Nations Environment Programme's Northwest Pacific Region Action Plan (UNEP/NOWPAP) for the wise use, development and management of the coastal and marine environment the United Nations Development Programme/Global Environmental Facility (UNDP/GEF) Program on Prevention and Management of Marine Pollution in East Asian Seas which includes China and North Korea in its efforts to support the participating governments in the prevention, control and management of marine pollution at both the national and regional levels the Intergovernmental Oceanographic Commission's Subcommission for the Western Pacific (IOC/WESTPAC) which defines regional problems and implements programs for regional marine scientific research, and facilitates regional exchange of scientific data, training and education the Northeast Asian Environment Programme which promotes frank intergovernmental policy dialogue on environmental problems of common concern to the region as a whole, information sharing, joint surveys and collaborative research and planning In engaging North Korea in the economic and environmental sectors, the United States should support those ongoing initiatives in which North Korea is already participating, which also involve China, and which show potential for success. The United States should encourage Japan to lead new initiatives. Thus in the economic sector, the United States might support the Northeast Asia Economic Forum and the Tumen River Area Development Project while encouraging Japan to take the leadership in discussions on an Association of Northeast Asian Economies, a Northeast Asian Economic and Social Commission, a Northeast Asia Development Bank, a regional labor market, a regional transportation and communication forum on Northeast Asia shipping and navigation issues, and on regional air traffic management. Similarly in the environment sector, the United States might support implementation of the UNEP/NOWPAP and the UNDP/GEF--the latter through its U.S.- Asia Environmental Partnership, while encouraging Japan to lead and support regional cooperation on trade and environment issues, acid rain, fisheries management and protection of valuable and vulnerable species. A current serendipitous opportunity U.S. involvement with North Korea might be U.S. assistance in monitoring and/or retrieving the dumped Russian nuclear submarine reactors in North Korean waters. I. Introduction The amelioration of political tensions in Northeast Asia and the internationalization of the world economy are stimulants for economic cooperation in Northeast Asia. Positive developments include Sino-Russian rapprochement and economic cooperation between

South Korea and both China and Russia. The nuclear issue remains a significant obstacle to improved relations between the DPRK (North Korea) and the rest of the region. However it should be remembered that prior to the surfacing of this issue, the general trend was toward an incipient North Korean economic "opening," and improved political relationships with the United States, Japan, and most dramatically, South Korea. Indeed there is a school of thought in South Korea that believes Pyongyang's attitude is slowly becoming more positive and that North Korea's tentative quest for foreign investment and diplomatic recognition should be supported. In this region, geoeconomic patterns are rapidly replacing existing geopolitical alignments. Indeed, a "soft" regionalism may be emerging--associations that lack organizational structure but instead are based on the flow of capital, technology, goods and people across ideological-political boundaries. The region is also being affected by several emerging global trends--economic regionalism, the growth of natural economic territories (NETs), regional cooperation on environmental protection and on implementation of the provisions of the Law of the Sea Convention. These trends present opportunities for involving North Korea in regional economic and environmental cooperation. Multilateral organizations in the Asia-Pacific region have increased from nearly nil in the 1940s to more than 70 in the 1980s, including the Pacific Economic Cooperation Council (PECC) and the Asia-Pacific Economic Cooperation grouping (APEC). In earlier years, Asia-Pacific regional organizations largely originated outside the region to assist in the development of nations within the region. Indeed the region previously obtained and maintained what cohesiveness it had through bilateral arrangements between smaller states and their protectors, especially the United States. More recently, the impetus to establish regional organizations has originated much more often from, and has been directed by, the nations within the region as self-help initiatives. This regional multilateralism is relatively new to Asia and more regional "self-help" associations can be expected. As a consequence of the amelioration of political and ideological tensions, a new phenomenon is emerging in Asia--natural economic territories (NETs). This cross-border utilization of economic complementarities for rapid growth in trade, investment, technology transfer and division of labor can be spontaneous and driven by private enterprise such as the "Greater China" NET--Hong Kong, Taiwan and southern China. Others are largely the result of governmental or intergovernmental initiatives designed to combine the distinct labor, capital and natural resource endowments of adjacent subregions. In Northeast Asia a broad NET may be emerging which includes northern and western Japan, the Russian Far East, Manchuria, North and South Korea and Mongolia. This NET is centered on the Tumen River valley at the trijunction of China, Russia and North Korea, and has the backing of those governments as well as Mongolia, South Korea and UNDP. Regional environmental cooperation is a "growth industry" in Northeast Asia. The 1992 Earth Summit officially known as the UN Conference on Environment and Development brought environmental awareness to the highest level of government. In its aftermath, China, Japan, South Korea and even North Korea have been busy establishing new institutions, commissions, agencies, and regulations to enhance environmental protection. Transnational issues--both global and regional--are receiving renewed attention and the necessity of cooperation on issues such as acid rain, transportation and dumping of toxic wastes, marine pollution and ecosystem and fisheries conservation has become obvious. UNEP's Regional Seas Program which targets 12 regions including 140 coastal states has now initiated a Northwest Pacific Action Plan (NOWPAP) including North Korea, covering the Sea of Japan and the Yellow Sea. ESCAP/UNDP have also launched regional environmental initiatives. Nevertheless, poorer countries continue to argue that poverty is the main cause of environmental degradation and that what they need is "trade not aid." They want environmental issues to be linked to the GATT process, more technology transfer at affordable prices, new definitions of intellectual property rights, and large infusions of "green" aid. Although developing countries reject the principle of attaching environmental conditions to lending and aid programs, the trend is clearly in that direction, and both countries and multilateral lending institutions take strongly into account environmental aspects in making their aid and grants. For example, the Asian Development Bank has decided that 50% of its financing must go to projects which list environmental or social goals as

their principal objectives. The Law of the Sea Treaty has now been ratified by the 60 countries necessary to bring it into force in 1994. The Convention heralds a new era of transnational rule making regarding national rights and responsibilities in the oceans and serves as a framework within which nations exercise these rights and fulfill their responsibilities. Article 122 of the Convention calls for states bordering semienclosed seas like the Sea of Japan and the Yellow Sea to cooperate with each other in the implementation of various Treaty provisions. The venue for addressing issues of ocean law and policy is thus moving from the global to the regional level as nations within regions such as Northeast Asia recognize that global standards and regimes may not adequately address their special circumstances of physical geography, uses or policies. These factors are leading to an incipient marine regionalism and maritime regime building in Northeast Asia. II. Opportunities and Suggestions for the United States Northeast Asia and the North Pacific area almost unique for their lack of regional institutions. This impoverishment reflects the conflicts among the governments in the region, particularly the divided countries--Korea and China--which create enormous problems of membership. There is however a gradual development of a thin net of regional institutions covering the region in the economic, environmental, and to a lesser degree the political arenas, but within a broader Asia-Pacific framework. Economically, the principal broad-gauged nongovernmental institution is the Pacific Economic Cooperation Council (PECC), which grew out of a 1980 conference in Canberra. The intergovernmental Asia-Pacific Economic Cooperation forum (APEC) followed in 1989 and consists of annual ministerial meetings and 10 working groups. The heads of government met in a "leadership conference" alongside the APEC ministerial meeting in Seattle in November 1993. PECC includes among its membership all the major North Pacific economies (although North Korea and Mongolia do not yet participate), but the APEC does not include many smaller nations--and Russia. Although solutions to divided states and regional problems are primarily the responsibility of the parties immediately concerned, they cannot be resolved solely by those parties since external states are also involved, directly or indirectly. Thus solutions to Northeast Asian regional issues must be sought through a series of concentric arcs: the immediate parties, the vitally interested external nations, and the regional or international organizations that can exercise influence or provide assistance. Present trends provide an unequalled opportunity to think boldly and to be innovative about solutions in general and about regime building in particular. I would argue that United States and Japanese support for this effort would be in their long-term interest. The important question is which should take the lead on what specific initiatives. America's stated overall policy for the Asia/Pacific region is to help build a "New Pacific Community"--a vision that sees America actively engaged in multilateral economic, political and security processes. To this end America will promote confidence- enhancing measures and regional initiatives that reduce tensions. Potentially prominent among these are economic and environmental initiatives. To achieve this vision, all vestiges of the Cold War in Asia must be erased, including the tension on the Korean peninsula. It is thus vital that every effort be made to bring North Korea into the international community. The major carrot that can be dangled in front of Pyongyang is the prospect of diplomatic relations with the United States and the West, the lifting of economic sanctions, and foreign cooperation in the economic development of the country. To start the process of international socialization and normalization, the United States should take a comprehensive approach which includes support for regional economic and environmental initiatives involving North Korea. The United States has yet to articulate specific policies for the economic and environmental sectors in Northeast Asia. However it does have several relevant global initiatives in these sectors. It is a very active member APEC--an economic grouping established to better manage the effects of growing interdependence in the Pacific region. And it is a member of the Asian Development Bank and has reluctantly agreed to an increase in the Bank's cash backing. Also, the U.S. Agency for International Development sponsors the United States-Asia Environmental Partnership program (US-AEP)--with a total expected funding of US$500 million over five years. The Executive Director of the APEC Secretariat is an American-- a former Ambassador to the South Pacific. APEC senior officials oversee 10 working groups on topics such as human resource

development, regional energy cooperation, marine resource conservation, telecommunications, transportation and fisheries. The human resources development group seeks ways to exchange information among Asia-Pacific economies in business administration, industrial training and innovation, project management and development planning and promotes university partnerships between U.S. and Asia/Pacific universities, outreach and cooperative education activities. The regional energy cooperation group develops cooperative projects which as a regional database on energy supply and demand, and exchanges views on coal utilization, technology transfer, and resource exploration and development. The marine resource conservation group exchanges information on policy and technical aspects of marine pollution, advancement of integrated coastal zone planning, and dealing with red tide/toxic algae problems. The telecommunications group compiles information on each member's telecommunications development activities and its policies and regulatory environment, and explores ways to develop regional networks and capacity building. The United States leads the transportation group which studies and recommends ways to improve infrastructure, and facilitate safe and secure movement of passengers and freight. The fisheries group surveys cooperation in the development of fisheries resources. An APEC Eminent Persons Group is developing a strategy on trade facilitation which includes cooperation on environmental policies. The US-AEP partners to solve environmental problems in Asia and the Pacific; links businesses, communities and governments on both sides of the Pacific in public-private, nongovernmental sector partnerships; mobilizes appropriate U.S. environmental technology, expertise and financial resources; coordinates participation of 25 U.S. government departments and agencies; and leverages public, private and nongovernmental sector resources. The US-AEP program provides services in four areas: Professional and organizational development: training, fellowships and exchanges for Asian and American professionals and technical assistance for specific environmental problems Technology cooperation: opportunities for Asians to contact providers of U.S. environmental goods and services and Americans to learn about business opportunities through US-AEP-funded technology cooperation offices in Hong Kong, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand Environmental and energy infrastructure: information, advisory services and innovative financing methods for clean power, water, waste water, municipal solid waste and hazardous waste projects in Asia and the Pacific Biodiversity conservation: grants that support efforts of local people to analyze and use their natural forest and marine resources for subsistence and commercial purposes while conserving the region's biodiversity. US-AEP also sponsors Environmental Action Teams that respond to specific environmental problems in Asia. The Teams bring together U.S. environmental experts to undertake short-term assignments. They are led by experts from the United States Environmental Protection Agency (EPA) and may include members from other federal or local government agencies, international organizations, businesses, and nongovernmental organizations. Action Team findings are shared with US-AEP partners to coordinate appropriate follow-up activities. The East-West Center, a non-profit think-tank on Asia-Pacific issues funded by the U.S. Congress and headed by Michel Oksenberg, has organized several conferences involving participants from North Korea on security issues and on transnational ocean management problems and opportunities. These latter meetings were held in Vladivostok in 1990 and Dalian, China in 1991. A. Constraints and Negative Implications of Cooperation There are several obvious obstacles to U.S. involvement in economic or environmental cooperation in the region, particularly that involving North Korea. The Clinton administration views Japan as an increasingly important global partner in peacekeeping, in promoting democracy, in protecting the environment and in addressing major challenges in Northeast Asia. The economic sphere is of course Japan's strength and its capacity to lead in this sector is obvious. However it is not clear that Japan is politically able or willing to lead. Nevertheless, Japan may not fully welcome a U.S. regional leadership role in these sectors. And despite the stated U.S. policy, there is a possibility that different agencies of the U.S. government are sending conflicting signals to Japan regarding the U.S. view on Japan taking a leadership role in some sectors. Thus if the United States truly wishes Japan to assert more leadership and responsibility on the world stage, it should not be seen as

undercutting Japan's leadership efforts in its own region. The United States should instead be seen as unambiguously approving and strongly encouraging Japan to take the lead in these areas. Second, North Korea could be a troublesome partner. It may withdraw, reject or greatly complicate American and others' initiatives in these sectors if it feels--as it often does--that there is a "conspiracy" to engage or "subvert" it. For North Korea to be productively involved in any regional economic and environmental initiative would require a sea change in its attitude and openness as well as a massive capacity building effort to bring its relevant personnel up to speed. Third, Russia's involvement in regional initiatives makes progress unpredictable and complicated because of its own instability and tensions, and conflicting interests between the Russian Far East and the center. Finally, "regional" cooperation could convey a sense of exclusivity to those left out. But on the other hand, familiarity may breed contempt. B. Go Slow: Support Existing Initiatives Given the risks associated with engaging North Korea and the need to encourage and permit Japan to lead in its own region, the United States should support those economic and environmental initiatives in which North Korea is participating and which show potential for success, and encourage Japan to lead new initiatives. Those ongoing initiatives which also have China's participation and support should be particularly targeted since China may be helpful in encouraging North Korea's positive participation. Thus in the economic sector, the United States might support the Northeast Asia Economic Forum and the Tumen River Area Development Project while encouraging Japan to take the leadership in discussions on an Association of Northeast Asian Economies or a Northeast Asia Economic and Social Commission, a Northeast Asia Development Bank or a Northeast Asia window in the Asian Development Bank, a regional labor market, a regional transportation and communication forum or plan, on Northeast Asian shipping and navigation issues and air traffic management. As a longer term goal, on the economic front, the United States should consider encouraging North Korea to join the APEC process initially as an observer in some of the more relevant working groups, particularly human resource development, and transportation which is led by the United States. In the interim the United States might extend support to the Northeast Asia Economic Forum, perhaps funding a meeting to explore the whole question of cooperation with North Korea, including North Korea's sectoral interests and priorities. In particular, it could support the Tumen River Area Development Project, funding American firms to contribute to the pre-feasibility studies and the environmental impact assessments. Similarly in the environment sector, the United States might support UNEP's NOWPAP and UNDP/GEF's Programme--the latter through its US-AEP while encouraging Japan to lead and support regional cooperation on trade and environment issues, acid rain, fisheries management, and protection of valuable and vulnerable species. If intergovernmental agreements prove unacceptable or difficult for North Korea, then U.S. support should be extended to nongovernmental initiatives like that of the East-West Center. A current serendipitous opportunity for U.S./North Korea cooperation might be to offer assistance in monitoring and/or retrieving the dumped Russian nuclear submarine reactors in North Korea's exclusive economic zone. This could even be a joint U.S.-Japan initiative under the environmental aspects of its global partnership. Japan should also be strongly encouraged to join the Tumen River Area Development Project at least in a modest manner. III. Regional Economic Cooperation: The Vision, the Reality, the Possibilities The economic potential of Northeast Asia can be perceived by imagining the region as one country--without political boundaries and economic barriers-- and the implications of this vision for transportation and infrastructure as well as the matching of needs and assets. For example, Russia could export to South Korea by railway through North Korea. North Korea could export to South Korea directly without transshipment via Hong Kong or Japan. Planes could fly between Japan and China directly over the Korean peninsula. And China and perhaps Mongolia could use the Tumen River for direct access to the Sea of Japan. The region has many potential complementarities. Russian resource-based industry, Japanese and South Korean heavy and technology-intensive industries, and Chinese and North Korean light industry and agriculture all complement one another. Japan and South Korea have considerable capital, technology, and managerial skills. North Korea and China have abundant cheap labor. And the Russian Far East, Mongolia, northeast China,

and North Korea have abundant natural resources--coal, oil and gas, timber, fresh water, minerals, and agricultural products. The Russian interest in developing its Far East and the focus of Japan and South Korea on overseas resources and markets are also converging incentives. Moreover, the Sea of Japan coasts of all Northeast Asian countries are underdeveloped. Indeed, there is a gap in economic development between the eastern and western coasts of the Korean peninsula, between the eastern and western coasts of Japan, between the European and Asian parts of Russia, and between the southeastern and northeastern coastal areas of China. These activities need to redress these imbalances to reduce internal factionalism and political tension. Northeast Asian economic cooperation could help ameliorate these economic differences by stimulating development around the Sea of Japan. Thus political relaxation, potential complementarities, existing and potential transportation linkages, and historical development patterns make Northeast Asian economic cooperation a real possibility. But research is needed to determine which specific industries and industrial sectors are likely to be enhanced. A more detailed analysis is needed of what specific kind of cooperation should be pursued. It may be unlikely that simple liberalization of the sort being promoted in ASEAN and APEC would do much to stimulate growth in the Russian Far East or North Korea or northeast China. Rather, the cooperation might need to take the form of strategic industry policy wherein countries target specific industries for nurturance through trade, credit, training and other policies. There will also be a need to invest in infrastructure, both physical and social. Industry targeting and infrastructure cooperation are especially important in promoting sustainable rather than just higher growth development. And in this context, there is need to know what the environmental impacts of different policy packages/approaches to regional economic cooperation are likely to be. A. The Current Level and Composition of Northeast Asian Trade Countries and parts of countries in Northeast Asia have wide differences in their degree of international specialization and approach integration with outside markets very differently (Table 1). South Korea has by far the greatest export share in output, high exports per capita and the highest recent growth rate in exports per capita. North Korea is way below optimum on all measures of international specialization. China and Northeast China also have a long way to go to achieve a respectable per capita export effort. Northeast China's exports are greater than the Chinese average export effort but is still far behind the more open economies. Russia lags far behind the United States and Japan in export effort and the same is likely true for the Russian Far East. Though comparable data are not available, a reasonable guess would be that the export share and effort are relatively low in Mongolia and North Korea. These relative performances show clearly the scope for trade development in developing Northeast Asia and the potential for regional cooperation that facilitates trade development. Northeast Asia Trade with the European Community (EC) Northeast Asia (including all of China and Russia) has a surplus with the EC, due solely to trade with China and South Korea. Thus unless a deficit in trade in services offsets this surplus there is a net capital outflow from Northeast Asia to the EC. Northeast Asia has surpluses with the EC in food and minerals and other resource based exports. Together these resource based categories account for over 20% of DPRK exports to the EC. Northeast Asia's surplus in labor intensive production, i.e., the "textiles plus" category and the labor intensive part of other manufacturing is significant--35% of China's large exports to the EC are in the "textiles plus" category and over half of North Korea and three-fourths of Mongolia's exports are also in this category. The EC surplus with Northeast Asia is in the more human and physical capital and technology intensive trade categories, such as chemicals and metal manufactures--basically heavy industry, and heavy manufacturing. Regional economic cooperation in Northeast Asia might lead to import substitution in the heavy industry category as some fear, but it could just as well lead to increased exports of resource based manufactures and skilled labor intensive manufactured goods to the EC (and other developed regions) in exchange for consumer goods and capital equipment, thus increasing trade. Intra-regional Trade in Northeast Asia (Tables 2 and 3) Intra-regional trade apparently increased steadily throughout the 1980s and early 1990s. However, the precise extent of intra-regional trade cannot be ascertained, since data are hard to obtain and are unreliable. There is no trade data for clandestine partners, e.g., South

and North Korea, data exists for one year only, and data are not disaggregated by parts of countries, e.g., Northeast China and the Russian Far East. The desired subnational trade coverage is unavailable and thus China and Russia must be substituted for Northeast China and Russian Far East. Further, most intra-regional trade is barter trade and difficult to price and there is no uniform compilation of trade data for developing Northeast Asia. Export orientation is low and regional trade is low in Northeast Asia--5 to 6% for developing Northeast Asia. This ratio might be somewhat higher if only the Russian Far East and Northeast China were included rather than all of Russia and China. Nevertheless it is woefully below the potential for such trade. Only Mongolia and North Korea have a large part of their trade with regional partners--mostly the CIS--and both have regional deficits. North Korea has an even larger deficit than Mongolia (35% of imports), but is essentially in balance with Northeast Asia--its deficit with developing Northeast Asia is just offset by its surpluses with South Korea and Japan. This is unlikely to continue, since there is no way to finance North Korea's overall deficit. Broader regional dependence is larger--23% of developing Northeast Asia exports go to and 14% of developing Northeast Asia imports come from Northeast Asia defined to include South Korea and Japan. Interestingly enough, developing Northeast Asia has a large surplus with Northeast Asia, although a deficit with the world. Although South Korean and Japanese trade with developing Northeast Asia is growing rapidly, there is much room for improvement in intra-regional trade, especially given the inherent resource complementarities and the experience in other large regional markets. This is sufficient reason to be highly bullish about any changes, including regional cooperation possibilities, that would open up and so increase economically efficient intra-regional trade. North Korea receives the bulk of its oil from China, especially for its military. A wide variety of Northeast China exports (coking coal, agricultural products, and to a lesser extent, garments and textiles, chemical products, and tires) also go to North Korea. Jilin province has a huge surplus with North Korea with food exports largest, followed by textiles, light manufactures and resource based goods. The small return imports are mostly ethnic Korean food and minerals and other resource based goods. Jilin's exports include automobiles, TVs, sewing machines and other manufactured goods. They get back timber, rice, seafood and products transshipped through North Korea from third countries. Heilongjiang has essentially zero imports from North Korea and exports leather, hides, glass, forest products and chemicals to North Korea. A large change not fully reflected in these data is China's conversion of trade with North Korea from barter to hard currency payments. In the absence of considerable reforms, probably only possible with international cooperation, either trade will shrink to the low levels of North Korean exports or untenable levels of Chinese financing of North Korea must occur. North Korea/Russia-Russian Far East trade reflects the command economies of both and the high level of dependency of North Korea. The latter exports agricultural products--fruit, vegetables, garments, other textiles, steel, metals, and non- staple foods to Russia and imports basic necessities such as crude oil and petroleum products, coking coal, ores, metal, transport equipment and machinery. With Russia's conversion of its trade with North Korea from barter to hard currency payments, that trade has dwindled rapidly. North Korea's leaders know that they must increase exports by improving the professional capabilities of North Korean "businessmen" and the availability of necessary information; create export industries based on local raw materials (processing industries based on comparative advantage and cheap labor); and adopting an appropriate tariff structure. North Korea's Economic Situation North Korea has lost its export markets in Eastern Europe and an important source of hard currency and technology--East Germany. Worse, both Russia and China have abolished subsidies on crude oil which North Korea must wholly import, and now require payment largely in hard currency. For the first time in its history, the country experienced negative growth rates-- estimated by South Korean economists at 3.7% in 1990 and -5.2% in 1991. Percentage cchievements of major targets in 1990 ranged from 19% in marine products to 54% in fertilizers. To partially compensate for its predicament, North Korea reversed its long term noncommittal position and strongly endorsed joint ventures with industrialized countries. In 1992 it passed three joint venture laws with generous provisions for foreigners, designated several cities as free trade zones, and became an active participant in the

Tumen River project and in 1993 promulgated legislation allowing foreign banks to trade in North Korea. Its new economic policy has three primary objectives--agricultural development, light industry production, and export promotion. North Korea has also agreed to direct trade with the South and in 1992, this trade was at $209 million, the fourth largest after Russia, China and Japan. Such direct trade could gradually narrow the economic gap between the two and ease the pain and dislocations of unification. B. Ongoing and Proposed Regional Economic Initiatives At this stage, the key to fostering economic cooperation and maintaining momentum is to keep discussions informal and representation "unofficial." To get the cooperative process going there is a strong need for unconstrained discussions of the many issues involved in the most politically neutral arena possible. A frank and open interchange reflecting different country concerns is required to clear the air, improve transparency, and establish trust, thus providing the basis for meaningful compromise. This applies to discussion of the various possible approaches to regional cooperation and of the specific proposals so far presented. Trial balloons need to be released and research on the realistic possibilities needs to be organized, financed and carried out. This is especially important in Northeast Asia, where government to government exchanges tend to involve little more than ideological platitudes and careful non-committal statements. Several forms of institutionalized nongovernmental organizations (NGOs) have been suggested, ranging from regional centers for information exchange to a PECC-like organization including academics and business representatives, with government officials as observers. The Northeast Asia Economic Forum, An Association of Northeast Asian Provinces, A Northeast Asia Economic and Social Commission, and a Northeast Asia Development Bank, an international free trade zone, and the Tumen River Area Development Project The Northeast Asia Economic Forum is an NGO formed to facilitate research, dialogue and dissemination of information on Northeast Asia economic cooperation. The forum has sponsored four conferences to date--three of which were attended by North Korean participants--Changchung in 1991 at which the Tumen River project was first mooted to an international audience; Pyongyang in 1992, a truly landmark event hosted by North Korea's Ministry of External Economic Relations; Vladivostok, 1992; and Yongpyong, South Korea 1993. The Yongpyong meeting focused on alternative futures for the region, cooperative financing of development, cooperation in planning transportation and communication infrastructure, utilization of labor and institution building, and the role of the private sector in these efforts. The next conference is planned for Niigata, Japan in 1994. This NGO effort was successful because of the linguistic and diplomatic skills and network of the founder, and its availability at a time when the world and the region were undergoing a major political transformation. Differences in the legal, social and paralegal environments affecting economic decision making can best be discussed in a non-governmental setting such as the Northeast Asian Economic Forum. The "rules of the game" have to be formulated and agreed for all forms of substantive regional economic cooperation, from joint ventures through international economic zones to even eventual EEC type integration. Achieving a consensus on these issues is a necessary but insufficient condition for economic cooperation. However, a formal international commission may be needed to take substantive steps toward codifying the "rules" in existence and to organize research and to hold meetings needed to reach agreement on what cross-border activities will be undertaken. Thus one goal of this process might be the establishment of a loose association of province-level officials and their relevant staffs--an Association of Northeast Asian Economies or Provinces--or alternatively a Northeast Asian Economic and Social Commission. Besides helping establish the "rules of the game" and setting regional product standards to ensure consistent acceptable quality, such a regional organization could help in negotiating plans for cross-border infrastructure development and close the huge information gap now constraining regional decision making. This objective could be accomplished by establishing the accepted definitions and reporting rules for data categories, by carrying out training proposals and by providing policy research that would serve decision making. High on the agenda is research on ways to finance the immediate infrastructure requirements which would promote regional economic cooperation. Also needed is a clear image of the costs and benefits, feasibility studies for various proposed projects

and agreements. These studies should emphasize economic returns, with and without economic reforms. The political process will supply the weights for the numerous other factors that will ultimately be involved. At some point an intergovernmental regional association could provide an appeals court for businesses contesting the interpretation of the "rules" of regional cooperation or for settling business conflicts between nationals of the different countries involved. Another possibility is a Northeast Asia Development Bank (NEADB) which could be both a development lending and a catalyzing institution. The necessary level of domestic and international banking sophistication for economic cooperation is largely missing in developing Northeast Asia. A financial system that can clear domestic and international accounts is a high priority. Although the timing may be in question, funding of basic infrastructure and financial modernization are both necessary conditions for achieving Northeast Asia's strong potential for economic development. The transportation, communications and energy infrastructure projects needed for sustainable industrial development often involve externalities not captured by market returns, as well as long payout periods that make raising private capital difficult--unless the risk is shared. Development banks have been more efficient than the private banking sector in organizing project finance of the sort required in Northeast Asia, because the development banks can more often overcome international political barriers and can better spread the risks of finance through effective and skillful development banking. There is also a clear need for "start up" or seed money loans, both to determine the feasibility of specific lines of production and to foster "learning by doing." Finally, for rational investment decisions to be made and outside investors to be attracted, there is a need to carry out project related research and evaluation and to monitor lending risks--necessary steps in the banking process. Together these preconditions for self-feeding growth suggest the value of establishing a regional development bank servicing developing Northeast Asia. Such an NEADB would facilitate the financing infrastructure and "start up" projects by raising and channeling funds, generating equity capital, serving as a lead broker or guarantor of loans, and upgrading general financial capabilities. It would have a broader mandate than existing multilateral banks, possibly providing trade finance and clearing services as well. It could also be a clearing union for intra- regional trade in developing Northeast Asia to economize on the reserves held in the region or to clear transactions internationally. But this would be difficult given that only parts of China and Russia are involved. An NEADB could establish regional training centers and develop other ways to help regional nationals learn basic banking skills. Even though all countries of the region (except North Korea) are already members of one or more of the ADB, World Bank or EDB, there are at least three reasons why a regional bank is needed. First, infrastructure projects in Northeast Asia will be better planned and carried out as multinational projects than on a country-by-country basis, as required by the charters or self- imposed lending criteria of the existing banks. Second, given the very different economic systems involved and the transition problems being faced, it does not seem likely that any but a regionally specialized lending institution will be sensitive enough to the region's special economic requirements and political realities. Third, staff of a regional bank would concentrate on Northeast Asia and not be continuingly shifting back and forth between Northeast Asia and the many other regions covered by the World Bank, the ADB, or the European Development Bank. If a separate NEADB is not feasible, an alternative would be a Northeast Asia window or facility within the ADB. An NEADB is needed also because of the lack of financial systems in developing Northeast Asia, and high risk premiums charged by private lenders and investors. The functions of an NEADB would include providing or arranging for long-term capital for infrastructure and large industrial/agricultural projects, privatization of state enterprises, and support for the capital growth of existing businesses and new firms, guarantee loans or arrange equity and debt financing. An NEADB could also finance trade, provide working capital, help the growth of the service sector, provide loan guarantees to private sector lenders thus reducing risk, and establish a regional clearing union. The staff of the NEADB would provide economic research and information for these activities and for government and business decision-making, thus reducing information and search costs for the private sector. It would also establish training centers to teach basic banking skills.

Japan and South Korea might be expected to fund an NEADB in order to influence the direction and priorities of regional development and to take advantage of the economic complementarities in the region. Japan could also see an NEADB as a means to help mitigate its conflict with Russia and develop its interests in Northeast China while avoiding the suspicion and resistance that often accompanies its direct approaches. Japan may also see it as a means to draw North Korea out of its isolation and to channel funds to it, thus mitigating that potential threat. South Korea could see an NEADB sharing the coming burden of modernizing North Korea, and use it to channel investment there. It would also enhance its entry into the Northeast China market, thus facilitating its current move to a higher technology based industrial structure. Taiwan could also be an important source of capital for an NEADB and use the bank to invest in Northeast China. The United States might provide at least moral support to an NEADB allowing it access to U.S. capital markets and it could use it to move capital into North Korea and Northeast China. The next step is a careful feasibility study of each possibility followed by meetings of representatives from each of the countries to determine whether the possibilities should be recommended to the relevant governments. A complementary approach is an international free trade zone. All developing Northeast Asia's borders could be opened for trade, with only a few exceptions--much as trade between the States in the United States is open. The North American Free Trade Agreement and Europeann Community (EC) are current examples of such an approach, but neither involves parts of countries, which could require customs check points between the Russian Far East and the rest of Russia and Northeast China and the rest of China. There would have to be a central committee to establish rules and fix border access as Brussels does for the EC. A large free trade zone of this sort could yield the maximum benefits possible from regional cooperation. Given the initial starting point there would probably be much more trade creation than trade diversion in such a zone, particularly in manufacturing and assembly, with major growth in productivity. More likely--at least initially--is an international free trade area limited to some narrow contiguous cross border enclave of the countries participating, as is the case with the proposed Tumen Project. Within such a free trade zone a broad range of economic functions would be covered--manufacturing, transshipment, warehousing and storage, trade and marketing, regional headquarters, international finance, services, research, tourism, and shopping. The Tumen River Area Development Project is the most widely discussed regional version of an international free trade zone. Ideally, the zone or adjacent connected zones would combine factor inputs and partly processed goods accessed from all member countries and beyond, bypassing normal tariff constraints or quotas, in the production of goods for export outside the zone or zones. Resources would be imported from the Russian Far East, Mongolia, China and North Korea. Labor would come mostly from Northeast China and North Korea. Technical skills and management would come from all members plus South Korea or from Japan. Capital would mostly come from outside the riverine countries, or regions, with Japan joining Hong Kong, south China and South Korea as the major providers. The goods produced would be sold in the participating countries or exported, either by rail to Europe, through a new port at the Tumen River mouth, or through the container facilities planned for Rajin, Troizki or Posyet. Benefits for Mongolia and the Russian Far East are that their natural resources that otherwise might remain in the ground would be used to comparative advantage and, possibly, some transfer of technology. The Russian Far East would also gain from the probable increased demand for its research capabilities and high technology inputs. China and North Korea would have the productivity of its workers increased as well as the workers' share of the value added. They would also retain training effects and the secondary ripple effects of increased employment and wages. All members would benefit from any subsidization of infrastructure loans used to get the project underway. However organized, an important part of the Tumen Project will be the connection of the zone or zones with container port facilities in the Russian Far East or North Korea, or both. These could involve significant reductions in transportation costs as well as increases in economic specialization for Northeast China. Similarly, Mongolia would gain access to an international port. And, if the Tumen ports can be connected to existing transcontinental rail routes, there could be further advantages. South Korea

and Japan would have access to developing Northeast Asia's resources. They would further benefit from the additional market for their machinery and equipment, both in the provision of the necessary infrastructure and in the establishment of the production/fabrication/assembly activities in the zone or zones. And along with the rest of the world they would benefit from any real economies made possible by zone activities. The 1993 UNDP meeting in Pyongyang established the Tumen River Development Corporation, a riparian States Coordinating Committee, and a Tumen River Economic Development Area Advisory Commission. A draft international agreement and a corporate charter have been prepared. Remaining tasks include the formal signing of the agreements, establishment of the working capital budget and merchant banking war chest, negotiating the individual land leases, valuation and allocation of the shares and commencement of operations. However, the project is not without controversy, particularly regarding exactly how it will be organized and managed. North Korea prefers separate national zones with separate national rules and with a commission representing the three riverine countries advising on relations across the zone borders. China supports the concept of each riverine country ceding sovereignty to some degree over a portion of its contiguous lands and placing the "international" zone thus created under the supervision of a zonal management corporation, with control in the hands of riverine countries but with board positions open to others. Mongolia supports China while the Russian Far East is closer to the North Korean position, apparently because of a belief Moscow would not approve the loss of sovereignty involved and its fear that the project will draw investment and trade away from its ports and free trade zones at Vostochny and Nakhodka. South Korea, expected to be an important player in the zone, supports the Chinese position It will make a considerable long-run difference whether there are three contiguous national free trade zones or one international zone covering the territory of three countries and whether there is a single authority able to grant investment rights, settle disputes and be responsible for infrastructure. In the scenario of three separate zones, problems in moving goods, factors of production, and money between three national zones could greatly restrict what can be accomplished. Of course bilateral cooperation is a possibility but this would have to be without UNDP assistance because its interest and funding is for a regional project. In sum, the Tumen Project has initial government approval and serves as an example of the international free trade zone approach to cooperation. It clearly needs further careful evaluation, especially as to the advantages or disadvantages of a multi-country zone over national zones. The main advantages may be that an international agreement can be used to push through otherwise politically difficult reforms, that the necessity of working together on a limited basis may suggest the gains possible from and open the door to more general trade liberalization, and that there may be efficiency gains outside the Zone from the increased competition and from the diffusion of the technology transferred into the Zone. Considerable investment capital has already moved into the area from south China, Hong Kong and South Korea. Regardless of the outcome of the Tumen River negotiations, North Korea is proceeding unilaterally with the development of an economic trade zone in the Rajin-Sonbong area. It believes that the area is very important in the development of Northeast Asia and that it can become an important gateway to Europe. North Korea also wants to turn Wonsan and Nampo into free port cities similar to Hong Kong, and a free trade zone at Rajin could compete with this plan. In considering the scale and expansion plans for the Rajin-Sonbong zone, North Korea is taking account of the growing demand in Russia and Northeast China for port facilities. North Korea sees Russia expanding its trade with South Korea, Japan, and the United States and believes that port facilities in Russia will expand slowly and not be able to meet demand. Also, Russia's ports are frozen for four months each year. There will also be a growing demand for a port for northeast China and the route via North Korea to Japan is the shortest and most economical. China and North Korea have signed an agreement that North Korea will develop its east Chongjin Port and China may use it for 50 years. North Korea plans to develop Rajin and Sonbong as commercial ports, reaching 750,000 people, including a new city of 250,000 people. Port capacity at Rajin and Chongjin is three million tons and eight million tons, respectively. The capacity of each port will be increased to ten million tons with the introduction and modernization of cargo-handling

equipment and the expansion of warehouse space. In the long run, total capacity of both ports will be increased to fifty million tons and a new port of fifty million tons will be built at Sonbong, providing a total port capacity in the area of one-hundred million tons. Tourism will also be stressed as there are many natural and scenic attractions in the area. Indeed, North Korea hopes to host the 1995 Asian winter games at a site close by. The existing rail network has a surplus capacity of 12.2 million tons: 6.4 million tons to China and 5.8 million tons to Russia. The rail expansion projects planned in the medium and long term will increase the network carrying capacity to 158.9 million tons. In the short term, existing roads will be widened to nine meters and paved, thereby increasing capacity to northeast China to twelve million tons. In the longer term, 306 km of highways are planned, and cargo volume on these highways is projected at sixty million tons annually. The plan foresees zone industries including oil, petrochemicals, chemicals, electronics, food processing, textiles, and garments. Laws, regulations, and facilities in the zone will be designed to encourage investment by foreign governments and by companies and individuals from foreign countries. Investments can be made in equipment, goods, and technology. Investors' assets will be protected legally, as will income and proceeds from the operations. The legal status of the zone will be proclaimed by government decree. In addition to the transport trade and manufacturing sectors, the communications, banking, tourism, and service sectors will also be developed. Given North Korea's present economic problems and the dearth of foreign investment implementation of these plans will certainly be difficult and most probably significantly delayed. C. Sectoral Cooperation: Labor, Transportation/Communication, Shipping, Air Traffic Management, and Energy A Northeast Asia Labor Market Most models of regional economic development combine abundant natural resources such as in the Russian Far East with cheap labor from China and North Korea. With the economic and political liberalization of the socialist economies and their improved relations with market economies, there will be an increase in the movement of labor from areas of surplus and low income to those with a labor deficit and better wages. Internal conflict in China or North Korea could result in massive outflows of population to neighboring countries as well as to the United States. Such migration to the relatively closed social systems of Japan and South Korea may cause ethnic tension. Such tension between Russia and immigrant North Korean laborers has already erupted in violent incidents. And the revelation of North Korean prison labor camps in the Russian Far East has shocked the Russian populace. Multilateral arrangements may be necessary to manage such population movements and to maximize the benefits to all concerned. The first step would be a network to monitor labor flows within the region. A second step would be to establish labor training centers and vocational schools with language courses and link them to labor demand and to employment services. Regional Transportation and Communication Planning Transportation and communication infrastructure in developing Northeast Asia are far inferior to that of developed neighbors. The existing transportation network and its concomitant spatial structure were introduced during the pre-WWII era of colonial and territorial expansion. Only minor piecemeal improvements have been made since to meet immediate needs and to complete some missing links. Thus the system lacks a vision and the reality of integration. Without proper infrastructure in place, it will be difficult to attract investors. If it is in place in one locale and not in others, then one part of the region will be favored over the others for investments. This distribution is not likely to reflect regional long-run comparative advantages and will tend to undermine the mutual confidence and good will needed for successful intra-regional trade expansion. Basically, the issues are how to internationalize existing infrastructure, what new infrastructure to try to finance, how to finance it and how to avoid the competitive or redundant development of infrastructure. Another question is how to proceed. It can be argued that a minimally satisfactory regional transportation and communication infrastructure and financial services must be in place for economic cooperation to proceed. Another view is that only once existing resources are fully utilized, and participant countries have shown that they can cooperate in the management and use of existing infrastructure, is there a need and justification for large new, cooperative investments. In this view it is better to let infrastructure development follow rather than lead demand. Research is necessary to resolve this

issue of supply led or demand pull development. Feasibility studies are also needed for regional projects, such as a Trans-Korean Railway (TKR) connecting North and South Korea. The railway would start from the southern coastal port cities of Pusan or Kwangyang and pass through the TKR to join the China Eastern Railway or the Trans Siberian Railway. This route might have a competitive edge as a new intermodal transportation system to Europe. An extension of this concept is to connect the Korean peninsula and the Japanese archipelago across the Korean Strait by an undersea tunnel. If realized, a person or cargo could go from Tokyo to London by rail. Above all, transport investment in Northeast Asia will play a more prominent role than in any other region in the world. And more investment in transport is required here to achieve a given development goal than elsewhere. In particular, more attention needs to be given to the role of transportation within the context of the emerging East Asia Development Corridor beyond the Northeast Asian region. A regional forum is needed to discuss, coordinate, and prioritize national infrastructure plans. Shipping: Transnational Issues and Possible Cooperative Responses As trade and shipping increase, so will the need for cooperative action to address issues such as freedom of navigation, safety of shipping, marine pollution control, vessel accident contingency planning, coordination of vessel traffic, and combatting of piracy. For the benefit of all vessels operating within the region, a coordinated effort to regulate maritime traffic is needed. The Northeast Asian countries have not participated in many international shipping agreements. Japan, Russia, North Korea and South Korea are all members of the International Maritime Organization (IMO) and send representatives to the technical and legal working meetings. However, not many IMO conventions have been ratified by all of these nations (Table 4). Of the 40 conventions, including the IMO convention itself, Russia has accepted 28 conventions; Japan, 22; South Korea, only 13; and North Korea, only 9. For example, it is significant that the International Convention on Maritime Search and Rescue has not been accepted by either North Korea or South Korea. There is a 1957 Japan/Russia agreement which provides for distress assistance at sea. Yet the best method of improving safety at sea and utilization of the marine highways is through cooperative regional arrangements. In addition to IMO, several other international organizations are active in the maritime sector. The International Labour Organization (ILO), an agency established to help promote basic workers' rights, has developed specific conventions relating to seafarers. Of the 36 Labour Conventions concerning seafarers, Russia has ratified nine and Japan eleven. Unfortunately, neither North Korea nor South Korea has ratified any of these ILO conventions. The United Nations Conference on Trade and Development (UNCTAD) has also developed several conventions relating to maritime matters. First, the Convention on a Code of Conduct for Liner Conferences, the primary objective of which is the improvement of the liner conference system, has been signed by South Korea and Russia but not Japan and North Korea. Second, UNCTAD's U.N. Convention on International Multimodal Transport of Goods, designed to facilitate the continued expansion of international multimodal transport, has been signed by Japan and Russia but not North Korea and South Korea. Another important maritime organization is the Comit, Maritime International (CMI). The principal aims of this nongovernmental international organization are the unification of maritime and commercial law and the promotion of national associations of maritime law. Japan, South Korea and Russia are members of this organization. The first task that might be taken up in establishing entente (in the sense of listening to and comprehending others) is to compile an inventory of maritime issues in the region, singling out those that are not divisive in themselves, but provide some advantage for the region and the participants. In semi-detente, the solution of some of these issues might not even require goodwill among some of the participants in the process to realize the advantages of cooperative action. The countries might set aside those issues which raise the question of the legitimacy or illegitimacy of precedent. Common interests in rescuing persons in distress at sea and in preserving an unpolluted marine environment are strong inducements to act in concert, even if at "arm's length." Traditionally, states could agree also to suppress piracy and other lawless maritime acts, since most states favor law and order. Unfortunately, this area of noncontention seems as relevant to the present as to the past. Piracy in the East China Sea is on the rise and victims have included North

Korean vessels. But in addition to piracy, modern enforcement agencies have to deal with illicit traffic in narcotic drugs and psychotropic substances, maritime fraud, maritime refugees and immigrants, and unauthorized broadcasting from ships. The states bordering the Japan Sea might easily establish a standing mechanism of some kind between their marine law enforcement agencies (if they have not already done so) or arrive at some practical method of collaboration to detect and suppress such acts. Scholarly gatherings are of great value to the process of pragmatic cooperation in maritime matters, as well as in the implementation of the new Law of the Sea. Technical and other coordinating mechanisms of an informal character, brought about by institutions of learning and professional bodies, are powerful agents of beneficial change. In the very process of "lobbying," these nongovernmental groups are often influential in focusing on new solutions to old problems and in raising public consciousness of issues that are sometimes more than even governments can easily control (e.g., land-source pollution). Air Traffic Management There are 27 international airports in the region, and 96 scheduled international direct air routes among the operating airports (Figure 1). Airports in the region often link with central cities but not across borders; missing are major conveniently located international airports. International air routes in operation are highly concentrated between 14 Japanese cities and 3 South Korean cities. The destinations are separated by only two hours of air flight time, which is not greatly different from many domestic routes. Many lines have recently started operations between Japan and Chinese cities like Beijing and Shanghai, and many more are waiting to be opened. Air route distances and the area to be served are rapidly expanding between Russian cities, e.g., Khabarovsk and Irkutsk, and South Korean and Japanese cities, e.g., Seoul, Niigata, and Nagoya. There is no air link between North Korea and northeast China although there is considerable demand. When South Korean-North Korean relations and Japan-North Korean relations improve, air transportation between them is expected to expand greatly. The scheduled international air traffic in Asia and the Pacific, already one-fourth of the world's total, is expected to double within 15 years. But the region's airports and navigation systems are unprepared to cope with current needs as well as growing demand. In particular, the air traffic management system in Northeast Asia is greatly deficient. The region's nations are planning, expanding, and building airports to relieve overburdened facilities and to meet the demand created by the region's 10 percent annual rate of air passenger traffic growth. Examples include the Kansai airport in Osaka, the new Seoul International Airport in Youngjongdo, and the Chep Lap Kok airport in Hong Kong, which is located offshore and is trying to become an international hub accommodating supersonic, intercontinental air services. Regional air traffic management will become more important and require cooperation. Energy Cooperation: Joint Ventures in Petroleum Exploration and a Northeast Asia Energy Consortium In Northeast Asia, a significant improvement in bilateral energy relationships has raised the prospects for multilateral energy cooperation. Indeed, some have called for a Northeast Asian Energy Consortium (NAEC) to create a climate of confidence to provide a framework for a secure energy supply. The uneven distribution of major production factors among the Northeast Asian countries paradoxically indicates mutual benefits can be derived from energy cooperation among them. Improved relations, regional energy demand and new environmental concerns increase the attractiveness of this mammoth and difficult project. Russia and China with huge oil and gas reserves need capital, technology and equipment for their exploration and development. Japan, Taiwan, and South Korea which have the necessary capital, technology and equipment need to lessen their heavy dependence on Middle Eastern oil and diversify their energy supplies. The mutual benefits would not only be economic. For example, a gas pipeline from its source in Yakutiya through the Russian Far East and North Korea to South Korea and Japan could only be undertaken through a pan-Northeast Asian agreement on energy which would clearly contribute to better relations. An NAEC would be a vehicle for approaching the larger political objective of reducing tension and misperception. This consortium--possibly with World Bank or UNDP support--could undertake a feasibility study of the proposed gas pipeline project examining the engineering obstacles in sparsely inhabited permafrost terrain, overall costs and their comparison with alternative energy sources, and relevant problems in internal Russia/Republic of

Sakha and international relations (Japan/Russia; North Korea/South Korea), progress and prospects of ongoing financial and monetary reforms in the socialist economies, environmental impacts, and allocation of costs and benefits. It might be useful to adapt two main ideas adopted by the European Energy Charter to that which could be created in Northeast Asia. One would be to promote a consensus in all Northeast Asian countries on the central objectives of energy policy, such as energy saving, diversification of supplies, integration of networks, nuclear safety, and environmental conservation. The other would be to create a political, legal, and if necessary, financial instrument to include substantial transfers of capital, management ability, expertise and technology necessary to rational development of the medium and long-term supply and consumption of energy in Northeast Asia. Such an arrangement might be similar to the ASEAN Council on Petroleum (ASCOPE). ASCOPE was formed in 1975 to promote and extend cooperation among state oil companies/agencies in each ASEAN country. The Council consists of the heads of each national companies/agencies. Its impetus was the 1973 oil shock and thus an emergency petroleum sharing scheme was its first priority. Its major thrust was the priority provision of oil by producers to consumers during times of worldwide shortage and the priority purchase of oil by consumers from producers during a glut. However, data and technology exchanges and joint training programs soon followed, becoming more comprehensive every year. ASCOPE sponsors an annual Technical Conference which has become the nexus of oil and gas discussions in the region. And ASCOPE laid the groundwork for an ASEAN Committee on Energy comprised of the Ministers of Energy of each country which pursues technical and policy cooperation. There are oil and gas complementarities in Northeast Asia which are similar to those in ASEAN. There are several potential suppliers in need of investment capital and technical expertise which is in ready supply in other Northeast Asian countries. These latter countries are also potential markets for the resources and products. Data and technology exchange in petroleum exploration, development and utilization, joint training programs, policy discussions and a major annual Conference could be a big boost to cooperation in this sector and lay the foundation for more difficult areas of cooperation such as joint development in disputed maritime areas, as well as broader cooperation in the entire energy sector. Joint Ventures Japan and South Korea have almost no hydrocarbon resources of their own while the hydrocarbon potential of China, the Russian Far East and possibly North Korea is largely untapped. Japanese oil companies have successful joint ventures with China and are involved in the Sakhalin gas project. Given detente on the Korean Peninsula, North/South Korea joint petroleum exploration and exploitation would be a striking possibility. Both Koreas need oil or gas to fuel their economies. North Korea is particularly desperate. South Korea has the technology and equipment to explore and exploit offshore oil, as well as surplus refining capacity, but has little or no petroleum resources. Apparently oil has been discovered off both North Korea's west and east coasts. North Korea thus has some offshore oil and gas potential but has little or no capability to fully explore, exploit or refine it. Until the nuclear issue surfaced, North Korea was tentatively exploring joint ventures with South Korea. And the February 1992 nonaggression pact between the two provides for joint development of resources and cooperation in science and technology. The two should make a deal: South Korean expertise to develop North Korean natural resources. This not only makes economic sense, but would be a tangible expression of both sides' oft-expressed desire for closer ties. D. Motivations for and Obstacles to Regional Economic Cooperation Japan might see support of developing Northeast Asian regional economic cooperation as a way to helf defuse the North Korea problem. Tapping a nearby source of resources is less significant but still a factor. Japan may also desire a nearby location for labor intensive production, given Japan's rapidly changing demography. And if Japan is truly intent on assuming an international role, it may wish to begin with its own region. However there is resistance in Japan's conservative bureaucracy to taking on new political initiatives or committing funds to regional problem solving. The poor relations with Russia would be another major obstacle, but domestic opposition could perhaps be mitigated by the argument that Japan is supporting a larger group that happens to include Russia. Other reasons for Japan's not supporting regional cooperation in Northeast Asia are the continued Japanese focus on the "West" and regional

stereotypes that may make working with Northeast Asia unattractive to Japanese. South Korea could hope that regional economic cooperation will help in sharing the coming burden of modernizing North Korea. And South Korea's economic planners understand the importance of China to South Korea's long-run economic performance and of Northeast China as an entry point within China. Regional cooperation could open a large market for South Korea's move to higher technology, and one where South Korea has a special locational and cultural advantage for "learning by doing." Developing Northeast Asia can also provide a home for South Korea's declining labor intensive production. The major problems are somewhat similar too Japan's--a negative image of Northeast Asia's capabilities, a relative focus on developed country markets, and a conservative bureaucracy. For North Korea, regional cooperation may be seen as the means to break out of its stagnating economic performance as well as help smooth the inter- generational transfer of leadership. An opening that involves cooperating with its old "comrades"--China and Russia-- may seem the least threatening path to take. However, North Korea's behavior is rather unpredictable, which is really also at the core of the nuclear issue. Creating a financial system that can function at international levels either requires action from Pyongyang or the creation of a regional central bank (like the regional Federal Reserve Banks in the United States) with a certain degree of autonomy. North Korea lacks the banking experience and skills needed for the most rudimentary financial activities. Permitting foreign banks to locate in North Korea and carry on a general banking business as allowed by recent law is one way to achieve this skill transfer. But the best option is regional cooperation under the auspices of a regional development bank that would help train North Korean personnel needed to operate regional as well as a domestic banking system. Regional trade cooperation could provide a ready market for North Korea's marine products and the labor to process these products into worldwide exports with a brand name in an international free trade zone. Once underway, the growth involved in these activities and the future opportunities presented could encourage internal migration to northern North Korea, adding a layer of semi-skilled, resource based manufacturing production to the economy. Growth in any part of North Korea will have ripple effects on the rest of the country. And growth that promises to add to the hard currency earnings of the country is even more necessary and desirable. Also, the competitive experience and "learning by doing" in a relatively easy market will provide externalities for the entire country. North Korea is short of capital and a regional development bank that succeeded in raising funds for infrastructure projects and for industrial development that otherwise would not be available would obviously benefit it. So would any direct foreign investment attracted by trade cooperation and financial reforms. In sum, North Korea can gain from regional economic cooperation that fosters greater international specialization, that generates demand for improvements in the physical, policy and legal infrastructure and gives sometimes needed rationalizations for difficult political changes. North Korea can also gain from regional cooperation that allows inputs to be combined more cheaply by accessing them throughout the region and that opens up economies of scale and provides opportunities to develop products and technology prior to entering world markets. Entry, via any cooperative scheme, into even part of the world's third largest market, China, promises present and future benefits. Additional benefits would be capital inflows and technology brought about directly by regional economic cooperation or indirectly through the optimism for growth created by the fact of regional cooperation or even discussion of cooperation. Research is needed to identify North Korea's most critical needs and the most efficient manner by which they may be met through foreign assistance. The benefits to the region from the minimal approaches to regional economic cooperation- -NGOs, intergovernmental conferences on specific sectors or regional plans--would not be great, but neither would the costs. These forms of regional economic cooperation are relatively easy to implement. Given the estrangement in the region for so many years, any mechanism that provides knowledge and builds trust will help in advancing economic activities that promise real growth and development for the region. Sister city programs such as Nakhodka-Oakland or even Berkeley-Pyongyang would be a good start. An Association of Northeast Asian Provinces or Economies would be a step up in complexity and commitment. It would provide a multilateral means

of building economic relations in Asia and so help avoid the bilateral issues that will continue to cloud such activities. Regional cooperation can also contribute to essential domestic reforms. Being exposed to international competition and to the necessity of survival in international markets is one way of making reforms palatable. Since the costs of opening to the whole world at once may be too great, a step-wise approach, with the initial competitive market limited to developing Northeast Asia, could ease the way and bring substantial benefits at the same time. An international commitment to provide information and to establish common institutions and rules to govern economic activities may seem more likely to remain stable than action by any one country and thus also be more attractive to foreign investors. IV. Environment Cooperation: Emerging Trends A. Issues 1. Regional Economic Cooperation, Trade and the Environment In the past, environmental quality has been balance and traded off against economic growth. New thinking holds that environment and development goals are compatible and should be integrated whenever possible. This concept is called economically sound and sustainable development, and it underlies the fundamental consensus achieved at the 1992 Earth Summit, especially in the Agenda 21 and Rio Declarations. Increasing intra-regional trade presents new issues for regional environmental regulation. On the one hand, cooperation tends to accelerate economic growth. But without environmental controls, economic growth increases the rate of resource depletion and generates more and more toxic industrial pollution. However, nations may be reluctant to raise environmental standards because they may think that rising standards will increase short- term production or resource extraction costs, undermining international competitiveness. Governments may even try to gain competitive advantage by seeking foreign investment through low or lax environmental regulations, creating so-called "pollution" or "resource extraction havens." In Northeast Asia, such as strategy may be especially attractive to nations seeking to lure Japanese or South Korean companies facing increasingly stringent domestic environmental regulations or which need foreign investment to harvest their timber, mineral and marine resources. But a patchwork of different national environmental standards and regulations may impede regional economic cooperation by increasing transaction costs. The "pollution/resource extraction haven" strategy has several negative implications. First, if pursued by all the developing countries of Northeast Asia, a "vicious cycle" of standards- lowering competition could result in regional environmental degradation--particularly of air and water. Beyond high long-term social and health costs, rapid resource depletion and ecological decline are likely to carry high opportunity costs. Second, companies and industries attracted by "pollution havens" are likely to be low-growth "sunset" industries which face a limited future. A development strategy based on non-dynamic companies is unlikely to bring technology transfer and knowledge spillovers which are crucial to sustainable, self- generating economic growth. Third, products manufactured or extracted from "pollution/resource extraction havens" may face import barriers in the increasingly environment and health conscious markets of the OECD. For example, Northeast Asian timber resources may be especially vulnerable to global campaigns by environmentalist groups such as Greenpeace. There are several avenues and benefits to regional cooperation in managing the links between trade and the environment. First, Northeast Asian nations could cooperate in setting and enforcing a common environmental regulatory framework for products, production processes and resource extraction methodologies. The central aims of such a framework would be to develop common approaches to the internalization of environmental costs into output prices; and to ensure that the scale of economic activity remains within eco-system thresholds. Environmental standards could be developed for a range of trade and investment-impacting environmental standards: environmental impact assessments, air and water quality, waste management, energy use, conservation of bio-diversity. The draft Environmental Principles articulated by the Third Program Management Committee of the Tumen River Area Development Program could serve as the foundation for a common approach to national environmental management of production. The benefits of regional standards include economies of scale in information, management and enforcement. They also eliminate "free rider" problems associated with national standards alone. It would be crucial, however, to build in mechanisms by which

standards could change as new information became available or as citizen and consumer preferences changed. Capacities for monitoring and enforcement of (regional) environmental standards could be enhanced by regional cooperation. Economies of scale could be gained in the regional creation of inspection and certification systems. A regional organizational infrastructure, such as a Northeast Asian Commission on Trade and Environment, may be needed to use scientific and citizen input both in the setting and the monitoring of environmental standards. Second, Northeast Asian nations could cooperate in promoting environmentally-friendly "green" industries, including export-oriented industries. Trade- environment linkages, in other words, offer not only new constraints but also new opportunities for industry growth. Environmental "sunrise" industries might be targeted with research and development support, donor support, and/or domestic credit or other subsidies. A regional eco-label could also be developed to target "green consumers" in Japan and other OECD countries. Regional cooperation could also help to promote an international eco-labeling framework more conducive to promoting developing country exports. Targeted industries should be dynamic, high growth, and efficient. The additional environmental externalities justify additional support. Further research is needed to identify regional industry development projects with high technological, social, economic, and environmental spin-offs. Third, there is likely benefit in regional cooperation in developing common negotiation postures and positions on environmental regulation within other trade organizations, including GATT, PECC, APEC, and the ISO. Common positions are likely to enhance the bargaining power of Northeast Asian countries in shaping the environmental parameters of trade in the coming decade. 2. Transfrontier Air Pollution ("Acid Rain") Sulfur emitted from coal burning power plants and factories causes acid rain which can decrease biomass productivity and degrade forests. The main source appears to be China, particularly Manchuria, and the main recipients are North Korea, South Korea and Japan. Acid conditions (low pH values) have been measured in Japan and China. North Korea may actually be a source as well as a sink of acid rain. The exact sources, sinks, scale and impact of transfrontier acid rain is not known. Ninety percent of sulphur emissions can be removed with current technology, but the question is "who will pay?" Some progress is being made in monitoring--particularly by South Korea and Japan. But needed urgently are a regional monitoring system and common methodologies, and baseline and ecosystem impact studies. 3. Marine Pollution Status of Marine Pollution in North Korea Industrial pollution remains the single most serious marine pollution problem of the country. North Korea had for many years invested in heavy industries along the coast and rivers which discharge most of their untreated and inadequately treated effluent directly into the rivers and coastal waters. Major industries include steel mills, electronic power generation, fertilizer plants, petrochemical plants, synthetic fiber and cement factories, most of which have been operational for many years, some as long as 30-50 years. The chemical effluent contains mercury, cyanide, arsenic, pesticides and other organo-chlorine compounds. The industrial pollution problem is considerably worse on the east coast than on the west coast. These problems are caused by the lack of treatment facilities and obsolete or overused equipment. Major efforts must be made to help the nation to improve their treatment and production facilities in the chemical complexes. The lack of national financial and technical capability compounds the situation. Although there are no data quantifying the amount of industrial effluent entering the marie environment, and nor reliable information on the concentration of toxic substances, available reports suggest that the long-term effects could seriously impair the quality of the coastal environment and possibly cause human health problems, particularly in areas close to the discharge points. Indeed, given the large number of factories along the coast, the cumulative effects of toxic substances could be high. In addition there have been incidents of oil contamination from tanker spills in the 1980s. After UNCED, the Government reorganized its administrative structure to strengthen its planning and administrative organs so that they could be more responsive and effective in addressing the environmental issues of the country. The establishment of the State Environment Commission is the result of such efforts. The Commission is made up to 10 departments: (1) Environmental Monitoring and Development, (2) Environment Supervision, (3) Ecological Conservation, (4) Meteorological, (5) Hydrological, (6) Oceanographic, (7) Science and

Technology, (8) Planning, (9) External Relations, and (10) Communication. The functions of each department are still being finalized. The Commission reports to the Committee of Environment which is made up of various cabinet ministers and is chaired by the Deputy Prime Minister. The Government has recently enacted "The Law of Environmental Protection of the Democratic People's Republic of Korea." Specific legislation regulating the discharge of oils, solid and liquid wastes from vessels, port management, industrial waste treatment, and agricultural waste has been drafted. The Government has also recently developed an Environmental Action Plan which is under review. The action plan includes coastal and marine pollution prevention, control and management. In many respects, most of Northeast Asian Seas are a "mare nulluis" in terms of environmental protection. Sensitive political relations and uncertain boundaries have not been conducive to information-sharing and cooperation on many matters, let alone the environment. This situation has made it difficult to evaluate the nature and extent of support for international marine environmental activities or even national positions thereon. Except in response to occasional tanker accidents that have destroyed coastal fisheries, and severe public health effects from untreated industrial effluents, there has been only minimal overt recognition by the Northeast Asian coastal states in recent years of the long-term effects of land-source, vessel, and other pollution on people and the marine environment. Limited regional law drafting and policy development respond chiefly to the IMO and Law of the Sea- related initiatives. Scientific questions on factors affecting the health of marine species and ecosystems are poorly articulated, and the relevance of national laws and policies to regional environmental protection has not been seriously considered by the coastal states. Review of national legislation shows little evidence of laws and regulations being developed with specific reference to natural features or processes that may affect pollutant transport, circulation, transformation, and dispersion. Laws and policies are couched in terms that separate legal justification and intent from the reality of people, ecosystems, and place. This is not unique to this region but is more important here, because the apparent failure to relate law more directly to nature through improved scientific understanding supports a general impression of regional disinterest in marine environmental issues. In the region, there was, and still is, except in some coastal areas, little public awareness of the importance of marine environmental protection, and central governments still tend to see environmental problems as peripheral issues to be acknowledged but effectively ignored. Whatever attempts were made to draft regulations have been hindered by the need to balance the interests of competing national and province-level sectors, such as coastal and offshore shipping interests, fishing and fish processing enterprises, coastal inland development construction and water conservancy bureaucracies, port and harbor administrations, and agriculture and industrial ministries. Prospects for improved transnational cooperation in resource development and use may depend upon better understanding of the potential for improved marine environmental protection in both coastal and open-sea areas. The most successful efforts to deal with marine environmental problems are carefully nurtured with simultaneous institution-building, scientific, and treaty-drafting activities at the regional level, but this can come about only with strong and sustained littoral state support for international organizational leadership. Several generalizations can be made about marine pollution protection in Northeast Asia. First, the degree of concern with marine pollution is quite varied, and actual practice is even more diverse. Japan is clearly the leader in marine pollution policy and prevention in the Northeast Asian region, but even it is now backsliding in policy and enforcement. Marine pollution awareness and prevention are much more recent phenomena in China, South Korea, and Taiwan, and although their laws and regulations are strict, there is a wide gap between the law and its implementation and enforcement. Although marine pollution is becoming a critical problem in these countries, industrial and economic growth remains the dominant national ethos. Russia is just developing an environmental awareness and a regulatory structure to protect its environment. And North Korea has included marine environmental protection in its recent Law of Environmental Protection. Poor political relationships and environmental apathy have prevented these entities from cooperating as a group in marine environmental protection endeavors--even research. Bilateral cooperation in this field is also sparse

and sporadic. Two trends are apparent: increasing marine pollution with concomitant damage to living resources in semienclosed seas, especially in the Yellow Sea, and a growing environmental consciousness, which may spill over into the marine sphere. Perhaps Taiwan and China and North and South Korea could begin their first tentative steps toward reconciliation via cooperation in marine environmental protection. What is not clear is whether the warming relations and environmental consciousness will overtake and mitigate an environmentally damaging ethos before irreversible damage is done. The 1982 U.N Convention on the Law of the Sea (UNCLOS) creates an international umbrella framework for developing coherent national marine pollution policies. UNCLOS addresses marine pollution issues in Part XII, Protection and Preservation of the Marine Environment. Section One calls for nations to "take all necessary measures consistent with this Convention to prevent, reduce, and control pollution of the marine environment from any source." This is complemented by Section Five's call for the enactment of national legislation and regulations controlling specific sources: land-based, dumping, vessels, and seabed activity. Enforcement of marine pollution laws is dealt with in Section Six, which stipulates that coastal states are to enforce their land-based pollution laws against their own polluters. Moreover, coastal states are given the responsibility to protect their marine environment out to the boundary of their exclusive economic zones (EEZs), which can extend up to 200 miles from baselines. UNEP experts subsequently fashioned the Montreal Guidelines on land-based pollution (LBMP) in 1985 to help integrate the regional harmony called for in UNCLOS and the responsibility for preventing transnational pollution. The Guidelines' purpose is to serve as a checklist for regional conventions and national legislation. When viewed as a checklist, the heart of the Guidelines lies in Guideline no. 13 on the development of control strategies and no. 16 on adoption of national laws and procedures. Although the body of the Guidelines appears softened by compromise, the scientific recommendations contained in its annexes bolster its credibility. Despite its weaknesses, the Montreal Guidelines could be helpful to the nations of Northeast Asia, which have yet to reach a regional agreement and which continue to look for guidance in refining their LBMP laws and regulations. The need to accommodate various domestic economic interests is reflected in the extent and level of the coastal states' participation in multilateral treaties for regulating vessel-source pollution and ocean dumping. Thirteen IMO treaties focus specifically on pollution prevention from ships (Table 5). Russia and Japan have subscribed to the most pollution treaties, ten and eight, respectively. China has ratified five treaties. South Korea has ratified only two treaties-- the original Civil Liability Convention and the Convention for the Prevention of Pollution from Ships. North Korea has acceded to Annexes 3, 4, and 5 of the Prevention Convention, and all but South Korea have signed the Civil Liability Convention. Only Russia has joined the 1973 Intervention Convention. China, Japan, and Russia are parties to the 1972 London Dumping Convention, whereas all six have acceded to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78). This perhaps reflects the dominance of shipping and shipbuilding interests in the Koreas, whereas in China, accession to both Conventions signals a desire to identify with international environmental and shipping interests. However, implementation is lacking, or lagging. Transnational Issues and Possible Cooperative Responses Harmonizing National Policies, Laws, and Regulations UNCLOS provides that states should endeavor to harmonize their policies regarding protection of the marine environment. The countries in the region have similar wastes and other than Japan, a similar level of technology for disposing of the wastes. Theoretically, they might adopt similar or uniform standards. The fact that they do not reflects both a lack of communication and real differences in national priorities for environmental protection in general and for specific pollutants and pollutant sources in particular (see Tables 6 and 7). For example, Russia's water quality and effluent standards are generally much stricter--on paper--than those of its neighbors. South Korea has just promulgated effluent standards. Taiwan's effluent standards are considerably less than those of Japan, and China's water quality standards are the most relaxed of all. Of course, enforcement of these standards is another matter. These differences are consistent with UNCLOS, since it provides that states "shall use the best practicable means at their disposal and within their capabilities to prevent,

reduce and control pollution." Yet, a mosaic of different pollution regulations could inhibit transnational activities such as the shipping of oil and control of transnational pollution and encourage "pollution havens." In few other semienclosed seas are multilateral measures for marine pollution control as deficient as those in Northeast Asia. However, there might now be opportunities for improvement, at least in subregions. For example, South Korea and China both acknowledge that threats to the commons from pollution and overexploitation of living resources could have serious, perhaps irreversible, economic consequences. The region's countries must now decide how to adjust national initiatives to be compatible with emerging international legal and technical obligations or, conversely, the extent to which each state wishes to ignore or deviate from international practice. There is a basic need to draft national regulations that reflect and incorporate the vaguely defined intent of UNCLOS Articles 192 and 194. These articles charge states with the "duty to protect and preserve the environment" and obligate them "to take all measures necessary to prevent, reduce, and control marine pollution and to ensure that activities under their jurisdiction or control do not cause pollution damage to other states or otherwise spread beyond the seas where they exercise sovereign rights." Yet, there are no agreed upon scientific criteria to determine the precise meaning of such terms as "prevent, reduce, and control." It is also difficult to determine how to justify and enforce legal prescriptions, given the limitations of scientific and technical knowledge. There is a large gap between acceptance of a vaguely defined legal framework, which moves from "obligations of responsibility" to "obligations of regulation and control," and the willingness and ability of states to establish and enforce standards and rules. Thus the states of Northeast Asia should work through these interpretations and implement them collectively. Transboundary Oil Spill Modeling of hypothetical oil spills from point sources in areas of active exploration in Northeast Asia shows that such spills could easily cross claimed maritime boundaries and eventually impact valuable and vulnerable marine resources-- fisheries, coastal aquaculture, fragile wetlands, fish spawning grounds, and endangered species such as seabirds, whales, seals and porpoises. Such a spill could bring into focus questions of jurisdiction and responsibility for response. If jurisdiction is uncertain, so may be the responsibility for cleanup and compensation. Worse, uncertain jurisdiction and bad relations may combine to prevent cooperation and a coordinated effort to clean up such a spill. In an atmosphere of tension, moving of personnel and equipment across a hypothetical median line without prior permission--even for the express purpose of combating marine pollution--could be considered dangerous or provocative. Consideration should be given to a number of possible measures to enhance overall maritime safety and environmental protection beyond the IMO-coordinated international conventions. Mitigating or precautionary actions might include the establishment of tanker exclusion zones to protect coastal environments, or moving safety zones, with escorts, around LPG/LNG tankers. Another could be the formation of regional pollution response teams, multinational in composition and authorized to act immediately, regardless of the national jurisdiction of the waters affected. Such regional pollution response teams might initially be established for the Sea of Japan and for the Yellow Sea, but also be available for deployment, upon request, for incidents in the Bo Hai and Japan's Inland Sea. Nuclear Waste Dumping The revelations of nuclear waste dumping by both Russia and Japan in the Sea of Japan may be the necessary trigger for Northeast Asian regional cooperation on marine environmental protection. The news that the former Soviet navy dumped 18 decommissioned nuclear reactors and 13,150 containers of radioactive waste from 1978 to the present, most of it in the Sea of Japan, created an uproar in the world environmental community. It particularly jolted nuclear- sensitive Japan and South Korea, and even drew a rare comment from North Korea. Adding fuel to the fire, a Russian naval vessel dumped nearly a thousand tons of low-level waste in the Sea of Japan shortly after Russian President Boris Yeltsin's visit to Japan. And despite Japanese, North and South Korean protests, Russia subsequently announced that it will have to continue to dump such waste at least until next year because it has no place to store the liquid waste on land. Then in a stunning case of the "pot calling the kettle black," Japanese Science and Technology Agency Chief Satsuki Eda admitted that Tokyo Electric Power Co. dumps 10 times more radioactive waste each year into the Sea of Japan than the 900 tons dumped

by the Russian navy. This revelation also caused demonstrations in South Korea. The possible silver lining in this very dark cloud is that the revelations of dumping of radioactive waste and the resultant alarm may be the critical spur needed to forge cooperation in marine environmental protection among the coastal countries. Although most scientists agree that the dumped waste provides no immediate threat to the environment or humans, the longer term effects are unknown, particularly after the containers corrode. The initial report of Russian dumping has prompted cooperation to deal with this specific issue at hastily arranged bilateral Japan/Russia meetings of relevant ministers and experts, proposals for joint South Korea/Japan/Russia surveys at specific dump sites, and a call by Japan for an international cooperative fund to help Russia treat its nuclear waste. North Korea even offered to host an international seminar on regimes for pollution control. North Korea might even be interested in joining South Korea, Japan, Russia and "others" in investigating the dumped waste. More recently, it has been revealed that chemical munitions were also dumped up until the mid-1980s in the Seas of Japan and Okhotsk. Obviously broader cooperative initiatives on environmental protection are needed and may be stimulated by these developments. 4. Fisheries The Issues Yellow/East China Seas Although total fish catch from the Yellow/East China Seas has been steady or increasing, that of particularly valued species has declined. Almost all species are overfished and some larger, higher trophic level species have been replaced by smaller, lower trophic level species. Thus the catch-per-unit-effort has declined in both quantity and quality. The stocks are fished by China (2.5 MMT), South Korea (1.32 MMT), Japan (0.474 MMT), and North Korea (amount unknown). The demersal catch by Japan has been decreasing while that by Korea and China has been steady or increasing but with changing species composition. Data on Yellow Sea fisheries are scattered and fragmentary. Needed is a single comprehensive view of the fisheries of the Yellow Sea, East China Sea, and the Bo Hai. Data needed include catch statistics by species, effort, and country; yield-independent surveys of major resource populations on mesoscale spatial and temporal sampling frequencies; and process- oriented studies of ecosystem structure and function. Cooperative research is particularly needed for the migratory species, concentrating on life history, stock assessment, and biological dynamics. Multilateral fisheries management would be complicated by the multiplicity of actual claims or hypothetical boundaries and the fact that fish migrate freely across boundaries and that spawning and wintering grounds straddle various jurisdictional lines. The current international regime for fisheries management is a delicate balance of multiple interests within national fisheries sectors as well as of tenuous regional relationships. Large areas are not covered by any formal agreement, while agreements overlap in some areas. Also, distribution of many of the species extend far beyond the Yellow Sea. Pending issues include the appropriate role of North Korea in Yellow Sea fisheries and their management; and the possible declaration by China and South Korea of EEZs and the resultant eventual exclusion of Japan from fishing in the Yellow Sea. Needed cooperative approaches include data standardization, collection, and exchange to provide a comparable statistical basis for decisions; the regulation of shared stocks within the Yellow Sea/East China Sea; and the regulation of overfishing in this multispecies fishery and the allocation of the resources. Sea of Japan There is also little information on catch and status of stocks in the western part of the Sea. Scanty information indicates that North Korean catch is very high almost as high as that of Japan. Total production has increased from about 9 million tons in 1982 to 12 million tons in 1985. Most conventional species are fully exploited, but the total catch might be increased to about 13 million tons. The species composition of both the demersal and pelagic fish catch has changed, implying changes in the ecosystem. Coastal fisheries stocks are in reasonably good shape, but there is concern about the stocks of flying fish, Pacific herring, sandfish, halibut, Alaska pollack, and Japanese sardine. Exchange of information and cooperation in fisheries research and management are necessary and urgent. Transnational issues center mainly around jurisdictional questions and thus ownership of the stocks. In the northern Sea of Japan, demersal spawning grounds are shared by Japan and Russia, and both demersal and pelagic stocks migrate across an equidistance line between the two. In the southern Sea of Japan, the pattern is more complex. Pelagic spawning

grounds occupy the southern part of the overlapping claims area around Tok Do/Takeshima (South Korea/Japan) and are also divided by the South Korea/Japan continental shelf boundary. Pelagic species migrate through the disputed area and across the boundary. An extensive demersal spawning area reaches north and south of North Korea's claimed EEZ, and both demersal and pelagic stocks migrate in and out of this zone as well as its Military Warning Zone. The Korea Strait is a confluence of demersal and pelagic spawning and wintering grounds and their migration routes, and the South Korea/Japan boundary artificially divides these natural fisheries distributions. Existing International Regimes There are now eight bilateral fisheries agreements in force-- Japan/Russia (2); Japan/North Korea; Japan/South Korea; Japan/China; North Korea/Russia; and North Korea/China (2). Japan is by tradition and mastery of techniques the most important fishing nation in most of the region in extent of deployment and size of catch and has bilateral agreements with each country. But because of the tenuous relations between Japan and Russia and Japan and North Korea, these agreements are largely among the fishermen and their organizations, rather than between governments. These agreements apply more to bottom fisheries than to pelagic fisheries, which migrate and occupy different areas for spawning and feeding. Despite some advantages notably the lack of overt conflict the present regime is fundamentally flawed. Theoretically this system an interlocking web of bilateral agreements dominated by Japan although inequitable could successfully manage the region's fisheries. The fact that many species are overfished indicates that the system is not working and underscores the need for multinational monitoring and regulation of this multispecies fishery, and ultimately, of equitable allocation of the resource. Cooperative Approaches Possible options that move incrementally from the status quo and do not require extension of jurisdiction include (1) modification of the existing arrangements, (2) creation of a quadra- partite nongovernmental arrangement, and (3) establishment of a scientific organization. The present bilateral agreements could be used as a basis for discussing coastal state/distant-water fishing concerns as well as for developing a coordinated approach to improving the scientific basis for regulation. The key element in this arrangement would be the extent to which Japan would be willing to accept the role of a "hinge" state on what may be a "closing door" for its fisheries. In this scenario, Japan would assume the role of information broker and analyst in coordinating international scientific studies in exchange for continued access to the fisheries. This arrangement could stave off coastal state demands for EEZs. And it would also permit communication on fisheries regulation matters to be systematic and predictable regarding standardization of statistics, coordination of scientific research, delineation of shared stocks, or evaluation of overfishing. Japan could perform a similar hinge- state function for nongovernmental arrangements with a willing North Korea. Japan sees fish as an element of its food security and as a distant-water fishing nation, Japan should also be concerned about the level of protection coastal states give to spawning populations of fish and to juvenile fish in nursery areas. Further, many fish stocks upon which the Japanese fleet depends are being overfished or are in danger of becoming so by a combination of its own fishing and expanding fishing pressure from the host country. Japan should also be interested in ensuring the stability of the system, and of maintaining or gaining access to neighbor's waters for fishing and scientific research. Japan's growing interest in playing a more prominent role in international politics may be an added stimulus to being an intermediary. Japan clearly understands the need to cooperate with its neighbors and, once decided, has considerable experience with such institutional relationships. The need to coordinate fishery policies could facilitate improvement of overall relations, just as Japanese-Russian and Japanese-Republic of Korea fisheries agreements positively influenced the two bilateral relationships in general in the 1950s and 1960s. Nevertheless, this arrangement may be difficult for the fisheries hegemon Japan to accept, if its objective is to maintain its dominant advantages in fisheries. And truly regional cooperation in fisheries matters clearly depends on Japan. The various countries do not share data and Japan probably has a virtual monopoly of knowledge regarding regional fisheries. And Japan already has access arrangements with every nation in the region. Japanese fishing interests thus face a classic dilemma. Should its fleet continue to fish these stocks as fast and as intensely as it can before the stocks collapse or

other fishing nations, e.g., South Korea or Taiwan move in or should it participate in a regime designed to manage and limit the catch in order to be able to fish longer but at a reduced level, hoping that competitors will join and abide by the rules. In the event that Japan is unwilling to perform this role, or this arrangement is unacceptable to either China or South Korea, another third-party state or entity (e.g., the Indo-Pacific Fisheries Commission, FAO or IOC/WESTPAC) could be asked to play this role. Because of the history of conflict in Northeast Asia, the first stage of regional fishery cooperation might not be expected to emerge directly from collective governmental initiatives, such as treaty negotiations, but rather from a common willingness to participate in regular informal meetings and training programs, which would be, at least initially, the responsibility of a coalition of respected nongovernmental institutions. Regular activities of this kind could facilitate the establishment of a network of government officials, scientists, and other experts, and eventually provide the opportunity for the governments of the region to proceed to the negotiation of more formal cooperative arrangements. Given the socio- economic dimensions of fishery policy and management, it might be wise to extend the suggested regional network to representatives of the various sectors of the fishing industry, the relevant trade unions, and the fishing communities, as well as to academic specialists in the field of ocean development and management, including the law of the sea. Possible specific cooperative approaches include modification of existing arrangements towards a coordinated approach to improving the scientific basis for regulation, with Japan serving as the go-between; or establishment of a scientific organization, for joint training, monitoring and research on stock status, either de nouveau or as a working group of existing international organizations such as IOC/WESTPAC. Because of its lack of experience of regional institutions, Northeast Asian countries might be expected to tread carefully before committing themselves to the building of a massive superstructure. Opening these topics at the wrong time could lead to chaos in the existing fisheries arrangements or to a strong redistribution of current allocations away from Japan. Indeed, it might be wise for the governments of the region to begin experimentally with a variety of relatively low-risk initiatives with decentralized power and authority. These might include some of the following options: 1. government participation in an ongoing fisheries policy dialogue for the North Pacific, which would be developed through cooperation among the East- West Center, relevant universities, and other nongovernmental institutions with a special interest in the ocean affairs of that region; 2. expansion of _ _ _ _ _ (PICES) to become a fully representative forum for the ocean scientists of the North Pacific; 3. organization of a research project to evaluate the effectiveness and applicability of existing regional fishery commissions in various parts of the world, with special reference to their roles, structure, and financial arrangements in light of new conditions of the law of the sea and of the recommendations of the UNCED and Agenda 21; 4. establishment of intergovernmental task forces to study the case for and against the establishment of formal fishery management or consultation mechanisms for Northeast Asia; 5. organization of a workshop to discuss the design of a proposed fishery conflict/dispute settlement system for Northeast Asia; 6. an informal intergovernmental meeting to compare public participation policies and practices and to review alternative modes of consultation with nongovernmental bodies in the context of fishery policy and management and related sectors; and 7. establishment of an informal intergovernmental forum designed to facilitate the harmonization of national fishery development and management policies and practices within Northeast Asia (and eventually, the North Pacific). 5. Protection of Shared Vulnerable Marine Animals and Habitat (Figure 2) Vulnerable marine animals in Northeast Asia include sea turtles, dugong, seabirds, shorebirds and other birds associated with the coastal wetlands, sea otters, seals, and some threatened species. Cetaceans--whales, dolphins, and porpoises are found along North Korean shores and in its waters. Conservation interests have generally been subordinated to economic and social priorities. As a consequence, many valuable and vulnerable resources have been lost to development, and many more will be unless environmental integrity and conservation awareness become national priorities. Article 65 of UNCLOS allows a coastal state or a competent international organization to regulate and limit exploitation of marine

mammals more strictly than provided for within Part V of the Convention. States are to cooperate with a view to conservation, and "in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study," i.e., the International Whaling Commission. However, Japan has not ratified the Convention and believes that small cetaceans are not under the jurisdiction of the IWC. It would seem time for the Northeast Asian countries to take the long- term view and work together to protect the threatened species and habitat that is their heritage. B. Regional Environmental Initiatives 1. Recent Developments Despite the relatively poor record of the region's entities, in joining or adhering to international conventions protecting the marine environment, the muting of the Cold War in Northeast Asia has stimulated a proliferation of multilateral discussions and program proposals for environmental protection. However the motives and rationale for these new initiatives may be broader than concern for the environment. By calling attention to politically benign but mutually threatening environmental issues, states sometimes can achieve broader objectives. Indeed, although marine environmental protection is a minor peripheral issue in relations among the Northeast Asian coastal states, negotiations on environmental questions may permit parties to avoid more controversial issues such as delimitation or fisheries disputes. Provisional agreement on environmental issues can also improve the atmosphere for further discussion of more difficult questions. The North-West Pacific Region Action Plan (NOWPAP) Of the several ongoing multilateral cooperative efforts in the region focused on or including marine environmental protection, the most advanced is the United Nations Environment Programme's (UNEP) NOWPAP as part of UNEP's Regional Seas Programme. Globally, UNEP has almost two decades of experience. Its Programme presently encompasses 13 regional seas and involves the participation of some 140 coastal countries and island states and territories. Nine "action plans" are operational; nine conventions and twenty eight protocols have been signed and seven conventions are in force. On the initiative of states bordering the semi-enclosed seas of the Northwest Pacific, UNEP's Governing Council decided in May 1989 to prepare NOWPAP and the littoral states nominated National Focal Points to develop it. Officials from the six concerned states met informally in Nairobi in May 1991 and reaffirmed their governments' willingness to initiate the NOWPAP. Due to the wide range of early suggestions for the content of the Action Plan, UNDP convened an early formal consultative meeting in Vladivostok in October 1991 which experts from five national delegations (except North Korea) attended. Establishment of the following structures were suggested in the national reports submitted to UNEP. A regional coordinating center (China); A regional center on the monitoring and assessment of the state of marine environment (Russia); A regional center for information and data exchange (South Korea); A permanent task-force or group of experts from the riparian countries (China and South Korea). The participants agreed that National Focal Points henceforth would prepare national reports for future meeting which would cover the status of the marine environment and coastal areas; national policies and measures to deal with marine pollution; and proposals for steps to be taken in a Regional Action Plan. They noted that regional cooperation in response to a pollution emergency would be appropriate for joint activities in the future. At the second meeting of experts and National Focal Points, held again in Beijing in October 1992, all six countries were represented, including North Korea's General Bureau of Environmental Protection and Land Administration. At this meeting, a draft Regional Action Plan was reviewed, and in some important respects, modified (at the insistence of Japan, for example, the section on Biodiversity and Ecological Resources was deleted, except for the section on wetland reserves and genetic resources. The geographical area to be covered by the Action Plan is still not entirely clear. At the first meeting, the majority view was that it should cover initially the marine environment and coastal areas of the Japan and Yellow Seas, without prejudice to its possible future extension to cover additional marine environment and coastal areas of participating states. The Third Meeting of Experts and National Focal Points on Development of the NOWPAP was held in Bangkok in October 1993 and agreed on a final draft Action Plan. The overall goal of the NOWPAP is "the wise use, development and management of the coastal and marine environment so as to obtain the utmost long-term benefits for the human populations of the region, while protecting human

health, ecological integrity and the region's sustainability for future generations." Subsidiary and complementary goals are include: the control, halting and prevention of any further degradation and deterioration of the coastal and marine environment and its resources; the recovery and rehabilitation of coastal and marine environments that have been degraded and which still have the potential for such a recovery; and the long term sustainability of coastal and marine environmental quality and resources as assets for the present and future human populations of the region. Objectives include assessment of the state of the regional marine environment; establishment of an efficient and effective information base; development of integrated coastal area planning and management; and development of a collaborative and cooperative legal framework. The first projects have been approved for implementation. A NOWPAP Intergovernmental Forum is to be established to provide policy guidance and decisionmaking for the Action Plan and will include representatives of relevant regional and international organizations. The NOWPAP states will work towards the development of a regional convention for the protection and management of the coastal and marine environment and resources. A Regional Coordinating Unit (RCU) will be established with the assistance of UNEP to ensure the integrated and managed execution from within the region of Action Plan projects. Until the RCU is established UNEP will coordinate projects and prepare a program based on regional government priorities. And most important, the regional governments must agree to establish a NOWPAP Trust Fund to finance the implementation of the Action Plan with contributions based on the United Nations formula. UNDP/GEF Program on Prevention and Management of Marine Pollution in East Asian Seas In response to a number of requests from East Asian nations regarding management of the marine environment, the United Nations Development Programme, Regional Bureau for Asia and Pacific, Regional Programme Division with support provided from the pilot phase of the Global Environment Facility is formulating a program entitled Prevention and Management of Marine Pollution in East Asian Seas. The countries to be included in this regional program are ASEAN (Philippines, Malaysia, Indonesia, Brunei Darussalam, Singapore, Thailand), China, North Korea, Vietnam, and Cambodia. The approved budget totals US$8 million with additional cost sharing contribution from the Government of Australia of A$5 million. The long-term objective of the program is to support the efforts of the participating Governments in the prevention, control and management of marine pollution, at both the national and regional levels, on a long-term and self-reliant basis. The program concept at the moment includes four main project areas, defined by the following objectives: to assist in the prevention, control and management of marine pollution problems through proper assessment of the state of marine pollution, including the effects of marine, coastal and other land-based activities on biodiversity and environmental quality; to assist in the development of policies, plans, and programs on prevention, control and management of marine pollution including measures for their support and implementation at both the national and subregional levels; to strengthen national and subregional institutional infrastructures and implementing mechanisms and upgrade technical skills and management capabilities on prevention/control of pollution, management and enhancement of the marine environment; and to establish appropriate financial arrangements and/or mechanisms for the long-term sustainability and self-reliance of national and subregional efforts at protection of the marine environments. North Korea intends to participate in the East Asian Seas Marine Pollution Program and subscribes to its objectives. It is particularly interested in participation in the proposed network of information management and marine pollution monitoring centers and wants assistance to upgrade the equipment and facilities of the West Oceanographic Research Institute to enable its participation. Intergovernmental Oceanographic Commission (IOC/WESTPAC) The IOC was established in 1960 as a functionally autonomous body within UNESCO and is mandated to organize basic oceanographic research. The IOC's Subcommission for the Western Pacific (WESTPAC) was established in 1989. The Secretariat is to be established in Bangkok which hosted the second session of the Commission in January 1993. The next session is planned for 1996 and will probably be in Tokyo. The goals of an IOC regional subcommission are to: -- define regional problems and develop marine scientific research programs -- implement IOC global marine scientific research programs at a regional level --

facilitate the regional exchange of scientific data, especially to developing countries; and -- identify training, education and mutual assistance needs. To achieve these general objectives WESTPAC identified nine projects at its first meeting in Hangzhou, China in February 1990, and adopted a Medium Term Plan (1991-1995). These nine projects are: Ocean Science in Relation to Living Resources: Toxic and anoxic phenomena associated with algal blooms (red tides) Recruitment of Penaeid Prawns in the Indo-Western Pacific Marine Pollution Research and Monitoring: Monitoring heavy metals and organochlorine pesticides using the Musselwatch program Assessment of river inputs to seas in the WESTPAC Region Ocean Dynamics and Climate Banding in Porites coral as a component of ocean climate studies Ocean dynamics in the northwest Pacific Continental shelf circulation in the western Pacific Ocean science in relation to non-living resources WESTPAC palaeogeographic map Margins of active plates There is some overlap as well as complementarities of activities envisaged under the auspices of WESTPAC, UNDP/GEF and NOWPAP. WESTPAC anticipates conducting training in the modeling of coastal circulation in order to predict and control accidental oil spills. It is also developing a WESTPAC Action Plan as a follow-up to UNCED, both of which appear to be similar to concerns raised at NOWPAP. WESTPAC activities can complement the strong national marine scientific and technological capabilities in Northeast Asian states. Moreover, WESTPAC's SEAWATCH program may be helpful in the implementation of the NOWPAP. Also, work by Northeast Asian WESTPAC members (which includes all six states that participate in the NOWPAP) on continental shelf circulation, ocean dynamics, paleogeographic mapping, tectonics and coastal zones, and on musselwatch and harmful algal blooms, are all either more active in Northeast Asia than in East or Southeast Asia, or are implemented on a western Pacific- wide basis without subregional focus. The objectives of the UNDP/GEF Program seem to greatly overlap those of the NOWPAP and the Program also includes North Korea and China in its terms of reference. Japan is slowly beginning to take the initiative in environmental protection activities in the region. It has signed bilateral agreements with both Russia and South Korea. Under these pacts, Japan and South Korea would set up a committee of experts to choose joint projects for improvement of the environment, exchange scientists and research and promote seminars. Japan and the United States have a similar agreement with a focus on protection of the environment in developing nations as a means of enhancing bilateral cooperation under the concept of global partnership. These agreements could be put to good use in the region. Despite the plethora of regional efforts in the marine sphere, there is still a general lack of a formal infrastructure to bring about international collaboration and cooperation in monitoring and research activities that would delineate the spatial distribution of a containment and its subsequent effects and, in particular, whether it would cross national boundaries. The lack of a formal structure prevents the development of well-coordinated cooperative baseline studies and coordination in emergencies (such as a spill of oil or other toxic and hazardous materials). Monitoring and research programs are not as effective as they should be, because they stop at some politically determined border, rather than at some physical or chemical border. And there is a wide discrepancy among the countries in the level and effectiveness of marine pollution monitoring and research in support of regulation. It is far easier to implement environmental assessment, legislation and institutional arrangements than the management and financial structure. Existing problems and the initial effects of new ones, are most likely to arise in waters close to land, and national attention is therefore concentrated on protecting the health of the coastal waters rather than the offshore, especially in enclosed and semi-enclosed seas. Despite efforts at national, regional and international levels, the current sectoral and monodisciplinary approach to the multiple use of marine and coastal resources will not provide an effective framework for achieving sustainability. Aside from physical and ecological degradation of the coastal and near-shore zones, and of course, nuclear waste dumping, pollution from land-based sources is at present the single most important threat to the Northeast Asian marine environment, contributing some 70 percent of the pollution load of the oceans. Intensified human activities in the coastal zone of the world ocean cannot be supported if the marine environment is considered as an "infinite sink" or receptacle for wastes and an endless free supply of resources. Most appropriate for cooperation in

the region are environmental monitoring and assessment; development and harmonization of upgrading environmental legislation; the technology involved in marine pollution control; and combating marine pollution, especially in the case of pollution emergencies stemming from incidents involving vessels or offshore drilling. Education and training should be an integral part of all areas of cooperation. Environmental monitoring and assessment should be decision-oriented and should receive high priority. Research priorities might include a synthesis of information on the state of marine pollution and of dumping in Northeast Asian seas. Needed is the harmonization of national legislation and preparation and adoption of an umbrella convention on the protection of the marine environment. Supporting efforts might include joint assessment of priorities for marine resource management and areas most at risk. Recommendations for integrated coastal zone and marine environment management might be developed at the regional level. Cooperative projects on training in environmental impact assessment, coordinated creation of marine parks, management of wetlands, and control of industrial, agricultural, and domestic wastes are also priorities. A mechanism may be needed to coordinate WESTPAC and UNDP/GEF activities with NOWPAP, similar to the Coordinating Body on the Seas of East Asia (COBSEA) operative in Southeast Asia. Northeast Asian Environment Programme (ESCAP/UNDP) The first Northeast Asian Conference on Environment was held in Niigata, Japan the following October, and was organized jointly by the Japanese Environment Agency and the Ministry of Foreign Affairs. Delegations from China, Russia, and South Korea attended. This was primarily a meeting of the representatives of environmental ministries and aimed at developing cooperation among them. The Conference sought to promote a frank policy dialogue on environmental problems "of common concern to the region as a whole." To this end, the participants agreed to convene the Conference to be hosted by different countries of the region. In addition to emphasizing the role of local government in regional cooperation, the participants suggested the following possible priority areas for regional cooperation: information sharing and exchange network; joint surveys and monitoring on acid rain, marine pollution, biodiversity; collaborative research and planning; and case studies of economic instruments for environmental management. A second meeting was held in September 1993 in Seoul. A Meeting of Senior Officials on Environment Cooperation in Northeast Asia, organized by ESCAP in cooperation with UNEP and UNDP took place in Seoul in February 1993 and was attended by representatives of foreign ministries and environmental ministries of China, Japan, Mongolia, South Korea and Russia. Its objective is to develop formal cooperation among states in the region. The participants considered a consultant's report which gave an indicative list of possible areas of collaboration, and emphasized energy-related air pollution and capacity building as important cross sectoral themes. They also suggested that only one or two substantive issues be concentrated upon at the outset in order to demonstrate the utility of cooperation, and that these activities be expanded incrementally. Although they cautioned against an overly ambitious program, they also recognized that identifying priority areas also necessitated the adoption of an overall strategy for regional environmental cooperation and a support arrangement. The following priority areas within which specific projects for regional cooperation could be developed were adopted: energy and air pollution; capacity building; ecosystem management, in particular deforestation and desertification; and intercalibration of pollution measurement equipment. The meeting also concluded that coastal and marine pollution issues should be addressed within the UNEP NOWPAP framework. Asia Foundation/NGO Environmental Cooperation The Northeast Asian Environment Programme arose out of a symposium held in Seoul in September 1992 which supported the development of an informal environmental network; and was preceded by an earlier joint memorandum of understanding between Russia and South Korea calling for the creation of a regional environmental forum. The meeting of the Second International Symposium on Environmental Cooperation near Irkutsk, August 17-20, 1993 created the Northeast Asia and North Pacific Environmental Forum. This forum is aimed at developing cooperation among NGOs. The Forum will provide a mechanism whereby people in the region can exchange ideas and information, enhance the public's awareness of environmental issues, promote dialogue and cooperation among governments and NGOs, support

surveys and joint projects and develop a method for fostering the work of the Forum. The Forum will meet tentatively again in July in Alaska to exchange ideas on ecosystem management and the public's role in protecting our environment. Environmental Components of the UNDP-supported Tumen River Project The environmental component of UNDP's Tumen River Area Development Program is perhaps the most advanced of its several regional environmental activities and may establish important legal and political precedents that will bear on other regional environmental agreements. This mammoth undertaking would involve heavily polluting industries-- preprocessing of minerals and timber using coal-fired energy. If the project hopes to receive seed financing from the ADB or the World Bank, it must undertake extensive environmental impact assessments and be designed to mitigate significant impacts. In October 1992, a preliminary environmental assessment was presented to the Program Management Committee's second meeting. The report stated that the hinterland, deltaic and adjacent coastal areas were ecologically fragile, and noted the paucity of environmental and resource data for the area. In May 1993, the third meeting of the Program Management Committee reviewed a draft set of "Environmental Principles" with the following objectives: to achieve "environmentally sound and sustainable development" in accordance with UNCED, international environmental law and agreements, and multilateral donor requirements. cooperation and coordination of the relevant governments on environmental concerns and their preparation of impact assessments of projects on national territory. Coordination of environmental protection of projects developed within the zone by the Tumen River Development Corporation will be the responsibility of institutions responsible for implementing the scheme. Member states will allow nongovernmental organizations to participate in environmental assessment procedures.
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