

*MAKING ENVIRONMENTAL
LAW IN ASIA
MORE EFFECTIVE*

PARTICIPANTS' REPORT

OF A REGIONAL WORKSHOP

Hong Kong, March 4-8 1996



REPORT EDITORS

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and

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I THE GOALS

Developing Practical Recommendations

East and Southeast Asia is undergoing the fastest development the world has ever witnessed. It is also experiencing severe environmental degradation with obvious harm to human health in the near term and potentially catastrophic consequences for the long term ability of the natural environment to adequately provide essential services on which our very social and economic systems ultimately depend.

While some tradeoff between the environment and development is inevitable, the bargain in emerging Asia has been particularly poor, with much environmental quality being sacrificed for modest and poorly distributed short-term benefits. Yet, with some notable exceptions, the problem is not generally one of an absence of stringent laws.

Much of the region has adopted the ambient environmental quality standards and legal approaches employed in North America, Japan, and Europe.

Unfortunately, for a variety of reasons, environmental laws in the region are far too often ineffective or simply unworkable.

A common complaint is: “we have good laws, but they are not enforced”.

This workshop brought together invited professionals from throughout Asia and North America with a wide range of environmental management perspectives (e.g., ministries, regulatory agencies, the courts, private industry, voluntary organizations, academia and practising lawyers). Our purpose was to consider how environmental laws in Asia may be designed to more effectively meet local conditions. While environmental law-making in the older industrialized nations provides useful models for emerging Asia, it is equally clear that conditions here, particularly the pace of development and the role of government in its promotion, presents a different context for environmental management.

Our task was to identify the key features of the Asian context for environmental management and the problems these might pose (even where these might be sensitive to some), and based on this assessment develop practical recommendations for the design of more effective environmental laws.

We have aimed to frame each of our findings and recommendations as practical for law-makers and others concerned with protecting our environment in the face of the world's fastest economic development. In keeping with this aim, the workshop participants first considered broad principles to determine where a consensus might lie and then strove to frame specific recommendations in ways which make as clear as possible how each might be actually implemented in one form or another in a variety of local situations throughout the region.

Network Building

Another important goal of the workshop was to try and aim to promote networking among environmental professionals in government, the private sector and voluntary organizations. The workshop setting proved to be an effective forum for the exchange of ideas among persons from different geographic settings and environmental perspectives (e.g., the business community, academia, and Non-Governmental Organizations - NGOs).

Most of the 33 participants came from one of the 12 Asian economies represented. In addition, several participants came in from North America to attend. Participants included senior persons from environmental ministries and agencies with major environmental oversight responsibility, regulators from line agencies charged with implementation and enforcement of environmental regulations, a judge, representatives of NGOs active in environmental advocacy, practising lawyers, academics and persons with environmental compliance responsibility in major private sector firms. About half the participants were trained as lawyers, while the others came from a variety of professional backgrounds, including the sciences, engineering, planning and economics.

The workshop provided valuable opportunities for the participants to develop a fuller appreciation of how those from different places, cultures, professions and positions inside or outside government see the nature of the shortcomings of environmental law locally and in the region and the best ways to improve the situation.

*One noteworthy aspect of these exchanges was the identification of considerable **common ground** among participants from private industry, government and the non-governmental organizations regarding the need for more effective environmental law and the need for more cost-effective approaches for attaining it.*

Where an adequate level of trust exists among the regulated community, government regulators and the community at large, opportunities for more effective and more cost-effective environmental protection are likely to emerge.

Aside from better specific environmental regulation, a more cooperative and participatory approach to environmental law-making would do much to improve the now all too typical poor terms of the development-environment bargain.

II STRUCTURE OF THE WORKSHOP

We stress that this was a 'workshop' and not a conference. While some participants brought materials, these served as background documents to facilitate the subsequent exchange of ideas.

It is the outcomes of this exchange of ideas at the workshop itself, rather than these previously prepared materials, which is the major subject of this report.

Each topical session lasted about three to four hours with a break. Typically, a session started off with a prepared short presentation by one of the participants presenting an overview of the topic and a number of important considerations for the up-coming discussions. Discussion was then led by a session moderator with several other participants serving as recorders of the major points of the discussion. The role of the moderator was to help guide discussions, particularly in the latter part of the session, toward agreement leading to specific and practical recommendations on which a working consensus seemed to have been reached for the design of environmental law in the Asian context.

The process of exchanging ideas among a group of 33 persons, airing alternative viewpoints and describing specific experiences from a variety of settings is, of necessity, relatively time-consuming if it is to involve a true exchange of ideas. And even when successful, at best such a process tends to lead to a workable consensus on a limited number of basic points related to particular topics, rather than the development of new paradigms.

The findings and recommendations that are reported here, by the nature of the process out of which they emerged, provide general, as opposed to detailed guidance. However, the consensus of the participants is that if such basic considerations are not fully appreciated, the best law drafting may fail to lead to effective measures for the protection of the environment.

III CONCLUSIONS/RECOMMENDATIONS

To facilitate the exchanges of ideas, the week-long workshop was divided into a series of separate sessions, each focusing on a particular theme: (1) the institutional context, (2) land use planning in environmental management, (3) monitoring issues for compliance, (4) enforcement issues for compliance, (5) the role of different types of policy instruments, (6) the design and use of environmental impact assessments, and last, (7) international trade agreements as these affect environmental decision-making. Despite some inevitable overlap, this framework proved reasonably functional.

In the course of a week of discussions a wide variety of issues and topics are inevitably raised. In some cases, particular points were eventually put aside, either because they are not of sufficiently wide relevance, or because no clear-cut recommendations emerged. However, for certain issues and topics the importance and relevance was clear and a reasonable working consensus emerged with regard to salient features. In such cases, our task became one of how to frame a particular finding (or preferably a recommendation) in a manner which would be of practical use to law makers and others concerned with effective environmental management in this region. Here, the challenge was to avoid the trap of stating the

obvious and offering platitudes with regard to the need to do good things.

The findings and recommendations of the workshop as reported here relate to both the broad context in which environmental management takes place and specific aspects of environmental law design and its implementation. The Summary on the opposite page lists the findings and recommendations. Fuller explanations and elaborations follow.

SUMMARY OF RECOMMENDATIONS & FINDINGS

THOSE RELATING TO BROAD, CONTEXTUAL ISSUES

(i) Unless environmental policy is more effectively integrated into overall planning and investment promotion, environmental protection in the Asian context will be inadequate and needlessly costly.

(ii) Wherever corruption is a major concern, environmental laws and regulations should be no more complex than absolutely necessary and as transparent as possible.

(iii) The most important environmental decisions are often collective ones and citizens can only exercise responsibilities for deciding the type of environment they are able and willing to pay for when they have access to adequate information.

(iv) In Asia generally, there is a need for greater consolidation of environmental responsibilities in government or, where such consolidation is not feasible, for much better coordination among responsible agencies.

(v) Land Use Planning is a vastly underutilised tool in the region for lessening the environmental consequences of development and this has tended to undermine success in reducing environmental damage from existing sources.

(vi) Considering the importance of international trade to Asia's economic development, it is particularly incumbent on those designing environmental laws for this region to ensure that these laws do not present arbitrary or unjustifiable discrimination or serve as a disguised barrier to trade.

SUMMARY RECOMMENDATIONS & FINDINGS, continued

THOSE RELATING TO SPECIFIC POINTS

Compliance Monitoring

(vii) Environmental laws must be designed with compliance monitoring needs and capabilities clearly in mind.

(viii) Careful assessments of what to monitor and how to monitor it are essential in building an effective and workable system of environmental law.

(ix) Monitoring systems are more effective and more cost-effective when government monitoring activities are supplemented by well-designed self-monitoring and information from the local community.

Compliance Enforcement

(x) Monitoring should provide both positive and negative feedback with results being made freely available (within the bounds set by the legitimate needs for confidentiality).

(xi) Alternative approaches to dispute resolution are needed in the Asian context because cultural factors often weaken the effectiveness of the approaches adapted directly from elsewhere.

(xii) In Asia, generally, there is a need to give greater scope for citizen-brought cases of environmental protection and perhaps the greatest obstacle to doing so is the desire of government to limit its own vulnerability to citizen suit.

SUMMARY

RECOMMENDATIONS & FINDINGS, continued

Type of Policy Instrument

(xiii) Selection of environmental policy instruments should be based on an assessment of each instrument's (i) effectiveness in limiting environmental damage, (ii) cost-effectiveness, (iii) administrative ease, (iv) fairness and (v) political acceptability.

(xiv) While the Polluter Pays Principle must be employed, there are circumstances in which positive incentives deserve consideration.

Approaches to and use of EIA

(xv) It must be appreciated by all parties involved that while EIA can be a useful planning tool, the EIA itself will not provide clear-cut answers on the acceptability of impacts. Policy decisions drawing on the findings of the EIA still require difficult choices.

(xvi) To be effective, an EIA must be conducted as early as is feasible in the planning process and impacts of individual projects evaluated within the context of larger development.

(xvii) While a considerable variety exists in the types of EIAs and how they are used in the region, in general, the EIA process in Asia involves inadequate public consultation and transparency.

(xviii) EIAs should ideally be conducted by independent, unbiased analysts and be done in a timely manner.

(xix) EIA should aim not to be restricted to narrowly defined 'environmental' concerns, still less to 'pollution'. It should embrace, where appropriate, aesthetic factors and also cultural considerations, including those of ethnic minorities.

(xx) An EIA should aim to include recommendations for post-implementation monitoring and reporting.

CONFIDENTIAL - SECURITY INFORMATION

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COMMENTARY

Broad, Contextual Issues

(i) Unless environmental policy is more effectively integrated into overall planning and investment promotion, environmental protection in the Asian context will be inadequate and needlessly costly.

Two distinguishing features of the Asian region are the role of government in promoting specific forms of development and the absence of effective integration of environmental concerns into the goals of planning ministries, investment agencies and the like. This problem applies not only to large national systems, but even to places such as Hong Kong which lacks the multi-tiered administrative framework of national, provincial and local decision-making.

Without such integration, the environmental agencies are left largely with the task of mitigation rather than prevention. This is both ineffective and inefficient.

In such a situation the burden of environmental protection tends to lie all the more heavily on existing industry, transport and others to undertake increasingly stringent and expensive steps to reduce their own environmental impacts, even as such efforts are overwhelmed by poorly planned growth.

Effective integration of environmental considerations into planning and investment must occur at a number of levels, but principally in:

- (i) the type of economic development promoted or allowed,
- (ii) the type of infrastructure put into place (e.g., sewage treatment),
- (iii) incentives to new industry to become more environmentally sound, and
- (iv) land use planning decisions.

The environment advances not only amenity and health values, but also provides essential economic

services. Rivers, for example, are important for industry and agriculture, as well as for drinking water. If a river is severely overstrained, it is simply good planning and good economics, as well as good environmental management, to halt the expansion of water-polluting industries in that watershed until damage is significantly reduced. The addition of new industries might be permitted on the condition of improved wastewater treatment facilities, so that overall discharges are reduced, even as industry expands. This statement may be simply common sense, but it is often not followed due to ineffective cross-ministerial (or perhaps even intra-ministerial) coordination on the environment.

Until environmental goals become much more effectively integrated into planning and investment agency goals, environmental management will remain a narrow problem-focused reactive effort. This is typically many times more expensive than prevention, wasting precious resources and represents poor economic planning.

(ii) Wherever corruption presents a major concern, environmental laws and also regulations should be as non-complex and as transparent as feasible.

A point which surfaced time and again during the workshop is the problem posed by corruption. As the region has grown very rapidly, older institutional and social values have been undermined. There is also a widening gap between public sector wage levels and those of the private sector, as well as between the rich and poor generally. These factors, among others, have made the use of illicit compensation to public servants to either perform their duties or to purposely fail to perform them, a growing problem in Asia, though by no means a problem unique to the region.

In environmental management corruption may be exhibited in a variety of ways from high level *ad hoc* exemptions to industrial plant siting restrictions in environmentally sensitive areas (e.g., adding another industrial plant on a lake where valuable fishing and irrigation needs are already being threatened by industrial waste discharges), to the granting of operating permits for new plants even before emission controls are in place, to the falsification of monitoring records and so on.

Corruption in various forms is a fundamental problem which requires basic changes in social and economic conditions (e.g., better accounting by public agencies, provision of liveable wages to public employees). Until that happens, the issue at hand is how to minimize the potential for corruption to undermine the effective implementation of all environmental laws.

In the face of the potential for corruption, drafters of environmental laws should design laws in a manner which:

- (i) aim to minimize the number of *points of administrative intervention* and
- (ii) makes *performance accounting* at these points as *transparent as possible*.

In some cases this recommendation might lead to a greater reliance on economic-based policy instruments (e.g., deposit-refund scheme to promote the collection of hazardous materials) where they are simpler to administer and hence reduce the number of

points of administrative intervention relative to an alternative direct control measure such as mandating waste stream separation and separate collection. In other cases, particularly where economic instruments are unfeasible or may increase opportunities for unauthorized diversion of marketable resources, the above recommendation might lead to the use of a direct form of control, but one which makes for more transparent compliance monitoring (e.g., mandating the quality of fuel which may be sold because this is easier to monitor than a requirement that the many users of fuel employ a specific end-of-pipe technology).

(iii) The most important environmental decisions are often collective ones and citizens can only exercise responsibilities for deciding the type of environment they are able and willing to pay for when they have access to adequate information.

If people are to be able to take responsibility for deciding the type of environment they are able and willing to pay for, they must have access to information to be able to make informed decisions. Hence, the planning process should be as open as possible and allow for periodic consultation as planning progresses from initial option review to final design.

One potential advantage of participation is that citizens will tend to *buy in* more to programmes they feel they can influence. This increases political support and may make it easier to 'sell' programmes which require the support of the public at large (e.g., fare increases for cleaner public transport).

Where such formal possibilities are non-existent or are not effectively implemented in practice, the citizenry will tend to feel distant from decisions and to consider them only from the viewpoint of their own narrow self-interest. In such cases, getting public support for broad-based efforts for environmental protection will be more difficult. The absence of effective formal channels of communication may also tend to lead to a feeling on the part of particular interest groups (e.g., those living close to a polluting factory or those with a special interest in rainforest protection) that only by highly publicized tactics (and if need be, ones disruptive to business as usual) are their concerns likely to be considered. Such an atmosphere of antagonism makes administration more difficult and may lead to poor decisions stemming from the desire of the political leadership to quickly end disruptions.

There is perhaps a natural fear on the part of developers and government that more consultation means delay and financial cost - especially in a region

developing as rapidly as this one and where consultation with the public is often not part of the traditional government ethos. But fuller consultation is likely to mean better informed decision-making, which will, in the ultimate analysis, be likely to be better decision-making. Government will usually have all the relevant information available (it certainly ought to have it available for its own decision-making), and provided the public is informed in good time that consultation will take place, periods available for consultation need not be long. Of course, the later in the planning process the consultation takes place the more concrete plans will be and the more resistance there will be to changing them.

There is a cultural tradition of non-confrontationalist styles of decision-making in this region and of acceptance of authority which may tempt government to ignore public opinion. In fact it should be possible to build on these traditions in a positive way and involve the citizenry constructively.

(iv) In Asia generally, there is a need for greater consolidation of environmental responsibilities and where this is not feasible, for much better coordination among responsible agencies.

Annex 2 outlines alternative administrative structures for environmental management along with their associated advantages and disadvantages. At the start of the workshop, participants from the various countries and economies presented the administrative structures for environmental law and enforcement of their home place. The range of alternatives was considerable, reflecting historical factors (e.g., culture, colonial legacies), local circumstances (e.g., the importance of forests) and simple happenstance. It was equally clear that each system has its strengths and weaknesses and that no single model is appropriate for all Asian settings.

It was noted how often the United States Environmental Protection Agency (USEPA) is looked to when law-makers and regulators in the region are considering how to set up management regimes. Discussions on this point stressed the value of USEPA as a preliminary model for Asian countries to evaluate, but also noted the dangers of attempting to apply such a model too directly to situations here.

The other, and more basic conclusion with regard to environmental institutions in this region, is the need for better integration of responsibilities, whether attained through the merging or transfer of different line agencies to the ministry with the major environmental responsibility and giving that ministry sufficient authority, or through better inter-and intra-agency coordination on the environment.

Agencies which have environmental responsibilities often work at cross purposes, with the policies of one undermining the effectiveness of another. Also, when responsibilities are widely disbursed and poorly coordinated, it is often more difficult for the regulated community to know all the rules and public participation and access to information becomes more difficult. Regardless of how the fuller integration is attained, it will improve the chances for more effective environmental law in Asia.

(v) Land use planning is a vastly underutilised tool in the region for lessening the environmental consequences of development and this has undermined success in reducing environmental damage from existing sources.

Many people tend to think of environmental damage as absolute. In fact, it typically depends largely on the proximity of a damaging activity to 'sensitive receivers', whether human settlements, other ecosystems, or geophysical features. The same pollution occurring near a large population centre or in the near proximity to important natural eco-systems (e.g., coastal wetlands) will usually involve far higher environmental 'costs' than the same pollution occurring in areas of low population or biological importance. This is not to say that environmental damage in areas away from sensitive receivers is not a matter of concern, but simply that its significance is likely to be much less.

Land use planning -- and especially industrial and infrastructure siting -- should be a starting point for environmental management.

While the above statement may simply be a matter of stating the obvious, the precept seems mostly to be honoured in the breach. Many of the workshop participants come from countries which have not often engaged in comprehensive land use planning. Clearly, other considerations (e.g., industrial growth, the location of existing infrastructure) may appear to be quite compelling when it comes to such matters as where to put an industrial plant, a sewage treatment facility or a new housing development.

Putting such developments 'close in' to an existing population centre tends to lower transport and certain types of infrastructure costs. Filling-in coastal wetlands may be the cheapest way to acquire the necessary land for construction. And putting a luxury housing development in an area excised from parkland may allow government to capture much higher land prices due to the amenity value of the location.

Yet in each case, there are substantial offsetting costs in the form of environmental damages (e.g., health effects of pollution, the loss of fish spawning areas, the weakened integrity of the park system) and these may continue far into the future in contrast to the typically near-term nature of the financial benefits. This makes the decision a bad bargain from an overall economic standpoint.

If the environmental consequences of land-use planning decisions are not explicitly considered along with other factors such as land costs, transport distances, etc., then the planning process is seriously flawed, resulting in higher losses of environmental quality in the near term and unnecessary costs for clean-up and restoration in the future.

On the other hand, environmental considerations should not always dominate land use planning, since that would be both unrealistic and inappropriate.

Societies throughout East and Southeast Asia have made poor land use planning decisions when income levels were much lower and they are now paying very high costs to deal with the consequences. In Taiwan, as an example, the rural industries programme which dispersed industry into agricultural areas in a misguided economic development effort, and in Hong Kong where population pressures led planners to place massive housing estates adjacent to pre-

existing highly-polluting industries means that today, major efforts are required to deal with polluted agricultural land and the health effects of industrial pollution on large numbers of people.

The ways in which land use planning may more effectively incorporate environmental considerations are many, varied and often obvious. Hence, we will not go into them here except to note that when environmental factors are incorporated into the planning process, it is vital that meaningful public participation be a fundamental part of this exercise. Planners may prefer to minimize or seriously constrain public participation, perhaps out of fear that the *not in my backyard (NIMB) syndrome* will prevent decisions from being made or result in decisions being made in ways which reflect the power of one group rather than the needs of society as a whole. Yet, despite the risk and difficulties, it is essential that the process be made as open and transparent as possible.

In part, this is to ensure that groups outside the land use planning agency itself have the opportunity to provide information (e.g., on some aspect of local ecology) of which the planners may be unaware or whose significance they may not fully appreciate. Only when all interested parties have the opportunity to make their case for or against the development as a whole or particular design features of it can the land

use planners know that they have the fullest information base on which to make their decisions.

Finally, land use planning must be recognized as one of the most effective tools for long-term environmental management. Indeed, when considering issues of inter-generational transfers, land use planning clearly must play a leading role. If we expect to continue to grow in economic terms and to accommodate a higher population before population levels stabilize, then we will have to make far more careful allocation decisions with regard to land -- which is ultimately a finite resource.

(vi) Considering the importance of trade to Asia's development, it is incumbent on those designing environmental laws for this region to try to avoid unnecessary barriers to trade when drafting environmental legislation.

Annex 3 briefly outlines several issues regarding international trade and the environment. A basic point here is that trade law may conflict with environmental goals. The General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO), focuses on *products*, arguing that 'like products' from different places should be treated the same in trade, even if the processes by which they are produced differ. Typically, environmental controls affect processes. If one nation places stringent process controls on its producers (e.g., allowed pollutant emission levels), these producers may be undercut by foreign competitors who produce the same products at lower cost to themselves but at higher 'costs' externalized to the environment. Under GATT, import discrimination on the basis of process technology would generally not be allowed.

GATT does not seem to recognize that when some producers are allowed to utilize processes which externalize costs in the form of environmental damage which their competitors must internalize through pollution prevention, this is an implicit subsidy.

And indeed, often the damage may not be fully experienced by the producer nation but may be 'exported' as non-compensated costs to others in the form of climate change, ozone depletion, acid rain, ocean pollution, degraded water flowing into a neighbouring country, etc.

It simply does not make sense when international agreements are such that they implicitly support the ability of a producer to avoid direct money costs to itself at the expense of environmental costs -- much of which are borne by other nations and by future generations!

A related matter is whether these implicit subsidies should be more acceptable in the case of lower income economies. International agreements generally assume 'common but differentiated responsibilities' for developed and developing countries. There is a growing recognition of the need for technology transfer and financial assistance to allow developing nations to adopt cleaner processes. With regard to trade, this may mean that if developed countries object to the manner in which something is produced in a developing country, they should assist developing countries to adopt more environmentally sound technologies for the good of all.

With the above problems noted and our hope that they will be fairly addressed in the WTO, we stress the need to avoid, as far as possible, conflicts with GATT and also with other such agreements when trying to design environmental laws.

This is not to say that environmental law making must necessarily operate within strict constraints set by international trade agreements.

Rather, drafters of national, provincial or local environmental laws should do their work with an awareness of the requirements of the international agreements, making sure whenever possible to avoid disguised barriers to trade which is consistent with attaining domestic environmental goals.

These studies have shown that the
effectiveness of the program is
highly dependent on the quality of
the implementation. The program
is most effective when it is
implemented in a way that is
consistent with the principles of
the program. The program is
most effective when it is
implemented in a way that is
consistent with the principles of
the program.

SPECIFIC POINTS

Compliance Monitoring

(vii) Environmental laws must be designed with compliance monitoring clearly in mind.

The first step is the setting of clear standards by government (e.g., allowable pollutant emissions) and a system of permits for emissions so that those subject to compliance know what is expected of them and those doing the monitoring know what to look for. In this regard, standards set by international organizations (e.g., the World Bank) or the older industrialized nations (e.g., the USA, Japan) may serve as benchmarks and guidelines.

How closely should the standards set by law and the permitting system match the capacity of the monitoring system to track compliance? One approach is to set up a comprehensive set of standards and permitting even if, as at present, the resources available for compliance monitoring fall well short of what would be needed to actually check compliance in all aspects. An alternative approach is to set standards which can be adequately monitored from the start. The former approach has the advantage of

alerting polluters that their emissions are a matter of regulatory concern, but it may undermine respect for a law when regulators are yet capable of enforcing it.

The manner in which monitoring is carried out must suit the local situation, particularly regarding the size and number of emission sources. Whereas large facilities might be monitored continuously and for a wide range of pollutants, this is unlikely to be feasible (or cost-effective) for many small emission sources. For smaller sources the standard-setting and the monitoring programme perhaps should be based on process or equipment requirements rather than point-of-discharge measurements.

Because of expected continued economic expansion and the desire to attain higher levels of environmental quality, it is likely that emission standards from each source may need to be periodically tightened. The likelihood of periodic changes in the standards should be taken into account when trying to decide how compliance will be measured.

(viii) Careful assessments of what to monitor and how to monitor it are essential in building an effective and workable system of environmental law.

One important development in the older industrialized countries is integrated, multi-media monitoring and permitting. Strict control focused on a single medium (e.g., air) may result in significant increases in another form of pollution (e.g., solid waste). In addition, it is now recognized that rigid emission standards may sometimes be needlessly costly and add little additional environmental protection.

For some important forms of pollution, standards based on a *probability of exceedance* may be more effective and more cost-effective than ones in which 'compliance' is defined as anything less than the standard and 'non-compliance' as any exceedance, however brief or minor. Pollutant emissions are sometimes highly erratic and it may be that what we are most concerned about is the total amount released over a given time. Hence, rather than setting a specific maximum level (which may tend to allow higher than desired total emissions), it may better serve the environment (and the emitter's ability to comply) if compliance is measured with regard to average

emissions and a limit on the sampling distribution-determined probability of higher levels occurring. For example, rather than setting allowed emissions at 100 tonnes per hour (TPH), it may be more appropriate to set the level at 80 TPH with the requirement that higher levels occur with less than a 5% probability. Clearly, such an approach requires more sophisticated monitoring and analysis than a simple maximum permitted level. But where feasible, the benefits in terms of cost-effective environmental management could be quite significant.

Finally, it is becoming increasingly recognized that clean production technologies are likely to be a more cost-effective way to reduce pollutant emissions and other forms of waste than end-of-pipe clean-up. Monitoring the actual use of the cleaner production *process* may allow reduced *emissions* monitoring.

Of course, using such sophisticated approaches to the standard setting sometimes adds to the complexity of compliance monitoring and hence are only appropriate where the technical and the administrative capability are adequate. However, where they are feasible, such approaches may substantially improve the usefulness of monitoring for effective environmental protection, while lowering the costs of the monitoring system itself and lowering the cost of compliance to the regulated community.

Monitoring systems must be carefully designed with respect to:

(i) the type of standards in place (e.g., single medium, multi-media), how compliance is going to be judged (e.g., absolute allowed levels, probability of exceedance-based sampling) and the expected number and size of the sources;

(ii) the extent of sampling needed to obtain a more than adequate certainty for detecting significant non-compliance (e.g., continuous, periodic spot checks);

(iii) the parameters which are actually to be measured (e.g., may sometimes be a surrogate measure, such as chemical oxygen demand (COD) might be tracked in place of another, such as biological oxygen demand (BOD) because it can be done more readily than the parameter of actual greatest concern);

(iv) the resources which are available for data analysis (i.e., data collection should be in line with what can be effectively analysed and reported), and

(v) the skill and capabilities for monitoring personnel and analysts.

As so often occurs in these findings, the above statements are perhaps all too obvious and yet they are not always followed. When a monitoring system is poorly designed, it will be more expensive than is necessary and less informative than it could be.

Finally, there are important training needs for monitors and analysts in the lower income, rapidly-growing economies where monitoring systems must be put quickly into place or greatly expanded. Training programmes, along with the holding of qualifying examinations and the licensing of monitors are important needs and here foreign assistance would be particularly useful.

(ix) Monitoring systems are more effective and more cost-effective when they incorporate well-designed self-monitoring and supplemental information from the local community.

Continuous real-time monitoring of all pollutant emissions and other activities which damage the environment is impractical. Hence, efforts should be made to assess the appropriate role for self-monitoring and community reporting so as to enhance the overall effectiveness of compliance monitoring by government. Even when environmental compliance monitoring is adequately prioritized and designed, it is vital for the environmental agency to look for ways to extend the coverage of available resources.

One basic option is to allow self-monitoring, with occasional spot checks, wherever this can be reliable. Such a system is likely to work best with large or modern industries where there is (i) in-house technical capability (which might well exceed that of the government agency charged with compliance monitoring) and (ii) where the regulated industry or organization has incentives for honest reporting (e.g., license renewal requirements, public image at home or abroad) and/or where disincentives are in place to punish dishonest reporting (e.g., licence revocation,

fines, criminal penalties, bad publicity).

In some cases, the local community may also be in a position to help check for non-compliance, particularly with regard to short-term high emission releases, or occasional system leakages to the air or water in ways or in places which the government's monitoring system may not be designed to measure. Obviously, decisions about the use of community reporting, like self-monitoring, must be highly site-specific.

Where use is made of community reporting as part of a larger monitoring system it is vital that the regulatory agencies make clear that the information thus provided is taken into account when it decides if a particular facility is in compliance. Without such feedback community reporting is likely to quickly become spotty and ineffective.

(x) Monitoring should be used to provide both positive and negative feedback and such results should be made as widely available as is possible consistent with legitimate confidentiality issues.

Public access to the results of monitoring is essential. When the results are not released or released only after long delays, the potential exists for corruption in the form of lack of action on violations. However, if raw, unverified data were to be routinely released, obviously there is considerable potential for misinterpretation and possibly even for the data to be of inappropriate use to competitors.

Data should not be released until it has been checked and the released information should be aggregated in a manner which will not raise confidentiality concerns. With that noted, the results of compliance monitoring should generally be routinely released in a timely manner (e.g., within weeks or months -- not years).

It should include not only summarize results but also the relatively disaggregated information, where such detail would be of importance to the public in judging the significance of reported levels of compliance.

While monitoring is typically viewed as a 'stick' to help keep polluters in compliance, its results may also be used to provide a 'carrot' (or as one participant suggested 'candy' rather than 'pins'). Firms which develop good track records for low emissions or which initiate specific forms of in-house clean-up (perhaps as part of ISO 14000 certification) might be rewarded with greater flexibility in meeting emission standards or with reduced environmental reporting requirements. In this regard recent programmes of the USEPA might provide useful guides.

When the monitoring results show repeated and prolonged violations, this information should be used to prosecute the plant managers and senior officers of the company. Such prosecution would likely be far more effective when penalties include prison terms as well as fines.

One feature of the regional context which frequently came into the workshop discussions was the

importance of public appearances (or, as it is often referred to, 'the matter of face'). From this the idea that verified failure to comply should result in swift public disclosure of such failure. In Ho Chi Minh City for example, there is a published 'black book' of the worst polluters (and now a 'green book' of the cleanest ones).

Compliance Enforcement

(xi) Alternative approaches to dispute resolution are needed in the Asian environmental law enforcement context because cultural factors often weaken the effectiveness of the approaches adapted directly from other nations.

Even among societies which draw on common legal traditions there are often considerable differences with regard to the willingness of people to go to court and how willing courts are to impose sanctions against particular legal transgressions. Obviously, such differences are potentially much greater when societies come from different legal traditions. Likewise, the prevalence and forms of corruption will vary from one place to another. Hence, enforcement approaches which work reasonably well in one place may not be the best in another.

When it is evident that enforcement is not effective in a particular situation, it is important to explore alternative measures.

These might be relatively formal (e.g., People's Courts, court-mandated or sanctioned arbitration or mediation), or relatively informal (e.g., public exposure/censure, or ad hoc private party negotiations on damages and penalties between polluters and those most immediately and seriously affected).

In some situations the threat of public exposure and subsequent loss of face or public censure may by itself be a more effective tool for promoting compliance than the threat of fines or other legal sanctions applied with little public notice. Particularly as an economy advances and companies look to the international market, *image* (both locally and to overseas buyers) becomes an important asset to a company. When this happens, or when a company has a long-standing role in a community, it may well move to 'clean up its act' in the face of strong public reaction to negative publicity about the manner in which it appears to casually disregard environmental damage in the way it conducts its business.

Alternative dispute resolution measures involving arbitration or private party negotiations will

generally be most effective when (i) public exposure or censure is of potential concern to those being challenged and (ii) an institutional and social context exists in which negotiations could take place. In arbitration (and also in some forms of private negotiation) concerned parties must also accept third party mediators.

Our point is not that alternative approaches should play the major role in compliance enforcement in Asia, but simply that they deserve greater consideration as a supplement to the legal enforcement approaches.

Regardless of the form and type of compliance enforcement (e.g., moral suasion, negative publicity, voluntary negotiation, administrative fines, or court imposed prison terms), enforcement works best when the sanctions are applied where it hurts the most. This requires flexibility in targeting the sanctions. In drafting environmental laws it is important to build in flexibility with regard to how sanctions might be applied to allow enforcers to better target their actions. For example, in some situations temporary facility closure may hurt profits far more than fines and can be implemented faster. In other cases, the threat of

public disclosure for repeated violations and expert commentaries about the human health or eco-system damages associated with these may be more effective in changing behaviour than simply raising fines (which, in any case, the facility may feel the courts will fail to impose).

Clearly, the legislation should indicate the nature of the sanctions to be normally imposed. Our point here is that drafters should consider adding, as feasible, the option for alternative forms of action by regulators or courts, particularly where the normal approaches have proven to be ineffective and the environmental situation is serious.

(xii) In Asia generally there is a need to give greater scope for citizen-brought cases of environmental enforcement and perhaps the greatest obstacle to doing so is the desire of government to limit its own vulnerability to citizen suit.

Since Asian environmental regulators are often overstretched and corruption may be a major obstacle to the identification of serious violations of environmental standards, actions initiated by private citizens against those damaging the environment can --- when done in an appropriate manner -- be quite useful in strengthening the effectiveness of environmental controls.

The obstacles to successful legal action by citizen groups lie mainly in the cost of litigation and in the narrow concept which some systems have of who is entitled to take a case to court.

Some systems grant standing to any interested citizen, while others will only permit those who have actually been injured to bring an action in court. In the latter case, if those actually injured are in the poorer sections of society, or it is difficult to identify injured

individuals, or the damage is likely to be felt by generations as yet unborn, such narrow concepts of legal standing will prevent the effective use of the courts to redress many types of environmental wrongs. Yet, the experience of some countries in the region has shown that these obstacles need not be insurmountable. For example, it may be necessary to make financial support available to those who wish, on a sound basis, to bring such suits (e.g., by providing for the recovery of their costs and attorney's fees).

It is not inevitable that government considers a legal action nominally taken against it as being hostile. Government passes laws, hopefully with the consent of the governed.

It is a positive development if the people, or the organisations which represent them, take an interest in the enforcement of that law. Such actions can actually strengthen the hand of government against other violators.

Type of Environmental Policy Instrument

(xiii) The adoption of any type of environmental policy instrument (e.g., market-based incentives, direct controls) should be based on an assessment of each instrument's (i) effectiveness in actually limiting environmental damages, (ii) its cost-effectiveness, (iii) administrative ease, (iv) fairness and (v) political acceptability.

Market-based measures (e.g., pollution taxes), direct administrative controls (e.g., mandating specific fuel quality) and education/moral suasion (e.g., informing people of the environmental consequences of their actions) each have important advantages in terms of environmental protection. Each is, however, likely to be effective only under particular circumstances. For example, pollution taxes will work only where discharges can be adequately monitored and where taxes are actually paid. Specifying a technology tends to limit technological innovation and will not be the least cost solution to pollution control by all affected parties. Education and information may lessen the need for laws which attempt to control some types of behaviour, but even when people are aware, they will not always choose to act in the desired manner.

Different types of policy instruments will have quite different impacts on a range of concerns to affected industries and to the public (e.g., reporting costs, predictability of compliance costs, effectiveness in limiting environmental damage in an expanding economy). While some types of environmental law (e.g., a requirement to employ a specific advanced technology) may be easy for large firms to adopt, that same requirement strictly applied to all firms may put older and smaller ones out of business. Such an effect on older and smaller industries might be viewed as unfair and politically unacceptable, just as it is likely to be inefficient from an economics standpoint. While regulators prefer to have as much information as possible, detailed reporting requirements can result in a substantial added cost, particularly to smaller firms.

The range of environmental policy instruments is impressive and the forms of environmental measures laid out in laws and regulations should aim to reflect this. Unfortunately, regulators tend to prefer measures which seem to most readily address their administrative concerns (e.g., ease of implementation) and hence to rely largely on direct controls.

Yet, environmental regulation-making will be more effective, efficient, and fair, when an environmental policy instrument is chosen with adequate consideration factors of concern for the affected parties and the public and not simply what matters most to regulators.

In situations where the environmental deterioration is rapid and is likely to continue to grow (e.g., in Vietnam in this early stage of its development), it is probably most appropriate to initially rely heavily on direct controls for existing activities and to look for opportunities to apply economic measures as part of investment planning. Gradually, as a solid foundation for effective environmental management system begins to emerge, economic measures may be applied to existing activities as well.

For older and smaller firms some of the burden of the environmental protection may be reduced through government assistance programmes, including technology transfers and training/education.

Finally, we stress that the choice of environmental policy instrument is a matter not just for pollution control from established sources but also for planning and investment decisions as well, with the same selection criteria noted above being useful. Economic incentives can, for example, be a powerful means of making land use decisions far more supportive of environmental quality goals.

(xiv) While the Polluter Pays Principle must be employed, there are circumstances in which subsidies deserve consideration.

Although it now seems a very out-dated notion, it is instructive to remember that until relatively recently, from a *de facto* standpoint and sometimes from a *de jure* standpoint as well, those who engaged in activities which damaged the environment enjoyed the right to do so within rather broad limits. Modern industry in North America, Japan, and Europe, as well as in Asia, began at a time when it was not, in general, against the law (as generally interpreted or enforced) to dump toxic chemicals into waterways or vent them to

the common air. In the terminology of environmental economics, the *environmental property rights* tended to lie with the right to freely use common air, water, and land to dispose of unwanted by-products of modern society more so than with the right of people and ecosystems to be protected from the environmental effects of such actions.

In recent years, everywhere in the world, there has been a re-assigning of such rights away from the right to pollute toward the right to be protected from pollution and other forms of environmental damage. In light of this *de facto* shift in responsibilities, it may sometimes be appropriate to ease the transition through temporary subsidies. And, more importantly, in some cases, incentives simply work better than disincentives, particularly for small industries.

Examples from this region of the use of various types of subsidies for environmental action on the part of those causing it (or potentially causing it) include soft loans in Indonesia for industry to build waste treatment facilities, cash incentives to livestock framers in Hong Kong to close the business or to build livestock waste treatment facilities, investment incentives for cleaner technology in Vietnam, and in China funds collected from effluent charges which are returned to these same industries for building wastewater treatment facilities.

By noting the conceptual validity of subsidies as an environmental policy instrument, the consensus of the participants was that such rewards should be used sparingly and be designed for a short-term rather than a long-term effect and must also be consistent with the many rules of international trade.

A number of workshop participants also noted that, unless used with extreme care, subsidies could increase the potential for corruption. Funds provided for a specific action might be taken by the firm while it postpones, perhaps indefinitely, implementation of the promised steps and meanwhile is granted continuing delays by compliant officials. On the other hand, participants also suggested trying, whenever possible, to employ economic incentives which do not involve direct transfers of cash through government hands and which minimize discretion on the part of those handling the funds.

Approaches to and use of EIA

(xv) It must be appreciated by all parties involved that while EIA can be a useful planning tool, the EIA itself will not provide clear-cut answers on the acceptability of impacts. Policy decisions drawing on the findings of the EIA still require difficult choices.

An EIA can be a useful tool. However, it is equally important to recognize that the mere existence of a system of EIA does not ensure that it will be useful. Indeed, there can be a risk that the mere existence of institutionalised EIA leads to complacency - an attitude of “We are all right, we have an EIA system” with the result then being ‘green washed’ (i.e., used to make a bad project look acceptable).

Government and NGOs alike must not lose sight of the limits of their system and must ask:

- *what projects are included in the EIA system?*
- *is there discretion to dispense with the requirement?*

- *how often is the discretion used?*
- *what factors can the proponent be required to take into account?*
- *is there a requirement to take into account the cumulative impacts along with other current and projected activities and situations?*
- *how extensive are EIAs required to be in practice?*
- *can the resultant statement be readily understood by those who have to comment on it, or even by the developers themselves?*
- *is there a proper system of scrutiny of the EIA process and how is it being implemented?*
- *is there appropriate public involvement?*
- *is there consideration of a full range of alternatives to the favoured development strategy, including the 'no build' or 'no action' option?*
- *is there effective post-project monitoring?*

Only if there are positive answers to these and other questions is it right to feel some satisfaction, though not complacency.

Just as a “diet” drink can only be effective as part of a wider calorie-controlled diet, so EIA can only be effective as part of an overall strategy and system of environmental protection. But again, like a diet drink, if it is not part of something more comprehensive, an EIA can give a temporarily satisfying illusion which soon wears off. Indeed, there was widespread skepticism among the participants about the effectiveness of the EIA process as generally practised in the region to date.

(xvi) In order to be effective, an EIA must be conducted as early as possible in the planning process and impacts associated with a particular project must aim to be evaluated within the context of the larger development process.

The purpose of an EIA is to allow planners to better assess the acceptability of various impacts and, where they are judged to be unacceptable, to look for ways to reduce or avoid them. In this regard, public projects should be held to the same standards as private ones. Also, for an EIA to be potentially most effective, it is also vital that as much scope as possible remains for avoiding or lessening environmental damage.

The further the EIA is pushed back in the planning process, the narrower the range of options for keeping negative impacts within acceptable levels at a reasonable cost.

Most basically, the EIA should be conducted with consideration of (and guidelines for EIAs should require) a “no-build” or “no-action” option. In other words, the very necessity of the project should be

brought into the equation, rather than assuming that the project is desirable. If, as is often the case, the EIA is left until after project approval has been given, then the no-build option tends to be given little serious consideration. Further, if the EIA is not part of the early planning process, then basic changes in project design also become much more difficult to consider.

The desirability of either the no-build option or that of making basic changes to project design will often depend in part on how a particular project fits into the larger development picture. For example, the loss of a single wetland may have very different ecological impacts depending on whether it is one of many remaining ones or, as is more often the case, are wetlands in a particular area which are under widespread and pervasive threat. Hence, in evaluating a project and its potential impacts, it is essential that the EIA assesses the significance of the project-specific impacts with respect to the cumulative impact of the individual project and of other projects and activities underway or being planned.

When an EIA is pushed back later into the planning process, it also becomes less likely that cumulative effects will be adequately considered, if only because by doing so it may raise doubts about the wisdom of proceeding with a project which has developed its own momentum. One important way to avoid this is to ensure that the status quo ante remains until the EIA is completed and the final decision on the project has been made.

(xvii) While there is considerable variety in the types of EIAs employed and in the way they are used in general, EIA in Asia involves inadequate public consultation and transparency.

EIA is a procedure used to some extent in all of the countries in the region. Currently, Hong Kong and Singapore do not have a legal requirement in the sense of a statute on the subject. However, EIA can be used as a requirement for planning permission even in those jurisdictions (and Hong Kong is in the process of passing legislation). There is considerable variety in the coverage of the EIA requirements, however, and in some countries far more types of projects require it than in others.

It is essential that there be a formalised and an institutionalised process for EIA. Both the process and the results must be publicly available and presented in 'language' understandable to the general public. The public must be able to participate in the process and comment. At present, EIAs in this region often fall well short on these points.

The decision that a particular project requires an EIA is by no means the last of the “line-drawing” decisions. Public input is useful throughout the process in addressing such questions as:

- what issues should the assessment address (the scoping decision)?;
- how well has the resulting statement addressed the issues?;
- how severe are the predicted impacts?; and
- what conditions should be imposed on permission to develop even if it is granted?

This does not mean that one must consult the public at large at every step along the way. Public involvement can focus on the participation of knowledgeable non-governmental organisations (NGOs). This requires a structured system in which NGOs know they will be consulted and when government and developers accept this too. This is not to say that there should be no publicity to the public generally. NGOs can sometimes be rather narrow and there is no reason to suppose that being non-governmental means they always represent the public at large. There is also the risk that they will develop cosy relationships with government or developers. It is important that at some stage in the process the public at large is informed of what is going on - and early enough to avoid a *fait accompli*.

(xviii) As far as feasible, EIAs should be conducted by independent, unbiased analysts and should be done in a timely manner which does not unduly delay decisions about project approval or final design and implementation.

Standards for EIAs should be established and publicised and the cost of EIA should be borne by the developers, who should budget for this. Clearly, some form of professional certification or licensing of those doing EIAs needs to be established.

The consultant who conducts the EIA should be not only professionally certified but also unbiased, which means that he or she should not be beholden directly to the developer, nor should he have any stake in the project, financially or otherwise.

An effort should be made to establish a system under which the consultant is not hired by the developer. For private sector development, the consultant should be hired by or only with the approval of the government. For government projects,

however, there seems no such “simple” solution. One possibility is for the developer to reimburse the government for the cost of the EIA and to post a bond or other assurance before the process begins.

The EIA process should not be so drawn out that it unduly delays development projects. Assessing all the environmental impacts should generally aim to be conducted in a professional manner adhering, as far as possible, to timetables which are well integrated into overall project planning and design.

Clearly, capacity-building for conducting and evaluating EIAs is vital, since the lack of trained staff may lead -- especially when a tight timetable is imposed -- to formalistic reports lacking insights into the real significance of what is observed. The need for better coordination among government agencies with environmental responsibilities comes in here as well. When separate approvals of an EIA are required from a large number of agencies, this may considerably slow project implementation without necessarily ensuring adequate environmental protection.

(xix) EIA should not be restricted to narrowly defined “environmental” concerns at all, still less to pollution. It should embrace, where it is appropriate, aesthetic factors and also social and cultural considerations.

When dealing with communities in many countries in the region, especially those which have a lifestyle closely tied-up with the environment - fishing communities, farmers, pastoral societies and forest dwellers - environmental damage may have impacts far in excess of those which outsiders may perceive. In other words, changes to the environment in such cases may bring about the need for unwanted basic changes to the economic and social foundations on which the society is based.

Pollution, and all other forms of environmental degradation, including damage to habitat, may not only have near-term direct costs for human health and for the economy, but may also have destructive impacts on the very fabric of society.

A community which has to try and find a new basis for its economic activity because fishing and farming are no longer possible locally will not be the same community. Economic roles will change and may have profound economic costs in the future (e.g., in dealing with the problems of mass migration).

There may also be other cultural impacts, such as the loss of sites which are of societal importance, such as sacred areas or ancestral graves. In societies where, as in much of the world, decisions tend to be taken by urban people, these dimensions can all too easily be overlooked.

Even in urban areas, the population can feel alienated by an environment from which familiar landmarks have been eliminated. Heritage can be a significant aspect of the 'environment'.

In some contexts the aesthetic is also an aspect of the environment. A park can be substantially damaged by what takes place immediately outside its boundaries as well as by what is permitted within it. Many of the countries in the region have growing

tourist industries and for those the aesthetic aspect of development has significant negative and perhaps permanent economic implications.

(xx) The EIA itself should aim to include recommendations for post-implementation impact monitoring and reporting of the results.

If EIA is truly to be an important tool for environmental protection, it is essential that its findings are used to ensure that impacts remain within acceptable limits. Initially, this means that the way the project is designed and implemented must reflect the findings of the EIA. Over the longer term it means that there must be a system for monitoring on-going impacts and for reporting these to an authority with the power to ensure compliance.

It is critical that there be a requirement for some post-project monitoring to see that the EIA's prognoses were accurate and undertakings for impact mitigation are followed.

Such information may provide valuable lessons for future EIAs, while also ensuring that the developer sticks to what has been promised under the conditions imposed by government on the granting of permission to develop. Monitoring of condition performance should be accompanied, where necessary, by an enforcement mechanism with strong penalties for non-compliance. This could include a bond which is forfeited on non-compliance, as well as revocation of permission for the project.

As noted earlier, one way of achieving this is to require self-monitoring on the part of the developer, coupled with self-reporting. Conditions imposed on development can require reporting on specific questions at specified intervals and the reports which should be publicized. Where the nature of the development is such that it will involve future monitoring by the environment protection authorities (such as manufacturing installations which may cause water or air or waste problems) the authorities which carry out the monitoring should take into account the undertakings made and the conditions imposed at the development approval stage. But not all possible impacts are caught this way. It should be possible to check that mitigation measures which were promised have been carried out, that a project which was said to look good actually does look good.

If consultants who carry out EIAs are unable to accurately predict (within reasonable parameters) what the impacts will be, or developers do not carry out measures which they promised or were bound to take, they should not be permitted to carry out future EIAs, or future developments. A bond also may be appropriate for the consultants who prepare the EIA.

APPENDIX 1

BRIEFING NOTES ON INSTITUTIONAL STRUCTURES

This appendix draws on experience from the United States Environmental Protection Agency (USEPA) to illustrate various options and as a starting point to outline pros and cons of specific administrative structures which might be considered. As noted in the body of this report, the USEPA is often seen as a leading potential model for approaches to environmental protection in Asia. Despite the limitations of this or any other specific model for the region, a look at the USEPA is useful as a starting point, if only because it is so often referred to.

One basic decision with regard to management of the environment is how to structure administrative responsibilities. Here, a fundamental choice is that between a single authority with comprehensive environmental protection responsibilities versus a more dispersed set of responsibilities spread out among one or more relatively focused environmental protection agencies (e.g., one for industrial pollution control and

another for nature conservation) and the strengthening of environmental responsibilities within other agencies (an agricultural ministry). Another question is whether the authority should be centralized with major decision-making coming from the national level versus a national authority which primarily provides guidance to strong regionally-focused agencies.

A Single Regulatory Authority or a Variety of Media-Specific or Regional Regulatory Authorities

In the United States there is one regulatory authority, the United States Environmental Protection Agency (USEPA) for environmental protection purposes (although there is a different institution for the management of natural resources). Nevertheless, US environmental legislation is media-specific and there are divisions within the USEPA corresponding to different areas of legislation, e.g separate offices for air and radiation, water, and solid waste and emergency response. There is a tendency for these offices to develop into separate fiefdoms and hence, it is important to consider the desirability of this fragmentation, both in terms of legislation and in terms of regulatory authority offices. A major criticism of the USEPA is that one office does not necessarily take into account those environmental impacts resulting from its actions which are the responsibility of another office.

The Advantages of a Single Regulatory Authority

- o Concentration of specialized responsibilities can strengthen the development of institutional expertise;*
- o The coordination of responsibilities can allow, at least in principle, a holistic approach to environmental problems (although this may be undermined by the existence of media-specific (i.e. non-multimedia) legislation);*
- o A single regulatory authority system prevents jurisdictional disputes between conflicting media-specific or regional regulatory authorities;*
- o A single regulatory authority system can provide an efficient “one stop shop” for environmental permits.*

Disadvantages of a Single Regulatory Authority

- o A single regulatory authority can cultivate a rigid approach to addressing environmental problems; a frequent criticism of the USEPA is that the lack of an alternative model in the United States results in a lack of stimulus to change entrenched practices;*
- o In a system with a single regulatory authority endowed with considerable power, agency accountability may be a problem; there is a need in such a system for a strong accountability structure to prevent institutional arrogance.*

The Role of Subnational Versus National Governments

Again, using the US as an illustrative example, the national (Federal) government establishes uniform minimum environmental standards which apply across the country. It is assumed that implementation will be delegated to the sub-national (State) governments, but the State governments must establish, to the satisfaction of the USEPA, that they have the resources to implement the Federal programme. *The State governments can impose more, but not less, stringent environmental standards than the Federal government.*

Once a State government is delegated responsibility for implementation, the Federal programme ceases to operate. The national regulatory authority can still step in to enforce State law if the State fails to enforce the law. This system leads to some uncertainty for members of the regulated community, who (1) cannot be sure which agency (State or Federal) will take the enforcement lead, or (2) must sometimes comply with both State and Federal law if the Federal programme has not yet been delegated to the State.

Advantages of a Strong National Presence

- o It can ensure that subnational governments do not set up 'polluter's havens' to attract investment;*
- o Such a presence also ensures that an expert and financially-capable authority can preserve minimum standards, since some subnational governments may not have resources to implement strong national programmes;*
- o A strong national authority is less likely to be influenced by the local regulated community to establish lax standards;*
- o It can establish policy and implementation models which subnational regulatory authorities can follow;*
- o It can ensure that financial resources be made available at the subnational level for programmes through the mechanism of the national regulatory authority;*
- o It may help to ensure that there is an authoritative body that will have influence in international fora.*

Disadvantages of a Strong National Government Presence

- o It is less able to account for regional differences (environmental standards have to be uniform);*
- o It is likely to be less sensitive to local needs and land-use preferences;*
- o Subnational governments may express the legitimate concern that national regulatory authority will place unrealistic burdens on local regulatory authorities to implement national standards;*
- o The regulated community may be subjected to some uncertainty with regard to which regulatory authority (State or Federal) it is accountable;*
- o In the absence of a national regulatory authority, subnational governments may be more willing to experiment with alternative approaches more suitable to local conditions (“one size fits all” programmes may actually fit no-one).*

APPENDIX 2

BRIEFING NOTES ON INTERNATIONAL TRADE AND ENVIRONMENTAL LAW

This appendix highlights some of the features of trade and the environment to serve as an introduction to the topic. Most basically, it is important to recognize that improvement in environmental quality is one of a number of important objectives in national and international relations. And when multiple objectives are involved, conflicts--and hence tradeoffs--between objectives may become necessary. This appendix notes some of the implications for environmental law of selected trade-related international treaties, particularly the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO).

Among the general issues arising from international environmental obligations is the necessity for countries to draft their domestic environmental laws so that they comply with these obligations. On the other hand, if countries sign international agreements but do not enforce them - does this

indicate that they should not sign, or that there are perhaps weaknesses in the agreements themselves? The main issue is therefore how to draft international agreements which win the real support of the countries which have adhered to them. In addition, how should we address the differences between developed and developing countries - their ultimate responsibilities may be similar but their resources and capabilities may differ from those of industrialized countries.

The major trade-related international agreement is currently the World Trade Organization (WTO), founded in 1995. WTO extended the principle of the GATT and established a permanent, legally-binding mandate for its members. The main principles of the WTO are:

- o Most Favoured Nation obligation. This requires that any member must extend to any other WTO member immediately and unconditionally any privilege or advantage which it extends to like products which are destined for, or imported from, other WTO parties. (Of course few products are exactly "like" any other product and the content of the concept of "likeness" has to be elaborated and applied by the machinery set up under the treaties.

- o National treatment obligation. This requires that the internal laws and policies of WTO countries must treat foreign products no less favourably than domestic ones
- o Prohibition on quantitative measures. This means that it is contrary to the WTO rules to set up embargoes or quotas on goods from other member countries.

While the WTO endorses the principle of free trade, there are a number of exceptions included within the mandate in recognition of the limits of 'free trade' in attaining 'fair trade' and maximization of overall welfare. While the general exceptions to GATT (Article XX) were drafted prior to much of the recent growth in environmental concern, it is nonetheless possible to integrate certain ones as being environmentally related. For example, Article XX(b) allows members to take measures "necessary to protect the life or health of humans, plants or animals". Also, Article XX(g) allows members to take measures on matters "relating to the conservation of exhaustible natural resources..."

However, exceptional measures must not be used, or operate as, a disguised way of discriminating against the products of another member.

One well-known example of the application of an environmental exception is in relation to the US Marine Mammal Protection Act (MMPA) of 1972, which made it possible to “ban the importation of commercial fish or products from fish which have been caught with commercial fishing technology which results in the incidental kill or incidental serious injury of ocean mammals in excess of United States standards”. Under this power, the import of tuna from Mexico into the US was banned. However, the GATT dispute panel held that the implementation of the MMPA in this guise violated Article XX(b) of the GATT. The GATT Panel took this view that as the exceptions under Article XX(b) were intended to protect life and health in the importing country. It was not satisfied that the measures were “necessary” (in the sense that all other possible measures had already been taken). It was also thought that the measures taken by the US were not reasonable because Mexico could never know at any point in time whether or not its policies conformed to US requirements.

In addition to the GATT (and now WTO) Articles there are also a number of Codes which have been developed by the GATT which set out additional obligations. These include the Agreement on Technical Barriers to Trade (TBT) 1980 and the Subsidies Code.

The TBT is intended to ensure that the drafting and adoption of technical regulations and standards relating to matters such as health and safety and consumer and environmental protection do not create unnecessary barriers to trade. The main approach is that of transparency. This means that members must inform other members of proposed measures and give them an opportunity to comment.

The Subsidies Code prohibits the use of subsidies on exports if this would cause injury to another party, and parties are obliged to try to avoid internal subsidies which have detrimental effects on parties. Curiously, the WTO/GATT does not seem to explicitly recognise that countries will actually be subsidising domestic production if they do not require mitigation of environmental costs.

Developing countries who are members of WTO are given some relief from the provisions of the treaties and in essence are given a period of time before they have to comply with all the obligations. In the case of the Code on Technical Barriers, developing countries are given special treatment and there is also provision for assistance to meet the requirements.

There are also a number of environmentally focused treaties and agreements which have trade implications. For example:

- o CITES - the Convention on Trade in Endangered Species which restricts trade in certain species and products;
- o The Basel Convention on Control of Transboundary Movements of Hazardous Wastes and their Disposal, which regulates the movements of waste across national boundaries on the principle that the movement of waste should be kept to a minimum and as far as possible should be disposed of where they are produced;
- o The Montreal Protocol on ozone depleting substances which requires parties to ban imports of CFCs and other ozone depleting substances from non-parties;
- o The UN Climate Change Convention which is an international agreement to address the threat of global warming with particular reference to reducing emissions of carbon dioxide.

- o The Convention on Biological Diversity, which attempts to preserve biological diversity.(This convention goes particularly far in recognising the position of developing countries and providing for technology transfer and other forms of assistance).

Also relevant, though not having the status of a treaty is Agenda 21. This commits states to promote the gradual development of international standards for the protection of the environment, taking into account the different situations of countries. It states that “Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade” and generally endorses the approach of the GATT - though with stronger emphasis on the needs of developing countries. (It should be noted that by no means have all these agreements been accepted by all the countries).

There are also a number of regional trade agreements. For example, in the North American Free Trade Agreement (NAFTA) and the European Community (EU). Another example is ASEAN, which is more of a loose association without trade rules. Concerning ASEAN, it is interesting to note that the Agreement on the Conservation of Nature and Natural Resources (1985) is not yet in force because it has not

been ratified by enough members of ASEAN. Nonetheless, the interesting features of this Agreement are:

- o the need for the conservation of species and ecosystems
- o the need for forest reserves and reforestation measures
- o the need to prevent degradation of the environment
- o the need for land use policies which achieve the optimal sustainable land use based on the ecological capacity, making use of environmental impact assessment techniques
- o the need for research, education and public participation
- o the need for international sharing of information and for international action

The relationship between national environmental law and international agreements (e.g., on trade) may be complex and subtle. This suggests that law drafters need to be careful when writing national environmental laws so as to minimize, as far as possible consistent with the needs of environmental protection, the interference (or the possible perception of such interference) with international agreements on trade and other matters. With regard to trade, for example, this means that it is useful in the drafting process to

consider if a particular management approach (e.g., controls on how some type of fish is caught or how a beverage may be brewed) might arguably be viewed as a form of trade barrier (with this point being seen by some as the real motive for the particular action rather than protection of health and the environment). When it appears that such an interpretation might be made and perhaps effectively argued, it would be prudent to consider how the particular environmental law might be revised in a manner which is likely to remain effective but be less in conflict with (or give less of the appearance of conflict with) goals of promoting free trade.

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APPENDIX 3

BRIEFING NOTES ON THE CHOICE OF ENVIRONMENTAL POLICY INSTRUMENT

A wide range of approaches to attaining environmental policy goals are available. Emission standards may limit pollutant outputs from individual sources. Mandates may be put in place controlling the type of fuel to be used or the type of process equipment employed (or not employed). Emissions may be permitted but subjected to a tax, or permitted only within the limits set by permits, which may be bought and sold. Bans might be placed on environmentally damaging materials or activities. Such a listing could clearly go on.

Depending on the circumstances some environmental policy instruments will be more practical, effective, efficient and robust (i.e., reliable under changing conditions) than others. One common way to classify environmental policy instruments is whether they are *market-based* or involve direct control (i.e., *command and control*). These broad categories

represent two fundamentally different philosophies of management. The command and control philosophy seeks to design and implement specific measures which *directly control* activities. In principle, command and control measures may be tailored to match the specific situation of each affected party. However, the information and administrative requirements for such individual treatment tend to be prohibitive. In practice, a set of requirements tends to be applied uniformly to all those subject to the control. In contrast, the market-based environmental management philosophy seeks to design and implement specific measures which *encourage* changes in environmentally-damaging activities. In doing so, they should be designed in a way which leaves the affected party as much flexibility as possible in deciding specifically how to modify his behaviour so as to be in compliance with the management measure.

Command and control approaches often appeal to regulators and environmental advocacy groups and affected parties by virtue of one or more of several reasons:

- o compliance requirements can be made unambiguous (and hence are [or appear to be] relatively effective means of meeting environmental quality goals).
- o The controls may be applied even-handedly (i.e., without the appearance of favouritism).
- o And, with the exception of outright bans and a few other types of controls, they often allow those engaged in environmentally-damaging activities to continue to do so to some degree (e.g., emit pollutants up to the level of the emissions standard).

Yet, as economists have effectively demonstrated, *in principle, as well as in practice*, command and control policy instruments are unlikely to result in the least-cost (i.e., economically efficient) attainment of environmental quality goals. Further, some forms of command and control, such as mandates to use specific technology, may stifle technological change and are unduly intrusive in personal and corporate decision-making.

Market-based environmental policy instruments appeal to economists by virtue of the flexibility they provide to each affected individual or organization. This flexibility is the key to their efficiency and non-interference advantages. For example, under the pollution tax system the affected emitters are each individually free to either pay the tax or avoid some or all of the tax by reducing the output of the subject pollutant. Under the tradeable permit system, the overall level of pollution is limited by the number of permits and each interested party is free to seek the most cost-effective combination of non-permit activities (e.g., in-house pollutant reduction) and bidding for the limited number of available permits.

To the extent that the affected parties differ among themselves with regard to their cost structures, the particular least-cost option for one will not necessarily be the best option for another. When each affected party is free to seek its own least-cost response, the overall cost to all affected parties tends to be as low as possible. This is not the outcome under uniformly applied command and control measures. Clearly, we are all better off if environmental quality goals are met at the lowest possible cost and are as non-intrusive as possible. However, the market-based measures are not perfect and often they suffer from several practical limitations. Pollution taxes, for example, only work where the government can

accurately measure pollution outputs and often it cannot, particularly for numerous small emitters. Tradeable pollution permits are only a benefit where pollution can be monitored and where there are enough emitters to make exchanges likely.

The tables which follow overleaf summarize the advantages and disadvantages of a selected set of market-based and also command and control environmental policy instruments.

TABLE
Advantages & Limitations of
Selected Approaches to Pollution Control

AMBIENT STANDARDS

Definition: an environmental quality goal, usually in the form of an upper limit on the average concentration of a specific pollutant in the air or water; the acceptable concentration levels are usually lower, the more prolonged period in which they exist.

Advantages

- It sets a relatively objective and measurable indication of certain types of environmental quality against which actions to protect the environment may be judged.

Limitations/Drawbacks

- The optimal level of the standard is very difficult to determine
- The specific compliance measurements may be flawed due to such factors as local variations in concentration.

TABLE
Advantages & Limitations of
Selected Approaches to Pollution Control
continued

EMISSION STANDARDS

Definition: a legal limit on the amount of a pollutant an individual source may emit under specified conditions (e.g., a period of time).

Advantages

- It allows the regulatory agency to set clear and explicit limits on pollutant emissions.
- Technology-based standards can be shown to be technologically attainable at demonstrable costs

Limitations/Drawbacks

- It is difficult to determine optimal standards (i.e., where the marginal benefits of the standards equal the marginal costs of attaining them).
- If the standards are applied uniformly, they will tend to result in excessive compliance costs.
- If the standards are set individually for different sources of environmental damage, the information requirements are great
- Technology-based controls may tend to discourage technological innovation

TABLE
Advantages & Limitations of
Selected Approaches to Pollution Control
continued

**INPUT OR TECHNOLOGY-RELATED
REQUIREMENTS**

Definition: includes requirements to employ specified processes, equipment, input materials, or end-of-pipe emission stream clean-up systems.

Advantages

- They provide those subject to the controls with explicit, specific directives on the actions each needs to take to be in compliance.
- They provide the regulators with considerable flexibility in deciding which parts of the production, end-use, and disposal stream to target for control.

Limitations/Drawbacks

- Such approaches restrict the ability of businesses and consumers to respond to changing economic and technological conditions.
- The imposed control method typically will not be the most cost-effective solution for all those subject to the controls.
- There is no incentive for polluters to look for lower cost ways of achieving the same level of environmental quality; therefore, it may inhibit technological progress in this field.
- If the requirement is not to become technologically out-dated, it must be periodically revised.

TABLE
Advantages & Limitations of
Selected Approaches to Pollution Control
continued

EMISSION TAXES (CHARGES)

Definition: a fee levied on each unit of pollution (e.g., a ton of ash, a litre of untreated waste water).

Advantages

- It tends to lead to the least-cost solution.
- It encourages development of improved means of pollution control.
- If technological improvements result in falling pollution abatement costs, this leads to higher levels of emission reduction.
- It makes firms face the costs for all pollutant emissions and not just those above some specified limit set by a standard or technology-based control.
- It raises revenue

Limitations/Drawbacks

- Like emission standards, monitoring becomes a matter of discharge measurement and in some cases it may be that adequate monitoring of individual emissions is impractical.
- The initial fee (tax rate) might be set either too high or too low. In principle, the level of the fee can be changed over time, but in practical terms this may often be difficult
- General price inflation will lessen the level of emission reduction unless charges are periodically revised upward.
- Some persons/organizations may feel that it is unjust for polluters to simply pay a fee for pollution, rather than being compelled to stop. (This type of feeling might be particularly strong against foreign firms or those unpopular for various reasons.)
- higher total cost for polluter (i.e., abatement costs, plus tax on remaining emissions)

TABLE
Advantages & Limitations of
Selected Approaches to Pollution Control
continued

TRADEABLE EMISSION PERMITS

Definition: emitters of the subject pollutant must purchase a permit for a specified allowance of emission). Permits can be traded (sold) on an open market. Total emissions are limited by the number of permits issued. Firms exceeding permit levels are severely penalized.

Advantages

- As with pollution charges, permits tend to automatically lead to the least-cost solution for emission control.
- It encourages the search for more efficient means of pollution control (since firms can make money by further reducing their own emissions and selling the unneeded permits to others).
- It is flexible with regard to economic growth, i.e., new firms entering the market must purchase pollution permits from existing firms or bid for those available the next time they are issued.
- It makes firms face costs for all units of emission and not just those above some specified limit set by a standard or technology-based control.
- Possible to control income transfers by choosing the means of initial distribution of the permits.

Limitations/Drawbacks

- As with emission charges and emission standards, monitoring becomes a matter of discharge measurement and it may be that adequate monitoring of such discharges is unfeasible.

TABLE
Advantages & Limitations of
continued

TRADEABLE EMISSION PERMITS

- Compared to a system of emission taxes, broadly falling costs of pollution abatement will lower pollution control costs, but not increase the level of emission reduction; (However, with generally cheaper emission control, the market value of the permits would fall, and this would make it easier for government or NGOs to buy-up [and retire] some permits, thus reducing aggregate emissions.)
- Some persons and organizations may object that the permits grant a "licence to pollute".

INPUT AND PROCESS CHARGES OR PERMITS

Definition: fees or permits applied to polluting material inputs or processes.

Advantages

- May allow use of market-based incentives in situations where emissions monitoring is not practical
- Other advantages similar to emission taxes and permits

Disadvantages

- They leave the polluter with less flexibility in determining the least-cost method of control and hence is likely to be less efficient than emission-based charges or permits.

TABLE
Advantages & Limitations of
continued

DEPOSIT/REFUND SCHEMES

Definition: in deposit/refund schemes, a fee is paid on potentially polluting products or product components, and a refund is paid for the return of that material; the purpose is to facilitate recycling, reprocessing or safe disposal of the material.

Advantages

- Makes it in the financial interest of purchasers or scavengers to maximize the potential for recycling, reprocessing or collection of material which otherwise would end-up in the general waste stream and be difficult to separate.

Where the demand for a certain product is relatively price elastic, it may reduce demand levels for that product and hence lower associated pollution levels for the fraction of the product which escapes the refund collection process.

Limitations/Drawbacks

- Works best with solid wastes and certain types of other materials (e.g., CFCs) but in general limited application for many types of air and water.
- Must be adaptable to existing product sales/distribution systems
- Possible implications for trade (i.e., be seen as a form of trade barrier).

APPENDIX 4

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In March 1996 thirty-three environmental professionals from government, business, universities and voluntary organizations from thirteen Asian economies and from North America met in Hong Kong for a week of discussions on how to make environmental law in Asia more effective. This Participants' Report lays out the groups' consensus on the underlying causes of the problem and offers specific and practical recommendations on how to make environmental laws in the region both more effective and more cost-effective in the future.

For example:

- Unless environmental policy is more effectively integrated into overall planning and investment promotion, environmental protection in the Asian context will be inadequate and needlessly costly.
- Wherever corruption is a major concern, environmental laws and regulations should be no more complex than absolutely necessary and as transparent as possible.
- Monitoring systems are more effective and more cost-effective when government monitoring activities are supplemented by well-designed self-monitoring and information from the local community.
- Alternative approaches to dispute resolution are needed in the Asian context because cultural factors often weaken the effectiveness of the approaches adapted directly from elsewhere.
- An EIA should include recommendations for post-implementation monitoring and reporting.