

Market, State, and Civil Society

Some key issues regarding the transition period from unsustainable industrial, agricultural, and infrastructure practices to sustainable development are examined here. Government policies, market incentives, and public pressure need to align to push reluctant public and private sector enterprises to waste less, pollute less, and meet more of the needs of low-income households, women, and socially excluded groups.

However, sustainable development will not result solely from a fortuitous conjunction of correct pricing, sound regulation and enforcement, and inevitably sporadic public pressure. The challenge is too great; the gap between crisis and potential achievements of environmental policy shifts is widening daily. Only fundamental shifts in culture, in the mindsets of enterprise managers, government functionaries, and owners of capital, can extricate Asia and the Pacific from a morass of obsolete technologies and process designs and overcentralized infrastructural behemoths, and put it on the path to a revolutionary transformation of production, consumption, and distribution of resources.

Getting the Prices Right

As a necessary incremental step toward improving resource allocation and utilization, getting prices right is a priority. Prices of resources such as energy, water, minerals, and timber should reflect marginal costs of their provision at point of purchase (including depletion, replanting, replacement allowances) plus the external costs imposed on society by resource extraction, transport, conversion, and use. Consumer product prices should fully reflect the sum of the externalities caused by production, transport, and consumption.

However, while economists can argue for decades over how to get prices right, no country in the world has made more than tentative and modest steps toward full price reform. Prices of energy, water, and almost all products and services (including transport) would have to significantly increase, and few countries can even achieve marginal-cost energy and opportunity-cost water pricing, let

alone internalize detrimental social and environmental impacts.

General, non-targeted subsidies on all fuels, electricity, fertilizer, water, and pesticides should first be removed.¹ Although they have been to some extent, attempts to implement the polluter-pays principle have been generally ineffective because pollution charges are too low. Pollution charges are generally meant to raise revenue rather than to spur reduction in pollution. Regulatory means are the primary method of reducing pollution (hiid 1999a:21).²

One major difficulty in raising energy prices to a level that reflects the social and environmental externalities caused by energy use is populist politicians' belief or claim that the high prices hurt the people. Thus, many countries in the region subsidize diesel and kerosene. As a consequence, diesel is a major source of health-threatening air pollution in Asian cities. The benefits of diesel subsidies, however, flow mainly to the nonpoor. There are far more effective ways of achieving real income gains for the poor without threatening their lives and health in the process.

Energy taxes would raise revenue while both stimulating energy efficiency and reducing environmental and social externalities. In Asia and the Pacific, such taxes would logically focus on the externalities of most immediate and direct concern in the region: sulfur, heavy metals, particulates, and site dislocations (hydropower and coal mining).

As stressed in the discussion on transport infrastructure, roads are highly subsidized and most countries lack pricing policies that attempt to incorporate environmental and social impacts in road-user charges. Ensuring the proper structure and level of such charges is a complex process, but light vehicles assume all charges as incorporated in a fuel tax. The objective is to move toward more efficient use

¹ Limited, well-crafted subsidies—lifeline rates, subsidized financing schemes for appliances, and capital-cost subsidies for water supply and sanitation—are fine when aimed specifically and exclusively at low-income households.

² Pollution charges in the prc, for example, are set well below compliance costs (thus acting as a disincentive to comply) and well below the magnitude of pollution damages (thus implying suboptimal compliance levels).



Barrage for canals in Pakistan.

of available transport capacity, choice of vehicles and fuels, split of traffic among modes (roads, rail, boat, air), and maintenance of infrastructure.

Road traffic involves three external effects:

- congestion, mainly in urban areas, (which can be controlled with measures such as those employed by Singapore, for example);
- environmental externalities, which are functions of amount and type of fuel, engine type, and noise-producing characteristics of vehicle and engine; and
- road damage, caused primarily by heavy vehicles and not captured by a fuel tax.

Fuel costs should cover the resource cost (generally the border price of the fuel), which was about \$0.25/l in 1997. To fuel costs is added a proxy road-user charge or the cost of using road infrastructure in the absence of tolls. US and UK studies estimate the charge to be at least \$0.25/l of fuel for the average car, not including congestion (World Bank 1996: 89; Schlegelmilch 1999).

Fuel taxes are a reasonable way to capture environmental externalities related to air pollution. Localized air pollution externalities in developing countries may add a further \$0.25/l (World Bank 1996: 91), not including the cost of accidents,³ global environmental impacts (greenhouse gases, oil spills, oil-related military eco-catastrophes), and oil-related military expenditures. While estimates of all of the costs are not available, it is clear that fuel should cost at least \$1/l—well above the price in any developing country. (See Table 5-1.) Prices at this

³ Road accidents in oecd countries are estimated to cost about 2 percent of gdp (World Bank 1996: 57).

Table 5-1 Pump Prices for Premium Gasoline, 1994

Countries	Prices (1996, % of price)	Tax as% of leaded premium gasoline price
PRC	1.05	23
Thailand	1.15	37
Viet Nam	1.25	n.a.
Indonesia	1.35	n.a.
US	1.35	27
Philippines	1.40	41
Malaysia	1.55	n.a.
Taipei, China	2.25	43
Singapore	2.65	n.a.
Korea	3.00	n.a.
Japan	5.05	54

Source: World Bank 1996: 92; HIID 1999b.

level should have the long-term effect of gradually making transport more efficient. But it is clear from experience in oecd countries—which are plagued by technological inertia and by oil and car cartels—that high prices do not magically transform transport systems. State intervention is thus necessary to promote national land-use planning, public transport (partially financed by road users), and alternative transport investments such as walkways, bicycle systems, and alternative fuel vehicles and fueling distribution systems.

At stake are not fuzzy aesthetic or ecological values, but the idea that economics must be viewed from the perspective of society rather than of energy cartels. A 20 percent reduction in suspended particulate matter in Bangkok alone would produce annual health benefits in lower morbidity and mortality estimated at over \$1 billion. The estimate does not consider other detrimental effects of suspended particulate matter such as corrosion of buildings and equipment, acidification of soils, reducing agricultural and forestry yields, and degradation of natural ecosystems (waterbodies and sensitive vegetation). Charges reflecting the cost of fuel

Road and Vehicle Fees in Singapore

Congestion tolls are among various road and vehicle taxes that Singapore has implemented in an effort to prevent congestion problems such as those affecting large urban areas in neighboring countries. In addition to import duties of 45 percent and registration fees of S\$1,000 (\$710), Singapore imposes an Additional Registration Fee (ARF) based on the market value of the vehicle. The ARF rose from 15 percent in 1968 to 175 percent in 1983, before falling to 150 percent in 1991. The annual road tax is based on the engine capacity of the vehicle. These rates have risen significantly since the early 1970s. The ARF is reduced when an old vehicle is scrapped and a new one purchased, to discourage ownership of older, high-emitting vehicles and to limit the used-car market.

In 1990, Singapore implemented a quota scheme under which vehicle owners are required to have Certificates of Entitlement (COEs), which are valid for 10 years and obtained at monthly public auctions. Owners of vehicles more than 10 years old are required to pay the prevailing quota price. The COE requirement enables the Government to determine the total number of vehicles in circulation based on the country's road capacity. COEs cannot be transferred. COE prices have increased rapidly. For cars with a capacity over 2,000 cc, they have risen from S\$528 (\$375) when they were introduced in 1990 to S\$17,600 (\$12,500) in 1992 to over S\$100,000 (\$70,000) in 1994.

The off-peak car scheme is designed to reduce congestion. Off-peak car buyers enjoy tax rebates on the registration fee, import duty, and COE premium, up to a maximum of S\$17,000 (\$12,000). They are also entitled to S\$570 (\$300) reductions in road tax. Off-peak cars can be used on Sundays and public holidays and during off-peak hours (between 7 p.m. and 7 a.m. on weekdays and after 3 p.m. on Saturdays). Off-peak vehicles are clearly marked by red number plates that are welded onto the vehicle and sealed by an authorized inspection center. To drive the vehicle outside the authorized times, a S\$20 (\$14) day license has to be displayed on the windshield. Owners get five free day licenses a year.

The unleaded gasoline tax is S\$0.60 (\$0.43) per liter or 50 percent of pump prices (including taxes), whichever is higher. One problem that arose as a result of the taxes was that motorists purchased fuel in neighboring Malaysia, where a liter of gasoline was about S\$0.50 (\$0.35) cheaper. Singapore countered this practice by requiring all vehicles leaving the country to have their gasoline tanks at least 3/4 full. As the main operator of parking facilities, the Government also imposes relatively high parking fees. Parking charges within the Central Business District (CBD) are S\$0.90 (\$0.64) per half hour during office hours. Outside the CBD, charges are S\$0.45 (\$0.32) per half hour.

The Area Licensing Scheme (ALS) was adopted in 1975 and modified in 1989 and

1994 to reduce congestion in the CBD. Cars entering the CBD need a license: a part-day license is S\$2 (\$1.40) for entry into the CBD during off-peak hours (10:15 a.m.-4:30 p.m.) and a whole-day license is S\$3 for use between 7:15 a.m. and 6:30 p.m.). The ALS has had a large impact on peak-hour traffic, resulting by end-1975 in a 71 percent decrease in the number of private vehicles entering the restricted zone between 7:30 and 10:15 a.m. Public transportation became the preferred mode of transportation after the introduction of the ALS. The 1989 expansion of the system to evening peak hours resulted in further traffic decreases and increases in average speeds of 10.8 percent in morning peak hours and 30.4 percent during the evening peak period. Road pricing is electronically handled, with tolls deducted from vehicle transponders and authorities notified of toll violators.

The COE and other measures are credited with significantly limiting the number of vehicles in Singapore. It has been estimated that without vehicle ownership and use disincentives, the number of vehicles in Singapore would have been 400,000 by 1992 instead of the actual number of 274,000. The road-pricing program, combined with other charges on vehicle ownership, has dramatically reduced traffic congestion and air pollution in downtown Singapore. Business activities and rents downtown have not suffered. Vehicle taxes accounted for 23 percent of total government tax revenue in 1994.

Source: HUID 1999b.

use to human health alone would be significant. They would not only represent a major revenue source but also effect a progressive income impact if used, for example, to subsidize mass transport, construction of walkways and bicycle lanes connecting low-income settlements to transport nodes, the retraining of coal miners, research and development in energy efficiency and clean production, promotion of energy efficiency investments, and the switch from two-stroke to four-stroke (or alternative fuel) motorcycles.

Getting the prices right helps to stimulate moves to make production efficient and clean. Prices can be complemented by policies to make markets more competitive by breaking up cartels in strategic sectors such as energy, promoting entry of small and medium-sized

enterprises into energy service businesses, and creating markets in "bads" (auctionable permits to emit sulfur dioxide, use chlorofluorocarbons [cfc], or import vehicles). The aim of getting prices right should be to reduce waste and pollution and in an economically efficient (least cost) manner while promoting long-term structural transformation toward zero waste.

Effluent and emission charges and tradable emissions or effluent permits can, theoretically, help increase efficiency and raise revenue. Charges allow firms the flexibility to make decisions based on the actual costs of abatement to the firm and should lead to lower aggregate costs of compliance than use of regulatory standards based on effluent or technology criteria. Market-based instruments also offer the theoretical possibility for dynamic

efficiency gains as they provide a continuous incentive for environmental improvement, including process changes.

However, it is difficult to rely on market-based instruments, which explains their rarity in the region. Pollution levies in the prc and Korea, for example, are generally set far too low to be effective as theorized. In addition, the prc practice of returning the levies to firms to offset their costs of pollution control biases their technology choices toward end-of-pipe treatment rather than process changes (Huq et al. 1999).⁴

⁴ One computation concludes that the prc's sulfur dioxide levy values the life of a resident of Zhengzhou at only \$270 and that the levy should, in fact, be 50 times greater (Dasgupta, Wang, and Wheeler 1997: 36).

Auctionable Permits for CFCs

Each quarter, Singapore's quota of CFCs is divided among importers and users. Half of the quota is allocated on the basis of historical consumption and the other half is auctioned through a sealed-bid tender. Bids include the amount desired and the proposed price. The lowest winning price is used as the price for the half of the quota that is allocated administratively. CFC prices rose sharply during the first few rounds of bidding. As a result, firms chose to reduce their use of CFCs through conservation measures and substitution. Demand for CFCs and, hence, their prices have declined significantly. The Government captured a large share of quota rents, which it has used to subsidize recycling and promotion of alternative technologies.

Source: HIID 1999b.

Regulation and Enforcement: A Look at Industrial Pollution

Over the past two decades, most developing countries have made progress in establishing a legal and regulatory framework for environmental protection. They have set up environmental protection agencies, promulgated standards and regulations, and put in place at least rudimentary monitoring and enforcement systems. As is all too well known, however, environmental quality has deteriorated for most indicators and in most of the region.⁵

Many observers of the worsening situation pronounce regulation unworkable, whether it be energy intensity standards, appliance standards, emissions or effluent discharge standards, treatment standards, or mandatory technology adoption. Ironically, every attempt at regulation has produced success stories in different countries. Unfortunately, the successes are dwarfed by the magnitude of the task.

Government fuel quotas based on international norms (not best practices) dramatically increased energy efficiencies in major energy-using State-owned enterprises in the prc (World Bank 1998). No other policy has had the same impact.⁶ Thailand and Taipei, China, for example, have successfully implemented appliance efficiency or cfc phaseout standards. prc; Korea; and Taipei, China have made attempts (even though sporadic and uneven) to monitor and enforce pollution control regulations and have been rewarded with enterprises moving toward compliance (Aden et al. 1999; Rock 1996; Dasgupta, Wang, and Wheeler 1997; Hettige et al. 1996).

Study after study shows both the impact of regulation and its uneven, seemingly arbitrary pattern. Whether pulp and paper mills and

⁵ Regulation and enforcement have reduced sulfur dioxide levels in cities such as Taipei, China. Particulate matter concentrations, however, have not fallen. Nearly everywhere water quality has continued to deteriorate even after governments and the private sector have built wastewater treatment plants.

⁶ Energy intensity per unit of gdp or production has fallen dramatically in the prc, mainly due to changes in the sector and product composition of the economy and not from gains in energy efficiency per se.



Industrial effluents flow untreated from factories near Mumbai, India.



Raw pollutants flow out of a Mumbai factory.

fertilizer factories in Bangladesh (Huq and Wheeler 1993) or a range of plants across sectors in Indonesia (Pargol and Wheeler 1996; Aden and Rock 1998) or Korea (Aden et al. 1999), some firms are cleaner than others. Newer and bigger plants are generally better. In Korea, domestically owned factories do better than foreign-owned ones, but in some other countries the reverse is true. Studies in the prc find that State-owned enterprises are more subject to and responsive to regulatory pressure than private and collective enterprises (Jahiel 1994, quoted in Sims 1999: 1238; Warren et al. 1999; Dasgupta, Hua, and Wheeler 1997).⁷

Most studies from Asia show that regulation matters⁸ and that response to regulation is surprisingly uneven. Why is it so?

A significant determinant of firms' responsiveness to regulation is community pressure, which also appears to be a major determinant of regulatory pressure and application of pollution devices in the prc (Wang and Wheeler 1996) where, in spite of uniform national devices, local devices are tailored to the intensity of local community pressure. Thus, application of the pollution levy system is neither arbitrary nor ineffective as sometimes claimed, but represents local adaptation to local conditions. It seems to be generally true

⁷ State-owned enterprises in the prc are more pollution intensive than other non-town-and-village enterprise (tve) plants as a result of their product and sectoral mixes. Most studies of energy and pollution in the prc ignore tves, which is unfortunate because they accounted for 56 percent of industrial output value in 1995, their share is on the rise, they are heavy polluters, and their emissions are steadily increasing (Sunman et al. 1999).

⁸ It is especially clear in prc, Korea, and Taipei, China. The evidence from India is less clear, and there is reason to believe that although high levels of pollution do increase regulatory inspection, inspection has little or no effect on pollution, presumably because of India's bureaucratic culture of *baksheesh* (bribery). The courts, however, seem to have had an impact (Agarwal et al. 1999).

Nandesari Industrial Estate: Cost-effective Water Pollution Control in India

The Nandesari Industrial Estate, established in the early 1960s in the state of Gujarat, India, is made up of about 250 small-scale industries. Many of the industries are chemical producers. The estate has a long history of water pollution problems. The pollution-related damage has had an impact on both drinking and irrigation water as well as other livelihood uses such as local fishing. There are records of various complaints lodged by the local people about the degraded quality of local water (the Mahi and Mini rivers and the aquifer) by industrial effluents. Consumer groups have filed complaints in the local court. Over the years, the State Pollution Control Board has filed about 200 cases against the various factories.

Two prior attempts at solutions, both initiatives of the public sector—a state-sponsored common treatment plant (CTP) and an effluent channel project—failed to solve the problem as industrial influents to the CTP were such that it could not function adequately. Complaints continued. However, no further remedial action was taken by the Government until a local environmentalist lawyer filed a public interest litigation case against the factories. As a result, the court ordered the closure of the factories in 1995. The court order encouraged the Nandesari Industries Association to take steps to avoid closure while also seeking a cost-effective solution. The result was a collective action, which proved to be a cost-effective alternative institutional arrangement combining both (i) industry-specific primary treatment for

those industries unable to meet CTP influent requirements, and (ii) additional treatment by an improved CTP. The CTP was taken over by the industrial association, which upgraded and now operates the treatment plant.

Investigations suggest that the industries cooperate because the collective action allows them to capture the economies of scale a CTP affords and because they have mutual expectations regarding their behavior. The latter is facilitated by the institutional arrangements put in place by the association, ensuring a fair sharing of costs, which are based on both quantity and quality of the effluents treated at the CTP. Ongoing sustainability of the new solutions is reinforced by both regulators and an industry-public monitoring committee that was formed as a result of the litigation.

Recent research quantified the benefits and costs for this case. It took into account the cost and benefits of all stakeholders involved: industry, local people (both users and nonusers); government entities; NGOs; and individuals (the environmental lawyer, for example). The detailed social-benefit analysis took into account the efficiency and equity gains from water pollution abatement. The examination study showed very positive results in terms of social-cost benefits encompassing all stakeholders and pointed to the possibility of collective action as a nonfiscal instrument in successfully bringing about water pollution abatement.

Source: Misra, forthcoming.

in Asia and explains why formal regulation is both important and unevenly effective.

Clearly, local political power matters, as shown by studies of Asian countries concluding that local income and education levels are predictors of the effectiveness of regulation at the local level (Hettige et al. 1996; Dasgupta and Wheeler 1996). The prc studies show that having a national regulatory system is necessary and that its local application is roughly a function of pollution damage (pollution load,

Catalyzing Community Participation in Water Quality Monitoring in the Philippines

Municipal mayors in the Philippines are mandated to develop natural resource management plans that address water issues. Information on water conditions is generally lacking, however, and rates of natural resource loss often exceed local government's attempts to remedy environmental problems. To remedy this situation and to build community awareness of water quality problems, community groups attended workshops where they learned how to monitor water quality and watershed stability in streams and lakes using inexpensive, simple test kits, and other basic and portable analytical tools. Community members were then expected to sample water at group-determined stream sites on a voluntary basis. One site was the Manupali River watershed in central Mindanao, which encompasses agricultural eco-zones of upland forests, agroforestry buffer zones, vegetables, corn, sugarcane, and lowland rice.

The thousands of water quality samples collected by the citizens revealed a clear west-to-east gradient of degradation across four subwatersheds of the municipality. The information was popularized as a "Walk Through Time": subwatersheds of the west represented relatively natural conditions of the past while those to the east demonstrated the more recent environmental costs of using traditional technologies to clear land for agriculture, homes, and roads. The municipal government incorporated all the research findings and recommendations into their Natural Resource Management Plan. The water-monitoring team formed an NGO, and the mayor appointed the newly elected president of the group to serve on the municipality's Natural Resource Management Council (a direct link between the community-based water monitors and government policy).

The program demonstrated that environmental monitoring and hands-on activities

using simple equipment and techniques are a tremendous motivation for people to participate. Once the mystique of "only the professionals can do this" was dispelled, citizens were eager to participate. Citizens' active involvement in finding solutions for conserving local water supplies exceed government's capacity to measure conditions, identify specific problems, and decide upon a proper course of action.

Especially in rapidly and irreversibly deteriorating watersheds, application of partly understood conservation practices, with full community involvement, may work better than waiting for a "complete" scientific analysis. The start-up of a collaborative process in these projects was relatively slow and expensive, but initial results indicate that the potential for lasting benefits and project sustainability is much higher than if attempted by a community, NGO, university, or government agency in isolation.

Source: http://www.un.org/esa/sustdev/phl_pro.htm

exposed population, and income) and community education, and bargaining power (Dasgupta, Wang, and Wheeler 1997: 9).

The studies suggest that effective environmental improvement regulations (and use of market-based instruments) can have an impact in the hands of an informed and aroused citizenry, as in oecd countries. Unfortunately, the implication is that rich and politically powerful communities can protect themselves while low-income neighborhoods gasp, wheeze, and vomit in the filth and dregs of the industrial revolution.

Besides community pressure and regulatory enforcement, the third key element in industrial environment management is the enterprise itself. Kimberley Warren examined the responses of 26 electroplating firms in four Chinese cities to pollution prevention (or P2, as it is called in the prc) incentives. (P2 means process change, energy and water conservation, materials reuse and recycling—not just pollution discharge treatment.) She found that firms active in pursuing P2 had (i) high levels of awareness of P2 possibilities, (ii) leadership commitment to P2, (iii) a P2 champion in the factory, and (iv) goals for P2. Active P2 firms saw P2 as a means to enhance profits, improve social standing, and stop pollution. Reactive or resistive firms responded to regulatory pressure,

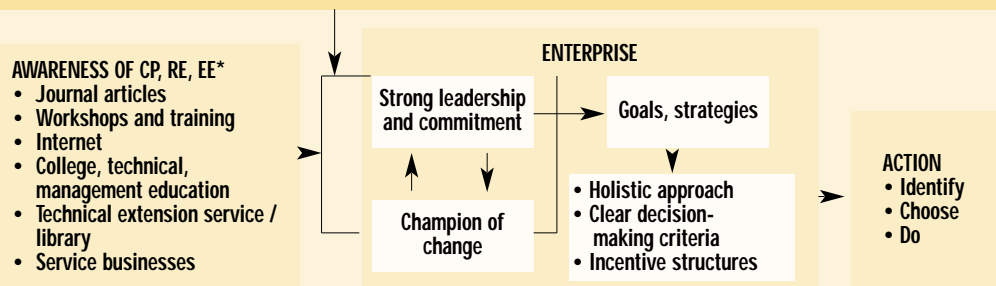
but only sluggishly and incrementally. Not surprisingly, the most pro-P2 enterprises were State-owned enterprises. They were generally reactive and tve resistive (Warren et al. 1999). The studies show the importance of State-owned enterprises as industry leaders (Warren et al. 1999: 524) much as Taipei, China's State-owned enterprises led the way in the high-tech computer chip industry.

Figure 5-1 shows how an array of incentives coupled with awareness impact on a responsive firm—that is, a firm with management commitment and forward-looking goals and strategies. Some of the same points emerge from a study of cfc reduction in two industrial sectors in the prc where market demand and industrial structure (size, age, international ties of firms) matter greatly in enterprise response to regulation incentives (Zhao and Ortolano 1999). Case studies presented by Warren illustrate the impacts of community and social pressure, market demands, and a wide range of regulatory instruments, including industrial expansion licenses that encourage explicit attention to environmental and social impacts.

Regulation in Asia and the Pacific is set to move beyond producing, monitoring, and enforcing standards and regulations, to providing information and ceding power to the

Figure 5-1 How Incentives Impact on a Responsive Enterprise

Social policy	Environmental policy	Economic policy
• Community pressure	• Discharge standards	• Lower production costs
• Worker pressure	• Discharge fees	• Competition in green markets
• Environment awards	• Factory closures	• International competition
• Public image	• Expansion permits	• Lower discharge fees
• Peer group status	• Pollution control deadlines	
• Children's awareness	• Health and safety regulations	
• NGO attention	• Energy and water quotas	
• Media	• Discharge registry and rating	
• Religion and culture		



Source: Adapted from Warren et al. (1999: 525, 531).
 *CP—clean production; RE—renewable energy; EE—energy efficiency.

public. Environmental policies can broaden their scope to consider firms as organizations subject to the power of information, social pressure, economic forces, and regulatory actions. Public disclosure of factories' environmental performance, voluntary participation of firms in environmental ranking schemes, pollution discharge registries open to public view, community monitoring of environmental quality, and environmentally focused community organizing could be elements of an effective approach that broadens the range of action away from sole reliance on market and State.

Overreliance on such a strategy, however, is subject to severe limitations. As already mentioned, citizen involvement has the most impact in higher-income and better-educated areas. The phenomenon not only suggests that low-income communities are at a disadvantage, but also that increasing the environmental voice of richer communities will, over time, force even more relocation of the dirtiest, most disruptive activities to low-income areas.

Another difficulty with current programs that do not involve both awareness education and monitoring (or mandatory disclosure of all discharges) is that citizen complaints naturally focus on the visible, whereas the greatest health effects may be from invisible discharges (Tietenberg and Wheeler 1998).

A further shortcoming of community pressure is that it tends to bring about only visible, incremental changes. For example, the announcement by plantation owners in the Philippines that they would reduce pesticide use would have been welcome, but it avoids the real issue of sustainable agriculture—plantation monocropping is unsustainable (socially and environmentally) and overapplication of pesticides is only one part of the problem as long as high-impact monocropping continues.

Politics and Culture

Technocrats see pollution prevention, clean production, environmental protection, and energy and materials efficiency as technical problems that can be solved by State intervention to correct the failure of policy, the market, institutions, or information. Remove the “barriers” to improved productivity and waste minimization and the problem is solved.

It is true that it is necessary to get prices right, foster market competition, and create a credible regulatory apparatus. At best, however, these measures are initial steps toward sustainable industrial development that will merely achieve incremental gains within firms and further reallocate social and environmental

Corporate Synergy Systems to Promote Clean Production in Small and Medium-sized Enterprises

As with many developing Asian economies, Taipei, China, has a large segment of industrial production that comes from small and medium-sized enterprises. Among approximately 90,000 firms in Taipei, China, more than 96 percent are small and medium-sized enterprises—those with a capital investment of less than \$1.5 million, total assets less than \$4.5 million, or employees less than 200. These firms together generate about 50 percent of the gross production of all business enterprises in Taipei, China. Although small on a per-facility basis, the gross amount of waste from small and medium-sized enterprises is substantial. Moreover, as many of the enterprises are scattered throughout commercial and residential areas, their environmental and health impact on the public is especially severe.

Small and medium-sized enterprises generally have little financial, technical, or manpower capability to implement adequate environmental measures. The public exerts substantially less pressure on them than on large firms in environmental, health, and safety issues. As a consequence, small and medium-sized enterprises are comparatively less active in environmental programs. The corporate synergy system is a management approach that involves forming partnerships among business organizations to achieve specific goals. Usually established within supply chains, corporate synergy systems are initiated under the leadership of large companies, where the upstream suppliers and downstream buyers in the chains are organized to work together to achieve common goals—in this case, cleaner production. Under the leadership of large companies, supply chains are becoming more integrated in terms of decision making and planning, with greater exchange of information among chain members. In addition to cost containment and quality assurance, many large firms have begun to work with the upstream suppliers and downstream buyers to reduce

their environmental responsibilities. Central firms of a corporate synergy system reward “good” suppliers by providing special credit treatment, free staff training, and/or relaxed quality audit requirements. Eventually, through the operation of a corporate synergy system, large companies use a variety of parameters, including product quality, financial strength, and environmental performance, to rank their suppliers. The good suppliers could be given preference over others while pressure is put on poorly operating and unranked suppliers to improve their performance.

Since 1995, two corporate synergy systems have been established in Taipei, China, to promote clean production in supply chains. TECO Electric and Machinery Co. Ltd., one of the largest electrical appliance and equipment manufacturers in the country, initiated the first system. Before corporate synergy system clean production started, many of TECO’s plants had implemented clean production programs and realized their financial and environmental benefits. TECO’s top management was convinced that further substantial gains could only be realized if its suppliers adopted clean production measures through corporate synergy system clean production. At the first stage of the system’s organization, however, many of TECO’s suppliers were either not interested or only passively participating in the program. It was only after TECO’s general manager openly threatened to discontinue business that its suppliers began to seriously take part in the corporate synergy system-clean production program.

In the TECO corporate synergy system clean production system, two of TECO’s electric appliance plants and two electric motor assembly plants served as the central firms. There are 12 satellite firms representing suppliers of data-processing equipment, printed circuit boards, parts molding, etc. More than 60 percent of participating firms are small and

medium-sized enterprises. During FY1995, the participating firms in the system implemented a total of 2,119 clean-production options. Based on incomplete data, the options required a capital investment of \$453,000 and resulted in an annual benefit of \$5 million.

Cheng-Loong Paper Manufacturing Company organized the second corporate synergy system-clean production program in Taipei, China. Established in July 1996 with Cheng-Loong’s Tayuan Paper Mill and Hsinchu Paper Mill as central firms, the corporate synergy system consists of 10 upstream suppliers that provide waste paper, machinery, chemical, energy, and transportation services, and 3 downstream buyers who are paper container manufacturers. With small and medium-sized enterprises making up more than 90 percent of participating firms, the Cheng-Loong system implemented 868 clean-production options from July 1996 to June 1997. The participating firms invested \$991,000 in clean production measures, resulting in an annual benefit of \$3.5 million.

A similar initiative was born in Surat, India. Surat has over 250 polyester-dyeing and -printing houses, which employ equipment, dyestuffs, and auxiliaries that are highly comparable to those found in Europe. The supply industry for chemicals and dyestuffs and a few entrepreneurs have taken the lead in organizing the Waste Minimization Group (WMG), which brings together textile processors and their suppliers. WMG aims to create awareness of environmental problems caused by textile wet processing, sharing WMG experiences and fostering WMG-driven innovations. An early success is the development of the extremely low liquor jet dyeing machine for low-grammage cloth. The machine is approximately three times as energy and water efficient as comparable equipment made in Europe. WMG has also supervised experiments in various processing houses on re-use of dye-liquor.

Source: Chiu et al. 1999; van Berkel and Krygar 1994.

externalities toward low-income and marginal communities.⁹

⁹ In the US, for example most industrial environmental protection is end-of-pipe treatment or, at best, environmental improvements (linearly effected) in process and material flows. White, middle-class communities have succeeded in forcing the removal from their backyards of polluting and toxic industrial units, pushing them into communities of color in the US or abroad.

Even the removal of barriers, however, is no easy task. Again, study after study shows scores, even hundreds, of specific opportunities with payback periods of less than one year. Yet, progress is slow because of an overly technocratic approach driven by bureaucratic desire to retain control of fund disbursements, an economic belief in the miracle of the market (and a blindness to the

Legal Approaches to Environmental Concerns in India

The Constitution of India emphasizes the need for environmental protection. Article 48-A states: "The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the Country." Article 51-A(g) confers a fundamental duty upon every citizen of India to protect the environment: "It shall be the duty of every citizen of India to protect and improve the natural environment, including forests, lakes, rivers and wild life, and to have compassion for living creatures."

The Indian judiciary has played a major role in protecting the environment and natural resources and in imparting environmental justice to the victims of pollution. The Supreme Court of India has broadened the scope and ambit of the right to life and liberty to include important issues of public interest, including the right to a healthy environment. Any action of an authority that is harmful or potentially harmful to a section of the public can be measured by the yardstick of constitutional rights.

The Indian Supreme Court has interpreted fundamental rights as enshrined in the Indian Constitution as a repository of human rights and the source of law for a just society. Thus, the right to life has been interpreted as the right to a decent living, the right to minimum wages, and the right to a healthy environment. Through landmark judgments, the Supreme Court has given recognition to the polluter-pays, precautionary, and public trust principles.

The liberalization of the rule of locus standi has enabled environmentally conscious, public-spirited individuals and groups an access even to the highest court of the land. In this context, public interest litigation may be viewed as a collaborative effort on the part of the petitioner to secure observance of constitutional and legal rights conferred upon vulnerable sections of the community and to bring social justice to them.

So far, more than 5,000 cases of prosecution against polluters are pending in different courts in India. A number of writ petitions filed by individuals and voluntary organizations are also pending in the High Courts and

the Supreme Court of India. Some interesting cases follow:

Closing of chemical plants in Birichi, Rajasthan: Public protest caused the closure of five plants emitting highly toxic wastes from the production of H-acid and sulfuric acid. The court provided for rectification of environmental damage.

Protecting the ecosystem in Danahu: A residents' organization protested against the construction of a thermal power plant, since the plant would destroy the region's ecosystem, including 15,000 ha of chikoo trees and 55,039 ha of forest cover. The court adopted an environment-friendly stance in the case, keeping power plant construction at bay.

Compensating for industrial pollution damage in Patancheru: Untreated industrial effluent from 100 industries poisoned the groundwater. The court ordered payment from industries, the upgrade of existing treatment plants, establishment of a common effluent plant, and provision of water to affected villages by the municipal government.

Stopping further damage to the Taj Mahal: Air pollution and acid rain from an oil refinery and other industries in Agra are damaging the Taj Mahal's surface. Based on public interest litigation seeking the closure or shifting of pollution sources, the court ruled that the burden of proof was on the industry to show it was environmentally benign. It ruled that 292 coke-based industries should shift to natural gas or face closure, directed the stoppage of coal supplies to these industries, and recommended moving small-scale polluting industries and providing natural gas to industries and the oil refinery in the region.

Preventing encroachment on the Delhi Ridge: The ridge, a reserved forest, has been largely misused. In response to a petition, the court ordered that all encroachments in the area be removed and a supervisory committee for claims settlement set up. The court also directed more careful assessment of environmentally sensitive projects.

Relocating industries in Delhi: In 1985, a petition to move 1,200 industries away from

Delhi was made. Based on violations of the Delhi masterplan, the court directed that 168 hazardous industries be removed from Delhi, factory owners pay workers compensation, 513 units operating in residential areas and 334 in nonconforming areas be relocated, the Delhi administration ensure the relocation or closure of 39,000 units in nonconforming areas, and relocation and monitoring functions be undertaken.

Making polluting tanneries pay in Calcutta: About 550 tanneries were operating in extremely unhygienic conditions and discharging untreated, highly toxic effluent. In response to a petition, the court determined that the tanneries were violating the Water Pollution Act. The court directed the 550 tanneries to move to a leather-making complex and set up an environment pollution fund, with each tannery depositing a pollution fine and 25 percent of the price of land for use in restoration.

Evolving policies for forests in India: Based on a petition and action by several environmental groups, the court banned all non-forest activity in the forest areas without prior approval of the Government. It also banned the movement of cut trees and timber from the northeast states.

Protecting India's coastlines: Aquaculture farms have been established in 85,000 ha of ecologically fragile land along the coastline. In response to a petition, the court ordered the closure of aquaculture farms within 500 m of the coast along India's 6,000-km coastline. It also directed that farm employees be paid compensation.

Despite environmental law and landmark judgments delivered by the Supreme Court and some of the High Courts of India, the situation has not changed dramatically on the environmental front. The implementation of the courts' orders rests with the executive, which remains indifferent to its responsibility to enforce environmental regulations. Political will created through a strong people's movement is required to rectify the situation.

Source: Agarwal et al. 1999. M.C. Mehta (forthcoming).

pervasiveness of market failure), and a fear of the power of an enlightened citizenry.

Sustainable development, environmental quality, and equity are political and therefore cultural issues.¹⁰ So, while prices are adjusted

¹⁰ unesco recently held a Culture and Sustainable Development conference in Florence, Italy, which mostly discussed museums, archaeological sites threatened by infrastructure development, and old buildings (Wolfensohn et al. 2000). By culture, we mean the values, ethics, and behavior of societies and their reflection in creative expression.

Multisectoral Movement for the Environment in Nan, Thailand

The relative isolation of Nan province in northern Thailand served to preserve its natural resources. In 1964, the province had 87 percent forest or over 1 million ha of forest. Improved transportation and the rapid development of Thailand brought broad social and economic changes to Nan. Natural resources were rapidly depleted and, by 1993, only 480,000 ha of forest cover were left.

Most of the deforestation was due to commercial logging. After an area had been logged and burned, it was planted to export crops such as corn, mung, cassava, cotton, tobacco, and sugarcane. The entire economy became export oriented.

Deforestation had serious effects on watersheds, resulting in prolonged dry seasons, and erosion and flooding during the wet season. Watershed areas, timber reserves, and biodiversity were destroyed, and environmental conditions were worsened by agricultural chemical use. Farmers fell deeper into debt through adoption of high-input export-oriented agriculture. Today they feel more vulnerable than ever to shock.

Rapid social and economic changes, and concern for preserving the environment and local culture have led to the creation of Hak Muang Nan (HMN), a network of development workers, monks, community leaders, and gov-

ernment officials. HMN has a strong local focus and has led protest actions against logging companies, developed programs and provided credit to promote sustainable agriculture, and provided support services. By the late 1990s, HMN had grown from 14 community organizations to 170, with 39 community forests and 53 river conservation zones.

The HMN founder is a Buddhist monk, Phrakhru Pitak, one of the "ecology monks" of Thailand. He was early on involved in people's protests against destructive commercial logging practices and has developed rituals of forest and river ordination that tie together local and national culture with the environment needs of Nan province. Many aspects of HMN's work are cultural (in a multi-ethnic province) as well as environmental. HMN is also strongly oriented toward livelihood projects, particularly credit unions, vocational training, nonfarm employment, and sustainable agriculture promotion. It is active in promoting diversified farming, including orchards, ponds, small-animal raising, and community forestry. One of its prominent goals is the empowerment of women.

Source: Meethom et al. 1999.

to reflect full resource costs and externalities, and markets are regulated or deregulated depending on the circumstances¹¹ (to increase competition and to remove technical, financial, and institutional barriers to clean production, pollution prevention, renewable energy, and energy efficiency), agents of change must be active on both the political and cultural fronts. The following are particularly important:

- Values and ethical standards have to change in order to moderate the current

¹¹ Markets are regulated to break up monopolistic power, stop monopoly-forming practices, and protect the interests of minority investors. They are deregulated to remove barriers to entry of firms into protected markets, end rent-producing licensing procedures, and end inefficient concessionary practices (Zhuang 1999).

materialist, individualist, anthropocentric value of "modern," thinking people.

- Scientists, technology developers, and management must recognize their value-laden contexts and shift from reductionist, linear, incremental thinking to a holistic, cyclical, revolutionary outlook.
- Rights of low-income communities and socially excluded groups must be recognized and upheld. They include (i) rights to life, health, and safety; (ii) the right of access to resources, including land; and (iii) the right to a political voice.

The following measures, in addition to the many market and State policies suggested in earlier sections, would help bring about systemic changes:

- enabling low-income and socially excluded groups to organize and participate in decision making;
- drawing up new rules of the industrial game;
- creating sustainable development think tanks; and
- mobilizing international resources for sustainable development.

Rights, Power, and Organization

Honest and effective governments and legal systems are imperative for equity and environmental protection. Neoliberal arguments that have led to the weakening of government's capability to cope with poverty reduction and environmental protection are misguided and have damaged society and nature. The market has a supportive role to play but only under a strong, democratic system where political decisions are made through a transparent political process rather than through an "impersonal" market characterized by egregious concentration of monopoly power and widespread market imperfections, asymmetries in access to capital and information, and refusal to account for social and environmental externalities.

Political decisions made transparently need to be followed by accountable implementation in a process where citizen beneficiaries can trust State intentions; depend upon the promises of politicians and bureaucrats; have recognized rights to life, health, and livelihood; and have

recourse when their rights are violated. Freedom of the poor, of women, of socially excluded groups to associate and organize is essential to governmental accountability.

The recognition of and support to many loci of civic action is a necessary complement to an honest and effective State and a competitive and regulated market. Social mobilization must achieve numerous purposes: (i) reduce individual vulnerability; (ii) increase incomes; (iii) build social cohesiveness; (iv) protect the environment; (v) resolve conflict; (vi) effectively and efficiently deliver public services; and (vii) give voice and creative expression to the silent. Many innovative forms of collective and cooperative organization for production, natural resources use, and service provision are coming up in Asia, and their successes (and lessons from failures) need to be widely disseminated. Women's initiatives, especially, are opening new frontiers of institutional innovation (Agarwal 1998a, 1998b).

The process is rough and uneven. It involves conflict and may involve violence. Not all industrialists appreciate citizen monitoring teams measuring mercury and chromium concentrations in factory effluents. Some developers can get rough when poor, informal settlements stand between them and incredible profits from land grabbing. Illegal loggers have strong incentives to be violent with tree huggers. The challenge is for governments to align themselves with expressed local desire and to reflect broad-based social values rather than narrow greed-based interests.

Transparency and accountability of government and corporate behavior are dependent upon continuous and vigorous political pressure from below. One result of that pressure is likely to be a devolution of powers and responsibilities from distant capital cities to local government units and communities. All too often, however, donor-advanced decentralization has been a guise for reducing government budgets and responsibilities, avoiding regulation of illegal practices, shifting risks to localities and individuals, undermining government line agencies, and enhancing the power of local elites (Harriss and De Renzio 1997; Tendler and Serrano 1999; Guthman 1997; White 1999). The weakening of the power

Unionization of Women Tobacco Workers in Kheda, Gujarat, India

Kheda is one of the richest districts in Gujarat, but it is also one where inequality is severe. At the lower end are impoverished and exploited workers, including tobacco workers, who often receive less than minimum wage. Women work long hours lifting large quantities of tobacco while breathing in thick tobacco dust. They suffer respiratory problems, physical fatigue, and back ailments. Employers exert a great deal of control deducting wages arbitrarily, often citing loans to employees. Women are disempowered due to (i) poverty, which makes them dependent on their employers for work; (ii) social distance between women and employers from different castes; and (iii) inequality in gender relations.

The Self-employed Women's Association (SEWA), now with over 14,500 members, has been striving to improve working conditions for women through unionization. For example, it has 250 members in Rasnol, the first village it unionized. Rasnol also has a childcare center run by SEWA, a savings group of 50 members, and over 70 women members in an insurance scheme. In Rasnol, as in other areas, SEWA first conducted a socioeconomic survey to give organizers an idea of the problems women faced. Workers' education classes were held to make women aware of their problems and likely solutions. Although SEWA's unionization process is longer than usual, it encourages the workers themselves to take action.

Unionization helps forge a bond among women. Workers' education classes not only made women conscious of their rights, but they also served as a meeting place to exchange views and discuss common problems. In unionized villages, wages rose, the minimum wage is often assured, and issues such as migrant workers and piece-rate overtime-rate wages are dealt with through the proper channels. Beyond trade unionism, SEWA supports childcare cooperatives, savings groups, health workers' cooperatives, insurance schemes, and employment programs

The primary objective of unionization has been to assure higher wages and improve working conditions by increasing women workers' bargaining power. Other economically empowering activities improve the quality of life of women and their families and, consequently, their productive potential. Unionization has thus changed gender and family relations and helped women find strength in unity.

Source: Bhowmik and Patel 1996.

and authority of government institutions fits in perfectly well with the needs of polluting industries, ravaging loggers, foreign fishing fleets, and global investors seeking to penetrate new markets.

The challenge is for the rough and tumble of democracy to force accountability and transparency. If this challenge is to be met, there must be not only devolution of authority to governments closer to the people affected by decisions, but also enforced legal rights for individuals and groups to participate in political and economic processes. This implies a far greater degree of social inclusivity than is common in many countries today, an inclusivity that threatens social norms justifying discrimination, inequity, abject poverty, and violence against the weak and powerless (Narayan et al. 1999; Jackson 1998; Joshi 1999). Equity of legal rights (rights to land, access to the courts,

Women Use Video in India

Far from the hustle of urban existence, a clutch of Dalit women is quietly spearheading a media revolution.

Tucked away in nondescript villages in Andhra Pradesh's Medak district, most of the women barely know where the local school is, much less have lofty qualifications to their name. They go about their daily chores, with a slight difference: they record them to the minutest detail.

The first time Narsamma, a farm laborer, handled a camera was when the Deccan Development Society (DDS), an NGO, began a program in Medak called "Learning without Frontiers." With support from UNESCO, DDS trained Narsamma and several other Dalit women to produce short video films as part of an empowerment strategy using participatory video.

Narsamma has a clear idea of what she will convey through her footage. "I want to show the world how hybrid seeds are being pumped into our farms and how they are making our farmers dependent on seed multinationals," she says. According to her, videographing traditional methods of farming and

seed varieties is especially important because "no one can then patent them and make claims on our ancient knowledge." The women's video stories have been aired on the Telugu satellite channel ETV and the regional Door-darshan channel. Laxamma, 28, who was abandoned by her husband, a border security force constable, says, "No one has ever captured the frustration of untimely rains—too little at sowing and too much before harvesting time." Laxamma supports her aged parents and works as a farm laborer in the remote village of Humnapur in Medak.

In capturing a slice of rural life, the women have, apart from training, their finely honed instincts to fall back on.

Shakunatala, 19, from Mator village says the difference between urban and rural camera persons is that the latter listen more carefully and present large pictures with details. Success will reverse the process of information flow from north to south, from rich to poor, from urban to rural, from the elite to the deprived.

Source: *Indian Express*, 22 February 1999.

and to form organizations that may oppose the rich and powerful) dovetails with the citizenry's vigilance necessary to keep governments, corporations, and ngos accountable to those they supposedly serve.

This is a time of experimentation with devolution of authority, forced by popular impatience with poor governance. Indonesia's dramatic moves towards regional devolution and Thailand's 1997 constitutional reforms have sparked unprecedented movements for democracy (Daorueng 1999). New local government legislation in Bangladesh provides for direct election to one third reserved seats for women in all four tiers of local government. There are now more than 12,000 women directly elected as Union Council members. The challenge now is to ensure these women's full and effective participation in local governance. The 73rd Constitutional Amendment in India mandates participation of women in local government, and the results, although mixed, are encouraging to the

view that participation of the socially excluded in politics leads to empowerment (Buch 1999).

Of equal or greater importance to these attempts to broaden access to government are the many loci of organizing that may make "Voting to Abstain," as a recent cover story in *India Today* put it, a more powerful force for social transformation than incorporation of the demands of the excluded into election campaigning (Wadhwa 1999). Both venues of struggle are important and necessary to good governance.

The transformation of "hopeless pits of aridity, despair, alcoholism, and out-migration" into oases of prosperity such as has happened in Ralegaon Siddhi, Maharashtra, India (Wadhwa 1999; Rao and Hanumappa 1999; Agarwal and Narain 1999), and so many other self-help villages of Asia and the Pacific offers fertile ground for optimism. How much faster the process could occur with State support and the participation of ngos that act as true partners of community organizations (White 1999; Joshi and Moore 2000). Central and local governments, ngos, and community organizations of many stripes all have roles to play in complex, nuanced, interactive, and dynamic ways that challenge simplistic characterizations about decentralization, participation, and civil society. Influences run in many directions and along numerous pathways. The technocrats' aversion to the messiness of politics and their attraction to the neatness of model institutions such as ngos, local government units, water-user associations, social funds, demand-driven projects, and the like can blur the image of what is really happening on the ground.¹² Messiness, however, shall prevail. With effort and will, the outcome

¹² Patronage, clientism, and vote seeking are not necessarily so evil from the perspective of the masses. They may increase inclusivity, expand infrastructure, and lead to new nodes of power. Professor Judith Tendler's work with Social Funds and other forms of participatory and demand-driven development institutions shows clearly the limitation of attempts to bypass government line agencies and set up donor-driven parallel institutions (Tendler and Serrano 1999). Many studies of ngos reveal similar limitations to overreliance on ngos for service delivery. Rhetoric of donors interferes with understanding why development initiatives often founder, sometimes for quite simple reasons such as short time frames, lack of flexibility to adjust to learning experiences, insistence that assessments be based on the ability of a project or program to achieve outputs rapidly, and failure to listen and learn from "beneficiaries'" experiences (Bond and Hulme 1999).

will be more effective government provision of protection and services.

What economist Anisur Rahman has termed “redistribution of the means of thinking” is basic to sustainable development (Rahman 1993). Self-reliance, self-confidence, and self-knowledge are all keys to social transformation and to new ways of thinking and doing—ways that give value to all living beings, credit to everyone’s opinions, and delight in the beauty of an intact ecosystem and vital social system. Chaos and conflict may be part of the process (Asian Coalition for Housing Rights 2000), but as the creative energies of all are freed from the oppression of hierarchy and exploitation, societies may emerge that nurture life and trust in the wisdom of the ancients.

New Rules of the Industrial Game

In order for markets to meet consumers’ preferences and to efficiently allocate resources, there must be competition, transparency, and corporate accountability. Consumers and producers need to know what is available, what are the lifetime costs, and what will be the expected health, safety, social, and environmental implications of their choices. Information is the key

to the functioning of effective markets. Lack of information hides corruption, collusion, anti-competitive practices, private profiteering from exploitation of public resources, and negative social and environmental impacts.

The information age will contribute to sustainable development if information is not monopolized or distorted. State intervention is required to encourage openness and accountability of all market players, whether public or private.

New rules of the industrial game include the following:

- Industries must get a license to operate from the stakeholders—the workforce, neighbors, inhabitants of the ecosystem they affect, and representatives of future generations. The licensing process is essentially a public sharing of information on costs, benefits, and risks.
- Corporate governance and accountability can be enhanced by community access to information, especially on health, safety, and the environment.
- National policies can only be feasible and effective if an international compact is set within a global framework that includes

Raising Environmental Awareness through a Multi-media Approach in Nepal

Increasing environmental problems in mountainous Nepal spurred the formation of the Nepal Forum of Environmental Journalists (NEFEJ) in 1986. NEFEJ, which was granted NGO status only in 1990, seeks to sensitize journalists, politicians, policy- and decision makers, opinion leaders, and the general public to environmental and development issues in Nepal through the use of radio, television, and print media. Its success in using the tri-media to disseminate information and create public opinion is exemplified by the following:

Radio. A 15-minute weekly slot over Radio Nepal considerably helps in raising people’s awareness on the environmental impact of development initiatives. Specifically, its community forestry program reports both success and failure stories of various community forest users. Question-and-answer sessions also allow listeners to air their concerns through the radio. NEFEJ also runs Radio Sagarmatha, which broadcasts programs such as talk shows, features, and opinion forums concerning vital issues affecting Kathmandu. Radio Sagarmatha’s special project on air pollution monitoring, in particular, was praised by listeners.

Television. NEFEJ’s video magazine, aired over Nepal Television, is acclaimed for its investigative approach to stories on the environment

and social sectors. The video production packages are also distributed to bilateral and multilateral agencies, private companies, community-based NGOs, universities, and journalism training centers.

Print media. *Batabaran* (wall newspaper) was launched in 1990. Nepal’s indigenous print medium, it is written in simple Nepali and illustrated. It publishes local solutions to problems, new technologies, and profiles of distinguished community leaders.

Sustained lobbying and the use of the tri-media have enabled NEFEJ to become Nepal’s most active NGO. It has succeeded in convincing various political parties that they should include environmental issues in their platforms. In 1992, NEFEJ prepared the Environmental Communication Plan for inclusion in the Government’s five-year plan. To help monitor related environment issues, NEFEJ established watch groups for pesticides, wildlife, public health, urban environment, and health.

Successfully using the tri-media and initiating discussion sessions to influence environment-related policies, regulations, and public opinion, NEFEJ received the Government’s prestigious Environment Award in 1995 for its significant contribution in the field of environment and sustainable development.

both micro-level investor responsibilities and macro-level sustainable development objectives. Minimum health, safety, and environmental standards need to be agreed upon. Such standards allow higher standards as national or sub-national options. The process of developing standards must be open and inclusive, and any standards must include information disclosure responsibilities. Any global framework should cover both domestic and foreign investments.

The current closed and secretive nature of many Asian businesses has led to highly inefficient allocation of resources (Zhuang 1999) and severe environmental externalities. Shining light onto the workings of public and private industrial enterprises can foster competition and the search for sustainable development practices. The public has a right to health and safety information regarding a firm's use of chemicals, energy, and raw materials.

Sustainable Development Think Tanks

A major challenge for sustainable development in the developing countries of Asia and the Pacific is thinking through the alternatives. The industrialized countries achieve hegemony not merely through military and economic might but also through intellectual and cultural leadership. Such leadership inevitably puts their interests first. It is futile to complain about it. The challenge is to build capacity within the region to seek and construct sustainable development strategies most appropriate for the diverse conditions prevailing in the region.

Sustainable development think tanks would take up the following issues:

- women and gender issues;
- social exclusion;
- management, norms, values, structures;
- conflict resolution;
- organizing the powerless;
- links to grass-roots groups such as people's organizations, advocacy organizations, and grass-roots research groups;
- values, ethics, contemplation, spirituality;
- legal aid, public interest litigation;
- Asian Coalition for Housing Rights low-income group exchanges;

- international links to support a community orientation;
- children;
- teaching environmental and human rights law; and
- achieving accountability and transparency in government.

Financing Poverty Reduction

Poverty reduction has been proclaimed as the overarching goal or a high-priority objective of many international financial institutions, bilateral agencies, and national governments. However, the key question is how to achieve this noble goal. adb, for example, identifies the following as pillars of its poverty-reduction strategy: (i) pro-poor economic growth; (ii) good governance; and (iii) social development (including empowerment of women and collaboration with ngos and civil society). Countries and their development partners have to devote a great deal of time and attention to strengthen these three pillars to reduce poverty in Asia. They should put greater emphasis on (i) agriculture and rural development, (ii) environment and natural resources management, and (iii) transport and energy development to meet the basic needs of the poor. Increasing efficiency of project implementation,¹³ improving public expenditure management, and decentralizing resources and authorities to the local level would constitute good governance for poverty reduction. But would strengthening these pillars significantly reduce poverty in the highly indebted poor countries? Our answer is "no."

In a recent World Bank/International Monetary Fund (imf) meeting, both US President Bill Clinton and the imf managing director agreed to significantly reduce the debt of highly indebted poor countries in line with the recommendation of the G7 Summit at Cologne. However, there are three caveats: (i) the initiative does not cover 85 countries classified as low- or lower-middle-income countries,

¹³ In developing countries of Asia, system losses in energy and water supply are estimated at 30-40 percent, and inefficient irrigation systems directly translate into severe land degradation due to waterlogging and salinity.

some of which have good policies in place; (ii) the initiative may, as some critics suspect, be implemented at the cost of increasing official development assistance (oda); and (iii) much of the debt relief is for bad loans agreed to by the governments and lenders, which should not have been made in the first place. The impacts of such debt relief on the poor developing countries may thus be zero or even negative.

A recent meeting of the United Nations Parliamentary Forum for eradication of poverty, which included both developed and developing countries, concluded that global poverty would continue to increase unless new and additional sources of financing broad-based and pro-poor development were found. And yet, this is an area to which the international community pays little attention. There are at least three possible ways of regenerating or creating such sources of financing:

- *Increase of oda.* oda flow has declined to about 0.2 percent of donor gnp in 1997, from 0.7 percent in the early 1990s. In August 1999, development cooperation ministers of the Netherlands, Norway, Germany, and the United Kingdom called upon the oecd countries to renew their commitment “to international development targets, including halving the proportion of people living in absolute poverty by 2015.” This certainly is a ray of hope for the poor developing countries.
- *Imposition of the Tobin tax.* Over \$1.5 trillion is exchanged everyday in currency markets around the world, mostly in

“speculative” buying of currencies. Such speculative buying can be taxed at 0.1-0.25 percent on each currency transaction as proposed by the Nobel Prize-winning economist James Tobin. Taxation will generate a minimum of \$150 billion/annually in additional resources for poverty reduction. In March 1999, the Canadian Parliament approved the concept of the Tobin tax. There is also a global initiative to get the idea approved by all donors. Thereafter, implementation and monitoring may be done by international financing institutions or through some other suitable arrangement. Since 80 percent of all the global currency trading takes place in seven financial centers in the world, implementation and monitoring should not be so difficult.

- *Reduction of military expenditure.* Global military expenditure stands at \$125 billion per year. In 1994, the African governments called for a one-third reduction on military spending to release funds for public spending on social programs. Similar appeal has been made in many other global and regional forums. undp has called the use of scarce resources for military expenditure “the most shocking example of states’ use of power contrary to the interests of poor people.”

These three international initiatives must be associated with three other regional actions of (i) pro-poor economic growth, (ii) social development, and (iii) good governance to bring Asia out of abject poverty by 2015.