

## **Can the Environment Wait in a Developing Country?**

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Can the environment wait in developing countries? Should countries focus on growth first and worry about cleaning up later? Is there an optimal mix between growth, development, and environmental management? These are all real issues facing the world's community of developing countries. The following presentation suggests that the answer to this question is "no – the environment does NOT have to wait". But first, let's consider the tale of two countries:

### **A Tale of Two Countries.**

Azerbaijan and Costa Rica may seem to have little in common (other than their place in the alphabet!). And, yet, recent work in both countries provides some interesting comparative, if anecdotal, data.

First, consider Azerbaijan, one of the world's first oil states. A hundred years ago Baku, the capital, and Azerbaijan were an important center of oil production. The oil boom that began at that time resulted in a number of impressive buildings in Baku – grand avenues, an imposing Opera House, an impressive array of mansions and apartments buildings. If one travels just outside Baku, however, one is impressed by the wasteland all along the shores of the Caspian Sea that is the direct result of the oil boom and associated production. Kilometers of rusty pipelines, pools of blue/ green/ black water, piles of industrial waste line the shore. It is a true environmental disaster, and much valuable Caspian Sea-front real estate is unusable, Who is to pay for clean-up or remediation??

Azerbaijan is a classic cautionary tale of the danger of the "grow first, clean up later" mentality. Those who benefited from oil extraction over the decades are gone, lost in time and in changes of governments. Now all that remains from the past oil boom are a number of grand buildings in a very poor country, and a tremendous bill for cleanup or remediation measures. Although new oil production may hold out hope for addressing some of these problems, the new developers rightly say that they should be responsible for their actions, not for mistakes made 50 to 10 years ago. Nonetheless, the costs

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associated with those mistakes will be borne by society at large. Better governance and a set of different political and historical conditions may well have resulted in different outcomes for the country. After all, many of today's developed countries have reached their current levels of economic prosperity despite, and some may argue, because of, over-exploitation of their natural resources. The choices available to countries today are however significantly different due to increased pressure on resources and changes in global, national and local awareness regarding patterns of economic development. Azerbaijan, like other mineral rich countries, faces an interesting choice today of making the most of its oil resources by wisely re-investing the rents from oil exploration in society, thereby achieving more sustainable economic development.

Now consider the case of Costa Rica, a small Central American country that has relied on its natural resources for growth. Originally coffee and bananas were the backbone of the economy, and now tourism – eco or otherwise – forms a major share of the economy. Costa Rica has successfully “sold” itself internationally as a green, environmentally-friendly country and receives large numbers of international visitors each year. In its international advertising it uses the slogan “Costa Rica – No Artificial Ingredients” to sell itself and reinforce this image.

Is Costa Rica perfect? No – it has all of the problems of most middle-income developing countries (including a high deforestation rate). But Costa Rica has successfully identified a strategy to “grow green” and take care of environmental problems to the extent possible. It realizes that this is good for the environment and good for the economy. An important part of this process has been a partnership between the government, the people of Costa Rica and the private sector. They all realize that they have an incentive in addressing environmental problems and these problems affect all of them.

### **Is There an Environment-Development Dichotomy?**

As these two stories suggest, there are different paths for development for resource-based countries. Many have suggested that the environment is a luxury good for rich people and rich countries. A related view is that a country should therefore get rich first and worry about the environment later. Let's examine these hypotheses.

**The environment as a luxury good.** There is no doubt that in some ways the environment is a luxury good. In economics this merely means that the environment has an income elasticity of demand greater than 1 (that is, if income grows by 10%, demand for the “environment” will grow by more than 10%). There is no doubt that some uses of the environment are in fact luxury goods – the demand for scuba diving or unique wilderness experiences are of this type. The demand for this type of adventure, and the ability to pay for it, are most often enjoyed by the rich.

For most other types of environmental goods and services, however, demand is usually positive, if not in the “luxury” good category. Positive income elasticity merely means that as incomes grow, demand for the environment also grows. As such, the

environment, especially a healthy, cleaner environment, will grow in demand as incomes increase. In this sense the environment can be considered as an appreciating economic asset – its value will grow in the future as incomes rise.

In addition, for many people the environment forms a central part of their production system: farmers, fishermen, loggers all depend directly on the environment to produce income. In fact, it is precisely the poorest people who are most directly dependent on the environment as a source of production, often deriving significant proportions of their income from the use of natural resources.

There are also important social-economic linkages between the environment and health and other social factors. In the case of the link between poor water resource management and lack of sanitation, for example, it is found that the negative impacts on health fall heavily on the poorest members of society and that the opportunity costs of time spent collecting drinking water may be much higher than normally thought. In both cases the economic benefits from improved water supplies (both in terms of quality and quantity) may be quite large. The cross-sectoral linkages (especially in terms of health and productivity implications for the poor) of investing in sectors such as water, clean energy and are often overlooked by policy makers and growth advocates who suggest that environment is a luxury good.

**The “Grow First, Clean Up Later” Hypothesis.** As mentioned earlier, there is the wide-spread belief that countries should focus on traditionally-measured economic growth first and only then worry about the environment. While it is true that this is the growth path followed by the US and much of Europe, we now know that this is a sub-optimal approach. This is true for a number of reasons:

- We know now that cleaning up after problems have been created (especially from pollution of the air or water) is much more expensive than prevention. Many studies have shown that environmentally “friendly” development (one that minimizes air or water pollution, or natural resource degradation) often only costs 1 to 3 % more in initial investment costs (and avoids damages that are much larger).
- As seen in Azerbaijan, growing first and cleaning up later often results in no one being responsible for the cleanup – all the money is gone and those who created the problems no longer are around. The US has had to implement an expensive SuperFund program to clean up abandoned toxic and hazardous waste sites all over the country.
- The grow first/ clean up later philosophy can also result in lost species and consequently lost genetic opportunities. Extinction is forever!
- Since many environmental problems disproportionately affect the poor, the emphasis on growth without consideration of environmental issues necessarily implies a more limited set of options for poorer sections of society.

## **A False Dichotomy – But a Difficult Path to Charter**

The supposed Development-Environment Dichotomy is in fact a false dichotomy. There are ample examples now why this can be said. Among the reasons for this statement are the following:

With the tremendous learning of the past 40 to 50 years, we now know that is possible, both technically and economically, to “grow greener” without pay a large, or in some cases, any extra economic costs. Whereas the famous Environmental Kuznets Curves (EKC) hypothesized that as economies grew the environment would at first get worse and only later get better, we now know that there exist many possibilities to “tunnel through” the Kuznets curve and grow in a much more environmentally-friendly manner. This is due both to technological changes as well as to policy interventions. For example, modern form of transportation and energy production are much less polluting today than they were 30 or 50 years ago. Similarly, the advent of the computer and high speed communications means that it may be possible to “leap frog” certain traditional stages in growth.

Environmental Kuznets Curves (see Figure 1) are also more complex than initially thought. Although the classic EKC shape is seen in the middle two curves – urban concentrations of particulate matter and sulfur dioxide, other EKC take quite different forms: populations without access to safe water or sanitation both fall steadily as incomes increase. More troubling, other measures increase directly with income – as seen in the lower two EKCs representing municipal waste per capita and carbon dioxide emissions per capita. For some pollutants there is no ‘turning point’.

The original Kuznets curve suggested that a deterioration in income distribution in the early stages of economic growth would be followed by an improvement later. This however, can be a long term outcome and one that is less that desirable in the face of growing poverty levels across the globe. Similarly, environmental degradation can exacerbate poverty, including vulnerability, and could, in some cases, be irreversible. There is no reason countries should today develop in the same way as they have in the past. A major lesson from the EKC literature is that it is possible to “flatten” many of the curves via appropriate policy interventions, and that income growth makes much of this possible. The challenge is to grow in a “greener” manner and reduce unnecessary environmental costs. This thinking is reflected in the natural capitalism literature whereby technological options allow one to switch from high energy/ high throughput consumption patterns to lower energy/ lower throughput consumption patterns, thereby reducing one’s environmental “footprint” and affecting the shape of the EKCs.

In addition, we also now know that in many resource-dependent economies, growth, development and environmental protection can be mutually supportive rather than in conflict. Whether we see this in the ADMADE or Campfire programs in Africa, or in Costa Rica or the tourism-dependent economics in the Caribbean, and community managed programs in India and Nepal, that the potential for positive synergies between growth, development and environmental protection exist. The difficulty lies in ensuring

that the benefits of such programs reach those communities that are directly dependent on these resources and/or act as caretakers for these resources. The transference of property rights from the state to village communities and from individual to communities is increasingly being shown to be an important factor in addressing both community development needs and environmental quality.

In other locations we are seeing the growth of direct payments for ecosystem services. Two well-known examples are those of New York City and Heredia in Costa Rica. In each case the municipal authorities have made direct payments to those who own watershed lands to protect these sources of water supply. Before 1996, New York City water was unprocessed and cleansed by the natural filtering services provided by the watershed. Subsequently, with increasing changes in land use, these natural, and free, ecosystem services were damaged by sewage and agricultural externalities. The City estimated a cost of \$6-\$8 billion in capital costs for the installation of an artificial filtration plan to clean the water supply, with annual maintenance costs of \$300 million. It was however determined that it would be cheaper to restore the natural ecosystem, at a cost of  $\$1.5 \times 10^9$  by purchasing land, investing in septic tanks and compensating farmers/landowners for reducing development and improving land management<sup>2</sup>. This example, albeit from a developed country, clearly demonstrates the need to account for alternative options, including investing in natural capital. Without examining the potential net benefits associated with alternative investment options, countries may miss out on more socially efficient development decisions.

Similarly, in Heredia, a small university town in Costa Rica, a small extra charge (measured in cents per cubic meter) is added to the monthly bill of all water users to create a fund that will then help pay farmers in the catchment area to use less environmentally degrading management practices, and thereby help protect the quality and quantity of water coming from the catchment. Various other countries have started to determine systems to evaluate and capture rents associated with ecosystem services that maintain productive and consumptive economic activities.

**Developments Since Stockholm (1972) and Rio (1992).** Even with these positive developments, the challenge of sound environmental management with social and economic growth remains. The Stockholm meeting of 1972 launched the modern environmental movement and Rio, 20 years later, represented its coming of age. Unfortunately, despite the initial optimistic feelings after the 1992 Rio Earth Summit, it is now realized that “growing green” is going to be harder than anyone anticipated. This is true for a number of reasons.

First, even the supposedly easy “win-win” policy changes (often referring to policy measures such as energy or water subsidy reduction, thereby producing both economic and environmental benefits – e.g. higher fuel prices encourages more energy efficient transportation or manufacturing) have proved much harder to implement than

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<sup>2</sup> Note that the replacement costs cited here are not an estimate of ecosystem services provided by the watershed. Flood control, carbon sequestration, reduced soil erosion, biodiversity maintenance etc are not accounted for.

anyone thought. It turns out that vested interests, and politically powerful groups that receive these subsidies, are often able to block subsidy reduction. Governments have often not been willing to take on this politically difficult task, and the costs to the treasury and the environment remains high. This is commonly observed in both developed and developing countries. In the US for example, energy prices have remained low and powerful lobbies fight [successfully] even the smallest attempts to increase gasoline prices, thereby re-inforcing patterns of living and commuting that are very energy-inefficient. A World Bank study in 1998, estimated that global fishing subsidies amount to approximately US\$ 11-13.5 billion, while OECD in 1997 estimated total fishing subsidies of US \$6.38 billion for industrialized countries alone. Trade regulations and restrictions are often used to create trade patterns that encourage inefficiencies in production and consumption, often at the expense of poorer groups.

Second, institutional development has proved much harder than initially thought. Ten or twenty years ago few countries had environmental management institutions – either in government or outside of government. Even with major commitments of money and people it is now realized that the process of building strong, competent environmental management institutions is a long-term undertaking.

Building strong institutions for improved management is more than training people, passing laws, and building laboratories and an inspection system,. It is also necessary to create the political (and public) backing so that these institutions can effectively argue their case with the traditionally powerful ministries that manage finance, the economy, and industrial or agricultural production. In all too many countries the Environmental Ministry is one of the weakest portfolios in the government and the environment is always considered as a “second priority”. As noted earlier, the cross-cutting issues associated with investing in the environment are often missed by both mainstream development practitioners and by environment advocates.

Third, all too often it has taken a major environmental “jolt” to focus attention on environmental management. Given the complacency of governments, and the powerful role of vested interests, it has unfortunately often taken a disaster to focus public and private attention on the role of the environment. The infamous “killer fogs” of London in 1952 led to important work on identifying the links between air pollution and health outcomes; Chernobyl and Bhopal focused attention on industrial pollution and accidents, and the dark side of nuclear power; and landslides and flooding in countries around the world (c.f. Nicaragua, Turkey, China among many others) focused attention on the links between land use patterns, location of settlements, and susceptibility to land slides and mass destruction. These are expensive (in lives and economic activities lost) ways to focus attention on the links between the environment and sustainable economic growth.

### **Eight Reasons Why the Environment Can't Wait in Developing Countries**

This quick overview of some of the links between economic growth and the environment, highlighting both the positive dimensions and the internal tensions, illustrates the magnitude of the environment/development challenge. We strongly feel

that experience from countries around the world support the view that it is a false dichotomy to think that the environment and development have to be in conflict. In fact, they can be and should be mutually supportive. There are eight major reasons for this optimistic view:

1. **The environment is a major economic asset.** Whether it is for direct production of food or fiber, or for indirect production of value through cleaner air or water, or for sale via tourism, the environment is an important economic asset that plays a central role in the economic health and sustainability of most countries. For some countries, like many of the small Caribbean islands, the environment is their main economic asset and its sale via tourism accounts for 30% to 60% of their GDP! Any economic asset of this importance needs investment in management and maintenance -- and, as said in the famous line from the film *The Godfather*, "This isn't personal, its business"!
2. **Prevention is cheaper than cure.** Experience around the world convincingly demonstrates that it is cheaper to prevent environmental pollution (or resource degradation) than to try to correct the same problems after they happen. Many studies have shown that prevention costs usually only add 1 to 3 percent to initial capital costs, while damages from degraded environments or pollution often result in 5 or 8 or more percent in annual losses of national GDP. The problem, of course is complicated by the fact that the investment costs are borne by individuals or firms now while the damages that are potentially avoided accrue to a much wider group in the population over a longer period of time.
3. **Private gains from the use of the environment are often sufficient to pay the costs to avoid externalities.** Just as prevention is cheaper than cure at the national level, the potential benefits to individuals and private firms from use of the environment are often sufficiently large that they can pay appropriate costs for environmental management or pollution reduction and still make money. This form of the "polluter-pays-principle" means that improved environmental management can often be paid by the private sector, IF governments are tough, do their analyses, and act as the stewards of the nation's environment. A major example of the potential for this approach is in such areas as recreation or tourism, whereby tourism operators, the visitors, and the government are all part of a partnership with shared responsibility for environmental management.
4. **Equity issues matter – and environmental degradation hurts the poor more than the rich.** It is usually true that environmental degradation affects the poor the most. Either they are directly dependent on the soil or the seas for their livelihood, or they are disproportionately affected by polluted air or water. In any case, there is a strong equity argument for improved environmental quality. Rich people can often protect themselves from environmental pollution by making appropriate housing or life-style choices. The poor often do not have similar options and governments must frequently intervene on their behalf. One must be careful not to confuse the desire for improved environmental quality (the demand

side) with the ability to pay for it (the supply side), especially among poor people. Furthermore, access to environmental resources and improved options for income generation are critical for reducing income inequality and vulnerability of the poor.

5. **Healthy economies need healthy environments for sustained streams of individual and social benefits.** The links between healthy natural environments and production, and the links between clean air and water and health, are widely observed. Healthy environments can support healthy economic growth and the converse is also true – poor economics often are characterized by bad environmental quality and poor health. Although the direction of causality is often debated in the literature – do poor people create degraded environments or do degraded environments create poor people? – it is very clear that as incomes grow people and societies demand (and have the ability to pay for) cleaner environments.
6. **Partnerships that promote environmental issues are likely to support positive social objectives (and vice versa).** Just as there are positive economy-environment links, there are also important positive links between environmental partnerships and social equity. Since improved environmental management means inclusion, means taking into account social welfare and justice, and requires a broader perspective, those societies where the environment is an important element in the public arena, also tend to be more inclusive. One sees this at various income levels – it is just as true in Costa Rica as it is in Switzerland or Sweden! Access to environmental goods and services and the choice of being involved in decision making (whether this is exercised or not, participation is also a matter of choice and is not always the desired option for an individual) support the broader concepts of defining poverty and opportunity as defined in the 2001/2002 World Development Report or Amartya Sen’s recent writings on Development and Freedom.
7. **The increased importance of private investment will determine a country’s environmental future.** At present private annual investment flows are 20 times as large as those of ODA – Official Development Assistance. This is both an opportunity and a challenge. The opportunity is to work with these very large financial flows to build towards a more sustainable future while the challenge is to set up incentives/ rules of the game that make private investments part of the process of sustainable development. If governments ignore private flows and just focus on government investments and ODA they risk “winning the [environmental] battle but losing the war”! Private sector interventions in water supply and opportunities presented by the Clean Development Mechanism are interesting examples of partnering with private interests to achieve desired development and environmental outcomes.
8. The final reason why the environment can’t wait in developing countries is that proper management of the environment **is the right thing to do!** Poor people

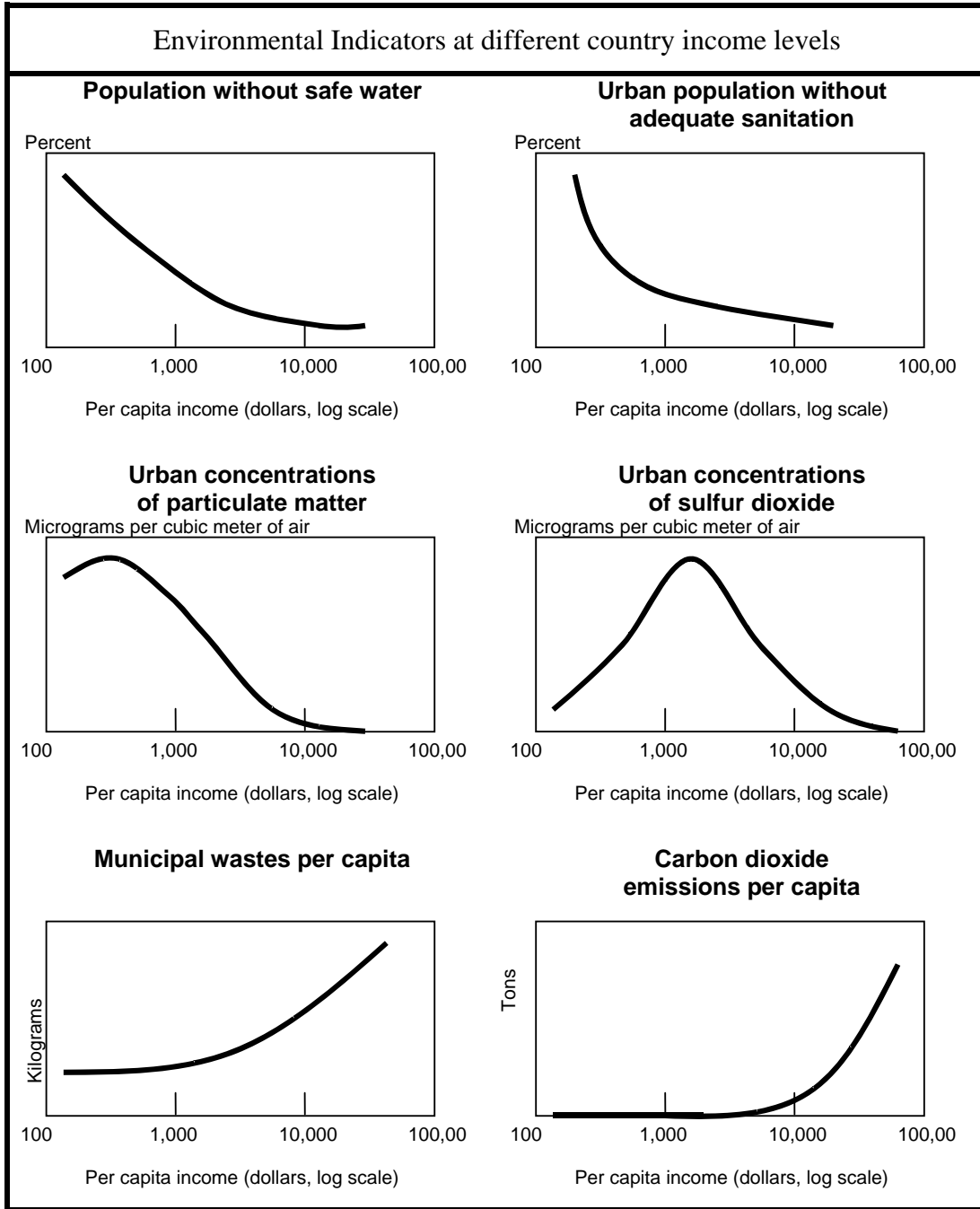
care about a cleaner and sustainable environment just as much as rich people, but their willingness-to-pay is not matched by their ability-to-pay. Governments, therefore, have a special responsibility to invest in the environment and its management, and to establish environmentally-friendly “rules of the game” that influence private individual and corporate behavior. For certain types of issues (e.g. global public goods like genetic stock or greenhouse gas reductions) the global community also has a responsibility to support these investment decisions. This increasingly is happening. While growth continues to be important for developing countries to rise out of poverty, this growth should not come at the expense of poor people’s environmental health and opportunities.

### **The Future Challenge.**

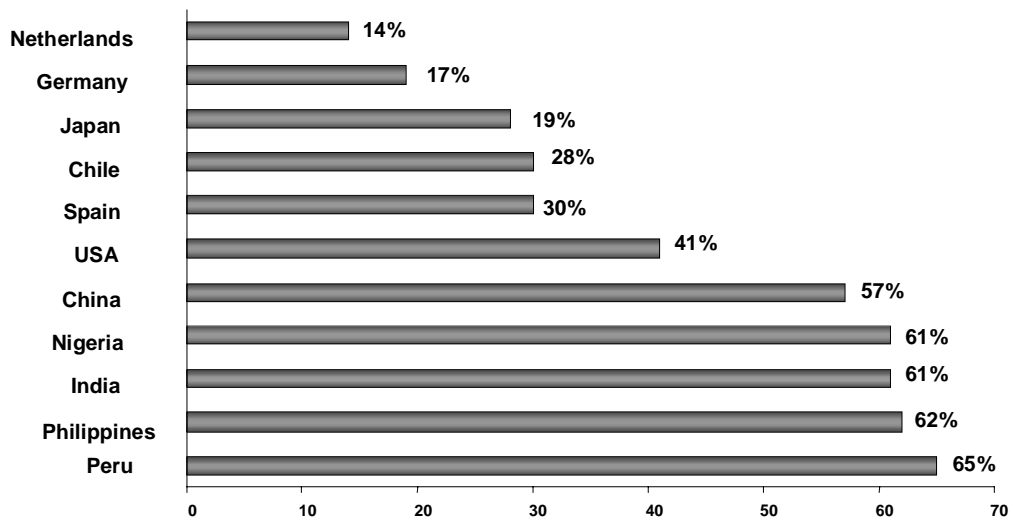
In conclusion, the intimate links between environmental quality, environmental management, and economic development, make a strong case for addressing both concerns – the environment and economic growth – together. This will not happen by itself, however, and there is an important role for government, as well as for an informed public, in making this happen. The responsibility is large, but the costs of not addressing these issues is even higher. The costs of inaction, as is becoming increasingly clear, are being paid by the more vulnerable and economically disadvantaged groups. What is more, such costs will be paid not just by this generation but by future generations as well. It would, in short, be a wasted opportunity for achieving sustainable and equitable patterns of development, if developing countries waited to grow first and address environmental issues later.

**As someone once said, we should treat the earth (and its environment) as if we intended to stay!**

Figure 1 Environmental Kuznets Curves



Source: World Bank, World Development Report, 1992



**Figure 2: Personal Concern About the Environment**

Source: The Environment Monitor 2000, Environics International Ltd