

## **Environment in East Asia and Southeast Asia: Lessons for Pakistan**

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It is a matter of great honour and pleasure for me to welcome you all to the 12th Annual General Meeting and Conference of the Pakistan Society of Development Economists.

It is now widely understood that despite past progress, Pakistan will be facing formidable development challenges over the next two decades. This realisation calls for a serious re-evaluation of the long-term development strategy as the country approaches the 21st century with its particular opportunities and challenges in a rapidly changing world economy. Accordingly, we also understand that the research agenda of professional associations like us, and of organisations like PIDE, must address forward-looking policy options and trade-offs in critical areas for sustained economic and social development, which has to be multi-disciplinary in nature. Of course, PIDE has responded to the new needs with a professional preparedness that only comes from long experience and timely perception, and reorientated its research priorities. The traditional areas of macro-economic research, sector studies, and the micro-economic behaviour of economic agents remain strong. But, in addition now, we are studying ethnicity, gender, technological change, regional development, and environment as crucial areas of research. The shift in the research focus is not only reflected in this year's conference theme, 'Macroeconomic Adjustment in the Era of Globalisation', but also in the topic of my Keynote Address.

As I mentioned earlier, our expanded research agenda considers the investigation of environmental questions as extremely important to any development agenda, and our comparative curiosity—if not advantage—has naturally led us to Look East. In many developing countries, including Pakistan, East Asia is being looked upon as a role-model. I have myself been interested in the region's impressive record for quite some time. And in this time of detailed study and thought I have come to believe that the scale of growth and the scale of growth-induced environmental deterioration in East Asia should be looked at together. Today I focus on the latter in relation to the former so as to draw some useful lessons for a reform

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in Pakistan. I would also like to argue that the policy reforms being considered now by the Government need to take a more serious view of the environmental problem as the damage and control costs of environmental deterioration in Pakistan are already large. I would not have the time today to discuss all aspects of this topic but I shall attempt, in the next few minutes, to put forward the main findings and conclusions as best as I can, hoping that they will add a key element to the reform agenda.

### I. THE SIGNIFICANCE OF THE ENVIRONMENTAL QUESTION IN PAKISTAN

The concern about environment has always carried an implicit message for change. Currently, Pakistan is experiencing every imaginable environmental problem. Although a comprehensive and reasonable quantification of the costs of environmental neglect in the past is beyond any one researcher's analytical reach, yet there is enough information available to prepare estimates of the environmental degradation and the costs this has initially imposed on Pakistan's economy. The effort requires construction of a new set of national accounts which eliminate two fundamental weaknesses of the existing national accounts; i.e., (1) their virtually complete neglect of environmental deterioration; and (2) their treatment of depletable natural assets as current income contributing to an increase in the GDP.

The existing practice of national accounting assumes that high rates of economic growth can be achieved by rapid exploitation of natural resources. Thus national income seems to increase in the short run, but definitive unsustainability is built into the system as natural capital is used up in the meantime.

Even highly conservative estimates of the damage costs in Pakistan, on account of air and water pollution and natural resource degradation in 1991-92 (at 1987-88 prices), range from 0.8 billion to 1.5 billion US dollars (Table 1). These costs are equivalent to 2.3 percent to 4.4 percent of the country's GDP. If the loss of bio-diversity, industrial waste, and coastal degradation are added to the account, the overall damage claims are from 4 percent to 6 percent of the GDP, which are much higher than any estimates available for a currently affluent developed economy. The evidence on the estimated damage costs is sufficiently robust to allow six key conclusions.

*First*, the magnitude of environmental degradation is large enough to affect much of the annual growth measured in traditional national accounts. As such, traditional growth measures in Pakistan have overstated the growth rates. *Second*, water-related health hazards and losses in agricultural productivity account for 70 percent of the total negative environmental impact. *Third*, a dominant share of the costs is borne by the poor as they suffer most from the losses from premature death and morbidity and reduced levels of agricultural production—directly through income losses and indirectly from price increases of food products. Therefore, it is

not surprising that Pakistan ranks low on human development measured by the HDI, as developed by Mahbubul Haq and his team. *Fourth*, given the high benefit-cost ratios, investments to protect the environment should meet the most stringent investment criteria. *Fifth*, given the high levels of economic burden resulting from a deteriorating environment, there is a need to ensure that the high growth rate targeted for the Ninth Five-Year Plan period and beyond be achieved in a manner consistent with the protection of environmental quality standards and a sustainable use of natural resources. *Sixth*, any poverty eradication strategy should also include the protection of environment as an essential component, as environmental degradation not only hurts the poor but also hinders their benefiting from the access to food and other social services.

It goes without saying that the current state of our environmental management actually has the effect of taking away with one hand a good share of what the other hand seems to be giving in terms of development. We are in need of better strategies in this regard, and may logically look at what others have undergone and done in some other developing Asian countries.

## II. ENVIRONMENTAL EXPERIENCE IN EAST ASIA AND SOUTHEAST ASIA

It is no longer new but we still need to understand fully the nature of significant development within our own continent. Over the past quarter century, East Asia and Southeast Asia have been the fastest-growing region. Real per capita incomes have quadrupled; the percentage of people suffering from absolute poverty has fallen from a third to about a tenth; and human development indicators have considerably improved. All this while the industrial growth and transformation has been rapid! Between 1965 and 1990, industrial production in the region grew at an average rate of 10 percent per year. But rapid growth was accompanied by an equally rapid expansion in energy and resource consumption, industrial and vehicular pollution, and hazardous and ordinary waste generation. In only 15 years of industrial transformation, per capita energy consumption trebled in Korea, and it rose by a factor of 2.5 in Taiwan, Thailand, and Indonesia. Private vehicles grew 40 times in Korea and 20 times in Taiwan. In Thailand, in only 10 years, sulphur dioxide emissions rose by a factor of two-and-a-half while solid waste-generated per capita increased by over 50 percent. The shift in economic structure away from agriculture has somewhat surprisingly been accompanied by a worsening, rather than an improvement, in agriculture-related pollution problem. Agriculture's ability to support a rapidly growing urban population was derived from crop intensification involving heavy application of fertiliser and pesticides. The agricultural run-off has contributed to water pollution with nitrates, phosphorus, and certain other toxic

chemicals. Growth-induced pollution has overlapped with the traditional pollution emanating from lack of sanitary sewage disposal.

That the rapid growth in East Asia and the improvements in social welfare were initially accompanied by increasing stresses on the environment should not necessarily lead to the attribution of blame on either rapid or widely shared growth. Slowing economic growth may not be the proper policy response. In fact, higher incomes from fast growth offer an opportunity to solve the environmental problem; they work in favour of environmental improvement as high incomes generate high demand for a better environment and provide a potential pool of resources to be mobilised for investing in such an effort.

We must recognise that economic growth was the overriding policy objective in East Asia. The “Grow Now—Clean Up Later” strategy was adopted by most governments, and the environmental consequences were massively adverse. And, the governments took their time to appreciate these adverse environmental consequences of the growth strategy, but appreciate they did! A number of governments in the region have already succeeded in repairing the worst kind of damage, while a few others are still struggling to come to grips with the legacy of environmental *laissez-faire*. Japan’s has thus far been the most effective case of controlling environment damage. Korea and Taiwan have also taken forceful control measures so that beneficial effects of the quality of environment have begun to be felt. It appears that once the problems were identified and the governments had accorded due priority, environmental improvement could be effected.

The question naturally arises whether by addressing the environmental issues from an earlier date, the combined damage costs and control costs could have been substantially reduced. The example of the countries I have listed in this regard gives a clear answer: adopting pre-emption policies now is considerably cheaper than waiting to pay for the clean-up later!

Once the governments were convinced of the need for an explicit environmental policy, their response was both flexible and comprehensive. In East Asia, the response has spanned almost all sources of pollution and environmental degradation. The policy package for dealing with the problem of environmental degradation consisted of several elements, and it evolved gradually. Its different components were put in place in a sequence that was thought to combat different types of pollution as and when the respective problems became serious. Most countries started by putting in place a regulatory framework to reduce industrial pollution. Ambient standards were specified. Those polluters who violated these standards had to pay fines. The introduction of pollution charges, the strengthening of environmental impact assessment procedures, and the integration of environmental considerations in national and regional planning came later when the emphasis had shifted from industrial pollution to other major sources of environmental deterio-

ration. A brief discussion of the salient features of each of the policy areas should suffice to indicate the major response mounted in East Asia to repair the environmental damage caused earlier by a misconceived development strategy.

To control pollution, the regulation of the industrial and commercial sectors had its genesis in local initiatives. Citizen groups pressurised major polluters to enter into voluntary agreements to control the pollution levels. In due course of time, national governments involved themselves in environmental management, and had thus evolved a legislative as well as an administrative framework to deal with such issues. Laws were introduced to deal with different types of pollution. Lead environmental agencies were also created within the government; in some countries, these agencies grew in strength as a result of the priority attached to sustainable development in the national development plans.

The linchpin of this approach, taken by the governments in general and the executing agencies in particular, was the use of command-and-control measures. Strict ambient standards were specified and these were implemented through legal and/or administrative measures. Full implementation and enforcement of the standards, however, has been difficult. The growth lobbies argued that the standards raised costs and undermined competitiveness. As a consequence, some firms had to be exempted from the regulations. Staff constraints faced by the monitoring agencies also resulted in weak enforcement. Rates of fines imposed by the regulatory bodies were generally low and, therefore, hardly served as an effective deterrent. As a result of weak implementation, the pollution levels, which had somewhat declined initially, stabilised at a still uncomfortable high level.

To complement the regulatory effort and to make a further dent in pollution, the governments in East Asia have recently introduced a number of economic instruments that impose costs on the polluters in proportion to the damage caused by them and/or have them subsidise the investment cost of the pollution abatement. The initial evaluation of the carrot-and-stick policies is quite favourable. The carrot has won out, as the governments in East Asia have relied more on the subsidies for pollution abatement than on the taxes on raising or aggravating pollution.

Clearly, the usefulness of the economic instruments can be enhanced only when environmental objectives are integrated into national planning efforts and big investments are appropriately sequenced. The containment of vehicle pollution through demand-side management policies alone illustrates this point quite well. Japan and Singapore had introduced strict demand-side policies to control emissions from vehicles. The measures succeeded somewhat in the initial phase but paid off only when these countries put in place an attractive mass transit system for transport. Vigorous motor vehicle demand-side policies are needed, but such efforts never succeed if an alternative transport system has not been created first.

Further, all governments in that region have introduced environmental impact assessment procedures in the project cycle to contain environmental damage in large public sector projects. Such impact assessments, however, have not produced the intended results mainly because governments' capacity to evaluate the environmental impact status has remained limited. In the case of some countries, the executing agencies have found themselves overwhelmed by the large workload involved in such monitoring. Yet, the task is well-understood by most governments.

To summarise, the East Asian and Southeast Asian economies rank high on an index of structural change for the economy in general and for the industrial sector in particular. As a consequence, the types and volumes of pollutants have changed rapidly. The challenge for the policy-makers there was to devise an environmental management system with an in-built flexibility to respond to the rapidly changing pollution profile before the problem became critical and inflicted a severe health and economic damage. The governments in the region were indeed late in recognising the seriousness of the environmental problem. However, once they became convinced of their faulty development strategy, a forceful policy response was created to meet with the problem squarely. The delayed policy response shows that by no stretch of the imagination the environmental management experience in East Asia could be considered as an unbroken chain of successes only. There were a number of difficulties experienced in the process of building an effective environmental approach to deal with various environmental problems. However, it should be realised that the governments in the region showed a strong capacity to learn quickly from their mistakes in the field of environment.

### **III. POLICY LESSONS FROM THE EAST ASIAN EXPERIENCE**

Let me now briefly turn to the matter of what the East Asian and Southeast Asian experience holds by way of broad policy lessons for Pakistan.

First, the market-based approach to avoid pollution and a sustainable use of natural resources can be more effective than the sole reliance on a regulatory mechanism as is the case at present in Pakistan. The taxation of pollution can generate revenues for the government and also reduce pollution at its source. However, the government should avoid the temptation of using subsidies for pollution abatement as it can lead to significant loss of tax exemption.

Second, there is a need to adopt a forward-looking approach to environmental management. The government should integrate environmental considerations into long-term planning and utilise industrial siting considerations so that industrial development takes place on an environmentally sound basis.

Third, the Government should evolve a quick response as the environment profile changes rapidly as a result of structural changes in the economy. In this

context, it is important to reduce the energy intensity in the economy. An active programme of public intervention on the demand and supply side of energy use needs to be initiated. The introduction of clean fuels, clean technology, appropriate transportation system and appropriate policy of energy are some examples to reduce the pollution intensity in the economy.

Last, but not the least, there should be greater transparency in the environmental management system. This would lead to improved monitoring and enforcement of the existing regulations, and make these interventions more credible to the people. For, ladies and gentlemen, it is the people who matter most in any environment and we must ensure that it remains good to them.

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