

# Foreword

Sunita Narain

*Director, Centre for Science and Environment, India*

Years before India became independent, Mahatma Gandhi was asked a simple question: would he like free India to be as “developed” as the country of its colonial masters, Britain? “No,” said Gandhi, stunning his interrogator, who argued that Britain was the model to emulate. He replied: “If it took Britain the rape of half the world to be where it is, how many worlds would India need?”

Gandhi’s wisdom confronts us today. Now that India and China are threatening to join the league of the rich, the environmental hysteria over their growth should make us think. Think not just about the impact of these populated nations on the resources of our planet, but—again, indeed all over again—of the economic paradigm of growth that has led to much less populated worlds pillaging and degrading the resources of this only Earth.

Let us be clear. The western model of growth India and China wish most feverishly to emulate is intrinsically toxic. It uses huge resources—energy and materials—and it generates enormous waste. The industrialized world has learnt to mitigate the adverse impacts of wealth generation by investing huge amounts of money. But let us be clear that the industrialized world has never succeeded in containing the impacts: it remains many steps behind the problems it creates.

Take the example of local air pollution control in cities of the rich world. The eco-

nomic growth in the postwar period saw it struggling to contain its pollution in each of its cities: from London to Tokyo to New York. It responded to the growing environmentalism of its citizens by investing in new technology for vehicles and fuel. By the mid-1980s, the indicators of pollution, measured then by the amount of suspended air particulates, declared the cities to be clean. But by the early 1990s, the science of measurement had progressed. Scientists confirmed the problem was not particulates as a whole, but those that were tiny and respirable, capable of penetrating the lungs and the circulatory system. The key cause of these tiny toxins, this respirable suspended particulate matter, was diesel fuel used in automobiles. So vehicle and fuel technology innovated. It reduced sulfur in diesel and found ways of trapping the particulates in vehicles. It believed new-generation technology had overcome the challenge.

But this is not the case. Now western scientists are discovering that as the emission-fuel technologies reduce the mass of particles, the size of the particles reduces and the number emitted goes up—not down. These particles are even smaller. Called nanoparticles (measured in the scale of a nanometer—one billionth of a meter), these particles are not only difficult to measure, but also—say scientists—could be even more deadly since they easily penetrate human skin. Worse, even as technology has reduced particulates, the tradeoff

## FOREWORD

has been to increase emissions of equally toxic oxides of nitrogen from these vehicles.

But the icing on the cake is a hard fact: the industrialized world may have cleaned up its cities. But its emissions have put the entire world's climatic system at risk and made millions, living at the margins of survival, even more vulnerable and poor because of climate change. In other words, the West not only continues to chase the problems it creates, it also externalizes the problems of growth to others, those less fortunate and less able to deal with its excesses.

It is this model of growth the poor world now wishes to adopt. And why not? The world has not shown any other way that can work. In fact, it preaches to us that business is profitable only when it searches for new solutions to old problems. It tells us its way of wealth creation is progress and it tells us that its way of life is non-negotiable.

But I believe the poor world must do better. The South—India, China, and all its neighbors—has no choice but to reinvent the development trajectory. When the industrialized world went through its intensive growth period its per capita income was much higher than the South's is today. The price of oil was much lower, which meant the growth came cheaper. Now the South is adopting the same model: highly capital-intensive and so socially divisive; material and energy-intensive and so polluting. But the South does not have the capacity to make investments critical to equity and sustainability. It cannot temper the adverse impacts of growth. This is deadly.

Let's stay with the challenge of air pollution. Some years ago, the organization I work with argued the city of Delhi should convert its public transportation system to compressed natural gas. The move to gas would give us a technology jumpstart as it would drastically cut particulate emissions. Delhi today has

the world's largest fleet of buses and other commercial transport vehicles running on gas. The result is that the city has stabilized its pollution, in spite of its huge numbers of vehicles, poor technology, and even poorer regulatory systems to check the emissions of each vehicle. In other words, Delhi did not take a technology-incremental pathway of pollution control on the basis of fitting after-treatment devices on cars and cleaning up fuel. It leapfrogged, in terms of technology and growth.

Now, with ever-increasing numbers of private vehicles crowding the roads of each of its cities and pollution attacking the lungs of its people, the question remains: can it reinvent the dream of mobility so that it does not become a nightmare? Can it make new ways to the future city—combining the convenience of mobility and economic growth with public health imperatives? In this hybrid-growth paradigm—which combines the best of the new and old—cities would run on public transportation, using the most advanced of technologies.

In other words, even as the whole world looks for little solutions to pollution and congestion, we must reinvent the answer itself. The case of water management is the same. India and China cannot afford to first become water-wasteful and then efficient. They cannot afford to pollute and then clean up. They have to invent the water management paradigm—in India's case, borrow from past traditions by building millions of local and decentralized water management structures to augment its resources. India must practice rainwater harvesting, as that will build its water reserves. At the same time, it must borrow from the future by investing in water-efficient technologies for recycling and reuse. It must, for instance, reinvent the flush system, which is both capital- and material-intensive and which uses water as its carrier

and discharge pathway: it cannot afford to build sewage networks and treat human waste, today polluting its rivers and lakes.

Water will then determine whether India becomes rich or remains poor. But to secure a water-rich future, India needs inventiveness and ingenuity, not just money and technology.

The question, then, is if all this is possible. After all, if the rich world has not found answers to the problems of environment-unfriendly development, why should the poor do so? The fact is that the environmental movements of the rich world happened after the period of wealth creation and during the period of waste generation. They argued for containment of the waste but did not have the ability to argue for the reinvention of the paradigm of waste generation itself. This environmentalism, which grew in periods of richness, did not need to push the envelope further.

On the other hand, in the South, the environmental movement is growing during the period of wealth creation, in the midst of enormous inequity and poverty. In this environmentalism of the relatively poor, the answers to change are intractable and impossible unless the question is reinvented.

So change there can be. But there are two essential prerequisites.

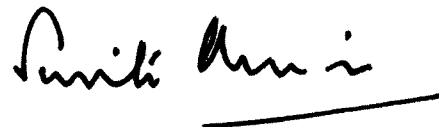
First, a high order of democracy, so that the poor, marginalized environmental victim can demand change. It is essential to under-

stand that the most important driver of environmental change in our countries is not government, laws, regulation, funds, or technology per se. It is the ability of its people to “work” its democracy.

But democracy is much more than words in a constitution. It requires careful nurturing so that the media and the judiciary, all other organs of governance, can decide in the public and not private (read corporate) interests. Quite simply, this environmentalism of the poor will need more credible public institutions, not fewer.

Second, change will demand knowledge: new and inventive thinking. This ability to think differently needs confidence to break through a historical “whitewash,” the arrogance of old, established, ultimately borrowed ideas. A break-through—a mental leapfrog—is what the South most lacks. The most adverse impact of the current industrial growth model is that it has turned the planners of the South into cabbages: believing it has no answers. It has only problems, for which the solutions lie in the tried and tested answers of the rich world.

It is here that the rich world must learn its Gandhi. It must learn that it cannot preach because it has nothing to teach. But it can learn, if it follows the environmentalism of the poor, to share Earth’s resources so that there is a common future for all.



Rishi Arora

