

# Relearning our footprints

Environment is central to the business of achieving inclusive growth and development, because only then can it be made sustainable

**T**his is the age of the environment. This is also the age of the anthropocene—a period during which human activities have been the dominant influence on the environment and climate. Globally, it is clear that climate change is happening and it has made economies and people insecure. Weather will change; it will become more variable, extreme; and, will lead to increased threats of disasters like cyclones, sea storms, droughts and floods. Climate change has been created because of human-made emissions, largely because of the fuel we use to run our industries, houses and economies. So, it is we who must now learn (or re-learn) the art and science of building futures, without destruction.

It is for this reason we must learn environmental issues. This is about our economies; our future survival; and, our well-being. Environment is not yesterday's concern. It is not peripheral to the real business of governance or the real business of providing basic services to meet the needs of all. In fact, it is central to the business of growth. But it is also (central to) inclusive growth, because only then it can be sustainable.

So teaching and learning environment is about everything in our lives. This is the connection we need to learn. Environmental studies are a textbook of the world around us. It is also about the inter-connections that make life—all subjects, from chemistry and geography to history and biology come together. The best way to imbibe environmental studies is then to learn from events that are happening around us.

But there is a reason environmental studies can never be a textbook. There is no one solution to the problem of environmental management. What works in some cases, may not work for another situation. Also, even as we find that we have a solution, another problem will emerge and take us back to the drawing board. The way to learn environment then is to learn to ask questions—being open, curious and, most importantly, humble enough to admit that we do not know enough about the environment.

## Environment is learning everyday

When India attained Independence, 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 destruction of half the world to be where it is, how many worlds would India need?” Gandhi’s wisdom confronts us even today. Just think of this economic paradigm of growth that has led small populations of the world to degrade the resources of this only Earth.

The current model of growth, which we want to emulate most feverishly, is intrinsically toxic. It uses huge resources—energy and materials—and it generates enormous waste. The industrialised world has learnt to mitigate the adverse impacts of wealth generation by investing huge amounts of money. But let us be clear that the industrialised 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 economic growth in the postwar period saw each of its cities, from London, Tokyo to New York, struggling to contain its pollution. 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 was innovated. It reduced sulphur 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 but the number of particles emitted goes up—not down. These particles are even smaller. Called nanoparticles (measured in the scale of a nanometre—one billionth of a metre), 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 trade-off has been the increase in the emissions of the equally toxic oxides of nitrogen from these vehicles.

But the icing on the cake is a hard fact: the already rich world may have cleaned up its cities. But its emissions have put the entire world’s climatic system at risk and made millions, living on the margins of survival, even more vulnerable and poor because of climate change. In this way, the world remains behind the problem and worse, it also externalises the problems of growth to others, those less fortunate and less able to deal with its excesses.

It is for this reason there is no country that can say that it knows what “sustainable development” means. There is no one who has practiced it so that it is perfect—makes for well-being in the present; secures the future; and, does all this in

costs that are affordable to meet the needs of all.

This is why we must push the envelope of ideas that will contain our present danger.

### **Pushing the envelope for more change**

Let's stay with the challenge of air pollution. Some years ago, we at the Centre for Science and Environment (CSE) had argued the city of Delhi should convert its public transportation system to compressed natural gas. The switchover to gas-based fuel would give us a technological 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 stabilised its pollution in the early part of the 2000s, 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 cities and pollution attacking the lungs of people, the question remains: can the city reinvent the dream of mobility so that it does not become a nightmare? Can it adopt new ways—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.

### **Challenge of development**

It is clear that we need a new definition of environment. We need to understand poverty not as a lack of cash, but as a lack of access to natural resources, because millions of people live within, what environmentalist Anil Agarwal called “the biomass-based subsistence economy”. For them, the Gross Nature Product is more important than the Gross National Product. Environmental degradation is, therefore not a matter of luxury, but a matter of survival. In other words, development is not possible, without environmental management. In India, environmental issues are not people versus nature concerns—a conservation perspective—but as people versus people.

We have not made environment into a development challenge. Because we have still not learnt how to use it sustainably. Therefore, environmental protection becomes an invariable conflict with development—a conflict between nature and jobs. Instead, what we need is policies and practices to use the environment for the greatest enterprise of jobs and prosperity. Build green futures from the use of forests, land, water and fisheries. But we don't know how.

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## Reinvent the question itself

In other words, the time to look for small solutions to pollution and congestion has long gone. Today, we must reinvent the question itself. Take, for instance, the case of water management. Countries like India have a massive challenge to provide clean water to all; ensure that the available water is used efficiently; and, most importantly, is shared between the rich and the poor—rural and urban. Then, we must also make sure that this available water is not degraded—pollution is increasing and making water unsafe to drink.

All this requires re-learning the very business of water. It means going back to the way how traditional societies learnt to optimise every drop of rainwater; harvest it in millions of decentralised lakes and ponds; and, used it to grow water-prudent crops. It also means imagining a future to find solutions that have never been considered by anyone—to go where no one has gone before. For instance, learning to reinvent the flush system which is both capital- and material-intensive and uses water as its carrier and discharge pathway. This would mean using microbes to treat sewage in ways that we could turn it back into a resource. The bottom line is that we cannot afford to first become water-wasteful and then efficient. We cannot afford to pollute and then clean up.

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.

What is clear, however, is that this change will demand knowledge, new and inventive thinking. This ability to think differently needs confidence to break free from a historical baggage of established, and ultimately, borrowed ideas. A breakthrough—a mental leapfrog—is what we need the most.

The environmentalism of the poor is about learning to share the Earth's resources so that there is a common future for all. This is why environmental studies matter.



(Sunita Narain)