

## Editorial

# Science and Technology Communication for Development

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## Introduction

Science and Technology have always been an integral part of Indian culture. Natural philosophy, as it was termed in those ancient times, was pursued vigorously at institutions of higher learning. The failure of reductionism- The very success of western science during the past 200 years is based on reductionism-explaining nature in terms of mechanistic processes and attempting to understand the whole of nature by studying its isolated parts. By generating detailed knowledge that has made it possible to expand the exploitation of nature while being incapable of determining all of the possible side effects, western science may actually be considered a principal causative factor of many current environmental problems.

Considering that environmental science currently cannot elucidate all of the complex interrelationships found in nature and that there will never be enough research funding to investigate more than a few isolated cause and-effect relationships (which, in turn, almost guarantee that extremely important issues will be over looked), it follows that present scientific methods are intrinsically incapable of providing sufficient knowledge to protect the environment. Limits imposed by the conservation of mass principle- Most physical treatment technologies attempt to reduce the risk posed by a pollutant using various strategies, such as limiting contaminant dispersal, reducing toxic effects by dilution, or transferring contaminants from one medium to another.

However, according to the conservation of mass principle, the total mass of the pollutant is simply contained, diluted, or transferred-not reduced, and thus, it is unlikely that many physical treatment technologies can provide long-term solutions to pollution problems. For example, landfill integrity cannot be maintained indefinitely, so any pollutants that do not degrade over time are likely to be released at some later time, thereby transferring the associated risks to future generations. In short, many physical treatment technologies are incapable of permanently solving pollution problems; rather, they transfer risks from one place to another or from the present into the future. Order at the expense of more disorder- The second law of thermodynamics implies that for each unit of "order" (neg-entropy) generated during an environmental remediation process that restores a site to its original condition, more than one unit of "disorder" is created somewhere else in the environment. A number of environmental scientists have suggested that an increase in entropy is correlated with environmental disruptions. Thus, a localized environmental cleanup can only be achieved at the expense of more environmental disturbance elsewhere. On the basis of this analysis, it is unlikely that science and technology alone will be sufficient to protect the environment now or in the future.

