

Communication

We must point out that it will be *most* important to have the non-scientist understand and appreciate what it is that the scientist is relating . . . The best science, the most elegant minds, and the noblest intentions are all immaterial and wasted if the end result is not an implemented policy. What then should be the role of the private scientist in the halls of public government? Again, and for the reasons discussed earlier, it falls to the earth scientist to provide the administration, the congress, and local government an overall systematic base of reference . . .

Change your way of doing your life's work

My plea, in conclusion, is for just some of you, and for just some of your students to change your way of doing your life's work. An arrogant plea, I know. Again, traditionally you have been trained, and train others, to look harder at things closer to you, and hope to add on to your knowledge-base an increment of meaning. I ask you to look harder at things further from you, and know that you will add on to your knowledge base a sweep of understanding. Push against the edges of your own learning and experience. You may be bucking the trend, but remember Trend is not Destiny. Your destiny, at any age, is determined by what you alone do - today.

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Learning Lessons from a Catastrophe

Earth Scientists all the world over have been engaged in understanding the problems of man's environment, especially so in the field of predicting and thereby mitigating the evil effects of natural hazards. We, in India, although vulnerable to earthquakes, cyclones, flooding and such other visitations of Nature's wrath do not appear to have given much attention to this subject. A large majority of our people continue to be in a state of unpreparedness to face such dangers which may strike some parts of the country suddenly and without notice. The tragedy that has occurred in the early hours of Tuesday, 30th April in our neighbouring country, Bangladesh, where nearly 200,000 lives have been lost in the twinkling of an eye should be a warning against developing a complacent attitude towards such disasters. The enormous havoc caused by the cyclone is appalling.

The worst part of the tragedy is that the path of the cyclone was known and timely warnings had been given by the meteorological department days ahead that a severe cyclonic storm would strike the coast line of Bengal. And yet, apparently no serious notice was taken of the warning.

Natural hazards are inevitable. There is no way of preventing them. The triangular shape of the Bay of Bengal makes it particularly vulnerable, as all the force of the wind gets concentrated as the storm moves northward. Even so, human ingenuity should enable certain measures to be taken to mitigate the evil effects of such hazards. By adopting such means a natural hazard can be prevented from becoming a national disaster. We understand that of the 20th Century's 10 deadliest storms, seven have occurred at the head of the Bay of Bengal. This is, therefore, a vulnerable spot and must receive immediate attention for the construction of effective cyclone mitigating structures. Poor countries have not got sufficient resources to provide for shelter and also create infrastructural facilities for rapid evacuation of population. It is here the developed nations have a responsibility of coming to the aid of their less fortunate brethren. For the United Nations, 1991 happens to be the International Decade for National Disaster Reduction (IDNDR). We do trust every type of assistance will be forthcoming to relieve the distress of the people of Bangladesh. More than this, steps have to be initiated by governments, academic institutions, social welfare organisations and voluntary agencies to make a special study of disaster-reduction technology and educate the people of disaster-prone belts to be in a state of preparedness.

Curriculum in schools and colleges should include a full coverage of the steps necessary to protect themselves from natural hazards. Audio visual education of the rural folk living in the coastal belt must be given high priority. Local administration should be geared up to set in motion a system of timely warning and evacuation of the people to safer places at short notice. The provision of a number of high level refuges for people to take shelter during the storm should be thought of. The extent to which afforestation and erection of barriers can withstand storms should be made subjects of special study. Have we in our country an organisation similar to the National Hurricane Centre at Florida, USA? There is immediate need for making an assessment of the frequency of hurricanes and identify specific belts on our coast-line, especially along the east coast, which are likely to be affected in future. Heavy investments on structures and buildings in such areas should be ruled out. It is also not prudent to develop coastal areas where major losses are expected to occur.

Academic institutions have a responsibility to discharge. They should initiate studies on identifying hazard-prone belts and preparing maps classifying land for various land uses. Such maps should be freely made available. The local population should be educated as to what to do in case of emergency.

A wiser plan would be for Government to progressively acquire vulnerable land and prevent growth of townships as a result of population pressure. Such land should be utilized for afforestation, development of national parks, horticultural farms, etc. A beginning has to be made.

The greatest mistake that we can commit is not to learn lessons from the disaster that has overwhelmed our neighbour.

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