

# **Editorial**

## **Climate and Global Warming**

Climatic changes have now attracted worldwide attention. This was the focal theme of a recent UN Framework Convention on Climate Change. The Convention was introduced at the UN conference on Climate and Development (UNCED) in June of 1992. By mid-October of 1992 over 150 countries had signed the Convention. This is an indication of the global concern about our changing climate. The World Meteorological Organisation (WMO) has played a leading role in stressing the importance of climate through its World Climate Programme (WCP). Of special interest is the World Climate Research Programme (WCRP), a component of WCP. The Tropical Oceans and Global Atmosphere (TOGA) programme, as well as the programme on climate variability (CLIVAR), are making interesting contributions to the El Nino – Southern Oscillation (ENSO) phenomenon. This is of much interest to India.

The UN Conference at Rio de Janeiro in Brazil (UNCED) set up the guidelines for the twentyfirst century to prevent further degradation of the environment. This is Agenda 21. And, in this context, plans for sustainable development are gaining universal attention. Sustainable development implies a plan that will not only permit the present, but also future generations to live and develop without damaging the environment beyond repair. Readers will be interested in an article by Professor Obasi on this topic. The problem before us is: How do we achieve this?

Clearly, there is no easy answer because it is a problem with many facets. The different aspects range from growing concerns about economics and legal issues to matters of science and strategy. And, overshadowing all matters is the fear of an exponential growth in world population. This is expected to touch 6 billion in 2000 A.D. and around 8 billion by 2025 A.D. Around sixty percent of these figures will come from Asia. It will undoubtedly have an impact on climate.

It was in the context of these developments that we decided to devote a special number of our journal to climate. We particularly thank the scientists who generously responded to our invitation for contributing to this number. Their contributions will add to the scientific value of this special number, and will encourage younger scientists.

The articles are divided into five sections. We begin with an overview by two acknowledged experts in this field. This is followed by a section on predictability and interannual variability. The subject covers different aspects ranging from rainfall anomalies, the predictability of a coupled ocean-atmosphere model to a climate attractor. The next section is on forcing mechanisms, fluctuations in relative sea level and a model for simulating the circulation in the Bay of Bengal. Regional studies are described in the next section. We are indebted to three scientists from East Africa and Malaysia for a detailed account of the problems that need attention in these regions. Readers will be interested to find an impact of the ENSO event in Malaysia.

Finally, we have two articles on atmospheric chemistry and the impact of data collected by the Indian geostationary satellite (INSAT).

There are a few areas of overlap between different sections, but this should enable readers to get an integrated picture of the general field. Many other aspects, of course, remain to be studied. This, we hope, will be covered in the years to come.

I wish to express my thanks to Professor Vinod Gaur. It was his idea to bring out this special number and his encouragement was always a big help. I am also greatly indebted to Mr Dhanna Singh for his able and generous assistance. Mr. Singh is looking after the Monsoon Activity Centre at the Meteorological Office in New Delhi, and is also the Secretary of the National Committee on the World Climate Research Programme. We thank him for his kind help.

The final task of realizing these papers in print would not have been possible without the painstaking efforts made by Mr G Madhavan and his colleagues at the Academy Office, who handled the various problems entailed in this publication with meticulous care.

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