

Fourth assessment report of the Intergovernmental Panel on Climate Change: Important observations and conclusions

The Intergovernmental Panel on Climate Change (IPCC) constituted by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) had held four meetings since 1989, every sixth year. The last meeting was held in January/February 2007 at Paris. IPCC has prepared its fourth assessment report in several volumes. It has been prepared by some 1200 authors and reviewers. A volume entitled *Climate Change 2007: The Physical Science* was released on 2 February 2007; others on impact of climate change and remediation of inclement effects are expected to be released in the near future. An important outcome of IPCC's work over the last two decades is that some of the predictions made about climate, based on observational data, have proved to be correct approximations.

IPCC has made several important observations in its recent report. The near-certain observations include the following.

Earth's climate is changing because of global warming. The warming is occurring at the rate of 0.2°C per decade. In the last 150 years there have been 12 warm years, eleven of them since 1990. Human activities, chiefly greenhouse gas (GHG) emissions (carbon dioxide, methane,

nitrous oxide, hydrofluorocarbons, per-fluorocarbons and sulphur hexafluoride) are responsible for the occurrence of warming. While emissions of refrigerant gases are being controlled, CO₂ emissions from the burning of fossil fuels (26 billion tonnes in 2003) and decay of organic matter in the soils that form the bulk of the GHG emissions, are growing. The temperature is expected to rise by 2.0–4.5°C with doubling of CO₂ concentration in the atmosphere. Between now and 2100, the temperature may rise by 1.1 to 6.4°C, depending upon the future levels of rise in fossil fuel consumption. Warming is causing ice caps to melt, glaciers to shrink, soils to lose water by evaporation, oceans to undergo thermal expansion and sea water-level to rise. The sea level is rising at the rate of 0.3 cm/yr and could rise to 0.28 to 0.43 m by 2100, in accordance with the rise in temperature.

In addition to the above unequivocal conclusions, IPCC has also made some predictions that are more uncertain. One among these pertains to feedback effects of high concentrations of GHGs in the atmosphere. The ability of oceans to absorb CO₂ from the atmosphere may decrease on account of increased acidity

of the oceans and consequent slowing down of calcification in the shells of molluscs and corals, and skeletons of marine animals. The arctic tundra sea ice may disappear and the area which is presently a sink for carbon may turn into a carbon source. Heat waves and heavy precipitation events may become more frequent. Agriculture will be adversely affected in lower latitudes, where rains will decrease. The latter are already on the horizon.

Clearly, the impact of climate change on Indian economy is going to be profound. Indian agriculture and water resources will get stressed. Indian R&D institutions should plan innovative programmes aimed at adapting agriculture to warmed and water-deficient/flood-prone situations. Further, IPCC reports especially about impact of warming in different geographical regions will be helpful in the process of policy making in the above context.

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Journal of Tropical Agriculture: The first agricultural science journal in India with an online editorial system

The *Journal of Tropical Agriculture (JTA)*, published since 1961 by the Kerala Agricultural University (Figure 1) as a print version (initially as *Agricultural Research Journal of Kerala*), embarked upon a programme of online production in 2006. The project for online publishing was funded by the Department of Scientific and Industrial Research (DSIR), New Delhi under the Technology Information Facilitation Programme (TIFP). *JTA* publishes scientific articles concerned with all aspects of crop science, agroecosystem management and conservation, and in particular, the application of biological, engineering, ecological and social knowledge to the management of agricultural crops including plantation and horticultural crops. The scope of the journal includes all agroecosystems in the tropics and the abstracts/contents lists are pub-

lished in *Science Citation Index*, *CAB Abstractsplus*, *EMBIology*, *SCOPUS*, *pkp.sfu.ca/harvester2*, *Indian Science Abstracts*, to name a few.



Figure 1. Cover page of the *Journal of Tropical Agriculture*.

A website (JTROPAG: <http://www.jtropag.in/index.php/ojs>) for hosting the journal was launched in October 2006. The site has provisions for online manuscript submission, review, tracking and retrieval. All *JTA* volumes published since 2001 have been uploaded and are freely available to readers. A unique feature of JTROPAG, quite apart from the open access to full text of all published articles, is the online editorial system. This is the first time that an online submission, review, and tracking system has been put in place for an Indian agricultural science journal.

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