GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

STARRED QUESTION NO:301
ANSWERED ON:10.12.2002
PREDICTION OF MONSOONS
IQBAL AHMED SARADGI

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the monsoon this year has forced the Indian Meteorological Department to have a re-look at its existing 16-parameter model of predicting rains;

(b) if so, the details thereof ; (

(c) whether the Department has decided to organise a brainstorming session on the predictions of rain in the country at the Indian Institute of Science, Bangalore in November, 2002 ;

(d) if so, the details thereof ;

(e) whether on the basis of the outcome of the Bangalore session, a new monsoon forecasting model will be finalised;

(f) if so, the details thereof;

(g) whether the Ministry have called for an efficient and more accurate monsoon predictions; and

(h) if so, the details thereof?

Answer

THE MINISTER OF HUMAN RESOURCE DEVELOPMENT, MINISTER OF SCIENCE AND TECHNOLOGY AND MINIS OCEAN DEVELOPMENT (Dr. MURLI MANOHAR JOSHI)

(a) to (h) : A statement is laid on the Table of the House.

STATEMENT AS REFFERED IN REPLY TO PARTS (a) TO (h) OF THE LOK SABHA STARRED QUESTION NO. 301 DUE ANSWER ON 10.12.2002 REGARDING `PREDICTION OF MONSOONS`.

(a & b) The south-west monsoon season of 2002 had a deficit rainfall of 19% for the country as a whole. The India Meteorological Department is critically examining its 16-parameter long range forecast model which had made correct predictions of normal rainfall for the last 14 years, but did not predict the rainfall deficit which occurred in 2002 monsoon. IMD`s 16-parameter model is a statistical model which uses correlation between the monsoon rainfall and antecedent land-ocean-atmosphere parameters across the globe. Any statistical model has inherent limitations and is likely to go wrong occasionally. The statistical relationships also exhibit epochal changes and the parameters have therefore to be removed or substituted by new parameters from time to time. This exercise is currently in progress.

(c & f) A Brainstorming Session on the Monsoon of 2002 was organized by the Centre for Atmospheric and Oceanic Sciences, Indian Institute of Science on 28 - 29 November 2002. The monsoon season of 2002 has turned out to be an intriguing season. None of the methods developed for empirical prediction, which have been reasonably successful for over a decade could predict this drought. The predictions given in May 2002, on the basis of complex atmospheric/climate models by the leading global centres, also did not suggest a drought over India. Empirical predictions for the season as well as July were discussed and possible modifications of the models for better predictions of the season and July 2002 were discussed. The atmospheric models have limitations, the world over, particularly in simulating the Indian Monsoon and its variation from year to year. However, some of the models presented during the meeting hold promise and are being subjected to further investigations to determine their usefulness in improving prediction capabilities.

(g & h) Prediction of extreme events such as severe drought remains a complex and challenging task. Development of new models and techniques of prediction is a continuous process and every effort is being made to improve the observational capabilities and infrastructure, intensify focused research efforts especially in developing newer, more complex and unified models for more accurate predictions.