GOVERNMENT OF INDIA EARTH SCIENCES LOK SABHA

STARRED QUESTION NO:31 ANSWERED ON:10.11.2010 RISING OF INDIAN OCEAN Panda Shri Baijayant;Pradhan Shri Nityananda

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether as per a study conducted by scientists, Indian Ocean is rising faster than other Oceans/water bodies;

(b) if so, the reasons therefor;

(c) whether this trend is likely to have far-reaching impact on the climate of vulnerable areas including the coastlines on the Bay of Bengal, the Arabian Sea etc;

(d) if so, the details thereof;

(e) whether this sea-rise could also aggravate flooding in India;

(f) if so, the details thereof;

g) whether the Government has formulated an action plan to address the impact on the population of the coastal areas in the country; and

h) if so, the details thereof?

Answer

THE MINISTER OF STATE (INDEPENDENT CHARGE) MINISTRY OF SCIENCE AND TECHNOLOGY, MINISTRY OF EARTH SCIENCES, MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE, MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS (SHRI PRITHVIRAJ CHAVAN)

a)- h) A statement is laid on the Table of the House.

STATEMENT LAID ON THE TABLE OF THE LOK SABHA IN REPLY TO (a) to (h) OF STARRED QUESTION No. 31 REGARDING "RISING OF INDIAN OCEAN" ASKED BY SHRI NITYANANDA PRADHAN AND SHRI BAIJAYANT JAY PANDA FOR ANSWER ON WEDNESDAY, NOVEMBER 10, 2010

(a) Yes Madam. A paper on the subject was published in Nature Geoscience (July 2010; led by Dr Weiqing Han of the University of Colorado, Boulder, USA) implied that if future anthropogenic warming effects in the Indo-Pacific warm pool dominate natural variability, mid-ocean islands such as the Mascarenhas Archipelago, coasts of Indonesia, Sumatra and the north Indian Ocean may experience significantly more sea level rise than the global average.

(b) Using in-situ and satellite observations and also with climate model simulations, the study identified a distinct spatial pattern of sea level rise since the 1960s in the Indian Ocean. It is found that sea level has decreased substantially in the south tropical Indian Ocean where as it has increased elsewhere, mainly in the north Indian Ocean and postulated this change in regional sea levels due to changes in atmospheric or oceanic circulation caused by changing wind patterns due to the rise in atmospheric green house gases.

(c) No Madam.

(d)-(h) Sea level rise is very slow phenomenon and is manifested globally with pockets of sea level rise/fall trends. However, the trends of sea level rise as estimated to be 13mm/decade by our scientists as well as mentioned in the study under consideration is consistent with the estimates made elsewhere over the globe. Further, the main conclusion of the study is based on the assumption that the anthropogenic warming effects dominating the natural variability in respect of Indo-Pacific warm pool that is manifested so far to be around 0.5oC in the past 50-years. Other observations in respect of possible change in the circulation response, changes in rainfall patterns etc. were purely based on the scenario generated by the ocean and climate models.

It is to be noted that the Inter-governmental Panel on Climate Change (IPCC) in its 4th Assessment Report suggested that climate models have a large uncertainty in respect of projecting consensus scenario of future climate and changes.

Only after such a response is manifested by several coupled ocean-atmospheric models in terms of consensus future climate change

scenarios, possibly in the 5th Assessment Report of IPCC and gets manifested in our tide gauge observations in future, the formulation of specific action plans can possibly be taken up to address postulated impact on the population of the coastal areas of the country.

Despite the above, India's National Action Plan on Climate Change (NAPCC) outlines a strategy that aims to enable the country adapt to climate change and enhances the ecological sustainability of our development path. It stresses that maintaining a high growth rate is essential for increasing living standards of the vast majority of people of India and reducing their vulnerability of the impacts of climate change.