GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. - 818
ANSWERED ON 09/02/2023

HEAT WAVE AND ITS EFFECT

818. # Dr. Sumer Singh Solanki:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether an increase in the phenomenon of heat wave has been witnessed in the country, including Madhya Pradesh, during the last three years;
(b) if so, the reasons therefor; and
(c) the effect of heat wave on labour productivity, public health and geographical phenomena?

ANSWER
THE MINISTER FOR STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

(a) Yes Sir. The details of state-wise average number of Severe Heatwaves/heatwaves over the country including Madhya Pradesh in the last 3 years is given in the Annexure-I. Considering last three years' data, the frequency of heat wave was significantly higher during 2022.

(b) As per the recent IPCC Sixth Assessment Report by Working Group I viz. "Climate Change 2021: The Physical Science Basis", the Global mean concentrations of anthropogenic aerosols and green-house gases which are the drivers of climate change have increased in South Asia region which will result in more intense and frequent increase in the heatwaves and humid heat stress during the 21stcentury.

As per the recent book on "Assessment of Climate Change over the Indian Region" published by the Ministry of Earth Sciences (MoES), Government of India, the rise in temperature is largely due to increase in GHG, aerosols and changes in land use and land cover. Due to this the all India averaged annual frequency of warm days and nights have increased, and cold days and nights have decreased since 1951. Report is available in the link(http://cccr.tropmet.res.in/home/docs/cccr/2020_Book_AssessmentOfClimateChangeOverT.pdf).

(c) Abnormal temperature events can impose severe physiological stress on the human body as the body operates best within a fairly normal temperature range. There is a marked relationship between human mortality and thermal stress. During unusually hot episodes, deaths from different causes can rise significantly with the elderly at greater risk than others.

Four Common heat health impacts resulting from excessive exposure to heat waves include dehydration, cramps, exhaustion and heatstroke. It is also learnt that there is a sharp rise in number of cases of acute gastroenteritis and food poisoning due to spoilage of food and reduction of its shelf life due to high temperatures. There is also rise in number of cases of anxiety, palpitations, nervousness and behavioural change linked to extreme temperature rise. The occupational profile of most of the victims was ascertained as agricultural labourers, coastal community dwellers, and people living below poverty level (BPL) category with mostly outdoor occupations.

Issuance of early warnings/forecasts and advisories in collaboration with NDMA, as described above, are the remedial/mitigation measures being carried out by the ministry.

Annexure –I

State-wise Average number of Severe Heat wave/Heat wave days reported during 2020-2022

States/UTs	2020	2021	2022
Andhra Pradesh	3	4	5
Bihar	1	1	6
Chhattisgarh	0	1	6
Delhi	4	3	17
Gujarat	2	0	5
Haryana	3	2	24
Jharkhand	1	0	18
Karnataka	4	0	0
Madhya Pradesh	2	1	13
Maharashtra	5	0	4
Odisha	2	4	5
Punjab	1	2	24
Rajasthan	6	4	26
Tamil Nadu	4	3	3
Telangana	2	0	2
Uttar Pradesh	2	1	15
Uttarakhand	0	7	28
West Bengal	0	3	2

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