

# Cauvery polluted by range of contaminants: IIT-M study

**DC CORRESPONDENT  
WITH AGENCY INPUTS  
CHENNAI, OCT 7**

Cauvery water is polluted by a range of contaminants including pharmaceutically active compounds, personal care products, plastics, flame retardants, heavy metals and pesticides among many others, the Indian Institute of Technology Madras researchers have found in a two-year study.

"Our observations are alarming. So far, not much is known about how pharmaceutical contaminants affect human health and the ecosystem over time," said professor, civil engineering department, IIT Madras, Ligy Philip.

Ligy Philip led a team of researchers who monitored the water quality of the river for two years to assess the seasonal varia-

tion of emerging contaminants, especially pharmaceutically active compounds and pollutants were quantified.

The team's environmental risk assessment has shown that pharmaceutical contaminants pose medium to high risk to the selected aquatic life forms of the riverine system. These drug compounds, when released even in minuscule amounts into water bodies, can harm human beings and the ecosystem in the long run, an IIT release here said.

The study found significant contamination by metals such as arsenic, zinc, chromium, lead and nickel. Freshwater intake points were also found to be loaded with extraordinarily high concentrations of pharmaceutical contaminants. These

pharmaceutical contaminants included anti-inflammatory drugs like ibuprofen and diclofenac, anti-hypertensives such as atenolol and isoprenaline, enzyme inhibitors like perindopril, stimulants like caffeine, antidepressants such as carbamazepine, and antibiotics such as ciprofloxacin.

The team collected water from 22 locations along the entire stretch of the river, setting up 11 sampling stations near discharge points of partially treated or untreated wastewater and 11 locations near intake points of water supply systems. The quality of water in the catchment sites was also monitored.

The research team found that water quality and levels of pharmaceu-

tical contaminants in Cauvery are influenced by monsoon season.

The post-monsoon period showed an increased level of various types of contaminants including pharmaceuticals due to reduced riverine flow and continuous waste discharge from multiple sources.

There was also a need to upgrade wastewater treatment systems to reduce the levels of contaminants.

The results of the study, carried out with joint funding from water technology initiatives of the Centre's department of Science and Technology, and the UK Natural Environment Research Council have recently been published in the peer-reviewed journal, 'Science of the Total Environment.'

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Deccan Chronicle- 08- October-2021

# AP to NGT: Halt Palamuru project

DC CORRESPONDENT  
KURNOOL, OCT. 7

Contending that the Palamuru-Ranga Reddy Lift Irrigation Scheme (PR LIS) clearly violates environmental clearances that require the state to build reservoirs for irrigation purposes, farmers from Andhra Pradesh, urged the National Green Tribunal (NGT) bench to halt the construction forthwith.

The NGT bench heard the pleas of the state government and farmers of Andhra Pradesh on Wednesday. The petitioners sought an order to stay further construction of the project's irrigation phase. Telangana raised an objection with regard to the limitation aspect, pointing out that the case had to be filed within six months. They said it was a fraud on the court that is being played by Telangana.

Advocate-General S. Sri Ram said that once there was a case of fraud, limitation fails to apply. He pointed out that this was a recurring cause of action and

● **THE PETITIONERS** sought an order to stay further construction of the project's irrigation phase. Telangana raised an objection with regard to the limitation aspect, pointing out that the case had to be filed within six months.

● **THE TERMS** of reference granted by the Centre on October 11, 2017 permits only pre-construction activities of the programme.

Telangana was proceeding further after having admitted that six reservoirs were already built. The report of the joint committee clearly shows that there are violations of environmental laws. The terms of reference granted by the Centre on October 11, 2017 permits only pre-construction activities of the programme.

The Tribunal, while pronouncing that it would pass orders in the interim application filed in the OA seeking a stay of further construction, adjourned the matter to October 29.

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# Support Godavari-Cauvery link, T.N. tells A.P., Telangana

It has requested the two States to give consent to the detailed project report

**T. RAMAKRISHNAN**  
CHENNAI

The Tamil Nadu Government has sought the support of Andhra Pradesh and Telangana states for the Godavari (Inchampalli)-Cauvery (Grand Anicut) link project.

A few weeks ago, a senior official of the Tamil Nadu government wrote to his counterparts in the two southern States, urging the officials to give their consent to a detailed project report (DPR) prepared by the National Water Development Agency (NWDA).

## **Stalin's request**

Chief Minister M.K. Stalin, in his memorandum presented

to Prime Minister Narendra Modi in June, requested him to have the detailed project report (DPR) finalised, incorporating Tamil Nadu's position, and enable the work to be taken up on a priority for the benefit of the southern States.

Water Resources Minister Durai Murugan reiterated the request while meeting Union Jal Shakti Minister Gajendra Singh Shekhawat in July.

The project envisages the diversion of 247 thousand million cubic feet (tmc ft) through the Krishna and Pennar rivers. This has been proposed to be carried out only during the south-west monsoon.

Tamil Nadu has been allotted around 83 tmc ft, with the rest going to the other two States.

Tamil Nadu has suggested that the Kattalai barrage be made the terminal point of

the link, instead of the Grand Anicut.

In view of the State being water-deficit, taking water to a higher contour will help to cover more needy areas than the existing arrangements and transferring water to the Vaigai and Gundar rivers.

## **Krishna water allocation**

One of the reasons for Andhra Pradesh and Telangana not to be so keen on the project as Tamil Nadu is the non-finalisation of the Krishna water allocation, says a water expert, adding that this explains the need for Tamil Nadu to pressure them to give their consent.

The National Water Development Agency (NWDA) has assessed that the allocation under the link project will take care of the future requirements of Andhra Pradesh and Telangana too, the expert adds.



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# Pending flood mitigation schemes may get a new lease of life

Water Resources Department has proposed to restart various projects that can prevent inundation in vulnerable areas in the city's western and northern part

K. LAKSHMI  
CHENNAI

Come monsoon, several localities prone to flooding in the city's western and northern parts may just escape inundation. A few long pending schemes may get a new lease of life as the Water Resources Department has proposed to bridge the missing links in surplus courses between waterbodies.

The department plans to form a new channel to link surplus water from Paruthipattu lake, near Avadi, to the waterbody at Ayappakkam. Efforts are already on by the Highways Department to construct a drain along Poonamallee-Avadi High Road for about 600 m. An official of the WRD said, "The lake does not have a defined surplus course. This leads to waterlogging every time it fills up. We plan to form a new channel near Vasantham Nagar to carry 600 cubic feet per second (cusecs) of floodwater and connect it to the existing open channel that



**Hit a roadblock:** The project to bridge the gaps in the surplus course between Retteri and the reservoir at Red Hills has remained a non-starter due to land acquisition problems. • K. PICHUMANI

drains into the Ayappakkam Lake."

## Widening the channel

Similarly, inundation in localities around the Porur Lake was one of the major challenges. The width of the 1.5-km surplus course was inadequate and possessed missing links. The ₹30-crore project, which has been pending, is expected to be



implemented by the National Highways Authority of India (NHAI).

Officials said besides the widening of the existing channel, a cut-and-cover drain would be created to carry about 1,000 cusecs of

floodwater till the Manapakam Channel and then to Adyar river. Once the work is completed, areas like Iyyapanthangal, Gerugambakam, Srinivasapuram and Moulivakkam may get relief from chronic waterlogging.

G. Natarajan, president, Mangala Nagar Residents' Welfare Association, said the obstructions in all minor channels around the Porur

Lake should be removed. Desilting of the waterbody and widening and forming of new channels should be expedited, he added.

The department plans to reinstate projects to provide a permanent solution to inundation in Korattur and Madhavaram.

These have remained on paper owing to land acquisition issues and challenges of urbanisation.

The surplus channel from Korattur Lake to Retteri would need to be widened up to 40 m.

"We need to discharge nearly 1,300 cusecs of floodwater to prevent spillover in neighbouring areas. A new channel will be constructed near Chennai Bypass Road after acquiring land as per the Tamil Nadu Land Acquisition Laws (Revival of Operation, Amendment and Validation) Act, 2019," an official said.

Another major project to bridge the gaps in the surplus course between Retteri

and the reservoir at Red Hills has remained a non-starter for over two decades due to problems with land acquisition and compensation.

"As there is no proper channel, surplus water from one of the weirs of Retteri flooded various areas, including Balaji Nagar and Arignar Anna Nagar. We plan to form an 80-m wide open channel and link it to the Red Hills reservoir surplus course, near Vadaperumbakam. This new channel, that can carry up to 3,000 cusecs, would also take the flow from the Thanikachalam Nagar drain," the official added.

The projects in Korattur and Retteri are estimated to cost ₹120 crore and 80%-90% of the cost would go towards land acquisition. The WRD is waiting for funds for the projects, which are expected to be kick-started by January next year. It will implement temporary measures to control flooding and clean up minor channels in vulnerable areas this year.

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# TS for fresh terms of reference to KWDT

Waiting for copy of SC order to take up the issue with Centre

**N. RAHUL**  
HYDERABAD

Now that the Supreme Court has conceded the appeal of the State government to withdraw its petition seeking a direction to the Centre to reallocate Krishna river water between Telangana, AP, Karnataka and Maharashtra, the State government was awaiting the SC order copy

to take up the matter with the Centre.

Sources said the State government will ask fresh terms of reference to the existing Krishna Water Disputes Tribunal - II to reallocate water between Telangana and AP only after the copy was received.

The government will not involve Karnataka and Maharashtra though the two States were also made party when the petition was filed in 2015.

The Centre had offered to refer the request of Telangana to a water disputes tribunal if the State government

had withdrawn its case in the Apex court.

It was shortly after formation of the State in 2014 that the Telangana government had made out a case to the Centre seeking reallocation of water between the four States but there was no response for over a year. As a result, Telangana moved the court in 2015.

Telangana had made a detailed case listing out the injustice to the region in water sharing in the combined State. It was highlighted that the new State had only 35 % share in water though the river flowed 68.5 % of its full

course in Telangana.

Of the total ayacut in the river basin in the combined State, Telangana's share was 62.5 % and Andhra Pradesh had 37.5 % but enjoyed 65 % water share.

The indifference of the Centre was brought to the notice of Union Jal Shakti Minister Gajendra Singh Shekhawat by Chief Minister K. Chandrasekhar Rao at the Apex Council meeting on river water disputes between AP and Telangana last year when the Minister expressed helplessness on referring the matter to the tribunal in view of the court case.



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**Down to Earth- 06- October-2021**

WATER

**Globally, India recorded the highest loss in terrestrial water storage**

For the past 20 years, India has experienced terrestrial water storage (TWS) loss of at least 3 cm per year. In some regions, the loss has been over 4 cm per year too

Terrestrial water storage (TWS) dropped at a rate of 1 cm per year in 20 years (2002-2021), according to a new report *2021 State of Climate Services* released by the World Meteorological Organization (WMO).

The biggest losses have occurred in Antarctica and Greenland. But many highly populated, lower latitude locations have also experienced TWS losses, according to the report.

This includes India, where the TWS has been lost at a rate of at least 3 cm per year. In some regions, the loss has been over 4 cm per year too. India has recorded the highest loss in terrestrial water storage if the loss of water storage in Antarctica and Greenland is excluded.

India is, therefore, the 'topmost hotspot of TWS loss', according to the WMO analysis. The northern part of India has experienced the maximum loss within the country.

*The red areas indicate a large water mass loss during the time. These areas are those worst affected by climate change and/or human activity, excluding Greenland and Antarctica, which are not included on the map, as their water mass loss trends are so great that they overshadow the other continental water mass trends*

TWS is the sum of all water on the land surface and in the subsurface, ie surface water, soil moisture, snow and ice and ground water. Water is a key prerequisite for human development. But only 0.5 per cent of water on Earth is usable and available as freshwater.

Water resources across the world are under tremendous pressure due to human and naturally-induced stressors. These include population growth, urbanisation and decreasing availability of freshwater.

Extreme weather events too have been responsible for the pressure on water resources realised across sectors and regions, the WMO noted.

**Indian scenario**

In India, per capita water availability is reducing due to an increase in population. The average annual per capita water availability has been consistently decreasing. It reduced to 1,545 cubic metres in 2011, from 1,816 cubic metres in 2001.

It is projected to further decrease to 1,367 cubic metres in 2031, according to the Union Ministry of Housing and Urban Affairs. Five of the 21 river basins in India are 'absolute water scarce' (per capita water availability below 500 cubic metres) according to the Falkenmark Water Stress Indicator.

Five are 'water scarce' (per capita water availability below 1,000 cubic metres) and three are 'water stressed' (per capita water availability below 1,700 cubic metres).

By 2050, six will become absolute water scarce, six will become water scarce and four will become water stressed, according to the State of India's Environment in figures, 2020.

The publication, brought out by *Down To Earth*, based its predictions on projections by the Central Water Commission, India.

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**Business Standard- 08- October-2021**

## 5 billion people could face difficulty accessing water in 2050: UN

More than five billion people globally are expected to face a shortage of water by 2050, a United Nations (UN) agency report has warned.



Residents wait in line to get water in Chennai, on September 22, 2021. (Photo: Bloomberg)

More than five billion people globally are expected to face a shortage of water by 2050, a United Nations (UN) agency report has warned.

The World Meteorological Organization (WMO), on Tuesday, said that climate change increases the global risk of water-related hazards like floods and droughts, and the number of people affected by water scarcity is also expected to soar.

"According to figures cited in the report, 3.6 billion people had inadequate access to water at least one month per year in 2018. By 2050, this is expected to rise to more than five billion," the report titled "The State of Climate Services 2021: Water" said.

It further highlighted the need for urgent action to improve cooperative water management, embrace integrated water and climate policies and scale up investment in this precious commodity which underpins all the international goals on sustainable development, climate change adaptation and disaster risk reduction.

"Increasing temperatures are resulting in global and regional precipitation changes, leading to shifts in rainfall patterns and agricultural seasons, with a major impact on food security and human health and well-being," said World Meteorological Organization Secretary-General Prof. Petteri Taalas.

In the past 20 years, terrestrial water storage - the summation of all water on the land surface and in the subsurface, including soil moisture, snow and ice - has dropped at a rate of 1cm per year.

According to the report, the biggest losses are occurring in Antarctica and Greenland, but many highly populated lower latitude locations are experiencing significant water losses in areas that are traditionally providing water supply, with major ramifications for water security.

The situation is worsening by the fact that only 0.5 per cent of water on Earth is useable and available freshwater.

Water-related hazards have increased in frequency over the past 20 years. Since 2000, flood-related disasters have risen by 134 per cent compared with the two previous decades. Most of the flood-related deaths and economic losses were recorded in Asia, where end-to-end warning systems for riverine floods require strengthening.

The number and duration of droughts also increased by 29 per cent over this same period. Most drought-related deaths occurred in Africa, indicating a need for stronger end-to-end warning systems for drought in that region, the report added.



I/73479/2021

Jansatta- 08- October-2021

# कुदरत से खिलवाड़ के नतीजे

अतुल कनक

प्रकृति का अधिकाधिक दोहन करने की हमारी नीतियों और मानसिकता ने समूची मानव जाति को एक ऐसे मोड़ पर लाकर खड़ा कर दिया है, जहां हम सबको प्रकृति और मनुष्य की आत्मीयता के समीकरण पुनः प्रबल करने होंगे। जलवायु परिवर्तन की मौजूदा दर बताती है कि दुनिया ने अगर अब भी होश नहीं संभाला, तो प्रकृति कहर बरपाने पर आमादा है।

जलवायु परिवर्तन को लेकर दुनिया भर में हलचल मची है। मानो प्रकृति अपने साथ किए गए दुर्व्यवहार से अकुलाने लगी है। जिन इलाकों में सूखे का लंबा इतिहास रहा है, उन इलाकों में बाढ़ के मंजर दिखाई देने लगे हैं और जिन इलाकों में कभी भारी बारिश हुआ करती थी, वे इलाके बारिश के लिए तरसते नजर आ रहे हैं। स्थिति का अनुमान रूस के याकुत्स्क शहर से लगाया जा सकता है। याकुत्स्क रूस के याकुतिया इलाके का एक चर्चित शहर है, जो बर्फ की सतह पर बनने वाला अकेला शहर माना जाता है। वहां अधिकतम तापमान कभी बीस डिग्री सेल्सियस रहा करता था। मगर इन गर्मियों में तापमान पैंतीस डिग्री सेल्सियस तक जा पहुंचा। किसी शहर के तापमान में एक साथ इतनी बढ़ोतरी बताती है कि कुदरत के मिजाज ठीक नहीं हैं।

याकुत्स्क ही क्यों, सारी दुनिया में सामान्य तापमान बढ़ रहा है। वैज्ञानिक भाषा में इसे ग्लोबल वार्मिंग या वैश्विक तापमान का बढ़ना कहा जाता है। इसके खतरों से वैज्ञानिक और पर्यावरणविद लगातार आगाह कर रहे हैं। लेकिन कथित विकास की

व्यग्रता में दुनिया उन तथ्यों को भी नजरअंदाज कर रही है जो समूची मानव सभ्यता के लिए किसी बड़े खतरों की प्रस्तावना का रेखांकन हो सकते हैं। बार-बार आने वाले समुद्री तूफान, चक्रवात, हिमनदों का फटना, सतत भूस्खलन, कहीं भीषण गर्मी तो कहीं भीषण सर्दी, लगातार भूकम्प और दुनिया के अलग-अलग हिस्सों में जंगलों का धधकना इस बात की ओर इंगित करते हैं कि जलवायु के आंगन में गहरी उथल-पुथल है और इसे मनुष्य यह सोच कर अनदेखा नहीं कर सकता कि किसी और के आंगन की आग से हमें क्या लेना-देना? जब दुनिया के किसी एक भी हिस्से में बड़ी पर्यावरणीय हलचल होती है तो वह समूचे मानव समुदाय के लिए चिंता का विषय होनी चाहिए, क्योंकि यदि जंगल में किसी एक पेड़ में लगी आग की बाकी पेड़ यह सोच कर अनदेखा करेंगे कि उन्हें इससे क्या, तो सारा जंगल आग के आतप और आतंक से बहुत देर तक नहीं बच सकेगा।

विकास के नाम पर हमने जिस जीवन शैली को अपनाया है, उसके चलते वातावरण में लगातार विषैली गैसों का उत्सर्जन हो रहा है। पराबैंगनी किरणों को हम तक पहुंचने से रोकने वाली ओजोन परत कमजोर पड़ने की चिंता जानकारों को लगातार परेशान कर रही है। दूसरी तरफ पर्यावरण में एअरोसोल की बढ़ती हुई मात्रा पृथ्वी के जलचक्र पर प्रतिकूल प्रभाव डाल रही है। एअरोसोल गैस के साथ ठोस कणों या बूंदों के मिश्रित होने की स्थिति को कहते हैं और इसकी अत्यधिक मात्रा के कारण मानसून का व्यवहार भी अनियमित हो गया है। मौसम विज्ञानियों की भविष्यवाणी है कि इस बार भारत में पंद्रह अक्टूबर तक मानसून सक्रिय रहेगा। विक्रमी संवत के अनुसार देखें तो यह आश्विन माह के शुक्ल पक्ष की दशमी तिथि होगी। इस समय तक मानसून की सक्रियता यह आशंका पैदा करती है कि अचानक बहुत तेज सर्दी के दिन आएंगे। लोकमान्यताएं भी कहती हैं कि जब भी मानसून इस तरह का अनियमित व्यवहार करता है, तो जीवन को नई चुनौतियों का सामना करना होता है।

मानसून की दृष्टि से ही क्यों, इस साल गर्मी के मौसम में भी दुनिया के लिए जून और जुलाई के महीने काफी बदलाव वाले रहे हैं। मौसम ने इतने रिकार्ड तोड़े कि वैज्ञानिकों ने इस वर्ष के मौसम को 'रिकार्ड तोड़ने वाला मौसम' तक कह दिया। इसके

पहले नासा की एक रिपोर्ट में सन 2020 को हालिया इतिहास का सबसे गर्म साल बताया गया था। उसके पहले भी अप्रैल 2017 में 'क्लाइमेट सेंटर' नाम के एक अंतरराष्ट्रीय संगठन ने अपनी एक रिपोर्ट में कहा था कि पिछले छह सौ अट्ठाईस महीनों में से कोई भी महीना उतना ठंडा नहीं रहा, जितना पूर्ववर्ती वर्ष में वह महीना रहा करता था। यानी छह सौ अट्ठाईस महीनों तक पृथ्वी के आसपास का तापमान लगातार बढ़ता रहा। यदि तापमान वृद्धि के हालात यही रहे तो सन 2050 तक पृथ्वी की सतह कितनी गर्म होगी, इसका अनुमान लगाया जा सकता है। गौरतलब है कि फिनलैंड में जून, 1961 के बाद जुलाई, 2021 का महीना सबसे गर्म रहा। इस देश के एक शहर कोवोला अंजाला में इकतीस दिन तक लगातार लू चली। इसी साल नौ जुलाई को कैलीफोर्निया की डेथ वैली में 54.4 डिग्री तापमान



दर्ज किया गया, जबकि अपेक्षाकृत ठंडा समझे जाने वाले शहर लास वेगास में पारा सैंतालीस डिग्री के पार चला गया। उधर, ब्राजील के कुछ हिस्सों में वर्षा नहीं होने के कारण सूखा आपातकाल घोषित करना पड़ा। मौसम की मनमर्जी ने चीन और बांग्लादेश में जम कर बारिश कराई। जर्मनी में जुलाई में हुई बारिश ने सदियों के रिकार्ड तोड़ डाले। विश्व मौसम विज्ञान संगठन के महासचिव पेटेरी तालस ने इस विश्वव्यापी मंजर को देख कर ही कहा था कि जलवायु परिवर्तन के विध्वंसक प्रभाव से अब दुनिया का कोई भी देश बचा हुआ नहीं दिखता।

बढ़ते वैश्विक तापमान पर सन 2018 में जारी एक रिपोर्ट में कहा गया था कि तापमान में वृद्धि के

कारण पहले से ही मानव और प्राकृतिक प्रणाली में बड़ा बदलाव हो रहा है। इस बदलाव को हिमनदों की मौजूदा स्थिति से भी आंका जा सकता है। पिछले दिनों एक अध्ययन में सामने आया कि सन 2000 के बाद हर साल दो सौ सड़सठ अरब टन हिमनद गायब हुए हैं। हिमनदों का गायब होना वस्तुतः उनका पिघलना ही है। दुनिया भर में समुद्रों में पानी की जो बढ़ती मात्रा पर्यावरणविदों के लिए चिंता का विषय बनी हुई है, उसमें इक्कीस फीसद से अधिक हिस्सा पिघलते हुए हिमनदों का ही है। आबादी के लिए, खासकर पहाड़ी इलाकों में हिमनदों का पिघलना एक नई परेशानी का कारण बनने लगा है। इनके पिघलने से एक बड़ी-सी झील बन जाती है और जब वह झील फटती है तो इलाके में तबाही मचा देती है। हिमनदों के पिघलने का कारण भी धरती का तापमान बढ़ना ही है। हालत यह है कि दुनिया की सबसे ऊंची पर्वत श्रृंखला माउंट एवरेस्ट लगातार गर्म हो रही है और इस गर्मी के कारण आसपास के हिमनद तेजी से पिघलने लगे हैं।

हम इसे ग्रीन हाउस प्रभाव कहें या वैश्विक गर्मी या कोई और नाम दें। सच तो यह है कि प्रकृति का अधिकाधिक दोहन करने की हमारी नीतियों और मानसिकता ने समूची मानव जाति को एक ऐसे मोड़ पर लाकर खड़ा कर दिया है, जहां हम सबको प्रकृति और मनुष्य की आत्मीयता के समीकरण पुनः प्रबल करने होंगे। जलवायु परिवर्तन की मौजूदा दर बताती है कि दुनिया ने अगर अब भी होश नहीं संभाला, तो प्रकृति कहर बरपाने पर आमादा है। भारतीय संस्कृति ने शायद इसीलिए कभी देवताओं के रूप में तो कभी परंपराओं के तौर पर प्राकृतिक शक्तियों की सामर्थ्य को नमन किया जाता रहा है।

ज्यूरिख के मशहूर संगठन- इंस्टीट्यूट फार एटमोस्फियरिक एंड क्लाइमेट साइंस के वैज्ञानिक एरिक फिशर ने कुछ दिनों पहले मौसम के बदलते स्वभाव पर टिप्पणी करते हुए कहा था- 'वर्तमान में जलवायु ऐसा व्यवहार कर रही है, जैसा कोई एथलीट स्टेरायड सेवन के बाद करता है।' इस विवेकहीन नशीली ताकत के बर्ताव का जिम्मेदार मनुष्य भी है। क्या यह सही समय नहीं है कि हम परिवेश और प्रकृति के प्रति अपने व्यवहार की समीक्षा करें और प्राकृतिक संसाधनों के अंधाधुंध दोहन के स्थान पर उन विकल्पों पर भी विचार करें जो समूची मानवता को क्षोभ, स्वाथ और आशंकाओं से रहित एक सुखी जीवन का आश्वासन देते हैं?