

# Climate change lessons from Montreal Protocol success

The ozone layer covers the entire planet and protects us from harmful ultraviolet radiation emitted by the sun. The ozone layer is found in the stratosphere part of the atmosphere and is located 15 to 30 km above the surface of the Earth. The stratospheric ozone layer is made up of ozone gas which is chemically represented as triatomic oxygen; each ozone particle is made up of three atoms of oxygen.

If the UV-B radiation from the sun reaches Earth, it can cause immediate sunburn and will have adverse long-term health impacts on humans and most other living creatures. It is for this reason that on 16 September 1987, a Montreal Protocol on Substances that Deplete the Ozone Layer was introduced by the United Nations. Most of the Ozone Depleting Substances (ODS) are man-made chemicals. Most notable among these are chlorofluorocarbons (CFCs).

The manufacture of CFCs began in 1930 as a refrigerant gas, at a time when the scientific community was not aware of its threat to the stratospheric ozone layer. The threat became apparent in the 1970s when it was found that the stable CFC gas could reach the stratosphere and destroy the ozone layer by reacting with ozone molecules. In 1985, scientists from the British Antarctic Survey published their findings of abnormally low ozone concentration in the ozone layer above the South Pole. This strengthened the importance of the UN-led Vienna Convention for the Protection of the Ozone Layer that took place in the same year.

The threat from the ozone hole over the South Pole was perceived so well by all stakeholders that the Vienna Convention, and the Montreal Protocol international treaty that followed, was ratified by all nations. It became the first universally ratified treaty in the history of the United Nations. The Montreal Protocol came into effect in 1989 and facilitated a successful phasing out of all ozone depleting substances. As a result, the ozone layer has significantly improved. It should fully heal by the end of this century, perhaps as early as 2070.

The phasing out of CFCs has not



just protected the ozone layer; it also has climate protection co-benefits. This is because CFCs are exceptionally strong greenhouse gases (GHGs) that cause global warming. The global warming potential of CFCs is several thousand times more than that of carbon dioxide. The Montreal Protocol has therefore also helped in our fight against climate change. After the CFCs were phased out, these were intermittently replaced by another carbon compound by the refrigeration industry. The replacement gas, Hydrofluorocarbon (HFC), does not deplete the ozone layer. However, it was soon found to be a potent greenhouse gas. An amendment was made in the Mon-

teal Protocol to reduce the consumption and production of HFCs. This Kigali Amendment (2016) has already been signed by almost all member nations of the United Nations.

The success of the Montreal Protocol in protecting the ozone layer has important lessons that can help overcome another global environmental crisis: climate change. Research must be funded by government agencies, and the scientific community must share their findings with utmost honesty and rigour. The climate crisis is as real as it gets. Our forthcoming policies and development plans must be based on sound scientific research and on the principles of sustainable development.

Overcoming the climate crisis is

not possible without participation from all sections of the society. This was true for addressing the ozone layer depletion crisis as well, and the clear and straightforward messaging helped. According to NASA, the ozone hole was never technically a "hole" in the ozone layer where no ozone gas was present. It was simply a zone of exceptionally depleted ozone in the stratosphere over the Antarctic. The "ozone hole" metaphor helped to communicate the urgency of the matter. In case of the climate crisis, we are still looking for the right metaphor. It is time to get our climate crisis messaging right.

The Montreal Protocol did focus on effective burden sharing and on

developing alternate solutions to ODS. It includes a Technology and Economic Assessment Panel to provide technical information about alternative technologies. In case of the climate crisis, there is a clear need to transition to green, low carbon energy.

The success of the Montreal Protocol shows that a global crisis can be solved when all nations come together. It requires concerted scientific, economic and political efforts backed by informed citizens. Successful climate action for overcoming the climate crisis can benefit from this learning.

The writers are, respectively, associate professor and dean at Jindal School of Environment & Sustainability, O.P. Jindal Global University, Haryana, India.

100 YEARS AGO

OCCASIONAL NOTE

"The New Leaf in the Story of India" is the title given to an address delivered by Lord Meston at the annual meeting in London of the Zenana Bible and Medical Mission. Lord Meston is thoroughly appreciative of the work of the Mission, with which he was personally familiar when he was in the United Provinces, the chief field of the Mission's activities. In the light of his thirty-five years' experience of official life in India, he ventures to offer the missionaries some counsel regarding their duties and responsibilities at the present time. Lord Meston does not take a pessimistic view of the situation in India. The political changes which some people regard as so risky are, he says, symbolic of far deeper changes which were inevitable in the minds and hearts of the Indian peoples. It is undeniable, however, that one feature of the situation today is a great religious reaction, a movement in favour of going back to the ancient classics as the only true source of wisdom. In addition there is the very strong economic revolt, the doctrine that Western civilisation has brought little to India except the destruction of its own industries. No one can see what the result of the present movements will be, but one thing that is certain is that in all crises of history the man serves his cause best who sets himself to do the job immediately in front of him.

NEWS ITEMS

FUTURE OF INDIAN RAILWAYS

Simla, Sept 15  
The Indian Railway Committee showed by extensive quotations from evidence that the existing Indian railway system is entirely inadequate to meet the needs of the country and that there is an urgent need of drastic measures of reform and reconstruction. They consider that the defects are due primarily to the failure of the Government to provide adequate funds, both for capital works and renewals, and are the inevitable results of the paralysing system which has not been developed to meet the requirements of a great commercial enterprise. Stress is laid on the fact that railway investment is indirectly profitable. The subordinate position of railway administration is not in accordance with its financial importance. As at present organised, it cannot possess necessary local knowledge and does not enjoy public confidence.

MOPLAHS ATTACK FROM JUNGLE

Calicut, Sept 15  
A column was fired on from dense jungle two miles from Tuvoor. It returned the fire but with what result could not be ascertained, owing to the thickness of the jungle. Yakub Hasan in a letter to the Madras Mail on the subject of forcible conversion says: There can be no question that these outrages and violence have been committed by those to whom the message of non-violence of the Khilafat Committee and of the Ulemas has not been delivered. This statement can be tested by the fact that on a statement volunteered by Kunhi Tangal of Malapuram, the conversion of Mr. Komu Menon and his family was effected by himself, and Kunhi Tangal was, at the time president of the Khilafat Committee, Malapuram.

CHARGES AGAINST AN ADVOCATE

A Special Bench of the High Court presided over by the Chief Justice and Justices Woodroffe and Richardson yesterday disposed of the rule which was issued by Mr. Justice Greaves on an advocate of this Court. The facts of the case have already appeared. The Chief Justice, in the course of a lengthy judgment, stated in detail the facts and circumstances which resulted in the present rule. His lordship also referred to the various statements made by some of the advocates, and observed that in view of the statements made by three counsel he could not say that the serious charges levelled against the advocate in question had been made out. The rule was discharged.

GRAVE RIOTS AT ALIGARH

News has been received from the District Magistrate, Aligarh, that the mob rose in connection with the case of a political prisoner under trial, attacking the police guard and the reserve inspector's bungalow, but being beaten off. While escorting the prisoner after conviction the police guard was beaten severely and a police outpost was attacked. Serious riots have developed. The Kotwali and other buildings, including the Post Office, have been burnt by the mob, which made a round of the city. Several people have been killed. It has been necessary to call in the military and mounted police from Agra. The Commissioner proceeds at once to Aligarh.

# Memories that will not fade

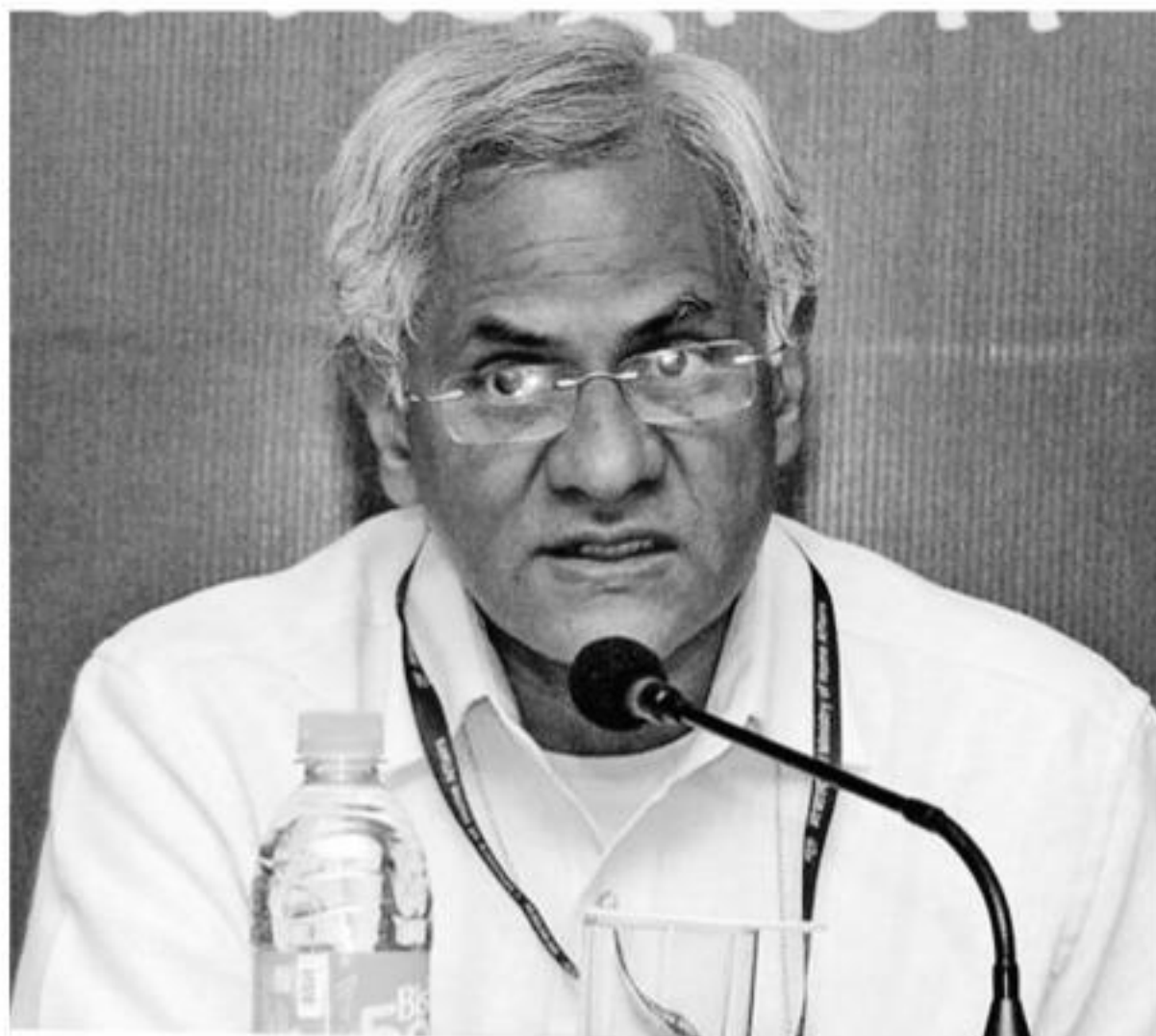
AMITABHA BHATTACHARYA

Death reminds us of the transience of life, and with the demise of a close friend, we also lose a part of our universe associated with him. Keshav Desiraju, an IAS officer of 1978 batch (Uttar Pradesh /Uttarakhand cadre), has left his friends and acquaintances to mourn his passing at the age of sixty-six. The stream of tributes carried by every major newspaper indicates how much this quiet man touched the lives of others.

Most of the obit pieces highlight his role in formulating the bill for mental healthcare during his tenure as Union Health Secretary. Some others have extolled his human qualities. But there have been umpteen civil servants whose contributions have been far more significant. I know of many who were as humane and empathic with people they came in contact with. What then were the attributes that made Keshav so unique?

First, his sense of purpose. I met him in August 1987 when I joined the faculty of L.B.S. National Academy of Administration in Mussoorie. We occupied the same residence, divided by a thin partition. His portion was always humming with activities of IAS and other probationers. It appeared unusual that Keshav knew most of them by name and their background and nature. This showed his interest in every individual.

Besides, he worked towards integrating the role of non-governmental, grass-root organisations into the training framework. Also, he emphasised the need for cultural nourishment for the wholesome growth of young minds. Keshav would know all about Tushar Kanjilal, the social activist and environmentalist at



Rangablia in Sunderbans region, as about Kesarbai Kerkar. This sense of purpose and an abiding interest in fellow beings would inform everything he did. His stint at the Academy was a turning point and deeply influenced his course of life.

Second, his equanimity and sense of fair play. As an apolitical officer, he faced the usual highs and lows that he accepted with grace. He worked as a District Magistrate at Almora, and in the ministries of environment, personnel and school education before he moved to the health sector, his gentle exterior concealing his resolve to stand by the right causes. When a senior IAS officer wanted to

get her date of birth changed in order to gain a few more years in service and brought pressure, Keshav had gone an extra length, in his gentle way, to resist the pressure and reject the request. There were many such instances, lying buried in files, where he consistently sought to defend the bureaucratic 'dharma'. And, sometimes he had to pay a price for such action.

Third, his clear perception of self and others. Conscious of his own strengths and limitations, he could use the former to advance what he held dear. More a thinking bureaucrat than a slogging one, he focussed his energy on select areas, and pushed

such priorities hard. Endowed with an acute mind, Keshav was best suited for ideation - as reflected later in his role as a policy maker. Aware of the deficiencies of 'sarkari' processes, he strove to expand the boundaries of government action to accomplish what really constitutes public service. He was convinced there are important players, especially in the social sector, whose voice should be duly recognised and mainstreamed. Against this perspective, the inkling that he was extra sympathetic to NGOs and civil society activists would appear unfounded.

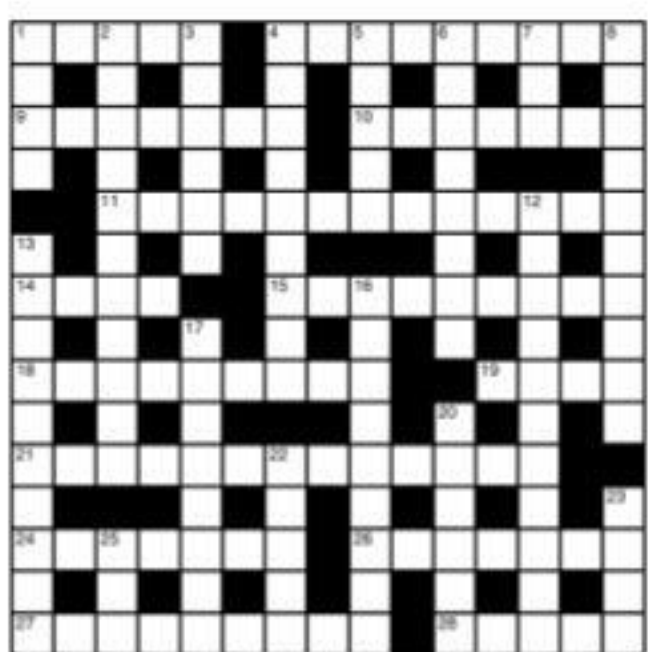
Fourth, his sense of balance. Keshav was even-handed in his appraisal of men and matters, being averse to anything crude, distasteful, or extreme. While certain actions of the current government, especially on contentious issues related to social exclusivity and reported violation of human rights, troubled him, he once told me, in a lighter vein, that few things have been done in recent times the likes of which had not been attempted earlier. He disapproved of any brazen exercise of power whether stoked by majoritarianism or other forces. As a career civil servant, he had seen them all and, therefore, his perceptions were defined more by constitutionalism and his bureaucratic self than by political ideologies.

Fifth, the freshness of his mind. Unlike most of his colleagues, he retained this quality on account of his association with an expanding circle of friends (of both sexes), and his wide-ranging interests in books and music. The last time we met at the India International Centre, he was finalising the draft of his book on M.S. Subbulakshmi, and was simultaneously busy reading *The Immortal Life of Henrietta Lacks*. We always talked of new books, the latest being Jairam Ramesh's remarkable work on *The Light Of Asia*.

Finally, he truly valued and nurtured friendship. Keshav led an

CROSSWORD

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YESTERDAY'S SOLUTION

DUNE HULLABALOO  
T E A N T A E R  
C R U I S E R G O D L I N G  
K T S T E S Y  
G O R R E S P O N D E N T  
T A S E S Y E B  
S P L A S H C O M E T R U E  
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M O T H E R O P P E A R L  
S O M R T B A  
G O V E N I N G R O N G E A D  
A T L A N S G E O  
G U A R A N T E E D T I T C H

ACROSS

- 1 Finishes without century and is defeated (5)
- 4 Scottish party take note of some work by composer (5,4)
- 9 Also called some bipartisan works back (5,2)
- 10 Ballet one to promote in Georgia (7)
- 11 Ballerina not many forget dancing (6,7)
- 14 See 5 Down
- 15 Parachutes, I see, regularly fail, having excess fluid (9)
- 18 See 25 Down
- 19 Set pieces oddly missing fencing kit (4)
- 21 Dancer found rule very silly (6,7)
- 24 Very funny fat early protestant (7)
- 26 About to reverse country's precedent (4,3)

- 27 Parts of Windows allow Spooner to store weapons (4,5)
- 28 Father near missing the start of hymn of praise (5)

DOWN

- 1 See 23
- 2 Cocaine dealer possibly a lecturer in online talk describing some mountain-tops (4-7)
- 3 Various students turn up not serving alcohol (6)
- 4 Sailor backed proposal to cut energy and ran off (9)
- 5/14 Turn strong women's organisation into group which biolates (3,2,4)
- 6 Lacking function, bodyguard is possible cat-killer (8)

- 7 Fish the Spanish stock online (3)
- 8 Pests with 7 fingers - horrible! (10)
- 12 Key primate's farewell protects against potential release of pressure (6,5)
- 13 Southwestern research station lists cakes (5,5)
- 16 Blocks podcast: Curt's boss uploaded (9)
- 17 M\*A\*S\*H actor featured in fashionable Ur (as it was) (8)
- 20 Mint with pretty flowers seems to develop last of all (6)
- 22 Starting now, understanding the German has less on (5)
- 23/1A Ballet to satisfy one's appetite with disappointingly feeble content (4,4)
- 25/18 Ballet smaller, certainly, keeping record concealed (5,9)

NOTE: Figures in parentheses denote the number of letters in the words required. (By arrangement with The Independent, London)

