

The Times of India

Title : Kumbh over, no one cares for Godavari

Author : Sumita Sarkar

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Two months since the Godavari was cleaned, the river is back to being a murky nullah choked with household waste, plastic and puja material dumped into it

Two months since the Godavari was cleaned for the Kumbh Mela in Nashik, the river is back to being a murky nullah choked with garbage of all sorts -household waste, plastic and puja material dumped into it during the recent festive period.

Residents have resumed washing clothes on the banks of the river, which has lost its usual placid flow after the Kumbh Mela, Navaratra, Diwali and the most-recent Chhath Puja. The new ghats, which were constructed for the 12-yearly religious congregation, have become dirty, a striking contrast to what it was a few months ago.

During the Kumbh Mela, water was released from the upstream dams to ensure that the river was periodically washed. But with scanty rainfall this monsoon and no water to release for maintaining the river's flow, it is unlikely that the Godavari will assume its pristine look before the onset of the next rainy season.

The Nashik Municipal Corporation (NMC) had put in months of hard work and planning to prepare the river ghats for the biggest religious congregation of the world hosted in the city every 12 years. After the event, the civic body seems to have lost its diligence and vigour, with one major consequence: the Godavari has become a murky nullah with foam, filth, plastic, used puja material and other garbage swirling in it.

“Washing vehicles has reduced but solid waste disposal and washing of clothes continue to pollute the river. The tributaries, particularly Nasardi, Kaplia and Waldevi, are the worst polluted,” said green activist Rajesh Pandit.

This is not to say that littering and pollution had completely ceased during the Mela. Even during the event, foam formation was seen on one side of the Sangam bridge, and filthy water from the Nasardi met the Godavari on the other side of the ghats.

The NMC had installed a net on the view from the bridge to conceal the murky water from the view of the pilgrims. The net has been removed ever since.

During a hearing on the Godavari pollution, the Bombay high court last month observed that the river had become dirty after the Mela. The HC observed this in response to a September 5 letter addressed by the executive engineer, irrigation division to the district collector, requesting him to release water from the Gangapur dam for cleaning and washing away the filth accumulated in the river during the Kumbh Mela.

But this year's scanty rainfall induced the government to redirect a major share of the dam waters to the parched Marathwada. And the river now has no means to wash away the garbage and rejuvenate its natural chemical and oxygen levels.

Pandit had filed a PIL against some government officials for being responsible for river pollution. Based on the HC's directions and National Environmental Engineering Research Institute's (NEERI) recommendations, the NMC made some permanent and temporary arrangements to arrest the pollution during the Kumbh.

NEERI is now working on the problem in collaboration with IIT-Powai to bring down the bio-chemical oxygen demand (BOD) of the outlets of the sewage treatment plants (STPs). “The BOD of the STPs is in accordance with the specifications of the centre. But since the sewage water is not treated completely, NEERI suggested that it be brought down and they are working on it,” said UB Pawar, the superintending engineer of the NMC's sewage department.

“The foam formation is our original problem but it is just an aesthetic issue. The increase in the foam formation is due to season change,” he added. “The NMC put up boards all over the banks and bridges to prevent river pollution, has done phytoid treatment for water purification at Someshwar nullah, diverted the sewage released in the nullahs to the STP plants permanently and in two places - Anandwalli and Lendi nullahs, temporary diversion has been done,” Pawar said.

An official in the NMC's health department said the problem of unclean ghats would soon be solved as they sought the general body's approval for outsourcing the sanitation work to 700 people. “At present, we have only 40 sanitary workers in Ramkund and the surrounding areas. We have 1,500 sanitary employees and the requirement is 4,500,” he said.

And as long as the wait for the staffers, water and prohibitions continues, Godavari flows in whatever way it can.

WATER QUALITY

MPCB collected water samples from Ramkund, Tapovan, Takli Sangam and Dasak in Nashik & Kushawarth, Ahilya Sangam and Bada Udasin Akhada in Trimbakeshwar during Kumbh. BOD was found between 3 and 9 mg per litre on an average. Dissolved oxygen was found to be between 3 and 6 mg/litre on an average, recommended level is 5 mg/litre. NEERI director Rakesh Kumar said the BOD should be below 3 mg/litre for bathing. If there has been 10-time dilution of water, then it is fine.

COURT CONCERN

From December 6, 2012 till October 29, 2015, the Bombay HC issued several directions to curb river pollution. In its latest order after the Kumbh, the HC observed that the river has once again become dirty and appointed NEERI again to study and suggest long-term and immediate solutions to check the pollution of the river.



RESIDENTS RUE

“During our childhood, visiting the Godavari banks and having peanuts and bhel used to be a ritual every Sunday. But since the past decade, we stay away from the banks. Even a few months before the Kumbh Mela, the river and its banks were in a pathetic condition. Just before the Kumbh, the ghats got a facelift. Now, the condition of the ghats is the same as six months ago

— **Prajakta Pathak** | TEACHER

“Months before the Kumbh, the river had a lot of waste floating on it. Sights of floating garbage and human faeces were common. People washed clothes and vehicles in the river. During the Kumbh, the situation improved. Now, it is back to square one

— **Piyush Joshi** | PRIVATE

ORGANIZATION EMPLOYEE

Pics: Aditya Waikul

AT GOD'S MERCY





RIVER OF ICE?

MURKY FLOWS THE GODAVARI: The state of the Godavari belies hope of any immediate turnaround with filth, foam and even idols covering a huge stretch of the river. With scanty rainfall and no water to release for maintaining the flow, it is unlikely the river will assume its pristine look before the next monsoon

Water world: Thirteen dead; crops and roads damaged

Rain wreaks havoc in AP districts



Rain marks 2nd day of Sabarimala

A steady spell of rain marked the second day of the Mandalam-Makaravilakku season at the Lord Ayyappa Temple in Sabarimala, DHNS reports from Thiruvananthapuram.

Heavy rain was reported from the sannidhanam, Pampa and other foothill areas during the evening. The rain that continued since Tuesday have led to a rise in water level in Pampa; alerts have been issued to pilgrims taking a dip in the river.

Hyderabad: Nellore, Chittoor and Kadapa bore the brunt of the rain that wreaked havoc in the three districts, killing 13 people and causing damage to crops and roads.

Rain abated on Wednesday and flood water receded in many parts of the districts, bringing some relief to people.

Sixty-one camps function in Nellore district and 6000 have been shifted from low-lying areas.

AP Transport Minister Sidda Raghava Rao is camping in Nellore while three IAS officers have been overseeing relief work in Gudur, Atmakuru and Naidupet divisions in the district that are worst hit by the rain.

District administrations are bracing for more disaster as the weather department has forecast rain for further 24 hours.

Rain pounded the three divisions since early Wednesday morning, throwing normal life out of gear there. Nellore received 12 cm rain and Balaipalli 15 cm in the last 24 hours. Swarnamukhi, Kaivalya and Kalangi rivers are in spate as heavy rain continued in the catchment areas. Somasila reservoir is almost full with 32 tmc feet of water.

District authorities are working against time to repair the 3 breached parts of the Kolkata-Chennai national highway near Manubolu due to overflowing Pambaleru, a seasonal rivulet. Officials hope to finish the repair work and allow traffic to resume by Thursday morning.

Floods and severe inundation paralysed traffic between Tirupati-Venkatagiri, Srialahasti-Naidupet, Venkatagiri-Gudur, and Gudur-

Rapolu.

The bridge linking Sangem and Kaligiri has considerably weakened and is in the danger of collapsing any time. Traffic on the route has been diverted.

Amidst severe floods engulfing Nellore town and its suburbs, residents of Gudur -submerged since Tuesday morning-are demanding food and drinking water.

Rescue teams found more troubles as communications of all modes broke down completely in the wake of the pounding.

Chief Minister Nara Chandrababu Naidu, who reviewed the situation with the district officials on a video conference call from Vijayawada, made an aerial survey of the flood-hit areas of Nellore and Chittoor, but his inspection was cut short due to inclement weather.

Naidu asked the district administration on full preparation as rain is expected for the next few days.

South Central Railway either cancelled or rescheduled several trains on Wednesday due to overflowing water on bridge number 167 between Tada and Sullurpet stations on Gudur - Chennai section, bank slip between Yellakuru and Venkatagiri stations & Vendodu - Kondagunta stations and derailment between Nandalur-Mantapampalli on Guntakal division.

DH News Service

[NATIONAL](#) » [OTHER STATES](#)

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Faecal matter found in UP rivers

- [Akanksha Jain](#)

: The Central Pollution Control Board (CPCB) on Friday, submitted before the National Green Tribunal (NGT), its report on analysis of water in rivers and groundwater in Western Uttar Pradesh revealing extremely high levels of faecal coliform contamination due to human and animal faeces.

The groundwater in several districts of western UP was also over-exploited and contaminated.

The NGT has already expressed concern over the disturbing state of Hindon as an impediment in clean Yamuna and clean Ganga projects as it confluences into Yamuna, which finally converges with Ganga.

With high levels of water pollution, the CPCB has recommended supply of piped water and mass awareness programmes for people to dismantle hand pumps and abandon wells with contaminated water.

The water quality of river Hindon was monitored at three locations – Ghaziabad, Meerut and Saharanpur.

“The analytical results of river Hindon reveals that the water quality of river Hindon does not meet the prescribed standard of Primary Water Quality Criteria for Bathing water under the Environment Protection Rules,” the CPCB said.

The report gives disturbing figures of faecal coliform contamination of rivers Hindon and Kali in western UP with it reaching 2.50 lakh MPN/100 ml in Hindon at Ghaziabad as against the prescribed maximum limit of 2,500 MPN/100 ml.

Faecal coliform in Hindon at Meerut was much worse at four crore fifty lakh MPN/100 ml.

Analytical results of groundwater in six districts i.e. Muzaffarnagar, Shamli, Meerut, Bhagpat, Ghaziabad and Saharanpur showed water is unfit for consumption.

The report has been filed on a petition moved by Dr C.V. Singh, a retired senior scientist in Haryana Pollution Control Board, highlighting groundwater and river water contamination in western UP.

“The analytical results of river Hindon reveals that the water quality of river Hindon does not meet the prescribed standard of Primary Water Quality Criteria for Bathing water under the Environment Protection Rules,” the CPCB said

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Maharashtra stares at water conflicts

• [Alok Deshpande](#)



PTI

Marathwada region in Maharashtra is severely hit by drought. File photo

Reeling under successive droughts and falling water levels in dams, Maharashtra is staring at a conflict between two regions over water .

On Saturday, farmers of Nasik in north Maharashtra gheraoed State Water Resources Minister Girish Mahajan over water release into the Jayakwadi dam, which caters to the Marathwada region.

Citing drought, they said water should not be released into the dam when their water needs are not fulfilled.

On the other hand, farmers and political leaders from Marathwada are citing the recent order from the Maharashtra Water Resources Regulatory Authority (MWRRA) to release 12.84 tmc ft of water into the Jayakwadi dam from upstream areas of north Maharashtra.

Experts fear a similar conflict situation may arise at all major dams in Marathwada soon.

The Jayakwadi dam meets the needs of Aurangabad, Jalana, Parbhani and Beed districts of the Marathwada region, which has been the worst hit by drought this year.

“Drought is everywhere and even areas of Nasik and Ahmadnagar are severely affected. We are not against others, but our needs should also be fulfilled,” said Radhakrushna Vikhe-Patil of the Congress and Leader of the Opposition in the Assembly.

As per the original plan in 1965, out of the 196 tmc ft of water to be made available in Jayakwadi, 81 tmc ft was for Marathwada while 115 tmc ft was meant for upstream areas in north Maharashtra. Subsequently, the upstream area was gifted with dams with a capacity of over 150 tmc ft which meant that the area was given 35 tmc ft extra water. In 2004, a new study on the Jayakwadi capped its capacity at 156 tmc ft, which further reduced Marathwada’s share.

“There is a need to re-examine this issue with a modern study. The water share must be decided considering today’s requirements as present figures are based from an age-old report,” said Pradeep Purandare, associate professor (retd.) at the Water and Land Management Institute (WALMI), Aurangabad.

Storage low

Water levels in dams across the State are falling rapidly with Marathwada being the worst affected. At present, storage in all projects in this region is a mere 14 per cent of actual capacity. In 2014, the level stood at 33 per cent.

A Central government team is travelling to Maharashtra — the third time this year — to assess crop loss due to drought. State’s Relief and Rehabilitation Minister Eknath Khadse has demanded a package of Rs. 4,000 crore for immediate drought-relief measures in 15,747 villages. Of this, Rs. 3,500 crore would be used to aid farmers, Rs. 314 crore for water supply in these areas and Rs. 109 crore for cattle feeding, he said. According to a government estimate, around 10,000 villages will face water shortage in the summer of 2016.

THE HINDU

NATIONAL » [ANDHRA PRADESH](#)

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November is the cruellest month in A.P.

- [Ram Karan](#)

FACING NATURE'S FURY

No fewer than 12 cyclones have devastated the coast in November since the 1977 calamity

◉ **15,000 people** were killed in the 1977 storm

◉ **Nellore, Chittoor and Kadapa** bear the brunt this time

◉ From November 9-19, Nellore received 740.4 mm of rain, the **highest in 50 years**

◉ Nellore conventionally suffers the most, and has withstood **25 calamitous impacts out of a total of 77 since 1891**

◉ Meteorologists say they see a **significant shift in the rainfall** from the southwest monsoon to the northeast monsoon



Flood waters surround Sivagiri Colony in Nellore city. - PHOTO: K. RAVIKUMAR

From the 9th of this month to the 19th, Nellore district received 740.4 mm of rain. 12 cyclones have devastated the coast this time of the year since the 1977 calamity.

November is the month of storms in Andhra Pradesh. It's the month cyclones brew in the Bay of Bengal, bringing rains and wreaking havoc in the coastal districts. No fewer than 12 destructive cyclones have hit the coast in November since the awesome calamity of 1977, a storm still remembered with dread. That one triggered a storm surge that killed 15,000 people. It resides in the Telugu psyche as a metaphor for nature's fury.

This November 19, even as people recalled the horrors and bravery of 1977, south coastal Andhra was living through a quick sequence of three low-octane depressions, not quite cyclones in the lexicon of the weather man, but the ones that devastated crop and property with sharp bursts of rain in three southern districts. It is because of November's notoriety that farmers in the coastal districts hurry their sowing in July-August so as to reap the harvest before the whirlwinds blow in November.

Nellore was one of the three districts battered this November. The others were Chittoor and Kadapa. Nellore conventionally bears the brunt of the cyclones, and has withstood 25 calamitous impacts out of a total of 77 since 1891. Thanks to this November's depressions, Nellore has been left bedraggled as never before. From the 9th of this month to the 19th, the district received 740.4 mm of rain, the most in 50 years, against the whole season average of 500 mm.

Topsy-turvy monsoon

It has been a topsy-turvy monsoon this year in Andhra Pradesh. Conventionally, the northeast monsoon is the lesser sibling of the southwest monsoon, wetting the southern districts of Nellore and Chittoor. But in recent years, the southwest monsoon has been setting in late. This year, it did not show up until late August and left the southern districts in deficit by the time it spent itself at the end of September. In contrast, the northeast monsoon has been aggressive, especially during November 9-19 and in Nellore.

The normally dry Rayalaseema districts received good rains during the same period (Anantapur with 31 per cent excess, Chittoor 131 per cent and Kadapa 99 per cent).

Meteorologists say they see a significant shift in the rainfall from the southwest monsoon to the northeast monsoon. "The Indian subcontinent is reeling under climate change. While the influence of the northeast monsoon is increasing, the influence of the southwest monsoon is decreasing. Ocean warming is also contributing significantly to weather change patterns," says S.S.V.S. Ramakrishna, chairman of the Board of Studies of Andhra University's Department of Meteorology and Oceanography.

Flash floods

The other noticeable thing about the wet spell since November 9 has been the cloudburst-like rainfall localised in some pockets, leading to flash floods in long-dry rivers. In Chittoor, the Swarnamukhi River, which had gone dry for a decade, sprang to life after one night of furious rains. The Kapila Theertham reservoir in Tirupati filled up after rains on the Tirumala hills.

The battering Nellore took during the last 11 days was due to unusually concentrated heavy rains in a limited area, causing flash floods in rivulets and streams in Gudur, Nayudupeta and Venkatagiri. "The rains came as if they were dumped in a particular area. Otherwise, the heavy flooding would not have taken place," says B.V. Subba Rao, superintending engineer of the Somasila project in Nellore.

The cloudbursts forced Chief Minister Chandrababu Naidu and his Ministers to take time off from their pet project, the new capital Amaravati, to visit the towns and villages that went under water. But what followed were something familiar: aerial surveys, commiserations with farmers who had lost their harvest and promises of relief. What was not given attention was urban flooding.

Flooding of cities in the peak rainy season is now a global phenomenon and has assumed epic proportions in cities like Mumbai. But to see that happen in smaller towns like Nellore and Tirupati must give pause to a great votary of urbanisation like Mr. Naidu, who declared at the World Economic Forum in New Delhi recently that "urbanisation is a reality, and it is unstoppable. Close to 80 per cent of the GDP is expected to come from urban areas in the near future."

If indeed cities are the growth engines of the States, urban planning has to be of the highest priority in all cities of Andhra Pradesh and not just in the dream capital Amaravati.

It is clear from the Nellore deluge that extreme floods are no longer freak occurrences. As the environment group Sustainable Development Unit says, "Major floods that used to happen, say, every 100 years on an average may now start to happen every 10 or 20 years. The flood season may become longer and there will be flooding in places where there has never been any before." In fact, as Andhra Pradesh's cities grow, floods are not likely to happen once every 10 years; they are likely to happen annually as they do in almost all cities of India.

As Mr. Naidu's vision for urbanising Andhra Pradesh takes shape, the challenges such as those faced in Nellore and Tirupati are surely likely to arise more frequently. In fact, it is an express concern in the city he plans to build, Amaravati. Inundation is likely to be a problem in the new capital city if the government does not address the issue of floods in the Kondaveeti Vagu.

The Kondaveeti Vagu, originating in the hill ranges of the capital territory, is one stream that can pose a challenge to the planners of the capital city — if proper plans are not in place. For years, the stream has been wreaking havoc on the local area disgoring 4,000-5,000 cusecs of floodwaters.

The capital project planners are eager to say everything has been considered. That must have been the very thing said when all city streets were built on low-level land. To say that it is only the poor who squat on such land is to be specious. In Hyderabad, for instance, the streets outside public buildings like the Raj Bhavan and the Chief Minister's office, and some high-profile corporate institutions are prone to flooding after small rains, and this leads you to the notion that there must have been a lake here somewhere.

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TN BRACES FOR MORE RAIN

BJP LEADERS, MINISTERS VISIT RAIN-HIT AREAS TO TAKE STOCK OF DAMAGE EXTENT

STATESMAN NEWS SERVICE
Chennai. 22 November

After a brief lull, Tamil Nadu coastal districts are bracing for another round of heavy rains, though the Meteorology department forecast for the capital city is only cloudy skies and occasional showers. However, coastal districts would receive rainfall, heavy at times, under the influence of a trough of low pressure over southwest bay in the coming days.

The Regional Meteorological Centre (RMC) here said rains were expected at many places in south Tamil Nadu and neighbouring Union Territory of Puducherry in the next 48 hours.

It forecast heavy to very heavy rains in coastal districts and heavy rain in interior districts during this period. However, there is not much possibility for the weather system to further intensify into a low pressure area and it is expect-



ed to move away from the coast, officials said.

November's heavy spells have also helped the city cross its average annual rainfall of 140 cm. Though there is still over a month for the Northeast monsoon to wind up, Chennai has already received 143 cm this year, said Met Department officials.

While various agencies

are coordinating relief work in Chennai and other parts of the State, BJP leaders and Union ministers Nirmala Sitharaman and Pon Radhakrishnan visited flood-affected areas in the State on Saturday to take stock of the extent of damage, especially in Cudallore district. In Tamabram and Mudichur suburbs they faced the ire of flood-affected

people while they blamed the civic authorities for the disaster and announced that they would report BJP top brass about the situation in the state. Meanwhile, rain continued to lash the boarder districts of Nilgiris, Kovai, Cumbam and Theni which caused heavy land slips and damage to roads. The Mullapperiyar Dam is brimming with heavy inflow of

water and the water level has crossed 135 feet when Tamil Nadu reduced bringing water from the dam.

Though the flood situation in Chennai city improved, the Saturday, Sunday rains again inundated low-lying areas which came as a rude shock to the people who have been suffering for the past one week.

The toll in rain-related incidents since the onset of the north-east monsoon last month rose to 122 today with the death of a 27-year old man here in a building collapse, police said.

In Otteri area in the city, a partially demolished building collapsed and fell on an adjacent building, killing a man and injuring a woman, police said.

Schools and colleges are set to reopen tomorrow in three adjoining districts of Chennai, Kancheepuram and Thiruvallur after remaining closed for nearly ten days in view of the monsoon fury.

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Life comes to halt in Nellore

■ Low-lying areas come under a sheet of water

DC CORRESPONDENT
NELLORE, NOV. 18

After Chennai it was the turn of Nellore city to bear the brunt of heavy rain on Wednesday. The non-stop downpour from Tuesday turned the city to a pool. It recorded 12.4 cm rainfall during last 24 hours ending at 8.30 am on Wednesday.

All low-lying areas were under a sheet of water and water entered hundreds of houses holds. Low-lying areas such as Mansoor Nagar and Khuddus Nagar, Parameswara Nagar, Sivagiri Colony, Vengalraonagar were under neck deep water and people are starving as water entered the houses.

Besides rain, water released from Nellore tank because of heavy inflows contributed to the water logging in the city.

Pogathota, Brindavanam, Achari Street, Fathekhampeta, Mulumudi Bus Stand, Trunk Road and Pedda Bazar located in the heart of the town were flooded with rainwater.

The railway under bridges connecting western parts of Nellore city with its eastern parts at Atmakur bus stand, Vijaya mahal gate, Ramalingapuram and Magunta layout have turned into ponds with storm water causing innumerable problems

to pedestrians and vehicular movement.

With all under bridges becoming inaccessible, motorists are forced to depend on railway gates at Kondayapalem, Vijaya Mahal and Ranganayakulapeta and wait for long duration to go to the other side of the city.

With storm water flowing, even arterial roads appeared like canals. Entire premises of the welfare hostels at Kondayapalem gate are under water causing hardships to the inmates. The BSNL office near Leela Mahal is also inundated. Water entered into the sanctum sanctorum of the popular Anjaneya Swamy Temple at Rayaji Street. The temple is under four-feet of water.

Although the official machinery ignored their plight, people staying in the nearby colonies offered food packets to the victims living in marooned colonies and the latter urged them to provide water packets.

At the instance of Nellore city legislator Dr Anilkumar Yadav, a local TV channel (AC-T) offered assistance to provide 5,000 food packets. The legislator lambasted the officials for their failure to plan beforehand while reminding they that were are aware of the cyclone threat to the district one week back.

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Plea on wetlands: NGT wants green ministry's response

HT Correspondent

■ hreporters@hindustantimes.com

NEW DELHI: In a move to curb the shrinkage of wetlands due to encroachment across the country, the National Green Tribunal (NGT) on Friday asked all states to implead themselves as parties and sought the environment ministry's response on a plea seeking the identification and protection of such areas.

The green court's directions came on a plea by activist Anand Arya, who said that the restoration and conservation of wetlands became impossible once they were destroyed, as these were neither identified nor categorised.

Senior advocate Shanti Bhushan, who was appearing for Arya, sought direction to the Centre and states not to permit any activity in and around the wetlands, as inventoried by Indian Space Research Organisation (Isro) in 2007 and 2011, till these were notified by the Centre.

He contended that the states, in coordination with the Centre, have not yet performed their statutory duty of identifying all wetlands in their respective jurisdiction as per the Wetlands (Conservation and Management) Rules 2010 within six months.

The petition alleged that the Centre had violated sections of the Environment Protection Act 1986.

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एक ही गड़बड़ी का नतीजा है उत्तर का सूखा और दक्षिण की बाढ़ हमारे हिस्से की ग्लोबल वार्मिंग



चंद्रभूषण

उत्तर भारत के ज्यादातर इलाकों में जमीन बहुत ज्यादा सूखी होने की वजह से किसान गेहूँ की बुआई टालते जा रहे हैं। नवंबर का तीसरा हफ्ता चल रहा है। सामान्य स्थितियों में पंजाब से लेकर बिहार और मध्य प्रदेश तक गेहूँ के कुल रकबे का तकरीबन आधा अभी तक बोया जा चुका होता है।

लेकिन इस साल बमुरिकल दस फीसदी रकबे का काम पूरा हुआ है। यह लगातार दूसरे साल बरसात के मौसम में बारिश कम होने का नतीजा है। लेकिन अगर दक्षिण भारत पर नजर डालें तो वहां फिलहाल बारिश ने तबाही मचा रखी है। चेन्नई में 10 नवंबर से शुरू हुई बरसात वहां 1918 का रिकॉर्ड तोड़ने जा रही है।

दक्षिण भारत में यह उत्तरी-पूर्वी मानसून का मौसम है। इस समय वहां बारिश होना स्वाभाविक है। अस्वाभाविक है तो बारिश की मात्रा और खासकर चेन्नई में जल निकास व्यवस्था का बिल्कुल बैठ जाना। हालात यह हैं कि पिछले एक हफ्ते से चेन्नई में नावें चल रही हैं। 70 हजार लोग विस्थापित हो चुके हैं और जो लोग हिम्मत करके वहां रह रहे हैं, उन्हें आवाजाही के लिए ओलाकैब कंपनी फिलहाल ओलाबोट नाम से अपनी सेवाएं दे रही है।

भारत के लिए गर्मी, सर्दी, सूखा, बाढ़, ओलावृष्टि, संक्षेप में कहें तो मौसमों का कोई भी उलटफेर ऐसा नहीं है, जिसके अतिरेक के किस्से यहां सैकड़ों साल से न कहे जाते रहे हों। यह ईसानों, जानवरों और पेड़-पौधों के अलावा ऋतुओं की भी विविधता वाला एक अति प्राचीन समाज है। कोई भी बदलाव इसे थोड़ी देर के लिए ही चौंकाता है। फिर जल्द ही कोई ऐसा किस्सा चल पड़ता है कि इससे भी जबर चीज फलों में फलों जगह पर फलों समय में काफी पहले देखी थी। लेकिन अगर हम गौर करें तो पिछले दस सालों में अपने यहां ऐसा बहुत कुछ हुआ है, जो पहले कभी नहीं हुआ, और जिसके अनोखेपन का कोई तोड़ हमारे किस्सेबाजों के पास भी नहीं है।

मसलन, जुलाई 2005 में मुंबई शहर ने जो बारिश देखी थी, क्या इतिहास और भूगोल में उसकी कोई मिसाल मौजूद है? या अगस्त 2010 में लेह-लद्दाख़ जैसे टंडे-सूखे इलाके में भयंकर भूस्खलन का कारण बनी बरसात की? या जून 2013 में केदारनाथ मंदिर के भी काफी ऊपर से शुरू होकर नीचे द्विपेश तक कहर बरपा देने वाले उत्तराखंड के जल प्रलय की? या फिर इसी साल मार्च और अप्रैल के महीनों में इलाके के इलाके पटरा कर देने वाले ओलों की? बड़ा सवाल यह है कि इन घटनाओं को अलग-थलग करके ही देखा जाना चाहिए, या ये किसी लंबे-चौड़े पैटर्न का हिस्सा हैं। उत्तर भारत में



जी हां, यह चेन्नई शहर का एक पॉश इलाका है

NBT-21/11

चेन्नई में 10 नवंबर से शुरू होकर लगातार जारी भीषण बरसात वहां 1918 का रिकॉर्ड तोड़ने जा रही है

लगातार दो साल कम बारिश होना या दक्षिण भारत में जाड़े के मौसम में ज्यादा बारिश होना खुद में कोई अनोखी बात नहीं है। जैसलमेर, बाड़मेर जैसे राजस्थान के ठेठ रेगिस्तानी जिलों में भारी बरसात भी दस-बीस साल में एकाध बार हो ही जाती है। लेकिन 1970 के बाद से भारतीय उपमहाद्वीप में बरसात का अध्ययन कर रहे मौसम वैज्ञानिक आर. कृष्णन इन सभी घटनाओं के बीच एक स्पष्ट पैटर्न देखते हैं। 2009 में और इस साल, यानी 2015 में प्रतिष्ठित अंतरराष्ट्रीय शोध पत्रिका क्लाइमेट डाइनेमिक्स में प्रकाशित अपने दो बहुचर्चित शोधपत्रों में उन्होंने जो निष्कर्ष प्रस्तुत किए हैं, वे बेचैन करने वाले हैं।

कृष्णन की प्रस्थापनाओं में तीन खास तौर पर गौर करने लायक हैं। एक, भारतीय उपमहाद्वीप में सालाना बारिश का औसत लगातार कम हो रहा है। दो, बरसात पूरब में कम और पश्चिम में ज्यादा हो रही है। और तीन, छोटे दायरे में बहुत कम समय में बहुत ज्यादा बारिश की घटनाएं बढ़ रही हैं। ये नतीजे ठोस आंकड़ों के आधार पर निकाले गए हैं, लिहाजा इन्हें मनोगत निष्कर्ष नहीं माना जा सकता। लेकिन क्या यह कोई स्थायी प्रवृत्ति है, यानी क्या यह सिलसिला आगे भी चलता रहेगा?

कोई कह सकता है कि हर चार-पांच साल पर एक-दो सूखे वाले साल अलनीनो का नतीजा है, जो कि एक

प्राकृतिक परिघटना है। प्रशांत महासागर का दक्षिणी अमेरिका के करीब वाला हिस्सा बीच-बीच में थोड़ा गर्म हो जाता है, जिसके चलते ऑस्ट्रेलिया, इंडोनेशिया और भारत जैसे देशों में सूखा पड़ने की आशंका बढ़ जाती है। 2014 और 2015 में अलनीनो को साफ तौर पर दर्ज किया गया है, लिहाजा इसे धरती के वातावरण में आ रहे किसी स्थायी बदलाव का नतीजा नहीं माना जा सकता।

लेकिन कृष्णन का कहना है कि हिंद महासागर का भूमध्यरेखा के करीब पड़ने वाला इलाका, जहां से उठने वाले बादल भारतीय उपमहाद्वीप में बारिश लेकर आते हैं, 1970 से अब तक 0.6 डिग्री सेल्सियस गर्म हो चुका है। इसके चलते अब बादल कम बनते हैं, उनकी रफ्तार पहले जितनी नहीं होती और मानसून के खाली दौर कुछ ज्यादा ही बढ़ जाते हैं। समुद्रों का गर्म होना ग्लोबल वार्मिंग का सीधा नतीजा है, लिहाजा कृष्णन के मुताबिक भारत में मौसमों की बदहाली की मुख्य वजह यही है।

भारत में मौसमों का मिजाज हिंद महासागर के बाद सबसे ज्यादा हिमालय से तय होता है। ग्लोबल वार्मिंग जहां हिंद महासागर को गर्म करके मानसून का ढांचा बिगाड़ रही है, वहीं हिमालयी ग्लेशियरों को तेजी से पिघलाकर उत्तरी भारत की नदियों का भविष्य भी संकट में डाल रही है। अपनी राष्ट्रीय आदत का अनुसरण करते हुए हम आज भी ग्लोबल वार्मिंग को दूर की चीज मानते हैं। हमें लगता है कि यह ध्रुवीय इलाकों, अलग-थलग द्वीपों और निचले समुद्र तटीय इलाकों की समस्या है। लेकिन हमारे देखते-देखते हालात इतने बदल चुके हैं कि इन्हें नई नजर से देखने के सिवाय कोई चारा नहीं है।

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Nav Bharat Times (Hindi)

Punjab Keshari (Hindi)

The Hindu

Rajasthan Patrika (Hindi)✓

Deccan Chronicle

Deccan Herald

M.P.Chronicle

A a j (Hindi)

Indian Nation

Nai Duniya (Hindi)

The Times of India (A)

Blitz

and documented at Bhagirath(English)& Publicity Section, CWC.

अमरीका में 20 इंच तक बर्फबारी, जनजीवन अस्त-व्यस्त

वाशिंगटन @ पत्रिका. मध्यपश्चिम अमरीका में बर्फीले तूफान से हुई भारी बर्फबारी ने यातायात और जनजीवन को प्रभावित किया है। शनिवार को साउथ डकोटा से विस्कॉन्सिन प्रांत में करीब 20 इंच बर्फ पड़ी। बर्फबारी से अमरीकी राष्ट्रपति पद के उम्मीदवारों के कार्यक्रमों पर भी असर पड़ा है।

शिकागो के राष्ट्रीय मौसम सेवा कार्यालय से जुड़ी मौसम वैज्ञानिक एली सीले बताती हैं, समूचे इलाके में बर्फबारी हुई है। सीले के मुताबिक 1951 में नवंबर में आए बर्फीले तूफान के बाद सवा नौ इंच बर्फ गिरी थी।

500 उड़ानें रद्द

अब तक 514 उड़ानें रद्द हुई हैं। शिकागो के ओ हेयर और मिडवेस्ट अंतरराष्ट्रीय हवाई अड्डे सबसे ज्यादा प्रभावित हुए हैं। इलिनॉय और मिशिगन यातायात विभाग ने सड़कों पर धीमे चलने की चेतावनी जारी की है।



दक्षिणी डकोटा के सियुक् फॉरेस्ट में बर्फ हटते हुए कर्मचारी।



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The Hindu
Rajasthan Patrika (Hindi)
Deccan Chronicle
Deccan Herald

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कार्बन उत्सर्जन तीव्रता में कमी भुनाएंगे

नई दिल्ली | मदन जैड़ा

भारत ने ग्रीन हाउस गैसों के उत्सर्जन की तीव्रता में 12 फीसदी तक की कमी लाने में सफलता हासिल कर ली है। पेरिस में इस महीने के आखिर में शुरू होने जा रही जलवायु परिवर्तन कान्फ्रेंस में भारत यह दावा करने जा रहा है। इस सम्मेलन में भारत उत्सर्जन की तीव्रता घटाने के भावी लक्ष्यों को हासिल करने के लिए अक्षय ऊर्जा के क्षेत्र में किए जा प्रयासों पर पूरी दुनिया का ध्यान आकृष्ट कराएगा।

वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय के अनुसार भारत ने 2020 तक ग्रीन हाउस गैसों के उत्सर्जन की तीव्रता को 20-25 फीसदी तक कम करने का लक्ष्य रखा था। यूपीए सरकार

के कार्यकाल में यह लक्ष्य निर्धारित किया गया था। जिसके अनुसार 2005 के स्तर पर तीव्रता में अधिकतम 25 फीसदी की कमी लाई जानी थी। अब मंत्रालय ने ताजा आंकड़ों के हवाले से कहा कि इसमें उत्सर्जन की तीव्रता में 12 फीसदी कमी लाई जा चुकी है।

संयुक्त राष्ट्र पर्यावरण कार्यक्रम ने भी भारत के इस दावे को स्वीकार कर लिया है। इसलिए भारत इसे लेकर उत्साहित है कि बाकी लक्ष्य को भी निर्धारित समय में हासिल कर लिया जाएगा। 2030 के लिए सरकार ने उत्सर्जन की तीव्रता में 35 फीसदी तक की कमी लाने का लक्ष्य रखा है। साथ ही यह भी शर्त जोड़ी है कि तीव्र आर्थिक विकास की दर हासिल करने के साथ-साथ उत्सर्जन के इस

जलवायु परिवर्तन कान्फ्रेंस

2030	तक 35 फीसदी उत्सर्जन में कमी लाने का है लक्ष्य
2022	तक 175 गीगावाट अक्षय ऊर्जा बनाने का लक्ष्य

लक्ष्य को भी हासिल करेगा। इस सम्मेलन में भारत की तरफ से वैकल्पिक ऊर्जा के क्षेत्र में किए जा रहे प्रयासों को दुनिया के सामने रखा जाएगा। जिनकी बदौलत तीव्रता में कमी आई है। मसलन, भारत ने 2022 तक 175 गीगावाट अक्षय ऊर्जा पैदा करने का लक्ष्य रखा है। इसमें

100 गीगावाट सौर ऊर्जा, 60 गीगावाट पवन ऊर्जा, 10 गीगावाट बायोमास ऊर्जा और पांच गीगावाट छोटे एवं सूक्ष्म बिजली संयंत्रों से बिजली पैदा करने का लक्ष्य शामिल है।

इसी प्रकार कुछ नवोन्मेषी योजनाओं को भी भारत प्रचारित करेगा। जैसे कोच्चि एयरपोर्ट पूर्णतः सौर ऊर्जा से संचालित होगा। सोलर टॉप प्लाजा, ग्रीन हाइवे जैसी योजनाओं को भी सामने रखेगा। इसके जरिए भारत जहां विश्व को अपने भावी योजनाएं बताएगा वहीं तीव्र आर्थिक विकास की जरूरत को भी रेखांकित करेगा। दरअसल, भारत ने विश्व का तीन फीसदी कार्बन स्थान घेर रखा है जबकि विकसित देशों ने 74 फीसदी कार्बन स्थान घेर रखा है।

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पोन्नई नदी उफान पर } किसान भगवान का अदा कर रहे शुक्रिया

बारिश से किसानों के खिले चेहरे

वेलूर बारिश के बाद जहां एक ओर मासूमियत छाई दिखी तो दूसरी ओर आंध्रप्रदेश से सटे इलाकों के किसानों के चेहरे खिल उठे हैं। यहां की सहायक नदियों में से एक पोन्नई नदी उफान पर है। पिछले सालों में सूखे के चलते किसानों के मुरझाए चेहरे पर खुशी छाई है।

इस पहले वर्ष 2005 में पोन्नई नदी में ऐसा उफान देखा गया था। आंध्रप्रदेश के चित्तूर जिले के किसान भगवान का शुक्रिया अदा करते नहीं थक रहे हैं, क्योंकि यहां

की नदियों के साथ बांध और जलाशयों में भी पर्याप्त पानी भर गया।

उधर, यहां के कलक्टर नाथगोपाल के साथ लोक निर्माण विभाग के अधिकारियों ने चित्तूर का दौरा किया। इस दौरान वे मेलपाडी गांव पहुंचे जहां बांध से अतिरिक्त पानी को अन्य स्रोतों में डाला जा रहा था।

लोक निर्माण विभाग के एक अधिकारी ने बताया कि यहां बांध का निर्माण 1855 में किया गया था,

जिसके माध्यम से पूर्वी और पश्चिमी तरफ की 129 टंकियों को भरा जाता है, जिनमें से 111 टंकियां अरक्कोणम, शोलिंगूर और तिरुवल्लूर तालुक तथा 18 टंकियां काटपाडी तालुक में हैं। जानकारों के अनुसार बारिश के पानी की वजह से पोन्नई में पानी की बहुत अधिक आवक हुई है।

वहीं कावेरीपाक्कम स्थित टंकी, जिसमें 1450 मिलियन क्यूबिक फीट पानी के समावेश की क्षमता है, का स्तर अन्य स्रोतों से पानी आने

के चलते बढ़ कर 625 मिलियन क्यूबिक फीट तक पहुंच गया। अधिकारी बताते हैं कि अगर अगले कुछ दिनों में और बारिश हुई तो पोन्नई में बाढ़ की स्थिति हो जाएगी।

दूसरी ओर गुरुवार तक लोक निर्माण विभाग की देखरेख वाली 519 टंकियों में 229 टंकियां पूरी तरह से भर चुकी थी। इनमें अरक्कोणम तालुक की 198 में 190, 86 में 33 बालाजाह तालुक और 94 में 42 टंकियां आरकाट तालुक की भर चुकी हैं।

News item/letter/article/editorial published on November 22/11/2015 in the

Hindustan Times
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The Times of India (N.D.)
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Nav Bharat Times (Hindi)
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The Hindu
Rajasthan Patrika (Hindi)
Deccan Chronicle
Deccan Herald

M.P.Chronicle
A a j (Hindi)
Indian Nation
Nai Duniya (Hindi)
The Times of India (A)
Blitz

and documented at Bhagirath(English)& Publicity Section, CWC.

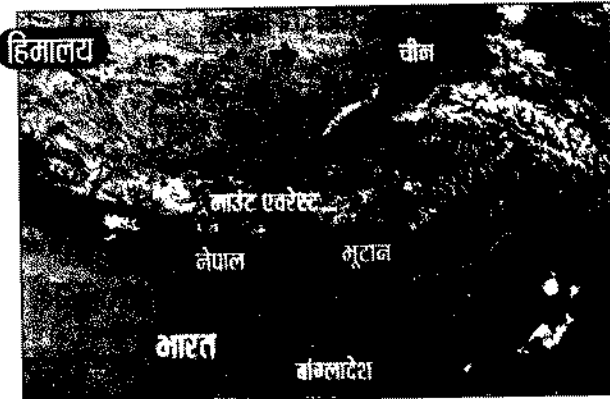
बर्फ भी और बंजर भी

नासा की तस्वीर में बहुरंगी हिमालय

हिमालय का मतलब सिर्फ हिम ही नहीं है। हिमालय बहुरंगी भी है। अगर विरवास न हो तो नासा के देश उपग्रह से दो दिन पहले खींची गई इस तस्वीर को ध्यान से देखिए। यह बता रही है कि हिमालय में कितने सारे रंग भरे हुए हैं।

यू होता है
हिमपात

- हिमालय तब और खिल उठता है जब उसमें हिमपात होता है। हिम से आच्छादित क्षेत्र बढ़ जाता है।
- मानसून के दौरान एकत्रित नमी नवंबर से हिमालय पर हिमपात कराने लगती है।



नेपाल, भूटान और उससे आगे नजर आती ताजा बर्फ, भूरा-बंजर क्षेत्र, हरियाली

पर्वत क्षेत्र से सटे
भारत में घुंघ

नासा की इस तस्वीर में हिमालय के भारतीय क्षेत्र में दक्षिणपश्चिमी (फोटो के) कोने में घुंघ दिखाई दे रही है। इसकी वजह है नई फसल बोन से पहले वहां पिछली फसल की पुआल को जलाया जाना।

हरा-भरा और
पथरीला क्षेत्र

- मानसून की नमी इसलिए एकत्रित होती है क्योंकि हिमालय इसे तिब्बत के पठार के उत्तर से घरे जाने से रोक देता है।

- यही कारण है कि इससे हिमालय पर्वतीय क्षेत्र का दक्षिणी मैदानी भूभाग काफी हरा-भरा दिखाई दे रहा है।

- वहीं ज्यादातर तिब्बती पठारी इलाका भूरा और तुलनात्मक रूप से बंजर नजर आ रहा है।

News item/letter/article/editorial published on November 23/1985 in the

Hindustan Times
Statesman
The Times of India (N.D.)
Indian Express
Tribune
Hindustan (Hindi)

Nav Bharat Times (Hindi) ✓
Punjab Keshari (Hindi)
The Hindu
Rajasthan Patrika (Hindi)
Deccan Chronicle
Deccan Herald

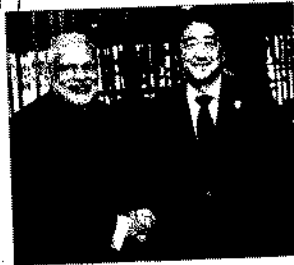
M.P.Chronicle
A a j (Hindi)
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and documented at Bhagirath(English)& Publicity Section, CW/C.

शिंजो संग 12 को काशी जाएंगे मोदी

■ विकास पाठक, वाराणसी 9.ND

प्रधानमंत्री नरेन्द्र मोदी 12 दिसम्बर को अपने संसदीय क्षेत्र बनारस आएंगे। इस बार वह अकेले नहीं बल्कि जापान के प्रधानमंत्री शिंजो आबे भी साथ होंगे। गंगा को प्रदूषण मुक्त करने में जापान सरकार के सहयोग और काशी-क्योटो समझौते को लेकर इस यात्रा को काफी महत्वपूर्ण माना जा रहा है। मोदी शिंजो को गंगा आरती दिखाएंगे और होटल ताज गेटवे में डिनर देंगे। जापान के पीएम संग मोदी के आने की सूचना जिला प्रशासन को रविवार की सुबह मिली। विदेश मंत्रालय से आए संदेश के बाद डीएम राजमणि यादव ने पीएमओ से सम्पर्क कर इसकी पुष्टि की। दो महीने के अंतराल के बाद आ रहे मोदी बनारस में पांच घंटे रहेंगे। प्रशासन को मिले प्रोटोकॉल के मुताबिक वे जापान पीएम संग दोपहर 3.30 बजे बाबतपुर एयरपोर्ट पहुंचेंगे।



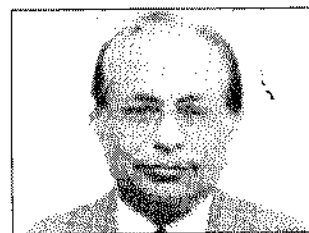
29 को मन की बात

■ एजेंसियां, नई दिल्ली : प्रधानमंत्री नरेन्द्र मोदी 29 नवंबर को 'मन की बात' प्रोग्राम के जरिए लोगों को संबोधित करेंगे। प्रोग्राम के लिए लोग अपना ऑडियो मैसेज 180030007800 नंबर पर रेकॉर्ड कर भेज सकते हैं। इसकी आधिकारिक रविवार को पीएम ने अपने ट्विटर अकाउंट पर दी।

Environment & Security

ALTHOUGH ENVIRONMENTAL CHANGE AFFECTS ALL OF HUMANITY, PEOPLE LIVING IN THE POOR COUNTRIES ARE THE MOST VULNERABLE. A LARGE SECTION IS DEPENDENT ON AGRICULTURE, FORESTRY AND FISHING FOR SURVIVAL. THESE ACTIVITIES DEPEND ON HEALTHY ECOLOGICAL SYSTEMS AND THERE ARE FEW BUFFERS TO PROTECT THE POOR FROM THE REPERCUSSIONS OF ENVIRONMENTAL DECLINE. CONFLICT IS INEVITABLE

November of that year. Around six million barrels of oil were lost each day. In a span of ten months, the fires had caused extensive pollution with devastating consequences on the environment and consequently on the people. Further, the Gulf War oil spill regarded as the worst such spill in history was caused when Iraqi forces opened the valves at the oil terminal and dumped oil from several tankers into the Persian Gulf.



M KHASNOBIS

Some defence experts have dismissed environmental stress and degradation as factors that are outside the realm of national security. Yet, after the end of the Cold War, the governments of the USA and the former Soviet Union and many of their neighbours began to assess the toxic legacy. An attempt has been made for the first time to link military security issues with the language of environment. NATO recognizes that it faces environmental challenges and has been working towards protecting the physical and natural environment from the harmful and detrimental impact of military activities and operations. It is promoting environment-friendly management practices in training establishments and during operations and adapting military assets to a hostile physical environment. NATO's mandate now includes environmental planning, base clean-up, compliance with regulations, pollution prevention, developing environmental standards for training and operations, technology development, military to military cooperation in such spheres as decommissioning of ships and submarines and resource conservation measures.

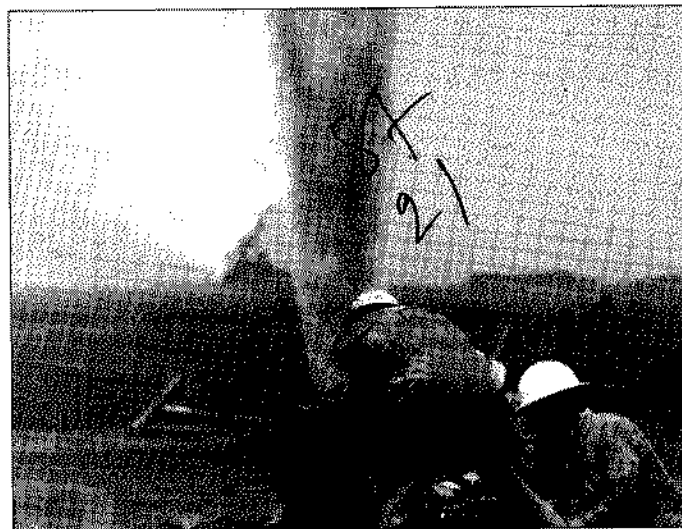
Economic development, the burgeoning population, and exploitation of resources have combined to alter the planet's natural environment in an alarming manner. For over 20 years, research and debate have focused on clarifying or disputing the links between various forms of environmental change and security. At one extreme are the skeptics who contend that the linkages are weak or even non-existent. They are simply attempts to harness the resources of the security arena to an environmental agenda. At another remove are those who believe that these linkages may be the most important security factors in the 21st century as they put the future of humanity at stake.

This discourse linking environment to security is largely a response to two almost parallel events ~ the end of the Cold War (1989-92) which compelled a rethink on the concept of security and the 1992 Rio Earth Summit that mobilized scientific evidence of global environmental change into a policy agenda widely regarded as urgent and vital.

The study in environment and security has thus far been fragmented, with contradictory concepts. The subject has been used to formulate a critical assessment of the military's "misconduct" during war or while preparing for war. In parallel, there is a debate on whether environmental factors such as water, conservation, food, sustainable development, demography, energy and climate change can lead to conflicts between nations. In the first case, ecological damage is due to military action; in the second, military action follows ecological damage that makes natural resources scarce. The competing approaches arise from the intersection of security and natural environment in a world of dense relationships, crumbling institutions, dramatic transformations and high levels of uncertainty.

Military action can severely damage the ecological balance. During World War I, all belligerent countries had used weapons of mass destruction against each other throughout the conflict in defiance of the Hague Declaration of 1899 and Hague Convention of 1907 that outlawed the use of chemical weapons. Such weaponry caused severe soil erosion, deforestation and water contamination resulting in the deaths of tens of thousands of people. The atomic bombing of Hiroshima and Nagasaki during World War II had a devastating effect on the natural environment and on human life. An estimated 50,000 people in the two cities succumbed to injuries or illness attributed to radiation immediately after the bombing.

During the Vietnam War, the US military had sprayed millions of gallons of herbicides ~ "Agent Orange" ~ to defoliate forests, clear growth along the borders of military sites, and eliminate enemy crops. The vegetation was



The theory that environmental stress could be a source of national insecurity was revealed through the 1987 Brundtland Commission report, titled *Our Common Future*. The report coined and defined the meaning of the term, Sustainable Development. The report is an attempt to reconcile economic development with environmental protection. "The environment is where we live and development is what we all do in attempting to improve our lot within that abode. The two are inseparable".

The three main pillars of sustainable development are economic growth, environmental protection and social equality. The overuse of natural resources and degradation of ecosystems can aggravate human vulnerability, undermining livelihood and well-being, creating instability and generating violent conflict. Demographic pressures, depletion of water resources, over-fishing, degradation of arable land, decimation of forests and alteration of natural cycles can damage the social fabric of many communities, and result in political strife and violence.

Although environmental change affects all of humanity, people living in the poor countries are the most vulnerable. A large section is dependent on agriculture, forestry and fishing for survival. These activities depend on healthy ecological systems and there are few buffers to protect the poor from the repercussions of environmental decline. Conflict is inevitable. Environmental challenges respect no boundaries. Indeed, some of the challenges such as air pollution, climate-change, and water scarcity are inevitably international. The increasing demand for water and conflicting claims to water can lead to inter-state conflicts over shared rivers. As the quality of water deteriorates or the quantity available is unable to meet rising demands over time, competition among water users intensifies. This is more destabilizing in river basins that cross political boundaries. Despite the complexity of the problem, records show that water disputes can be resolved through diplomacy. Yet, there is no denying that trans-boundary water issues contribute to violent conflict.

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During the Vietnam War, the US military had sprayed millions of gallons of herbicides ~ "Agent Orange" ~ to defoliate forests, clear growth along the borders of military sites, and eliminate enemy crops. The vegetation was unable to regenerate and left behind barren and infertile land even after years of spraying. Not only was the vegetation affected but also the wild life. The napalm strike in 1972 resulted in deaths and severe burn injuries. Those who survived had suffered permanent disability because the jelly-like substance released from the bomb caused scars almost four times as thick as normal skin.

The genocide in Rwanda led to massive migration of nearly two million moderate Hutus who fled the country for refuge in Tanzania and the Democratic Republic of Congo. The large-scale displacement of people in the refugee camps exerted pressure on the surrounding ecosystem. Forests were cleared in order to provide wood for building shelters and to supply fuel for cooking. The harsh conditions had an impact on natural resources.

The Kuwaiti oil fires, during the first Gulf war between Iraq and Kuwait, were caused by the Iraqi military which set fire to nearly 700 oil wells as part of a scorched earth policy while retreating from Kuwait in 1991. The fire erupted in January 1991 and the flame was eventually extinguished by

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The analysis is suggestive of two opposing trends. There is an increasing awareness that military campaigns should be conducted on the concept of "green defence", ensuring environmental stability and ecological balance. This awareness has dawned after realizing the consequences that wars or conflicts have created on the environment, affecting human security. At the other extreme, environmental scarcity carries the risk of damaging social consequences that in turn may lead to violent conflict. The complex stresses of the 21st century, from the nuclear threat to the global economic crisis, climate change and extensive urbanization do not lend themselves to a unified analysis. Given the analytical diversity, further research is necessary to navigate the complex literature and arrive at a comprehensive approach on environment and security.