

# Why this town has a curfew every day P-11 M-2 TLO

*Residents in Odisha's Titlagarh, one of the hottest spots in the country, stay indoors from 11am to 6pm*

**Ashok Pradhan & Riyan Ramanath V | TNN**

It's just 10.30am but 25-year-old Rohit Jain is lowering the shutters of his ceramics store before an undeclared curfew comes into effect. In

Titlagarh, one of the country's hottest places, it's the unrelenting heat that keeps people at home these days.

By 11 am, the roads are deserted and there is no sign of life in this western Odisha town, 450km from Bhubaneswar. "Only a fool will risk facing the burning sun. Even stray animals stay in the shade. Business can be done another day," says Jain before heading home. The Titlagarh market opens at 10.30am during other seasons.

This town of 60,000 people is even named after the climate: Tatla means 'very hot' in the local Sambalpuri dialect. This April, the temperature hovered around 45 degrees Celsius and touched 48.5 on April 24. The hottest day ever in this town was recorded on June 3, 2003 — 50.1 degrees Celsius.

Though they're used to the heat, residents say the temperature has stayed over 45 for the longest period this year. "Previously, we'd have very high temperatures for a few

outdoor tours after 11am. I always keep oral rehydration salts, even in office," he added. People also keep their heads covered, usually with a white cloth, and wear white clothing.

It's the topography that makes Titlagarh a heat island, say experts. The town is surrounded by several treeless hillocks, which radiate heat and block winds. "Its hard rock soil and lack of ventilation makes it warmer than surrounding areas," said Sarat Chandra Sahu, director of India Meteorological Department, Bhubaneswar.

Balangir district, of which Titlagarh is a part, has 14.7%

**TOO HOT TO HANDLE**

**48.5 degrees C**

**Titlagarh was India's hottest place on April 24**

**50.1 degrees C**

**The town's all-time high was recorded on June 3, 2003**



**WEATHER-WISE** The town of 60,000 people is even named after its climate. Tatla means 'very hot' in the local Sambalpuri dialect

**Experts say the area's topography is to blame. The town is surrounded by several treeless hillocks, which radiate heat and block winds**

days, which were followed by hailstorms," said Sudam Behera, a government employee.

The town now functions before 10.30am and after 6pm. "We impose a curfew on ourselves in summer. We're wiser from past experiences, and don't make plans for weddings or other functions for the summer," said Maneesh Majhi, a resident.

To survive the open oven, people eat pakhal (semi-fermented stale rice soaked in water). "Eating pakhal and frequently wiping the skin with wet towels helps," said Kailash Chandra Sahu, sub-collector of Titlagarh. "We avoid

forest cover, far below the state average of 32%. "If only Titlagarh is considered, the percentage would be even lower," said Ranjan Panda, a water conservation activist.

A central team visited the area in 2005 after temperatures started rising, and suggested massive plantation within a 10km radius of the town. The Centre provided Rs 1.8 crore to raise trees on 10 hectares. Saplings were planted in Tulang, Tikrapada and Belpadar and the project kept the mercury below 46 degrees Celsius till 2010. But many trees eventually died or were felled, and now the temperature is spiking again. "The cooling project seems to have failed because the species selected were not enough to create a green canopy. Trees should have been planted up to 30km from the town," Panda said.

Divisional forest officer (Balangir) Rashmi Ranjan Naik claimed the trees were unable to survive the heat. "In some places, only 40% of trees are alive, in others 62%, because the place is so dry," Naik said. "Despite our best efforts of launching yearly plantation drives, the place remains the hottest."

# '54 cr. farmers in the grip of drought'

May 2 H P. 12

Rural populations across 13 States hit by multiple crisis, with food and fodder getting scarce

SPECIAL CORRESPONDENT

**NEW DELHI:** Over 54 crore farmers and rural populations across 13 States are in the grip of drought, and it is a multi-dimensional crisis. This fact was highlighted at a national consultation on drought here on Sunday.

Yogendra Yadav, convener of Jai Kisan Andolan, told journalists that owing to the drought, people were battling for drinking water, food had become scarce, domestic cattle were dying a nomadic death and farms had turned fallow.

"Good rains [in the coming monsoon] may end the water crisis, yet food shortage will continue until the new crop comes in; the government needs to ensure food security," Mr. Yadav said.

Bundelkhand was the worst affected. "Dal [pulses] has become a luxury for the



Women trudge to collect drinking water from a near-dry well in Samba district of Jammu. It has become a grim battle for survival in several States. — FILE PHOTO: AP

ordinary people in Bundelkhand," he said, appealing to the youth to help the people of the affected villages during their summer vacation.

"We will have a two-week

internship programme for students during the summer vacation to serve in the drought-hit villages. Come and join to understand what's going on....," he said.

Mr. Yadav said Jai Kisan Andolan, along with other farmers' organisation, would start a 10-day 'Paidal Yatra' from Latur in Marathwada to Mahoba in Bundelkhand on

May 21 so as to implement the decisions taken at the consultation.

Farmers in a dozen States struggling with severe drought conditions and experts participated in the consultation, which was organised by Swaraj Abhiyan and the Centre for Science and Environment (CSE).

## 'Man-made crisis'

CSE director-general Sunita Narain said: "Drought in the 1990s was essentially the drought of a poor India. The 2016 drought is of richer and more water-guzzling India. This classless drought makes for a crisis that is more severe and calls for solutions that are more complex.

"The severity and intensity of drought is not about lack of rainfall; it is about the lack of planning and foresight, and criminal neglect. Drought is human-made."

# 'Must manage water resources better'

Recipient of various national awards including a gold medal from Dehradun-based Indian Association of Soil and Water Conservationist in 2015, Dr B K Ramachandrappa is known for his outstanding contribution towards dry land agriculture and water conservation efforts. As Chief Scientist, he heads the All India Coordinated Research Project for Dryland Agriculture (AICRPDA) under Central Research Institute for Dryland Agriculture, Hyderabad, based at the University of Agricultural Sciences (UAS) campus in Bengaluru. In an interview to DIPANKAR CHAKRABORTY, Dr Ramachandrappa said technologies developed by AICRPDA research centre in Bengaluru can go a long way in helping farmers face drought conditions prevailing across the country by getting better yield per acre.

**The country has been in the grip of severe water scarcity and drought conditions. What factors do you attribute to this unprecedented situation?**

Indian agriculture is basically monsoon dependent because more than 60 per cent of the cultivated area depends on rainfall. The success of rain-fed agriculture in India depends on timely onset of South West monsoon in June and its distribution till the end of September. During 2014-15 there was a 12 per cent deficit and during 2015-16, a 15 per cent deficit from the normal rainfall in the country. The major reason for this drought situation was the influence of El-Nino (caused by rise in the surface temperature of the Pacific Ocean) resulting in delayed onset and deficient rainfall at different stages of crop growth. This factor eventually is respon-



sible for bringing down the productivity of crops.

**AICRP for Dryland Agriculture, University of Agricultural Sciences, Gandhi Krishi Vigyan Kendra in Bengaluru has been accorded the distinction of a centre of excellence for research in dryland farming. Can you tell our readers about the institute?**

The centre was started in 1971. We have developed more than 70 technologies in the last 45 years. These are being showcased annually in the dryland agri tech park for the benefit of visiting farmers during the annual mega event Krishimela and also for dignitaries visiting the university. It has bagged best field demonstration award by the UAS, Bengaluru, successively from 2007 to 2015. The nodal organisation for dryland research in the country (CRIDA-Hyderabad) has recognised this centre as the "Best Dryland Cen-

tre for 2012-2013 and 2013-2014" in the country. This centre received the coveted "Choudhary Devilal outstanding AICRP" award by ICAR in 2009.

We have also developed watershed models which are being widely adopted by the Watershed Development Department of Government of Karnataka. Technologies developed at this centre are being tested in the farmers' fields through participatory research for getting feedback and also upscaling technologies through Operational Research Project for dryland agriculture and National Innovations on Climate Resilient Agriculture.

**Can you give us some projections on how the drought conditions are going to impact agriculture in the country?**

The drought will delay the sowing. It will reduce area under kharif crop. The non-availability of seeds will affect the adoption

of contingent crop plan which demands change of crop and change of variety. Stress due to drought at critical stages of crop growth can reduce the productivity by 20 to 30 per cent depending upon the intensity and duration of the drought and stage of occurrences of the drought in different crops.

**What are your contingency plans to help the government deal with the ongoing drought situation across the country?**

Depending upon the forecast given by IMD by the end of April there is a need for preparedness on the part of the state department of agriculture in sensitising the farmers about drought and contingency measures that need to be adopted to face the situation.

There is a need for stocking the required seeds and other inputs to address contingent crop planning. This needs planning and preparation at least one year before the event occurs for its timely and effective implementation. Publicity and mass education through television and radio programme and also the print media is the need of the hour.

**Can you tell us about the dry farming model of Karnataka. Can it be adopted by other states of the country?**

The Government of Karnataka since 2014 through its Krishi Bhagya programme has been emphasising on improving the productivity of crops in the five dry zones of Karnataka. This programme emphasises on rain water harvesting and its storage through lining, water lifting and efficient water application for improving the productivity of dryland crops by making the best use of water collect-

ed in the farm pond for giving protective irrigation in the catchment through sprinkler/drip method of irrigation and also for nourishing vegetables and fruit crops around the farm pond. This can be useful for other states especially in dryland areas.

**What are the ways in which India can efficiently manage its scarce water resources? Can you give a few examples?**

Water resource potentiality for the country which occurs as natural runoff in rivers is about 1869 billion cubic metres per annum and utilisable surface water is 690 billion cubic metres per annum, as per the estimation of the Central Water Commission. With increase in population in the country, the national per capita annual availability of water has come down from 1816 cubic metres per annum in 2001-02 to 1544 cubic metres per annum in 2011 and it will further reduce to 1140 cubic metres per annum by 2050.

In India nearly 80 per cent of water is used for irrigation. Concerted efforts are required for increasing "more crop per drop of water" both in rain-fed and irrigated ecosystems by adopting scientific and technological knowhow. Discouraging water-intensive crops in scarce water situations and encouraging low water requiring and high water use efficiency crops should be stressed. Plugging conveyance and distribution loss of water, accounting for nearly 50 per cent, through proper lining of canal networks and also by piped irrigation system by adopting both sprinkler/drip irrigation systems are some of the steps that can help manage water resources efficiently.

# Now, pay fine for wasting water

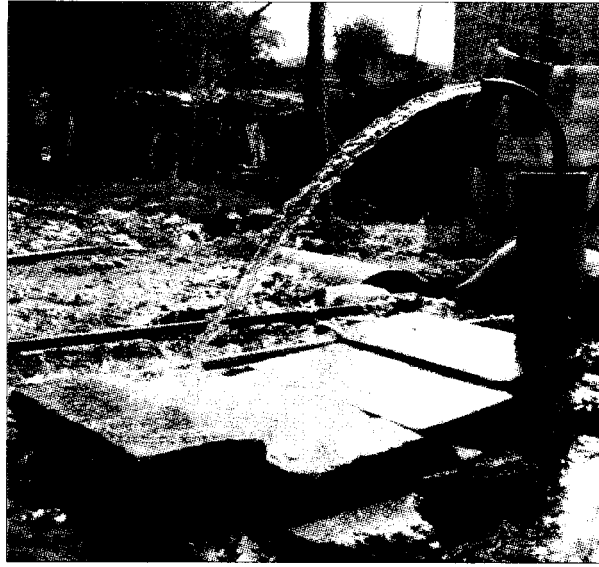
TRIBUNE NEWS SERVICE

CHANDIGARH, APRIL 29

Punjab's Local Bodies Department has restricted the use of water across the state. The restrictions come with penalties for the violators.

Apart from the shortage of water during summers, the restrictions come in wake of the alerts by the Central Ground Water Board, Punjab Irrigation Department and Agriculture Department over the rapidly declining water table for the past many years.

Secretary, Local Bodies, Vikas Partap Singh, said the civic bodies have been asked to enforce the orders. "No one will be allowed to water lawns and wash vehicles directly from the main supply line. Watering of lawns



would be allowed after 5 pm only," he said.

While citing the acute water shortage crisis in states like Maharashtra, where the peo-

ple were depending on other states, the department has also written to the Punjab Water Supply and Sewerage Board and Industries Depart-

PENALTY	FINE
First time	₹1,000
Second time	₹2,000
Third time	₹5,000 & disconnection

ment to enforce the orders in their respective areas.

The average consumption of drinking water in the state is around 55 litres per person per day.

Suresh Kumar, Additional Chief Secretary and Secretary, Water Supply and Sanitation, said the department was only supplying 40 liters of water per person per day in the rural areas.

Official statistics reveal that the water level had dipped in 80 per cent of the total area in the state. The scant rainfall had an adverse impact on the water table.

## Pingalwara shows the way

Initiates water conservation in all its branches

GS PAUL

TRIBUNE NEWS SERVICE

AMRITSAR, APRIL 29

Keeping in view the water scarcity in several parts of the country, the All-India Pingalwara Society has not only initiated water conservation in all its branches but is also spreading awareness among the masses at the state level.

Special volunteers have been deputed in Amritsar and other parts of Punjab to sensitise the people against the wastage of water. Free literature is being distributed at various gurdwara stalls, including at the Golden Temple complex.

Bhagat Puran Singh, the founder of the Pingalwara, believed in the verse from Guru Granth Sahib 'Pawan Guru Pani Pita, Mata Dharat Maht' (air is guru, water is father and the Earth is mother.)

This belief is being propagated through the literature originally penned down by him in various parts of Punjab.

Dr Inderjit Kaur, head of Pingalwara Society, said that presently, 1,719 aban-



Leftover water of the RO system being collected for reuse to wash utensils at the Pingalwara complex in Amritsar on Friday.

PHOTO BY VISHAL KUMAR

doned and helpless persons are being accommodated. All of them have individually been educated about saving water during their daily chores.

In another attempt, traditional earthen pots have been distributed in every ward instead of water coolers. These will save water and electricity.

Its Manawala branch, located outside the boundaries of the MC, has no arrangements for the disposal of sewage. Therefore,

a sewage treatment plant has been set up and the water is recycled and used for watering lawns, agriculture and harvesting.

"We have started utilising the waste water of the RO system to clean floors, utensils or for washing clothes. Around 30 RO systems have been installed on our premises in Amritsar and we accumulate a good amount of water which otherwise went down the drain," Dr Inderjit said.

## 'Magic' water attracts thousands

SANJAY BUMBROO

TRIBUNE NEWS SERVICE

ANNIA VILLAGE (AMLOH), APRIL 29

Thousands of people have started lining up for a bucketful of 'magic' water from a hand pump at Annia village in Amloh block of this district.

Terming it a superstition, members of Tarksheel Society have submitted a memorandum to the SDM. Baldev Jalal, a representative of the society, said this water did not have any religious or scientific basis to support the villagers' claim.

SDM Arvind Gupta said he had asked the sanitation department to get the water samples tested.

XEN Water Supply and Sanitation Jasbir Singh said they had found nothing extraordinary in the water. It is simply potable water, he added.

Krishana, a resident of Bhawanigarh near Patiala, said that she had consumed the water two weeks ago and was relieved of the pain in her ankles.

# Ponds go bone-dry in Bundelkhand villages

Many water bodies have “vanished”, mainly due to encroachment.

OMAR RASHID

**BUNDELKHAND:** A stroll through the dusty tracks of Gorai-Mughli village in Banda, Uttar Pradesh, takes you past two large, low-lying grounds, measuring 32 and 16 bighas. Wild grass has run over parts of them and stray cattle can be seen moving about or resting there. There is not a drop of water in sight; the two *talabs* (ponds) are bone-dry.

With May yet to arrive, the village faces acute scarcity of drinking and irrigation water, as out of 142 hand pumps, 36 are damaged. Not a single government tube well, canal or pipeline is close to the village. Water-boring has also proved difficult due to the rough terrain.

“The last time the ponds went dry like this was in 1989. Since they are located within the village, people could have



**DESTROYED LIFE-LINE** An almost dry pond in the Banda district of Bundelkhand. — PHOTO: RAJEEV BHATT

gone there for bathing, washing animals or even drinking water. Under the circumstances, ponds are our lifeline,” said Zubair Ahmed, a panchayat member.

Mr. Ahmed’s concern holds true for much of Bundelkhand, where rainfall has been traditionally deficit and for centuries residents have relied on ponds for sustenance in times of scarcity. “As early as 1970, Bundelkhand was meeting its domestic and

irrigation water demands through traditional methods of water harvesting despite being drought prone,” according to a report by Water Aid India. “The vast network of tanks and ponds captured water for use during leaner period. The ponds and tanks also worked as recharge pits.”

However, the condition of water bodies in the region, once known for its ‘pond culture,’ is pitiable today. Village after village, you are con-

fronted with barren patches of land, where once stood live ponds. You will also come across settlements that were once large ponds but were illegally occupied or encroached upon. The ponds, traditional or new, that remain, are fast drying up, robbing villages of time-tested mitigating methods. The indiscriminate use of ground water through hand pumps and submersible pumps has pushed it to critical levels.

Sanjay Singh of the Jal Jan Jodo Campaign says out of the 12,000 odd Chandeli and Bundeli era traditional ponds — known for their engineering brilliance — which dotted the Bundelkhand landscape, only 2,000 remain. He blames rampant encroachment, settlements and dismantling of the ponds’ outlet system for their demise. In addition, in the last decade, 4,020 ponds have “vanished” in Bundelkhand, primarily due to encroachments by land sharks, environment activist Ashish Sagar found through an RTI. Of these, 151 were in Chitrakoot, 869 in Banda, 541 in Hamirpur and 2,459 in Jhansi.

“Bundelkhand has been popular as the region of ponds. It faced droughts every 16 years but our ancestors devised mechanisms to beat drought through rain-water harvesting and preservation of ponds,” Mr. Sagar said.

Experts believe that reviving the lost ponds are cheaper and smarter means to counter Bundelkhand’s water problem in the long term. “Unfortunately, ponds are considered nothing more than pits and officials who did

the *chakbandi* (land consolidation) didn’t realise their importance and converted them into pattas,” said Prem Singh, a farmer. In 2013 itself, U.P. admitted to losing more than 1 lakh water bodies (ponds, tanks, lakes and wells) to illegal encroachment.

While it may be too late for this summer, the Akhilesh Yadav government has come up with what it feels is a game-changer, the Khet-Talab or Farm-Pond scheme, under which 2000 ponds would be dug across Bundelkhand in the coming month. However, activists feel that the government needs to provide long-term solutions.

The Khet-Talab model, adopted in the past, has not been successful in the region, said Sanjay Singh. The BSP government had come up with a similar project of building ‘adarsh ponds’ in villages. However, it was restricted to building boundary walls, he said. “This is a high-soil erosion area and these ponds won’t last more than three years. They need to ensure the inter-linking of ponds.”

# A people's movement in Uttar Pradesh to revive a river

Villagers from Shamli donate their labour to retrieve an entire ecosystem

MOHAMMAD ALI

**MEERUT:** A group of villagers from Malakpur in Shamli district of western Uttar Pradesh are trying to breathe new life into Katha, a 150-km long river which is dead now. With help from a local scientist, farmers are leading the effort to turn a one kilometre stretch of the barren riverbed into a lake.

People from dozens of villages have started digging the river bed to level the surface, and plan to tap nearby water sources to feed it.

The self-made engineering plan is to put up check dams to harvest monsoon water along the one kilometre stretch of the



Villagers from Malakpur in Shamli trying to turn a barren riverbed into a lake. — PHOTO: SPECIAL ARRANGEMENT

river bed which is 5-40 feet deep. At present, in the absence of check dams, it flows into the Yamuna. Over the last two weeks the villagers have launched a "one house, one pot" water

donation movement.

Prof. Umar Saif who leads the initiative, says Katha earlier used to flow between Saharanpur and Rampur but it dried in 1830 when East Yamuna came

into being, using a 60 kilometre area.

"At present, Katha functions as the drainage pipe of the Yamuna because every time it gets monsoon flows, which at times is a lot, it drains that into that river. What we are trying to do is to pick up one kilometre stretch of riverbed and revive it," says Prof. Saif, a resident of Shamli and a wildlife scientist.

"Once we develop this lake, it will encourage people to do the same with rest of the 90 km river. So, we will have 90 check dams and 90 bowls of water," Prof. Saif, who heads Dehradun-based Natural History Research and

Conservation Centre says.

"Our larger aim is to restore the integrated eco system taking into account the wildlife which is currently declining," he adds. After seeing two weeks of completely voluntary work by the villagers, local officials assured them that the work on the riverbed can be done through MGNREGA.

"Shivpal Yadav, a Cabinet Minister in the Akhilesh Yadav government, had promised us that the excess water from Yamuna and Ganga during the time of monsoon will be channelised to Katha to revive it. The proposal has been passed but is stuck in official files," according to

Prof. Saif.

The wildlife located on the banks of Katha started declining, the village head Sushil Pradhan argues, because there is no water.

On the restoration of an integrated ecosystem, Prof. Saif says, "Once we develop water bodies, we also plan to develop a butterfly park."

The district magistrate of Shamli Sujit Kumar told *The Hindu* that this model of revival of riverbed and water bodies is being tried in other districts like Fatehpur and Shravasti. "I will have to see the technical viability. There certainly is the option of doing it through MGNREGA if it fits the criteria," Mr. Kumar said.

# Uncertain waters: Dealing with increasing floods and droughts demands new thinking and new technologies

Giriraj Amarnath and James Clarke



In the city of Latur, guards are currently stationed at all six of the municipality's water tanks. In nearby Parbhani, the local council has banned water extraction from the town's lakes and reservoirs. Trains carrying lakhs of litres of water are being sent to Latur to provide relief. These extreme measures are just a few examples of how severely the drought that is ravaging much of central India is affecting communities.

For city folk water rationing is now almost inevitable. For farmers, the prolonged dry spell heralds disaster. Many have been unable to grow winter crops and are struggling to survive. Climate scientists warn us that extreme weather is the "new normal". In the future we can expect much more water variability. For a country like India which already has a highly seasonal pattern of rainfall, this could be disastrous.

Thankfully there is much we can do to make sure that the effects of this change in our

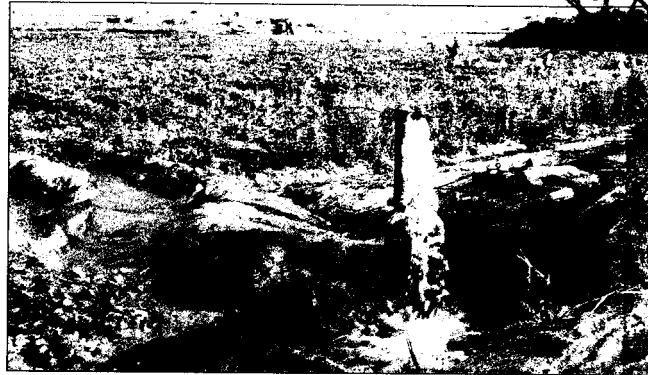
weather are manageable. Flooding, for instance, could be a boon to farmers. If excess water can be channelled underground to replenish aquifers, then it will create a stable water store that can be accessed via tube wells during the dry season.

Our institute, IWMI, has launched a pilot scheme in Uttar Pradesh where a village pond has been modified to channel floodwater below the surface

## **There's immense opportunity for smallholder farmers to save 35-40% water by adopting drip irrigation as opposed to flood irrigation**

through specially built recharge wells. This will be of great use to farmers during the rabi season.

Overall, however, we will need far more water storage than schemes like this can deliver. So we should invest in more reservoir capacity. At the same time we need to protect and conserve natural water storage in rivers, lakes and wetlands. Without these ecosystems our environment will suffer. That will negatively



affect productivity of our farms and our general quality of life.

We also need to explore more high tech solutions. We work on remote sensing. The data we can now get from space satellites is remarkable. Not only can we see what is going on in our landscape in incredible detail – like a supercharged Google Earth – we can also measure how well plants are performing and even estimate how much water is underground.

By combining all this information we are able to monitor and predict water shortages and depleting soil moisture field by field, to a hitherto unimaginable degree. This will allow us to warn of impending drought well in advance of it actually happening. By passing this information on

to farmers through their mobile phones, they will be able to plan far more effectively. For instance if a drought is expected, they can consider sowing crops that are less water intensive, such as pulses and oil seeds.

A recent study by IWMI of the inventory of over 1,300 farm ponds, using high-resolution satellite imagery in the tribal districts of Maharashtra (Palghar and Thane), highlights an immense opportunity for smallholder farmers to save as much as by 35-40% water by adopting drip irrigation as opposed to flood irrigation – resulting in increased crop yield, which allows farmers to sell more without increasing their inputs and results in higher incomes.

Satellite imaging can also

help us provide farmers with more effective crop insurance. In the past it has been tricky to design insurance products for smallholders, since verifying claims and issuing payouts has been too time consuming to be worthwhile for private companies. If we can see the effects of flood or drought from space, however, and that can be accessed at the insurer's desk, then new possibilities open up.

We are working on just such a scheme for flood prone farmers in Bihar. Together with partners in the insurance industry and local government we have devised a new system that, for the first time, can give them financial protection from extreme events.

Adapting our water management to climate change won't be easy. Investments will need to be substantial both in infrastructure and institutions. But new thinking and new technology can help us cope with extremes and protect the most vulnerable. However, as events in Maharashtra are showing, the time to act is now.

*Giriraj Amarnath specialises in water-related disaster risk management, James Clarke directs communications and marketing at the International Water Management Institute (IWMI)*

# Uttarakhand blaze, a man-made disaster

JACOB KOSHY

**NEW DELHI:** Two years of drought and a rise in the average temperature, low relative humidity and strong winds have all contributed to the fires raging in Uttarakhand.

"It's known in these parts that forest fires follow a general five year cycle, and the intensity this year can be seen in this light. The drought and low humidity over two years have played a big role," Ashwani Kumar, Director-General, Indian Council of Forestry Research and Education, told *The Hindu*.

The Forest Survey of India warns State governments about the probability of forest fires and preparations are usually taken up in February to contain them.

Apart from the threat to life, forest fires are ecologically damaging depending on whether they are ground fires or crown fires.

When fires spread at the level of treetops — the crown — they irreversibly damage trees. The fires in Uttarakhand this year, according to Mr. Kumar are largely ground fires.

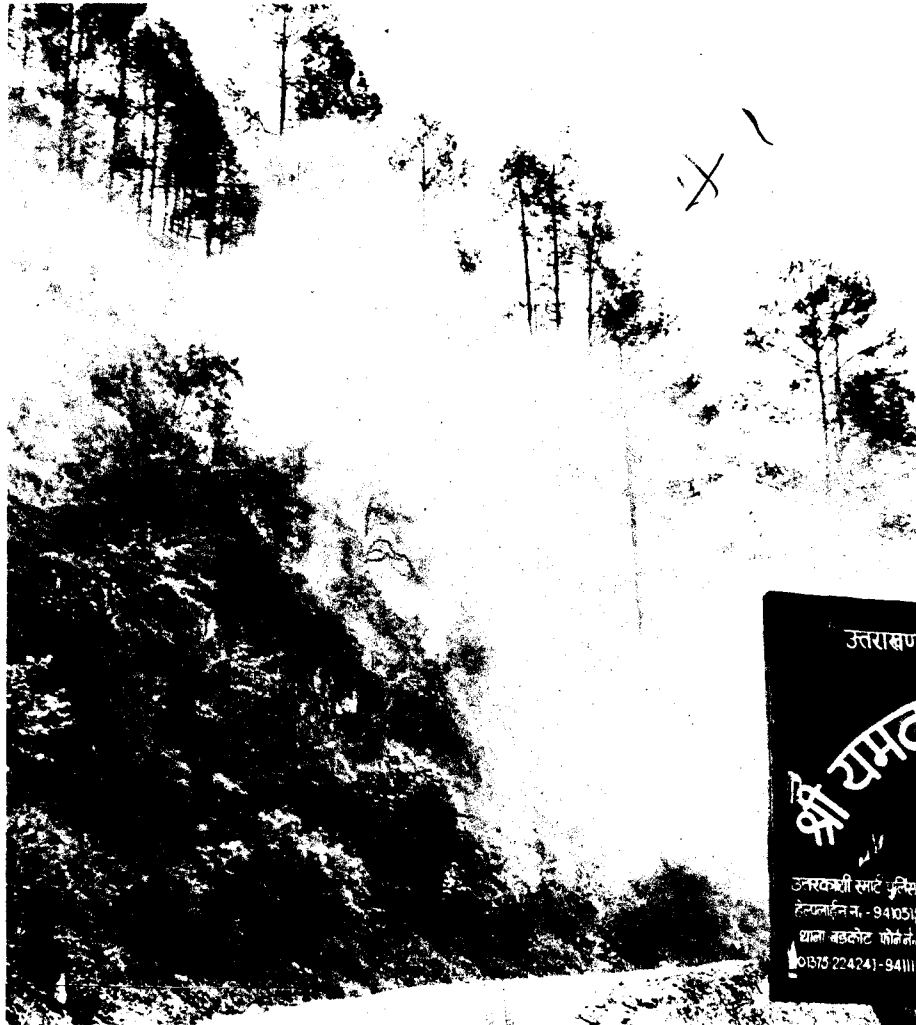
## 'Need more manpower'

Using helicopters to pour water and put out the fires is not a feasible option in the affected area because there are not enough lakes or large water sources nearby. The best way is to recruit more manpower to do the job, he added.

Compared to the United States and Australia, forest fires in India occur largely due to human actions.

Forest dwellers often start fires to create new ground to get a fresh crop of grass for livestock. Mr. Kumar said such activities went out of control on many occasions and there should be greater awareness.

Nearly 55 per cent of India's forests are prone to fires and they emit aerosols in copious quantities that are damaging the environment, according to a study by the University of Freiburg on the causes and patterns of Indian forest fires.



Flames engulf a forest near Badkot in Uttarkashi district of Uttarakhand. The State has been under a dry spell this year with either scanty or no rainfall in most areas. — PHOTO:VIRENDER SINGH NEGI

## Area under forest fire doubles this season

KAVITA UPADHYAY

**NAINITAL:** Official data for the past three years for Uttarakhand show that the area under forest fires has more than doubled this year. In 2014, it was 384.5 hectares while in 2015, it was 930.33 hectares. This year it has already touched 2,000 hectares.

Five people from Kumaon and Garhwal regions have succumbed to forest fires in the State since February. Jagdish Joshi, 53, a forest guard, in the Naina Range under Nainital was hospitalised for smoke inhalation. "Since

BLAZING HILLS			
A look at the incidents of forest fires in Uttarakhand in the last four years	2012-13	1,328	Fires Area affected (hectares)
	2013-14	245 384.5	
	2014-15	515 930.33	
	2015-16	922	
		2,000 (till date)	

Source: Forest department, Uttarakhand

April 24, we were putting out forest fires day and night," Mr. Joshi said, recovering from chest pain.

Principal Chief Conservator of Forests Rajendra Kumar said the five deaths could not be directly attributed to

fires. "Some four or five deaths have taken place in the vicinity of fires, but there is no direct connection," he said. At least ten people have been injured and seven animals killed.

Van Panchayats and local residents have been engaged and a 24-hour helpline set up.

Uttarakhand has been under a dry spell this year with either scanty or no rainfall in most areas. "High temperature with no moisture was the major reason for fires this year," Mr. Kumar said, adding that intense winds had exacerbated the situation.



# Maharashtra to shun water-intensive crops, to support pulses production

State to give extra 5% to 10% incentive over the procurement prices announced by the Centre

SHARAD VYAS

**MUMBAI:** The Maharashtra government has taken steps to promote pulses over other crops as the clamour to bring down water-intensive farming in the State grows following three consecutive years of drought.

In the bid to encourage farmers to grow more pulses amidst falling sugarcane rates, the State has decided to give an additional 5% to 10% of incentive over the procurement prices announced by the Centre annually. The incentive will also be over and above the one-time bonus of Rs. 75/quintal already granted for chana (gram) and masur (lentil) last Rabi season, officials said.

The proposal to grant additional incentives from the State's side has been prepared by the Agriculture Department, which is now seeking



**BOOSTING PRODUCTIVITY:** The idea is to encourage farmers to invest in improving production of pulses. — FILE PHOTO: REUTERS

to answer questions raised over growth of water-intensive crops in drought-hit regions like Marathwada, where some experts have pointed out excess consumption of water, attributing to crops like sugarcane, banana, grapes and oranges, which

are mostly groundwater dependent.

Senior officials said the decision taken will give a strong price signal to farmers to increase acreage and invest in improving production of pulses. "It was about time we took a strong stand from our

side to send a message to farmer to increase acreage in other crops and not only sugarcane. Merely telling him not to grow any particular crop does not make much sense anyway," said a senior official.

The Centre's current minimum support price (MSP) for tur (pigeon peas), urad (black gram whole), moong (green gram), masur (lentil), currently stands at Rs. 4,625/quintal, Rs. 4,625/quintal, Rs. 4,850/quintal and Rs. 3,425/quintal.

However, experts said the State intervention is too little too late. With market prices for pulses hovering two times the MSP — tur trading over Rs. 10,000 and Urad around Rs. 15,000 — increasing the MSP or even adding an incentive over and above that will not serve as a motivating factor for the farmers, experts said.

"The government's intentions are good, but even if assuming that the Centre increases the MSP next season by say 10% and we add another 10% incentive of the State, it will still be way below the market price to influence the planting decisions of the farmer in October when he actually takes a call on what to sow," said Nitin Kalantari, of Kalantari Foods Ltd, a prominent trader in the State.

Some others pointed out that procurement must continue even as the government was looking at bonuses and incentivising the use of pulses.

At most times, the State machinery does not procure even when prices hit below or around MSP, "We have to petition the local collector to start procurement but the implementation of the MSP is poor in the districts," said Lalit Shah, of the APMC, Latur.

# Dams have water till May-end, dead storage may be used later

DH-29, P. 7

**BENGALURU:** Water levels in all reservoirs of the state are fast depleting, and the government has announced that water will last only till the end of May.

Water Resources Minister M B Patil told the media in Bengaluru on Thursday that the situation might worsen if the monsoon fail this year too.

If such a situation were to arise, then the government will meet the drinking water needs by pumping water from the dead storage.

He said that water boards had been directed to supply water on a staggered basis, to ensure judicious utilisation.

"Come June, if the rains fail, the situation will worsen. It will be ideal if BWSSB and other water supply boards stagger

the supply of water," said Patil.

He said Maharashtra had fulfilled Karnataka's demand and had supplied 1 tmc ft of water from Ujjani dam. The government has sought an additional 1 tmc ft of water from Maharashtra, but the neighbouring state had said that it might be difficult to provide the same. Patil said that Karnataka would appeal once again. Chief Minister Siddaramaiah would submit a petition shortly to Maharashtra.

## Mekedatu project

Patil also said that the department was on the verge of finalising the detailed project report for the Mekedatu balancing reservoir project. The project proposal would be submitted to the Centre next month.

The department will also sub-

mit a proposal for the expansion of the Tungabhadra reservoir.

## Telangana's appeal

The Telangana government has requested Karnataka to release 3 tmc ft of water from the Narayanpura dam.

Telangana state too is facing severe drought conditions. A three-member ministerial delegation led by the Telangana minister for Irrigation, Marketing and Legislative Affairs, T Harish Rao, met Patil and submitted a memorandum to him to this effect.

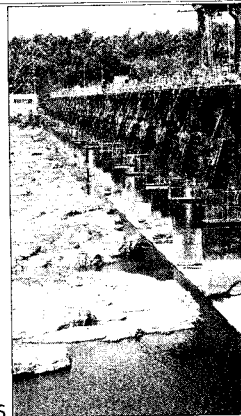
Patil has promised to consider the demand on humanitarian grounds.

"I will discuss the matter with Chief Minister Siddaramaiah and the officials concerned. A decision will be taken soon after assessing the avail-

## Then and now

RESERVOIR	2015	2016
Linganmakki	35.22	36.36
Supa	59.63	34.86
Varahi	7.54	6.93
Harangi	1.24	1.00
Hemavathi	5.51	4.97
KRS	14.35	10.92
Kabini	11.31	4.41
Bhadra	34.05	20.16
Tunga Bhadra	2.03	2.62
Ghataprabha	7.86	3.60
Malaprabha	6.60	4.21
Almatti	21.04	13.61
Narayanpura	13.97	13.34

\* Levels in tmc, as on April 28, 2016



ability of water and the requirement of the state," he said.

He said people of Karnataka too were facing severe shortage

of drinking water and the government was making concerted efforts to mitigate the problem.

**DH News Service**

# C'garh waterfall dries up for first time in 30 yrs

RABINDRA NATH  
CHOUDHURY | DC  
RAIPUR, APRIL 28

One of the famed cascades of Chhattisgarh, Tirathgarh waterfall, has almost dried up triggering desertion of its age-old inmates, monkeys.

The waterfall, which splits into multiple falls creating a stunning vista particularly during monsoon, has almost reduced to a streak of fall, the phenomena witnessed for the first time in three decades, a local forest officer said on Thursday.

The waterfall is located nearly 35 km from Jagdalpur, headquarters of Bastar in south Chhattisgarh.

"Monkeys, the age-old inmates of Tirathgarh waterfall, are the worst victim of the phenomena. The simians have deserted the waterfall after it dried up," a forest officer posted in Bastar said



A farmer walk with a calf on parched lake bed at drought-hit Hukunda near Chikmagalur in Karnataka on Thursday —PTI

unwilling to be quoted.

"The waterfall has almost dried up. It is a disheartening and rare sight. Denudation of forests coupled with global warming may have contributed to the phenomena," Professor of Zoology, Government PG College, at Jagdalpur, Sushil Dutt said.

## U'khand districts to be declared drought-hit

**Dehradun, April 28:** Five out of 13 districts of Uttarakhand located in the hills will soon be declared drought-hit, a senior official said on Thursday. Almora district in Kumaon belt is the

worst hit with 1,343 hectares of irrigated land and 24,000 unirrigated land affected by drought.

Other hill districts in the grip of a drought are Pithoragarh, Nainital, Rudrapur and Pauri,



Farmers from drought-hit Marathwada arrive in the market to sell bullocks due to the shortage of fodder in Karad on Thursday —PTI

## KERALA TO BE DECLARED DROUGHT-HIT

DC CORRESPONDENT  
THIRUVANANTHAPURAM  
APRIL 28

The government on Thursday decided to declare the state as 'drought-hit' with the concurrence of the Election Commission.

The decision was taken at a meeting of the Kerala State Disaster Management Authority chaired by Chief Minister Oommen Chandy.

"We have requested the EC to permit us to declare the state as drought-hit because of the current heat wave conditions," Revenue Minister Adoor Prakash told mediapersons.

Once these districts are declared drought-hit, farmers will start getting concessions like a periodic moratorium on repayment of loan taken from banks and collection of revenue from them. —PTI



पाली जिले के सुमेरपुर समीप जवाई बांध के गेज में गिरावट के साथ सिमटती जल राशि।

# लूट रहे चंबल का 'खजाना'

RP. 1 May - P-2



कोटा. चंबल नदी से रेत निकालने पर प्रतिबंध है, लेकिन इंसानी स्वार्थ के आगे यह प्रतिबंध मात्र दिखावा साबित हो रहा है। सरकारी सरखी के अभाव में नियमों की खुलेआम धजियां उड़ रही हैं। आज भी चंबल नदी से रंगपुर गांव के पास खुलेआम पहले नावों से रेत बाहर निकाली जाती है, इसके बाद उसे ट्रकों में भरा जाता है। यह काम दिन-दहाड़े होता है। ट्रक को रंगपुर गांव में नदी पर बनी रपट पर कुछ दूरी तक पानी में उतार दिया जाता है, यहां रेत से भरी नाव को ट्रक के नजदीक लाकर उसमें रेत भर दी जाती है। इस जगह से रंगपुर व केशवरायपाटन के बीच यात्री नावें भी चलती हैं और दिनभर लोगों की आवाजाही रहती है। इसके बाद भी रेत का अवैध कारोबार करने वालों को किसी का खौफ नहीं है। शुक्रवार को नदी से नाव में रेत निकलने के बाद ट्रक में भरते लोग उधर क्षेत्रीय वन अधिकारी दाताराम के अनुसार चंबल से रेत निकालने जैसी कोई शिकायत मेरे पास नहीं आई है। फिर भी यदि ऐसा हो रहा है तो इसे दिखवाया जाएगा।

फोटो - हाबूलाल शर्मा

# उत्तराखण्ड : 24 घंटा में 4 गुना बढ़ा आग, शिमला तक

सैटेलाइट तस्वीरों में दिखे भयंकर हालात



12 जगहों पर शिमला में लगी है

200 जगहों पर उत्तराखण्ड में सक्रिय है



**राहत : एक-दो दिन में  
हो सकती है बारिश**

इस बीच मौसम विभाग ने राहत की खबर दी है। विभाग के मुताबिक, अगले दो दिन के भीतर बारिश हो सकती है। यदि ऐसा होता है तो आग बुझाने में काफी बड़ी मदद मिलेगी।

2 May RF-P-14

एमआई-17 ने  
बरसाया पानी



एमआई-17 हेलीकॉप्टर ने प्रभावित इलाकों पर पानी की बौछार की। दूध कम होने से रफ्तार धीमी रही।

नई दिल्ली @ पत्रिका. पिछले 24 घंटों में उत्तराखण्ड के जंगलों में लगी आग चार गुना बढ़ कर शिमला तक पहुंच गई है। शिमला में 12 जगहों पर ये आग पहुंच गई है। 50 हेक्टेयर एरिया इसकी चपेट में है। इसरो के राष्ट्रीय रिमोट सेंसिंग सेंटर द्वारा किए गए विश्लेषण के मुताबिक उत्तराखण्ड में 200 जगह ऐसी हैं जहां आग

सक्रिय है। वहीं समूचे उत्तरी पर्वतीय क्षेत्र में करीब 1000 ऐसे ठिकाने हैं जहां आग सक्रियता से काम कर रही है। आग से अब तक 7 की मौत हो चुकी है। पूरे उत्तर भारत में 1300 जगहों पर आग फैली हुई है। पिछले 90 दिनों से उत्तराखण्ड में आग से 3000 एकड़ के जंगल पर असर पड़ा है।

2 साल बाद मई की शुरुआत बढ़े टेंपरेचर के साथ हुई, टेंपरेचर नॉर्मल से 5 डिग्री सेल्सियस ज्यादा था

NOT 2/P. 4

# टेंपरेचर 44<sup>0</sup> के पार

■ नगर संवाददाता, नई दिल्ली

संडे को दिल्ली का अधिकतम तापमान 44.2 डिग्री सेल्सियस दर्ज किया गया। मौसम विभाग के पालम स्टेशन पर यह तापमान दर्ज किया गया, जो नॉर्मल से पांच डिग्री सेल्सियस ज्यादा है। इससे पहले, 16 अप्रैल को मैक्सिमम टेंपरेचर 44 डिग्री सेल्सियस दर्ज किया गया था। मौसम वैज्ञानिकों का कहना है कि पिछले दो सालों में पहली बार मई महीने के शुरुआती दिन में ही इतना ज्यादा अधिकतम तापमान दर्ज हुआ। वहीं सोमवार को धूल भरी आंधी चलने की आशंका है।

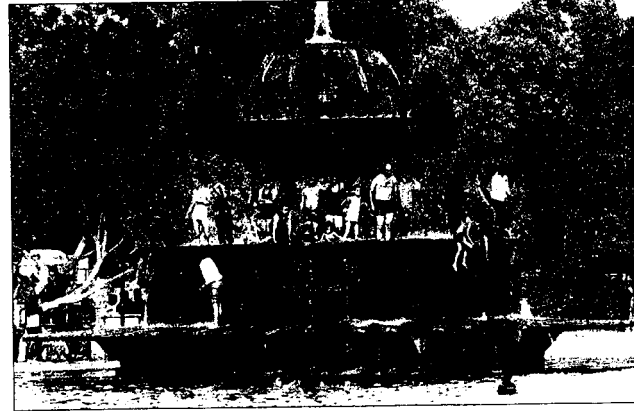
दिल्ली में कई जगह मैक्सिमम टेंपरेचर 42 डिग्री से ज्यादा दर्ज किया गया। सफदरजंग में मैक्सिमम टेंपरेचर नॉर्मल से तीन डिग्री ज्यादा के साथ 42 डिग्री सेल्सियस दर्ज किया गया। मैक्सिमम टेंपरेचर लोदी रोड में 42, दिल्ली रिज में 43.5, स्पोर्ट्स कॉम्प्लेक्स में 43.2, आया नगर में 43.2, जाफरपुर में 42.4, पीतमपुरा में 41.5, नजफगढ़ में 42.2, पूसा में 41.3 और अक्षरधाम में 41.9 डिग्री सेल्सियस दर्ज किया गया।

■ इससे पहले, 16 अप्रैल को मैक्सिमम टेंपरेचर 44 डिग्री सेल्सियस दर्ज किया गया था

■ सोमवार को बादल छा सकते हैं। धूल भरी आंधी भी चलने की संभावना है

■ तीन से चार दिनों तक धूल भरी आंधी चल सकती है, हल्की बूंदबांदी का अनुमान

PTI



गर्मी से बचने के लिए इंडिया गेट पर लगे फव्वारे के नीचे लोग नहाते नजर आए

रविवार को मिनिमम टेंपरेचर नॉर्मल से सेल्सियस दर्ज किया गया। हवा में मैक्सिमम तीन डिग्री सेल्सियस कम के साथ 22 डिग्री ह्यूमिडिटी 56 परसेंट दर्ज की गई। मौसम

वैज्ञानिकों ने बताया कि मई महीने के पहले दिन 44 डिग्री तक तापमान जाने की वजह है कि मौसम ड्राई रहा। गर्म हवाएं भी चलीं। इसकी वजह से तापमान ज्यादा रहा। रविवार के दिन हीट वेव जैसी स्थिति बन गई। मौसम विभाग ने अपने बुलेटिन में कहा कि सोमवार को बादल छा सकते हैं। धूल भरी आंधी भी चलने की आशंका है। मैक्सिमम टेंपरेचर 41 डिग्री और मिनिमम टेंपरेचर 24 डिग्री सेल्सियस रहने की संभावना है। आने वाले तीन से चार दिनों तक धूल भरी आंधी चल सकती है। मौसम वैज्ञानिकों के मुताबिक बंगाल की खाड़ी और अरब सागर से नमी वाली हवाएं उत्तर भारत में दस्तक देंगी। साथ ही नया वेस्टर्न डिस्टर्बेंस भी उत्तर भारत में पहुंचेगा। इससे दिल्ली और आसपास के इलाकों में धूल भरी आंधी चल सकती है। साथ ही हल्की बूंदबांदी की भी उम्मीद है। मौसम वैज्ञानिकों के मुताबिक, आंधी चलने से तापमान गिर सकता है। मई महीने में वेस्टर्न डिस्टर्बेंस का प्रभाव कम रहता है। लेकिन मौजूदा मॉडल से मिली जानकारी के मुताबिक मई महीने में कई मौसम के सिस्टम बनेंगे, जिससे मौसम का मिजाज बदल सकता है।



आइसक्रीम और ठंडे पानी से राहगीरों ने दूर की गर्मी