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SIMPLY PUT

# A little more water than usual, not everywhere

Storage in the country's reservoirs is just over what is normal for this time of the year. But those in Western and Southern Regions are way short of those levels

AMITABH SINHA  
PUNE, JUNE 16

THE overall storage position in the 91 major reservoirs monitored by the Central Water Commission (CWC) across the country this week is better than the situation in the corresponding week of last year, as well as the corresponding average storage of the last 10 years, the CWC has said in its latest report, published on June 13.

However, this situation is not uniform across the country. Maharashtra, Gujarat and Karnataka are facing drought conditions and an acute water shortage, and reservoir levels in all states of the Southern and Western Regions are significantly lower than the 10-year average — known as the “normal” level.

The southwest monsoon hit Kerala on June 8, a week behind the June 1 schedule. The timing of the onset does not have a bearing on the quality or amount of rainfall over the June-September monsoon season. A delayed onset over Kerala also does not mean that the monsoon would be delayed elsewhere in the country.

The CWC, which is an attached office with the Union Ministry of Water Resources, River Development and Ganga Rejuvenation, is the country's premier technical organisation in water resources. It issues detailed bulletins on reservoir levels and storage every Thursday. The reservoirs, which store water for irrigation, drinking, and generation of hydro power, are a key component of regional and the national economies. Reservoir levels are low before the arrival of the monsoon, and they gradually fill up as the season progresses.

As of June 13, the major reservoirs together held 29.189 billion cubic metres of water, which was 18% of these reservoirs' combined storage capacity. This is slightly better than the situation in the same week last year, when reservoirs had storage of 28.013 BCM. The normal storage at this time is expected to be 28.972 BCM.

The situation in the reservoirs of the Western and Southern Regions, however, reveals why these areas are going through an acute water shortage. The 27 major reservoirs in the Western Region, essentially in Gujarat and Maharashtra, are together holding just 10% of their combined storage capacity, well below their normal levels of 17% for this time of the year. The 31 reservoirs in the five southern states are filled to only 11% of their combined capacity as against a normal level of 15% at this time of the year.

The situation is particularly critical in Maharashtra, where the total water in reservoirs is 68% below normal, and in Andhra Pradesh, where reservoirs are at 84% below normal storage.

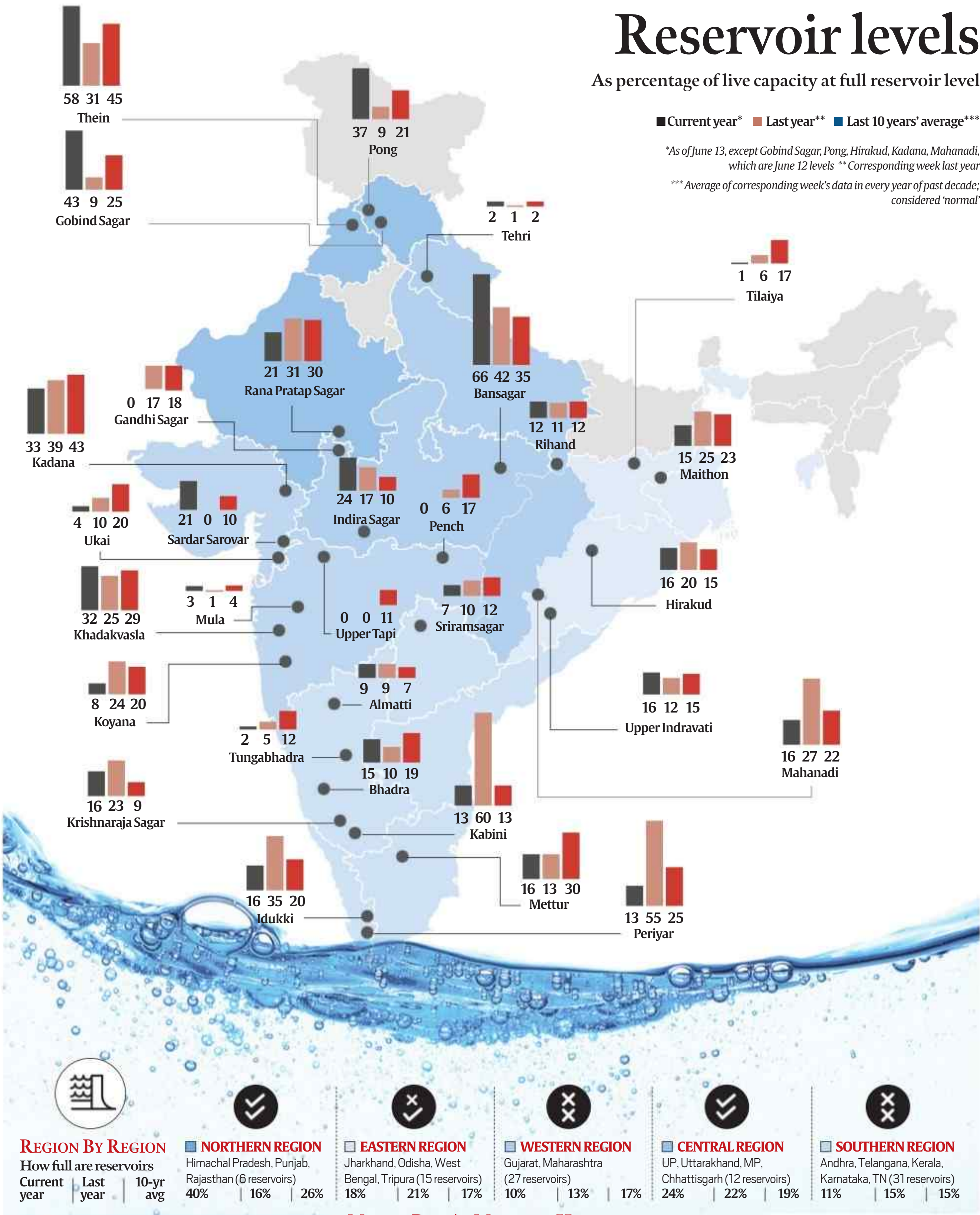
Reservoirs in the Northern Region (Himachal Pradesh, Punjab), Eastern Region (West Bengal, Odisha, Tripura), and in Madhya Pradesh were in healthy condition.

There has been very little rain this year, with the pre-monsoon season of March to May witnessing 25% below normal rainfall. In the last one year since July, there has been just one month, February this year, that has witnessed normal rainfall. All other months have been deficient.

The storage in the reservoirs, however, depends not only on the total amount of rainfall, but also on where the rainfall happens. The catchment areas, from which water drains into the reservoirs, need to receive good rainfall for the reservoir levels to rise.

## Reservoir levels

As percentage of live capacity at full reservoir level



### ANDHRA PRADESH, MAHARASHTRA RESERVOIRS DRIEST

Departure from normal storage: All states in the Southern Region are in deficit

NORTHERN REGION	
Himachal Pradesh	77%
Punjab	29%
Rajasthan	- 5%

EASTERN REGION	
Jharkhand	- 16%
Odisha	9%
West Bengal	29%
Tripura	15%

WESTERN REGION	
Gujarat	- 22%
Maharashtra	- 68%

CENTRAL REGION	
Uttar Pradesh	- 11%
Uttarakhand	37%
Madhya Pradesh	39%
Chhattisgarh	- 9%

SOUTHERN REGION	
Andhra & Telangana	- 51%
Andhra Pradesh	- 83%
Telangana	- 34%
Karnataka	- 8%
Kerala	- 24%
Tamil Nadu	- 41%

Data as of June 13

### WATER WORDS

#### FULL RESERVOIR LEVEL (FRL)

■ Highest possible level of water in a reservoir, including active and inactive (water below the level of dam outlets) storage, and flood storage if provided for

#### STORAGE LEVELS CLASSIFICATION

NORMAL
Average storage of the last 10 years
CLOSE TO NORMAL
Shortfall up to 20% of normal storage
DEFICIENT:
Shortfall more than 20% and up to 60% of normal storage
HIGHLY DEFICIENT
Shortfall more than 60% of normal

### BASINWISE STORAGE

Southern and Western river systems have the least water

BETTER THAN NORMAL
Ganga, Indus, Narmada
CLOSE TO NORMAL
Mahi, Kutch rivers, Mahanadi and neighbouring east- and west-flowing rivers of the South
DEFICIENT
Sabarmati, Godavari, Krishna, Cauvery, neighbouring east-flowing rivers
HIGHLY DEFICIENT
Tapi

Source: Central Water Commission

## AN EXPERT EXPLAINS

# Why healthy animals mean healthy humans, and how to meet that goal



TARUN SHRIDHAR

NOT SO long ago, the widespread prevalence of avian influenza in poultry, or bird flu as it commonly became known, created nationwide panic resulting in the culling of millions of poultry birds. It was concern for human health that prompted the extreme reaction and subsequent establishment of protocols; containment of avian influenza is managed quite effectively now. Similarly, in 2003, SARS or Severe Acute Respiratory Syndrome emanated suddenly in China. This too vanished soon, but not before an emergency response that included extreme measures like travel bans and restrictions.

In both cases, panic spread much faster than the virus. Besides drawing a response from governments, these events also brought

forth the hitherto forgotten philosophy of One Health, which recognises inter-connectivity among human health, the health of animals, and the environment.

### The One Health concept

The World Organization of Animal Health, commonly known as OIE (an abbreviation of its French title), summarises the One Health concept as “human health and animal health are interdependent and bound to the health of the ecosystems in which they exist”. Circa 400 BC, Hippocrates in his treatise *On Airs, Waters and Places* had urged physicians that all aspects of patients' lives need to be considered including their environment; disease was a result of imbalance between man and environment. So One Health is not a new concept, though it is of late that it has been formalised in health governance systems.

As human populations expand, it results in greater contact with domestic and wild animals, providing more opportunities for diseases to pass from one to the other. Climate change, deforestation and intensive farming further disrupt environment characteristics, while increased trade and travel result in closer and more frequent interaction, thus increas-

ing the possibility of transmission of diseases. According to the OIE, 60% of existing human infectious diseases are zoonotic i.e. they are transmitted from animals to humans; 75% of emerging infectious human diseases have an animal origin. Of the five new human diseases appearing every year, three originate in animals. If this is not scary enough, 80% biological agents with potential bio-terrorist use are zoonotic pathogens. It is estimated that zoonotic diseases account for nearly two billion cases per year resulting in more than two million deaths — more than from HIV/AIDS and diarrhoea. One-fifth of premature deaths in poor countries are attributed to diseases transmitted from animals to humans.

### The approach needed

This builds a strong case for strengthening veterinary institutions and services. The most effective and economical approach is to control zoonotic pathogens at their animal source. It calls not only for close collaboration at local, regional and global levels among veterinary, health and environmental governance, but also for greater investment in animal health infrastructure. Developing countries like India have much greater stake in strong One Health

systems on account of agricultural systems resulting in uncomfortably close proximity of animals and humans. This calls for strict health surveillance to incorporate domestic animals, livestock and poultry too. Humans require a regular diet of animal protein. Thus, loss of food animals on account of poor health or disease too becomes a public health issue even though there may be no disease transmission, and we lose 20% of our animals this way.

The size of India's human and animal populations is almost the same; 121 crore people (2011 Census) and 125.5 crore livestock and poultry. A network of 1.90 lakh health institutions in the government sector form the backbone of health governance, supported by a large number of private facilities. On the other hand, only 65,000 veterinary institutions tend to the health needs of 125.5 crore animals; and this includes 28,000 mobile dispensaries and first aid centres with bare minimum facilities. Private sector presence in veterinary services is close to being nonexistent. Unlike a physician, a veterinarian is always on a house call on account of the logistic challenge of transporting livestock to the hospital, unless they are domestic pets. There could not be a stronger case for reinventing the entire

animal husbandry sector to be able to reach every livestock farmer, not only for disease treatment but for prevention and surveillance to minimise the threat to human health. Early detection at animal source can prevent disease transmission to humans and introduction of pathogens into the food chain. So a robust animal health system is the first and a crucial step in human health.

We are slowly but surely moving towards a strong and effective One Health regime, establishing a collaborative mechanism for joint surveillance and monitoring, strengthening disease reporting and control programmes. While the institutional mechanism for One Health governance is in place, the concept would really catch the imagination if the critical importance of animal health in human well-being were underscored continuously. Disease surveillance has to go beyond humans and encompass preventive health and hygiene in livestock and poultry, improved standards of animal husbandry for greater food safety, and effective communication protocols between animal and public health systems.

### Why it matters for India

The World Health Organization (WHO)

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## BISHKEK LESSONS

SCO summit underlined that manoeuvring among US, China and Russia is now a permanent condition for Indian diplomacy

ALTHOUGH THE shadow of Pakistan followed him to the Bishkek summit of the Shanghai Cooperation Organisation last week, Prime Minister Narendra Modi had bigger fish to fry at the forum that is constructing a new region, now widely described as Eurasia. The SCO brings together two of the world's great powers — China and Russia — and four central Asian nations — Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan — with India and Pakistan. Launched by China and Russia nearly two decades ago, the SCO has also been billed by some as the “Alliance of the East” and as a continental counter to the US and more broadly, the maritime West. For that very reason, it is seen as a major diplomatic challenge to Delhi that has moved steadily closer to the US in recent years and embraced the Indo-Pacific maritime construct.

India's navigation between the two competing worlds had become even more difficult as the US President Donald Trump ratchets up tensions with both China and Russia. His renewal of American confrontation with Iran and the threat to pull out of Afghanistan have thrown the region into fresh turmoil. Undaunted at Bishkek, Modi appeared to revel in India's emerging possibilities in the new dynamic. The big political mandate at home has raised PM's regional stature that he is happy to flaunt. Even as he demonstrated great personal warmth toward China's Xi Jinping, Modi stood his ground on opposing the Belt and Road Initiative and turning down China's advice to begin talks with Pakistan. With President Vladimir Putin of Russia, Modi sought to expand the strategic partnership with Russia to new areas of defence and energy. Modi, however, joined Xi and Putin in opposing the new threats to global trade from new American unilateralism under Trump. The need to manoeuvre between Moscow, Beijing and Washington is now a permanent condition for Indian diplomacy and will be put to test again at the G-20 summit later this month.

On the regional front, PM's bilateral engagement with the host nation Kyrgyzstan underlined the new political commitment to realise the full potential of India's relations with the Central Asian republics. Bishkek summit also revealed India's deepening challenges with Afghanistan and Pakistan. While India continues to emphasise an “Afghan-owned and Afghan-led” peace process, Kabul has become increasingly marginal as major powers negotiate with the Taliban. On a positive note, the forum strongly endorsed India's concerns on cross-border terrorism. Modi did exchange pleasantries with Prime Minister Imran Khan, but is in no mood to revive talks without major steps from Pakistan on shutting down its terror factories. And, Imran's domestic standing is diminishing by the day as a series of political and economic crises envelop Pakistan. Modi, then, is willing to wait.

## IF THE RAINS FAIL

Low retail food inflation, ample stocks of pulses and cereals give government leeway to plan for the exigencies of a poor monsoon

IT'S EARLY days yet, but the prospects of a failed monsoon loom large in the first year of the Narendra Modi government's second term, as in 2014 and 2015. The first half of this month has seen the country receive 43 per cent below-normal rainfall, on top of a 25 per cent deficiency in the pre-monsoon season (March-May). Moreover, Gujarat, Maharashtra, northern Karnataka, coastal Andhra Pradesh and large areas in the Northeast have been experiencing an extended dry spell since the last post-monsoon period (October-December). If current conditions persist — the US Climate Prediction Center has forecast an 81 per cent chance of El Nino, the abnormal warming of the equatorial eastern Pacific Ocean waters known to adversely impact rainfall in India, continuing till July and 66 per cent up to August — kharif crop production will take a hit. The agriculture ministry's data already shows a 9 per cent fall in plantings so far this kharif season compared with last year's corresponding acreage, with even sharper declines for pulses (51 per cent) and coarse cereals (26 per cent).

There is a difference, though, in the situation now relative to five years ago. In May 2014, retail food inflation was at 8.89 per cent year-on-year. In May 2019, it was only 1.83 per cent, while ruling below general consumer price inflation for an unprecedented 33 months in a row. Also, this time, government agencies are holding huge stocks of not just wheat and rice, but also pulses. While most pulses, barring *arhar*, are still trading below their minimum support price levels, even the little inflation now building up in many vegetables, milk or poultry products should not ring alarm bells. If anything, they represent a healthy price correction after a prolonged bearish phase in agricultural commodity markets, triggered both by global factors (collapse of exports) and domestic policies (inflation targeting and demonetisation).

Given the delayed onset of monsoon and likely rainfall deficit, farmers should be advised to sow short-duration pulses (*moong* and *urad*), soyabean, groundnut, sesame, guar and fodder crops, apart from maize and cotton that need less water than paddy or sugarcane. More important, however, is to think beyond the immediate. That would mean freeing up agricultural markets by totally abolishing stocking, movement and export restrictions on produce; giving farmers the freedom to sell their crop to anybody and anywhere; and replacing all input and output subsidies with per-acre direct benefit transfers. The farm sector must no longer be viewed as a source of wage-goods for meeting industrialisation or inflation-targeting goals, but a potent instrument for raising rural incomes and reducing poverty.

## FREEZE FRAME

E P UNNY



SHAH ALAM KHAN

THE RECENT ASSAULT on junior doctors in a medical college in Kolkata — that caused serious injuries to two interns — needs to be strongly condemned. Such violence is unique to the Indian Subcontinent. A number of studies have shown that violence at the workplace can have negative and disastrous effects on employee satisfaction and work performance. Having said that, doctors too are not completely innocent. It appears that the mob mentality has come to rule our social consciousness, preying on even the most elite members of the society. This needs deeper introspection by the society in general and the medical fraternity in particular. It is important to remember that we have institutionalised violence through politics, caste, religion, economics and gender discrimination. We have created a hierarchical social order through such institutionalised violence. Doctors are amongst those who sit at the top of this hierarchy.

Broadly speaking, India has two types of healthcare facilities — public and private. The latter delivers nearly 80 per cent of the country's healthcare. Doctors in both public and the private sectors are at the receiving end of violence. The public sector is in general blamed for most of the faults of the services sector. We need to understand, therefore, why reactions are different when it comes to doctors.

Violence as a means of effecting “justice” is common in Indian society but a large part of the intellectual class, including doctors, remains insensitive to this problem, till they are affected. I have worked with some of the best minds in the profession. But I wonder how many of my seniors, colleagues and juniors would even know about the tombstones in India's graveyard of injustice and violence. Most of my professional brethren haven't even heard about the Khairlanji massacre, they don't understand the reasons behind the Bhagalpur blindings, don't care about what happened at Naroda Patiya and fail to understand the logic behind the Adivasi protests in Chhattisgarh's forests. We doctors have an insulated existence, unaware of the institutionalised violence faced by common people. This



RAMIN JAHANBEGLOO

TEN YEARS AGO, the world watched in admiration the peaceful, non-violent protests of young Iranians in the aftermath of Iran's fraudulent presidential elections of June 2009 that re-elected Mahmoud Ahmadinejad as president. On June 12, interior minister Sadeq Mahsouli, an ally of Ahmadinejad, declared that the president had won the election with 62.6 per cent of the vote against 33.7 percent for Mir Hossein Mousavi, a reformist politician, who served as prime minister from 1981 to 1989. The protests in Tehran began by denouncing the presidential election results. When the administration clamped down, the people created a massive civil movement. In the days and months that followed, the state authorities were challenged by what came to be known as the “Green Movement”, the biggest non-violent challenge to Iran's rulers since they gained power in 1979.

In what is now understood as a Gandhian moment in post-revolutionary Iran, young men and women from all walks of life protested for fundamental changes in the leadership of the Islamic Republic, its economic system, and many other civic issues. Also, for the first time in three decades, Iran's public spaces saw extraordinary heroism from women demonstrators, who were beaten up, arrested, and killed. Neda Agha-Soltan, a 26-year-old philosophy student, who bled to death after being shot during a peaceful demonstration in Tehran, became the symbol of the fighting Iranian women. The demonstrators condemned violence



Violence incubates in our society. Insensitivity to it makes the doctor vulnerable

Solutions like beefing up security within hospital premises can only provide temporary relief. In contrast, sensitising a young doctor towards the problems of the poor and underprivileged can be a simple solution that could reap dividends in the long-run. Compassion, unfortunately, cannot be taught. Teaching behavioural sciences at undergraduate and post-graduate levels can be helpful. Acquainting the young doctor to social prejudices could also be a way to inculcate compassion.

is the most important reason for violence coming back to haunt doctors, painfully so. The young Indian doctor is angry at the injustice meted out to him/her without realising that Dalits, minorities, women and other underprivileged sections of Indian society suffer such violence on a regular basis.

Some may argue, correctly so, that injustices and tragedies should not be compared. But in the case of doctors, this argument does not hold much ground because doctors in India are considered next to god. Most doctors wear this idolisation with pride and this leads to hubris. The doctor-patient relationship in India is thus more than merely “professional”. The acceptance of this god-like status by Indian physicians is problematic, in fact, it works against them. Gods are not supposed to mint money and they are not supposed to have flaws. And, when they fall short of such standards of divinity, the illiterate and the deprived faithful unleash violence on them. India's doctors should realise that their acceptance of a divine status makes them vulnerable to violence by patients.

The rampant corporatisation of medical practice and erosion of medical ethics in private and public set-ups is another reason for doctors facing the music. Corporatisation is known to have changed the behavioural patterns of healthcare personnel. Misbehaviour, over-treatment, under-treatment and blatantly over-priced treatment today constitutes an important part of the medical culture. Unfortunately, not many amongst us are willing to fight it. I am yet to read a statement by an authorised/statutory body of medicine or surgery in the country that condemns outright the malpractices of its members. Such hoodwinking goes on till coercion from the other side assumes threatening proportions.

The country's medical fraternity, especially young doctors, should realise that we work with limitations of infrastructure. The poor conditions of government hospitals, particularly those in large parts of rural India, is no secret. Lack of proper infrastructure leads to improper care — this creates

conditions rife for violence. With one doctor for every 2,000 people, the situation is bound to get out of hand at times. The working hours for residents, who form the backbone of public-funded healthcare, is dreadfully irrational but no one, not even the medical fraternity, wants to raise the issue with the administrative authorities concerned.

It would, therefore, be wrong for doctors, including those involved in the current agitation in West Bengal, to turn against patients. Their anger should be directed at the systemic failures, which leads to infrastructure shortage. The doctors should, in fact, send out the message that they are not against patients. A simple way to assert this point would be to run out-patient clinics outside their hospitals on days when they are on strike. Strikes by doctors can also be tricky from an ethical standpoint. It is correct to fight injustices but a doctor under the Hippocratic Oath is contractually obliged to care for the patient — this overrides all other responsibilities of a physician. Striking work complicates the issue in other ways too: Loss of public sympathy, brinkmanship of the administrators and demonising by the media erodes the moral standing of the doctors.

Solutions like beefing up security within hospital premises can only provide temporary relief. In contrast, sensitising a young doctor towards the problems of the poor and underprivileged can be a simple solution that could reap dividends in the long-run. Compassion, unfortunately, cannot be taught. Teaching behavioural sciences at undergraduate and post-graduate levels can be helpful. Acquainting the young doctor to social prejudices could also be a way to inculcate compassion. In other words, young physicians should be made aware that the violence they suffer incubates in the society they live in. Insensitivity to such violence makes one vulnerable to it.

Khan is professor of orthopaedics, AIIMS, New Delhi and author of *Announcing the Monster*. Views are personal

## READING GANDHI IN TEHRAN

A decade later, the peaceful Green Movement continues to inspire Iranians worldwide

and the exercise of power without ethics by the authorities. The Iranian political society had abandoned ethical values since the constitutional revolution of 1906-1911 and adopted violence as a means to force regime change. So, the non-violent action by the Iranian Green Movement was proof of a new political maturity and moral integrity. The Green Movement chose civil disobedience, particularly silent demonstrations, to unify people, which gave it a “Gandhian” tone. This rather spiritual and peaceful spirit of the Green Movement that saw the participation of a large number of young Iranians, was a huge motivation for the young Arabs, who two years later, took to streets in Tunis, Cairo, Damascus and Bahrain to challenge the undemocratic order in their countries.

The Green Movement was quickly crushed by the authorities. But it impressed the civil society actors in Iran about the need to go beyond all forms of violence in political action. The brutal policies of the authorities, since the 1979 revolution, have made many people inside and outside Iran believe that only a violent showdown can force regime change in the country. However, the atmosphere that precipitated the Green Movement has promoted radically decentralised political associations and non-hierarchical values among the Iranian youth. Living through two revolutions, one coup d'état, one armed occupation and sporadic guerilla warfare in one century, several generations of Iranians are exposed to the horrors of violence. In this context, the Green Movement is

not only an important moment in Iranian history, but also a milestone in the history of non-violent initiatives across the globe. For those who seek a more tolerant, pluralistic and democratic order in Iran, the rise of the Green Movement represents an explosion of democratic thought and action, which created a “new unity of purpose” among Iranians around the world since the downfall of Mohammad Reza Pahlavi in 1979. A decade since its eruption, the Green Movement is viewed as a promising indigenous movement for democracy.

It's useful to remember that two out of three people in Iran today are under 35. They make up one-third of the electorate in the presidential elections. These young Iranians, many of them well-educated, may not pose a threat to the regime in Tehran, which has vast paramilitary and police resources at its disposal. But given the demographics, policy decisions that do not factor in the views of the young Iranians could severely threaten the very foundations of the Islamic regime.

The idea of the Green Movement as a democratic learning community has not disappeared. Many Iranians see the moral claims made by it as a legitimate counter to the values claimed by the Iranian theocracy. Young Iranians will continue to read Gandhi in Tehran, though it may take another generation to make the Gandhian dream of non-violent political change a reality.

The writer is professor-vice dean, Jindal Global University

## JUNE 17, 1979, FORTY YEARS AGO

### US-SOVIET TALKS

US PRESIDENT JIMMY Carter and Soviet President Leonid Brezhnev planned to talk business in the first east-west summit meeting in nearly five years. They open their formal talks with an exchange of verbal statements outlining often-conflicting positions on global, regional and bilateral issues. Carter and Brezhnev exchanged brief pleasantries last night in a call on Austria's president and shared a box at a glittering first night performance of the Austrian state opera.

### POWER CRISIS

MAHARASHTRA IS UNDER the worst power crisis in the annals of history. A five-day total

power cut to all general industries, including textile mills has been announced. The continuous process industries will be subjected to 75 per cent energy and demand cut on their basic quotas. They will be allowed to retain 25 per cent quota to prevent damage to equipment. The drastic measures to curtail consumption were announced by Chief Minister Sharad Pawar at a press conference after getting cabinet approval and post consultations with representatives of labour and industries.

### L N MISHRA PROBE

THE SPECIAL MAGISTRATE, Patna, reserved orders on the petition of four Ananda Margis, accused in the L N Mishra murder case, re-

newing their plea for release on bail. He also reserved orders on another petition submitted by them for the production of four documents which had acquired importance in the context of “newspaper reports that there is going to be fresh probe in Mr Mishra's murder case”. The magistrate fixed July 17 as the next date for hearing the case. The petitioners, who are lodged in the Phulwari Sharif camp jail in Patna, are Santoshanand, Arteshanand, Sudevanand and Krishna Mohan Singh alias Gopaljee. Referring to the rejection of their earlier petition for bail, they sought to reiterate their plea on the ground that “there is no chance or possibility of the case being opened in the near future”.



