



## Water equity

States. Centre should accept the finality of the Supreme Court's decision on the Cauvery Dispute Tribunal, while slightly modifying its award, the Supreme Court has boosted the prospects of a viable water-sharing arrangement among the riparian States. That it has reduced the Tribunal's allocation for Tamil Nadu and raised Karnataka's share does detract from the fairness of the decision. It has underscored that no single State has primacy in accessing water resources and that rivers are national assets. This is a significant recognition of the principle of equitable distribution of inter-State rivers. The Supreme Court's message is that the Centre should get down to creating a legal and technical framework to implement the Tribunal's award, as modified by the judgment. This is the strongest affirmation so far of a basin State's right to its share of water on a regular basis without having to rush to the court for *ad hoc* orders to open the sluices of reservoirs during monsoon-deficit years. It may be possible for either side to cavil at the judgment, questioning the reduction in quantum or the obligation to adhere to specified monthly release targets, but these would be exercises in political partisanship rather than legitimate grievances warranting legal redress. Tamil Nadu, as a State that has seen agrarian distress in its delta districts, ought to be satisfied with any prescribed allocation being met as per a schedule. Karnataka can take heart from the reduction in its mandatory release target and the additional share for Bengaluru. Neither State, in any case, should be aggrieved by the stipulation that equity is at the heart of a water-sharing arrangement.

Resolving an inter-State water dispute is mainly about balancing the competing genuine demands and interests of each State and coming up with a pragmatic sharing arrangement. Rather than looking at the court's decision from the narrow prism of the quantum of allocation, the parties would do well to see this as the culmination of a fair and scientific adjudicative process. They should pose no further impediment to the smooth implementation of the order and be prepared, for the next 15 years, to share both the bounty and distress caused by nature. By dithering, the Centre has not covered itself in glory throughout this protracted dispute. It took six years to notify the award, and even in the final hearing argued it was not obliged to frame a scheme for implementation. The argument was deservedly rejected. It should comply with the court's direction and set up the Cauvery Management Board and Water Regulation Committee as part of the scheme. It will be unfortunate if the States and the Centre are reluctant to accept this verdict and refuse to acknowledge its finality. There is ample judicial wisdom in the country to adjudicate complex and emotive inter-State disputes, but the question is whether there are enough conscientious and cooperative parties to make judgments work.

## Case histories

Without reform of the public health system, insurance schemes are but a band-aid solution. The government's intention to launch the world's largest health insurance programme, the National Health Protection Scheme, raises an important issue. Should the focus be on the demand side of health-care finance when the supply side, the public health infrastructure, is in a shambles? Experience with insurance schemes, such as the Centre's Rashtriya Swasthya Bima Yojana and Andhra Pradesh's Rajiv Aarogya, show how demand side interventions can miss the mark. While the RSBY and Aarogya did improve access to health-care overall, they failed to reach the most vulnerable sections. At times they led to unnecessary medical procedures and increased out-of-pocket expenditure for poor people, both of which are undesirable outcomes. These showed that unless the public health system can compete with the private in utilising funds from such insurance schemes, medical care will remain elusive for those who need it most. Policymakers behind the NHPS, which will cost the government around ₹5,000 crore in its first year, must take heed.

Both RSBY and Aarogya are cashless hospitalisation schemes. While both benefited people living below the poverty line, over-reliance on private hospitals and poor monitoring watered down their impact. According to one Gujarat-based study, a majority of RSBY insured patients ended up spending about 10% of their annual income during hospitalisation, because hospitals still charged them, unsure as they were when they would be compensated. A study in Andhra Pradesh found that beneficiaries spent more from their own pockets under Aarogya. They spent most of their money on outpatient care, and Aarogya didn't tackle this adequately. Possibly the most problematic fallout was mass hysterectomies done in Andhra Pradesh. Between 2008 and 2010, private hospitals removed the uteri of thousands of women unnecessarily, to make a quick buck. Thus, perverse incentives can drive the private sector to sabotage schemes that are not well monitored. The second problem with over-reliance on the private sector is that it limits the reach of such programmes. Evidence from RSBY and Aarogya shows that as distance from empanelled hospitals grew in Andhra and Gujarat, fewer people benefited from them — most empanelled hospitals are private and urban. Scheduled Tribe and rural households typically missed out, while richer quintiles of the population benefited. There can be much gained from the NHPS if the government views it as the first step towards universal health care, rather than a panacea to all of India's health-care woes. The second, and a long-awaited, step is to reform the public health system. Without this, an insurance scheme, no matter how ambitious, will be a band-aid.

# Science should have the last word

As India continues to be hidebound with tradition and rituals, the need for 'scientific temper' is essential as never before



JAYANT V. NARLIKAR

A few years ago, I was at an international conference in Delhi which dealt with important issues arising from changes brought about by the rapid progress of science and technology. As the meeting progressed, with international experts highlighting the action needed in various fields, I began to feel uncomfortable, much like a diner at a sumptuous buffet searching desperately for that missing ingredient — a pinch of salt. The subject I wanted to hear about but which was being glossed over by the speakers was "scientific temper". Ultimately, it was left to me to make a case for it, not only for the scientists but also for the common citizen, whatever his or her occupation.

What is scientific temper? Let me cite a quote from Jawaharlal Nehru's book, *The Discovery of India*: "The impact of science and the modern world have brought a greater appreciation of facts, a more critical faculty, a weighing of evidence, a refusal to accept tradition just because it is tradition..."

He then went on to say: "But even today, it is strange, how we suddenly become overwhelmed by tradition, and the critical faculties of even intelligent men cease to function..." Nehru concludes with the hope that, "Only when we are politically and economically free, will the mind function normally and critically."

### No difference

Alas, what has been the outcome? More than seven decades have elapsed since Nehru's deadline of Indian independence but where are we *vis-à-vis* scientific temper? We continue to be hidebound with

tradition and waste precious time and money in rituals which may have been relevant in earlier times but which have no relevance to modern living. An interesting sidelight on superstitions has been thrown by Jiří Grygar, a scientist and science communicator from the Czech Republic. He finds that during the Soviet-dominated era, no superstitious ideas were publicly aired as these were feared to be against the beliefs subscribed to by the state. In the 'free' thinking times that followed the collapse of the Soviet Union, all pent-up superstitions have come up.

### Superstitions thrive

Further, there are new superstitions that have their origin in the age of space technology. Towards the end of the last century, I had visited the radio telescope at Arecibo in Puerto Rico. Puerto Rico forms one of the vertices of a rather notorious triangle whose other vertices are at Bermuda and Florida. Known as the Bermuda Triangle, it has generated considerable excitement because of a claim that it formed a region within which mysterious (and possibly malicious) forces were present. A book on the Bermuda Triangle by Charles Berlitz which describes disturbing and unfathomable events makes for fascinating reading. If those accounts were true then the



Bermuda Triangle did encompass a sinister region. There have also been accounts of pilots losing their way and their lives, and watches stopping for an appreciable time, which, in short, were events that defied a rational scientific explanation.

A few years later, scientific attempts were made to test the veracity of the Triangle events. Lawrence David Kusche did seminal work in debugging the Triangle stories. His investigations have shown that the stories were either inflated, or did not tell the whole truth, or tinkered with the vital part of the evidence. Thus, one can safely say that there is no tangible evidence to ascribe an alien character to the Bermuda Triangle. Nevertheless as a scientist, whenever I invite questions from an audience of school or college students, the question inevitably pops up: What is the mystery behind all that is going on in the Bermuda Triangle? The questioner is visibly disappointed to learn that there are no black holes or dark energy or powerful aliens hiding there. When I asked my host in Arecibo how the locals react to such questions, he laughed and said that the Bermuda Triangle had long ceased to be a matter of concern. It of course serves the purpose of attracting tourists.

Harmful rays believed to be prevalent during a total solar eclipse

keep many of our citizens behind closed doors. I once saw a total solar eclipse while in Zimbabwe. Recalling a previous eclipse in India, I was expecting to be greeted with the sight of empty roads and inhabitants behind closed doors in their houses, as is the case in India.

Nothing happened. Perhaps Zimbabweans were blissfully unaware of the evil rays. But in India, we are good at coming up with antidotes. As a housewife from a well-educated family once explained to me, the food in the fridge is supposed to be destroyed after an eclipse as evil rays will have contaminated it. However, the local priest had a solution which would avoid the food being wasted. His solution, the woman proudly told me, was to smear the fridge with cow dung, which would protect the food.

Here is another example. An executive of a firm had to catch a flight on a certain day but found out later that travelling on that particular day was inauspicious. He was told that the day prior to this was a "good" day. But he had other engagements that day. So what did he do? He stored his bag in his neighbour's house on the earlier day and picked it up while on his way to the airport the following day. By leaving the bag in the neighbour's house he was supposed to have begun his journey the previous "auspicious" day. This trick, known as "keeping prasthan", is sufficient to deceive evil spirits.

### From mythology

All these are examples of pseudoscience that grow around superstitions. But there are apparently more serious aspects that have grown around our mythology. Did our Vedic forefathers possess a knowledge of science that was well beyond the level attained by modern science? While references in our Puranas to the Pushpak Vimana, Vishwamitra's counter hea-

ven in mid air, and weapons such as the Brahmastra and Indra's Shakti look persuasive, they do not have the details that would stand the test of scientific scrutiny. If such claims are to have standing, their supporters have to give us their technical details. For example, what was the basic mathematical principle that explains how a craft such as the Pushpak is lifted and which propelled it through air? And, if the Brahmastra was a nuclear device, which would indicate a knowledge of nuclear physics, why are there no references to the forces of electricity and magnetism, knowledge of which would be necessary to understanding nuclear physics? In today's modern age, the facility of running tap water and electric lighting is considered the basic minimum for living and forms a part of the manifestos of all political parties. Yet, as the Mahabharata tells us, the Hastinapur palace of Duryodhana or the Indraprastha abode of the Pandavas did not possess this minimal facility.

Recently, there was a claim made in India that the Darwinian theory of evolution is incorrect and should not be taught in schools. In the field of science, the sole criterion for the survival of a theory is that it must explain all observed phenomena in its domain. For the present, Darwin's theory is the best such theory but it is not perfect and leaves many questions unanswered. This is because the origin of life on earth is still unexplained by science. However, till there is a breakthrough on this, or some alternative idea gets scientific support, the Darwinian theory is the only one that should continue to be taught in schools.

In the final analysis, scientific evidence is what should have the last say.

Jayant V. Narlikar is Emeritus Professor, Inter-University Centre for Astronomy and Astrophysics, Pune

## Not a prescription for the poor

With out-patient costs outside its purview, the National Health Protection Scheme is unlikely to help those it wants to



SOUMITRA GHOSH

The National Health Protection Scheme (NHPS) is being hailed as the biggest take-away for the aam aadmi in this year's Budget. Given the noise that is being made around it, one is led into believing that the government has brought the nation into the next generation of health security. Quite expectedly, the Opposition, led by the Congress, has dubbed it "as nothing but a pack of lies". As there are a few elections this year before the big and major one, the battle lines are being drawn. So, given this impasse in public discourse, how will anyone be able to judge it accurately? The only real way to judge the potential of the NHPS is to review the empirical evidence pertaining to some of the existing publicly-funded health insurance schemes, particularly the Rashtriya Swasthya Bima Yojana (RSBY).

### Old scheme

At the outset, it should be pointed out that the RSBY was rechristened the NHPS in 2016. The Budget promised to provide insurance

coverage to an estimated 50 crore poor beneficiaries through the NHPS. There are two problems with this claim. First, the RSBY which was launched in 2008, was initially designed to target only the Below Poverty Line (BPL) households. However, even after nine years of its implementation, only half the BPL families have been covered, according to government data. Further, there is a huge discrepancy between the coverage figures in government data and estimates from surveys. In the 71st round of the National Sample Survey (NSS), 11.1% of the population was covered by the RSBY and State health insurance schemes in 2014 but according to the Insurance Regulatory and Development Authority, the population coverage of these schemes was 16.4%.

A key reason for this discrepancy is the creation of bogus beneficiaries by insurance companies to earn premium subsidies from the government. Another reason is that while insurance companies have been given the premium subsidy for covering all eligible households in the respective States, the insurer reached out to only a fraction of the eligible population. For example, in 2016, only 2.45% eligible families were enrolled under Maharashtra's Mahatma Jyotiba Phule Jan Arogya Yojana (MJPJAY) in 2016. Enrolment was also found to be very low in the Chief Minis-



ter's Comprehensive Health Insurance Scheme, in Tamil Nadu, as shown in the NSS data.

The second problem is related to the identification of poor households. According to the NSS data for 2014, among the poorest quintile, 12.7% of households received RSBY coverage, which accounted for 25.9% of all the RSBY enrolled households. On the other hand, about 36.52% of households enrolled in the RSBY were actually drawn from the richest 40% of the sample households. Further, almost half the households enrolled in the RSBY actually belonged to the non-poor category. The targeting process in RSBY has been fraught with exclusion errors.

### Access issues

It is important to underscore the fact that insurance coverage does not automatically translate into

utilisation. According to the programme data, the hospitalisation rate was found to be as low as 1% among RSBY-insured individuals, compared to a national average of 2.6% for the general population as of 2014. The RSBY is not an exception in this regard. The utilisation rate of other insurance schemes is also very low. For example, the MJPJAY recorded a utilisation rate (calculated as the proportion of eligible persons with at least one in-patient claim during the year) of just 0.12% in 2013-14 and 0.18% in 2014-15.

There is no evidence that the RSBY/NHPS has caused a reduction in out-of-pocket expenditure. Two very recent impact evaluation studies have reported that the RSBY has hardly had any impact on financial protection. Proponents of the NHPS might argue that the insurance coverage was limited in the RSBY, leading to patients incurring payments for hospitalisations. So, in 'Modicare', the benefit package has increased coverage substantially. However, the increase in allocations is unlikely to effectively address the problem of out-of-pocket expenditure.

There are two reasons. First, international experience in publicly funded health insurance in unregulated private health-care markets suggests that in countries where the benefit package was expanded by raising only the insurance limit,

private hospital care providers responded by substantially increasing the price of services. So, this kind of increase would actually mean a larger transfer of public money into private hands. This was also evident in recent actions by many private hospitals which withdrew from the RSBY as they were apparently not happy with the package rates. Hence, it is just a matter of time before private hospitals empanelled under the NHPS ask for higher package rates as seen in Karnataka or Andhra Pradesh where private network hospitals have threatened to pull out if their demands for higher rates are not met.

Second, given the fact that outpatient care, the single largest contributor to out-of-pocket spending, is not included in the benefit package of the NHPS, the increase in the insurance limit will not be of much help. Moreover, in the absence of strong and effective government regulations for insurers and providers, well-recognised market failures such as supplier-induced demand will ensure that eligible families exhaust full coverage with little improvement in their well-being.

Soumitra Ghosh is Assistant Professor, Centre for Health Policy, Planning and Management, School of Health Systems Studies, Tata Institute of Social Sciences, Mumbai

## LETTERS TO THE EDITOR

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### Bank fraud

The bank fraud could possibly have been avoided had the bank followed one of several important vigilance guidelines applicable to banks. In one, officers as well as clerical staff in branches are not encouraged to look after the same desk/task beyond a certain period, usually a year. While this ensures sufficient staff exposure to various areas in banking, the more important reason is that staff continuing to look after the same task pose a significant risk in terms of a possibility of manipulating records as it seems to have happened in the present case. Another time-tested guideline is not to allow staff with familial links to be

posted in the same branch. During internal inspections, officials are required to look into these aspects. In spite of sound reasons behind guidelines relating to job rotation, many branches find it difficult to adhere to them. For example, the domains of credit and foreign exchange are normally considered by bank officers as difficult to master. It usually takes an officer at least a couple of years' hands-on experience to acquire reasonable expertise in these areas. This sometimes leads to a situation where the branch manager is loathe to shift officers at these desks for fear of things going wrong. In course of time, such officers acquire an aura of indispensability. While all

such cases may not result in frauds, the risk of wrongdoing happening is definitely high.

G.G. MENON,  
Tripunithura, Kerala

At a time when bad loans are impacting the very source of survival for banks, unearthing a fraud to the tune of ₹11,500 crore is a systemic failure that has resulted in a breach of trust between the bank and the employee (Editorial - "Gem of a scam", February 16). As the fraud was committed by those who were supposed to protect the interests of the bank, it's time to strengthen the system and put in place stringent procedures that brook no such transgressions in future.

R. PRABHU RAJ,  
Bengaluru

Even in a small *kirana* store, when a small amount goes missing, the owner becomes alert and has in place all checks. When an ordinary trader goes to a bank for a transaction, he is asked to fulfil various formalities and get the approval of various officers at every level. When such is the case, it is shocking how a massive fraud to the tune of several hundred crores could have been committed in a single branch despite the existence of watchdog agencies to scrutinise accounts and day-to-day transactions. The perception is that offender will follow the Mallya way and escape from the law. This should not be allowed to happen.

S. NALLASIVAN,  
Tirunelveli, Tamil Nadu

### Education no priority

A major reason why the government of the day in India spends less on education is that the gains from it take a long time to fructify and are mostly intangible (Editorial page, "A deepening crisis", February 16). This makes investment in education less appealing in a political scenario in which government outlay is directed at quick results encashable at the time of five-year elections. So it is prudent to announce setting up more Indian Institutes of Technology and IIMs and new centres of learning of global standards than providing for teacher education or needed infrastructure. An easy way to determine government attitude is to look at who is appointed as minister for

human resource development. For example, one opened reservation of seats for OBCs in premier institutes, while another did away with the examination system in schools.

Y.G. CHOUKSEY,  
Pune

### Human sacrifice

The report about a couple in Hyderabad having carried out human sacrifice is a horrific, incredible story that shows the depth of superstitious faith people in India still have. The media is also to blame as there are many TV serials which depict such scenes and misguide people instead of educating them.

J. EDEN ALEXANDER,  
Thanjavur, Tamil Nadu

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