



We don't have to sacrifice a strong economy for a healthy environment. Dennis Weaver

Need to stop meddling with nature Wetlands and Loktak

Don't meddle with nature. It is a virus, no doubt, a highly contagious one at that and if at all there is a lesson to be learnt from the global pandemic triggered by the coronavirus, which has claimed lakhs of lives and derailed the economic activities of countries across the world, then it is time to come to the realisation that for too long mankind has been meddling with nature. This is where the observation of Chief Minister N Biren that the Departments and authorities concerned have failed to protect and preserve 13 prominent wetlands of the State should be taken note of with a tinge of worry and concern. Tough talk and an admission that failure of the Departments concerned is writ large on the bald hill ranges that one sees across Manipur. What were once verdant hills, with greenery all around are today nothing much more than barren hill sides and one has to just take a drive to any of the hill districts to get a glimpse of the point that is sought to be made here. World Wetlands Day. The significance of setting aside a day in a calendar year dedicated to the need to preserve Wetlands across the world should not be lost on anyone and this is where people of Manipur would need to come together and acknowledge the point that preserving the large swathes of wetlands cannot be the responsibility of those sitting at New Delhi or anywhere else. An environmentalist in office is of no use, or somewhere along this line were the words used by the Chief Minister to drive home the need to preserve the environment. How well is the Loktak lake protected is the natural question that follows when one talks about water bodies in Manipur. The very fact that numerous localities in Imphal end with the term, Pat, such as in Lamphelpat should tell all of the huge presence of water bodies in the valley areas of Manipur.

And when one talks about water bodies in Manipur, Loktak is right up there at the top. The question is how concerned are the people and the Departments about what is being fed to the largest fresh water lake in the region by the numerous rivers that empty into this lake? To secure the future of Loktak it is then imperative that people walk the extra mile to ensure that no pollutants are thrown into the rivers that empty into the lake or join another river that ends at the lake. This is primarily the reason why when any talk of preserving Loktak starts, there is the pressing need to ensure that Nambal river, which flows through the heart of Imphal is not polluted. It is along this line why Professor Kshetri Rajendra Singh of Manipur University penned a series of poem, 'Cry of a Dying River' stretching to 100 poems from September 17, 2017 to November 2019 and which was carried in the English edition of The Sangai Express every Sunday. The link between Nambal river and Loktak lake should not be missed and the pollution level at Nambal river will have a direct impact on the health of Loktak lake and this is something which everyone seems to talk about but about which no one seems to do anything worthwhile, much less the Departments concerned. This is where it becomes important to note the point that saving or preserving the Wetlands of the land means protecting the environment and this is where the efforts taken up to green Angaan Ching at Kakching should not miss the attention of the Government. If volunteers can turn a barren hillside into a now verdant Eco Park at Angaan Ching, it should not be much of a trouble to stop the rampant deforestation at Mount Koubru, which the Chief Minister noted with concern.

Career Corner

7 best career options after BA Nitin Gurmukhani

Contd from previous issue After you complete this course, you can practice as a lawyer. It's a vast field for people who are interested in the judiciary. With an LLB, you can become a legal advisor for institutions and companies. You can also prepare for the Judicial Services Exam and become a judge, which is another popular career choice. What you can learn in this field :You'll get to learn about how the judiciary works, the different components of India's Constitution, and relevant topics. After getting an LLB, you can pursue advanced studies and specialize in a specific category of law such as criminal law, divorce laws, etc. Minimum Eligibility : Many major universities and colleges offer this program. To enroll in LLB, you'll need to pass the respective admission test of the institute. If you want to join the prestigious National Law Universities, you'll need to pass the cut-off in CLAT (Common Law Admission Test). You also need to have a Bachelor's degree to enroll in LLB. Choose Your Career Wisely So now you know the answer to 'What to do after BA?'. There are many career opportunities available, and you should choose one according to your interests. You can join the tech sector as a data scientist, or crack CLAT and become a lawyer. If you are curious to learn about data science, check out IIT-B & upGrad's PG Diploma in Data Science which is created for working professionals and offers 10+ case studies & projects, practical hands-on workshops, mentorship with industry experts, 1-on-1 with industry mentors, 400+ hours of learning and job assistance with top firms.

Get the vaccine shot but do not throw away the mask to fight COVID-19

Shobha Shukla

The message from all scientists is very loud and clear that vaccines alone will not be able to stem the tide of the COVID-19 pandemic. Even after getting vaccinated, we will have to continue to wear masks, maintain physical distancing, wash hands frequently and avoid congregated settings, to break the chain of transmission of the virus.

Some leading scientists such as Dr Anthony Fauci, Director of the US National Institute of Allergy and Infectious Diseases; Dr Helen Rees, founder and Executive Director of Wits Reproductive Health and HIV Institute, University of Witwatersrand, South Africa; Dr Robin Shattock, Professor of mucosal infection and immunity, Imperial College London; and Dr Sarah Schlessinger, Associate Professor of Clinical Investigation, Rockefeller University, New York, interacted with a select group of global health writers including me, ahead of HIV Research for Prevention (HIVR4P) International Conference, to be held (virtually) over the last week of January and the first week of February.

The year 2020 was a tumultuous one indeed. The SARS-CoV-2 virus (commonly known as one of the forms of coronavirus which is causing the COVID-19 epidemic) ripped the world apart in a very short time, spreading the deadly COVID-19 pandemic very rapidly. The first clinical cases were recognized in Wuhan, China in December 2019 and till to-date it has infected almost 100 million people globally and killed more than 2 million. While 2020 will remain etched in history as a catastrophic year, it will also be remembered as a year of scientific and medical breakthroughs-identifying the virus, sequencing the virus, making vaccines to combat it, at breakneck speed, and also figuring out what works medically-both in terms of treatments and in terms of prevention. Vaccines in our arsenal It is nothing short of a miracle that in less than one year the biomedical community has fast tracked the development of several vaccines. As of now there are at least 3 injectable vaccines- Oxford-AstraZeneca, Pfizer/BioNTech and Moderna-that have got regulatory approval for their use by many countries to combat the pandemic. The Pfizer/BioNTech and Moderna vaccines use a new, first ever technology which packages messenger RNA (mRNA) inside tiny fat droplets to intrude human cells to make the spike protein jutting out from the coronavirus's surface. The Oxford-AstraZeneca vaccine uses an accentuated (harmless and weakened) version of a virus that causes the common cold in chimpanzees and packages the genetic instructions in the shell of this adenovirus. This virus has been genetically altered with a gene for a coronavirus protein to provoke the body's immune reaction. Efficacy of Pfizer/BioNTech and Moderna vaccines is around 95%. While efficacy of Oxford-AstraZeneca vaccine is slightly lower at around 70%, but it is cheaper and easier to store than the other two vaccines. Efficacy versus effectiveness of a vaccine Efficacy of a vaccine is determined through randomised, double-blind controlled Phase-3 clinical studies and refers to its success (reduction of disease incidence) in a vaccinated group compared to an unvaccinated group under optimal conditions. Eligible participants enrolled in any randomised double-blind controlled clinical study are divided into 2 equal groups.

One group is administered the vaccine and the other group is given a placebo. Investigators then observe the number of infections that occur in each group over a specified period of time. An X% efficacy would mean that while 100 infections occurred in the placebo group, only 100-X occurred in the vaccine group. For example, the Pfizer vaccine Phase 3 clinical study had 44,000 participants. 22,000 were given the vaccine and the other half got a placebo. In the weeks that followed, 170 of the study participants got infected and tested positive for COVID-19 while going about their daily lives. Of these, 8 had received the vaccine shot and the other 162 were in the placebo group. In other words while 162 infections occurred in the placebo group only 8 occurred in the vaccine group. This translates into 95% efficacy. Vaccine effectiveness, however, refers to the ability of the drug to prevent disease in a real-world setting, which is less than that in a controlled setting. In the real world, a vaccine's effectiveness can be influenced by several unpredictable factors-like rate of spread of the virus, proper storage of vaccine, adherence to the optimum dosing schedule, etc.

What we know about these vaccines What is currently known so far from the ongoing Phase-3 clinical studies is that all these 3 vaccines have proven to be safe in humans. They also exhibit varying degrees of efficacy in preventing clinically recognisable, that is laboratory confirmed symptomatic disease. So these vaccines are safe and they will protect us from severe disease and lower the severity of the infection. What we do not know Normally it takes 5-10 years to develop a vaccine. But the COVID-19 vaccine studies were put together very rapidly, and they are still ongoing. While the vaccines are efficacious in protecting us from severe disease and lowering the severity of the infection, it is not known as of now whether any of them will prevent the infection and/or prevent transmission of the virus. Scientists are still in the process of learning if the vaccines will also prevent asymptomatic infection or prevent transmission and therefore interrupt transmission into the community. Dr Robin Shattock says that they will have some ability to prevent transmission. It is important to differentiate the impact on transient infection of an individual versus the impact on transmission at the population level. If we reduce the period of viral shedding and the amount of viruses shed, it will have an impact on the overall transmission rate. So on a population basis we may see evidence of reducing transmission.

Dr Anthony Fauci is confident that by doing a lot of sequencing and testing of asymptomatic carriers, we will be able to find it out if the vaccines can also prevent infection and transmission. Administering the vaccine Each of these 3 vaccines require 2 vaccine doses to be given at specified intervals of time. Dr Sarah Schlessinger elaborates that "None of the approved vaccines have the possibility to give you COVID-19, but it is possible to get COVID-19 after getting vaccinated, before the body fully makes an immune response. It takes two weeks after any vaccination to mount a peak immune response. So you will be vulnerable for 6 weeks after taking the 1st shot, provided you take the second shot after 4 weeks. The vulnerability goes down after about 12 days of taking the 1st shot. There simply is

no data at this time to say what happens if you do not get the second shot. But almost certainly a single shot confers some level of protection. However it is critical for the durability of the response to get the second shot." New variants of the virus Dr Helen Rees voices concerns around the emergence of new mutations of the virus. "New global variants have already emerged in UK, South Africa, and Brazil. They will go on emerging as long as we have large number of infections because the push for new mutations to occur will continue if we do not get the vaccines out to everybody", she says. One of the major concerns is if the vaccines will work as efficaciously against these new strains. In the event that we need to change vaccines, if not for these variants, but for those in the future, one technology that makes it much easier to do are the mRNA vaccines, which can be modified rapidly. Vaccine hesitancy and scepticism Science has designated the COVID-19 vaccines as the breakthrough of the year 2020, but there is still a considerable degree of vaccine hesitancy and scepticism. Dr Fauci lists basically two reasons for this: -Some people think that as the vaccines were developed in just less than one year, safety issues might have been compromised; and -Vaccines that were developed with help from the Government are not trustworthy (due to mistrust of Government actions in general public). He says people should be made to understand that it was science, and not the US Government or private companies, that worked on clinical trials involving 30000 to 40000 people. According to Dr Fauci, one way to restore the people's trust in the safety and

efficacy of the approved vaccines is for Presidents, Vice Presidents, Prime Ministers and other prominent political and scientific figures to get vaccinated publicly. This happened most recently in the USA where Joe Biden, Kamala Harris and Anthony Fauci took the vaccine shots with their masks on, while the public watched online. Heads of States of other countries, including UK and Canada, have done the same. On the contrary, India's Prime Minister said that no political bigwig will take the vaccine in the first phase of the Nationwide vaccination drive that began on 16th January, 2021. This has only added to the public mistrust, which had already been fuelled due to introduction (along with the Oxford-AstraZeneca vaccine) of the indigenously produced Covaxin, that has yet to show any efficacy data from its Phase 3 clinical studies. As Dr Fauci says, "We are never going to be free of the threat of COVID-19 until we get 70% to 85% of the global population vaccinated to get herd immunity. In the meantime we must take the politics out of the pandemic and continue to wear masks and adhere to all public health measures that have been recommended by science. It is the right and ethical thing to do." CNS (Citizen News Service)

(Shobha Shukla is the award-winning founding Managing Editor and Executive Director of CNS (Citizen News Service) and is a feminist, health and development justice advocate. She is a former senior Physics faculty of prestigious Loreto Convent College and current Coordinator of Asia Pacific Regional Media Network to #endTB & #endtobacco and #beatNCDs (APCAT Media). Follow her on Twitter @shobhalshukla or read her writings here www.bit.ly/ShobhaShukla)

World Wetlands Day Measures to save Manipur's wetlands and Loktak lake

M Asnikumar Singh

The idea and theme of this day The World Wetlands Day is celebrated every year on 2nd February. The Convention on wetlands was adopted on 2 February, 1971 in Ramsar, Iran. The Ramsar Secretariat's main objective is to raise public awareness about the importance and value of wetlands. This year's theme is 'Wetlands and Water'.

The increasing demands and pressure on wetlands without understanding their nature and consequences have led to their rapid degradation. Loktak lake : Significance Keeping this day and its significance in mind, we ought to shed some light on the wetlands and one of the largest water resources of our region, the Loktak lake. Due to its socio economic importance it is often considered as the "life-line of Manipur" and rightly so. Its biological richness and uniqueness of habitat has resulted in its designation as a "Wetland of international importance" under the Ramsar convention, a distinction it shares with just other five lakes of India. The Loktak lake and the area in its vicinity is one of the most important wetlands in the country. One often ignored statistic is that 60 percent of the fish of Manipur comes from the Loktak lake alone. It also plays a pivotal role in the socio economic life of the region. Causes of and crystal clear warning signs of a lake slowing falling to its death Sadly due to increasing pressure on the lake, attributed to a rapid rise in population, the shifting cycle of the agricultural land in the hilly catchments of the lake has reduced sharply. This has further led to land degradation and increased soil erosion leading to sedimentation of water bodies consequently reducing its water holding and water carrying capacity. The commission of the Lokatak Hydrel Power Project in 1993 and the construction of the dam at Ithai along the Manipur river adversely affects the ecological balance of Loktak lake. Since the commissioning of the Ithai Barage some 35 years ago

there have been massive floods in and around the lake. The Ithai dam was constructed to maintain minimum water level required to generate electricity for the Loktak hydro power project owned by the National Hydroelectric Power Cooperation. The Loktak lake is the natural reservoir of the State's river system. However since the construction of the dam, the migratory fishes which the lake and its catchment areas used to receive from Manipur, Irrawady and Chinwin rivers, have reduced drastically thereby affecting the economic situation of the fishermen dependent on the lake and its catchment areas for livelihood. Moreover the dam has blocked the Manipur river which acted as its natural drainage outlet. This blockage has affected the refreshment cycle and volume of the lake to such an extent that many species of flora and fauna in the lake are on the verge of extinction. The natural pathway of the Ungamel channel, which drains out excess water from Keibul Lamjao floating national park has been altered by the Loktak hydrel project. Such scientific analysis reveals the true picture i.e It is not only the responsibility of the people living in the vicinity of the lake but also the citizens of the State to come together and work towards improving the lake's bleak and uncertain future. Moreover our State's pride, the Sangai shares an inseparable bond with the Loktak lake. The reducing depth of Loktak lake, a naturally enriched water body is also the culmination of our apocentric behaviour. Construction of roads, artificial structures in and around the major water bodies of the State like Loktak pat, Pumlel pat, Waithou pat, Loushi pat etc, which act as natural water drainage system of the State is only inviting more disasters in the future. The task of wetlands restoration has become complicated in light of threefold increase in global water demand in the last 6 decades. Pressing issues Attention ought to be drawn on the following key issues which need to be addressed on priority to secure the health of Loktak wetlands, and linked livelihoods of communities

living in and around. Efforts for addressing degradation of the wetland have been made since 1986 when the LDA was established as a nodal agency for conservation and integrated management of Loktak. An amount of Rs 491 crore has been spent on implementing ameliorative measures for the wetland till date, with financial assistance from the North Eastern Council, the Planning Commission, the India Canada Environment Facility, the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India and State plans. As an outcome of the interventions, that has been an increase in open water area in central sector (from 439 ha to 7638 ha during 2002-2017), decrease in area under athaphum (from 982 ha to 212 ha during 1999- 2017), increase in dense forest cover in catchments (by 6,612 ha during 1988 - 2017), and increase in capture fisheries (from 1,473 MT to 3,800 MT during 2003 - 2013) has taken place. Yet, the wetland continues to be under threat from continued pollution loading, conversion of phumdi into fish farms and impeded hydrological connectivity within the complex. Systemic institutional weaknesses have resulted in very limited enforcement of extant regulatory regimes, and lack of coordination in implementation of various development programmes related to Loktak. Based on evaluation of data and monitoring records, observations from field visits and discussions, we seek the priorit attention of authorities concerned of the Government of Manipur to the following: a) Implementation of water allocation plan : Revising allocation of water to meet human demands (for hydropower generation, irrigation and flood control) with ecological needs (maintaining KLP habitat, enhancing water quality) is central to management of Loktak.

(To be contd)

Reforms to transform India are part of Budget and Beyond

Prakash Chawla

Contd from previous issue Time to go for the kill. Setting a disinvestment target of Rs 3 lakh crore and raking up the funds from abundant liquidity should be eminently achievable. Foreign flows are gushing into our financial markets as India figures quite high in the pecking order of the Emerging Markets (EMs). Buoyed by prospects of V-shaped recovery in the FY'22, the Sensex is in the kissing range of the psychologically important 50,000 mark. As the largest recipient among the EMs, India received USD 23 billion in the calendar year of 2020 in equities alone and the gush continues in the new year. Investors, brushing aside the high valuations, remain bullish on the Indian companies on their topline and bottomline prospects. The great India Story is prominently flashing on stock indices. If you happen to be amongst those who consider the equity market speculative, there is another data that explains how global investors want to go long on the India Story. As much as USD 30 billion FDI (foreign direct investment) was pumped into greenfield and brownfield projects in the first six months of the financial year 2020-21. Even on a most conservative estimate, the FDI inflows for the full FY'21 would easily cross USD 50 billion. Given the geo-political factors at play and the fact the Joe Biden Presidency would not go soft on China, India is being considered as a serious alternative for the global manufacturing giants. As the Prime Minister had recently advised India Inc, we must remain vigilant and become nimble to respond to the fast

moving global geo-political scenario. With China, the major manufacturing hub, being in the eye of the storm the job becomes even compelling. After slashing corporate taxes to 22 per cent for existing companies and 15 per cent for new investment, India ranks amongst tax jurisdictions with the lowest rates in the world. It should be projected and promoted as the key pillar of the Government's Make in India programme. Returning to the domestic landscape, introduction of Goods and Services Tax was certainly the most important and life-changing reform of the Modi Government. The GST rollout had its share of initial problems, but the stakeholders have got a good hang of it by now. The defining contribution of the GST would be to bring in most of the Indian economy into a formal tax structure with consumers and intermediaries, accepting the dispensation as part of life. Realisation that being tax-compliant makes life easier and even less expensive is more wide-spread now. The Government on its part, has cited several examples how GST has made things of everyday use cheaper. For instance, the tax incidence on TV sets, washing machines, water heaters, detergents and cosmetics stands reduced to 18 per cent from 28 per cent in the pre-GST times. The financial inclusion programme, the PM JandhanYojana was enabled by the Digital India initiative resulting in reforms which are truly inclusive in nature. Opening 35.27 Jandhan accounts between August, 2014 and August, 2019, of which a large number are linked to UPI (Unified Pay-

ment Interface) is something that has transformed the Indian society and consumers at the bottom of the pyramid. Emergence of a large number of Fintech companies with ambitions to go well beyond payment wallets has seeds in the technology-enabled financial inclusion, billed to be largest in the world. As many as 2649 crore financial transactions valued at Rs 161 lakh crore were done on digital platforms. Needless to say, the digital platforms are ready with all the building blocks for a much bigger leap, creating a perfect example of 'creative disruption', if you will. Labour reforms, confused with the 'Hire and Fire', have been ushered in without much fuss. The codification of 29 different and archaic labour laws into four unified code has largely been welcomed, with States like Madhya Pradesh and Rajasthan showing alacrity in adopting labour reforms, aligning with their own investment policies. The ensuing Budget is going to be vastly different from the past. The Finance Minister, no doubt, is hard pressed for resources, but she would not be under a scanner for crossing the FRBM Lakshman Rekha on fiscal deficit. It may be other way round; too much of financial conservatism on expenditure may not go down well with a vast majority of analysts. Besides, this Budget coming as it does in the middle of a global health emergency, would need to build on the reforms of the past six years. The process of transformation has to be never-ending. PIB The writer is a Delhi-based independent journalist