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Taliban's Ascendancy: India's Concern in the Context of Kashmir

-By KM Singh

The stunning takeover of power in Afghanistan by Taliban and hasty retreat of the US have serious portends of new geopolitical dangers and security concerns. Looking into the emerging security concerns of India, certain issues which may serve as a warning signal are ideology, renewed strength of Taliban, a new vigour of the Pakistan Army/ ISI, morale of the jihadi extremist forces in the region and present

status of India in the emerging geopolitical alliance. These issues are matters of concern from the security perspectives for India in general and Kashmir in particular.

Enhanced Fire-power of Taliban:

The strategy and planning of the Taliban, possibly with tacit support of its allies, and its high morale can be judged from the fact that over three hundred thousand personnel of Afghan army trained by USA at the cost of nearly eighty-three billion dollars virtually capitulated to one fourth of this size of Taliban forces providing a walk over to the Taliban troops.



What may be a matter for greater concern is that after regaining power in Afghanistan, there has been a manifold increase in arms holding of the trigger-happy Taliban forces. In their haste to leave, the personnel of US and Afghan army left their armoury with huge stockpile of arms, ammunitions and equipment besides armoured vehicles and aircrafts, both fixed wings and helicopters etc. which have added immensely to the fire power of Taliban.

Renewed Motivation of Pak ISI:

In this entire episode, Pakistan has been a big gainer and a security concern for India. Pakistan has maintained its nexus with Taliban all along and their return to power in Afghanistan is a matter of great rejoice for Pakistan. It may provide a renewed motivation to Pakistan, particularly its Army backed up by ISI to achieve its long-standing, cherished desire to settle the score of humiliating surrender in 1971 by ensuring dismemberment of Kashmir from India to redeem its ego. Significantly, the mindset of Pakistani Army has undergone a major change over in past. Gen. Zial ul Haque paved the way of Islamization of a major chunk of Pakistani Army in 1980s. The developments in Afghanistan may, in all possibilities, lead to Talibanisation of a section of Pakistani Army.

New geopolitical alliance :

In the context of geopolitical alliance, Pakistan is apparently far better placed than India at the present juncture taking into account its continued close nexus with Taliban over the years. In this new geopolitical alliance with the Taliban government in Afghanistan, Pakistan, China, Russia and Turkey are providing supportive role. In this context, the statement from Beijing (Aug 16) welcoming the opportunity to deepen its ties with Afghanistan, Russia's

assertion that it would engage comprehensively with the Taliban government and Turkey's deal with Taliban to facilitate its ascendancy to power in Afghanistan should be a matter of serious concern from a security angle for India in the light of its close alliance with US in recent years as a strategic challenge to China.

A series of events like the Korean war in 1950s, Vietnam war in 1960s and the recent Afghanistan episode have confirmed that USA cannot be trusted to extend its support to any ally to a logical conclusion as its policy is primarily governed by its national interest. As such, under the current circumstances India stands virtually marginalized and is left to fend for itself against any aggressive covert or overt onslaught of this powerful alliance.

A major impetus to 'jihadi' extremist forces:

Looking at the current situation and likely future scenario from the security perspectives in Kashmir, a disconcerting fall out of the Taliban's ascendancy to power in Afghanistan would be a major impetus to all the jihadi extremist forces in the region. In this victory of jihadi ideology against democratic forces, Taliban led Afghanistan will once again become a haven for like-minded jihadi extremist elements namely, Al Qaeda, Lashkar- e- Taiba, Jaish-e-Mohammed and Jamat-e-Islami etc. Pakistan may fully exploit this opportunity to work with these jihadi extremist forces in tandem with Taliban a with a call for a major push to liberate the Muslim majority region of Kashmir from the clutches of 'infidels' in India.

Likely Strategy of Pakistan:

Conscious of its fear of FATF, Pakistan may try to pursue this plan with utmost care to ensure its complete deniability. It may try to replicate a well-planned operational strategy shrouded under complete secrecy as was done by Taliban in the current Afghan

episode.

Taliban took care to ensure no repetition of the lapses of 1990s, like leaving a gap in the northern region which provided a support base for the USA with the Northern Alliance. On the same lines, Pak ISI may use its propensity to identify the loopholes to penetrate the security gaps in Kashmir. They may try to stealthily enhance the number of its 'sleeper cells' with adequate motivation, finances and firepower. At the same time, they may also try to use the services of pro-Pak, pro-independence, anti-India elements and its other agent provocateurs in Kashmir by exploiting their strong undercurrent of resentment following abrogation of Art 370 and down gradation of the state to UTs. They may also try to create a situation of anarchy to destabilize any democratic process by targeted killing of leaders of prominent political parties, elected representatives of DDC and Panchayats, besides the personnel of security forces. Efforts will be to create a mass upsurge as was there in early 1990s with total demoralisation of personnel of Kashmir Police. Significantly, J&K Police was later fully activated and over the last few years have done commendable work in dealing with the situation in Kashmir. However, with the ongoing counter-terrorism operations in the last three decades fatigue factor is gradually creeping in among the personnel of J&K Police. Added to it is the targeted killings of police personnel which may be more in number aimed at ensuring demoralisation of the local police.

Prognosis:

In this backdrop, outlook for the situation in Kashmir looks grim and it will call for requisite counter measures with adequate planning to thwart any design of Pak ISI supported by jihadi elements in the valley. The security forces, which are already doing

commendable work need to be sensitised about the likely threat emanating from the nexus between radical faction of Taliban and Pak Army/ISI. In this ongoing fight against terrorism morale of the state police is very important. Requisite steps to sustain high level of morale of the J&K Police would be very important. Equally important at the present juncture will be a pro-active political process to provide healing touch to the hurt feelings of people following down gradation of the state to UT. It may be prudent to fulfill the promise made in the Parliament two years ago regarding restoration of the statehood. This gesture may go a long way in assuaging the hurt feelings of a sizable section of people in both the UTs of Jammu & Kashmir. As far as political outreach is concerned the PM's meeting with 14 leaders of J&K in June this year was an important step forward. Another follow-up meeting of the same will send a positive signal about the sincerity of the central leadership towards the well-being of the people in J&K. In this meeting in June, PM had mentioned about the need of involving the "youth to provide political leadership in J&K and ensuring that their aspirations are duly fulfilled". Some visible action on the ground on this suggestion of the PM would convey a positive message to the youth elements, who have otherwise a propensity to get allured by the jihadi forces.

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A Mild Setback to India's Space Programme

-By Sanjay Sinha

India's space programme suffered a mild setback when on August 12, 2021 the indigenously built state of the art earth observation satellite EOS-03, launched aboard

GSLV Mk II from Satish Dhawan Space Center, Shriharikota, failed to reach its designated height. The EOS-03 was supposed to be placed first in a geosynchronous orbit and later to be shifted to a geostationary orbit which is nearly 36,000 kms (35,786 kms to be precise) above the equator. It was later revealed that while the first two stages of the GSLV Mk II had functioned normally, the upper cryogenic stage had failed to ignite due to some technical anomaly. It was the 14th flight from the GSLV stable (Mk I and Mk II) and the 8th with the indigenously built cryogenic engine. The mission was originally planned for lift off on March 5, 2020 but had to be deferred hours before takeoff due to technical problems.

The Indian Space Research Organization (ISRO) has a long run of successful missions including Chandrayaan-1 and Mangalyaan-1 among several other satellite launches. But not much had happened since the beginning of 2020. Covid-19 pandemic had apparently taken a toll on the activities of ISRO also. Consequently, ISRO had planned several launches recently in preparation to the proposed launch of Gaganyaan-3 in 2023 which is to be India's first manned mission, making it only the fourth country in the world after USSR/Russia, USA and China to send a man in space aboard its own spacecraft. Nationals of as many as 41 countries, including 1 from India (Wg Cdr Rakesh Sharma aboard Soviet spaceship Soyuz T-11 in 1984) have otherwise already travelled to space. The list includes 3 other persons of Indian origin (Late Kalpana Chawla, Sunita Williams and Sirisha Bhandla, all American nationals)

It seems the August 12 launch of EOS-03 was in a way supposed to signal a resumption of ISRO's activities. Its failure, therefore, is a sort of setback to the ISRO plans and it could

possibly delay several upcoming space programs. Before launching Gaganyaan-3, ISRO has planned a couple of test flights, Gaganyaan-1 and Gaganyaan-2, the latter carrying an empty capsule of appropriate weight in which the Indian 'astronauts' would ultimately travel, a sort of a dummy flight to see that all parameters function precisely. This might now take time because GSLV is going to be used for all heavy launches and the 3rd stage of the GSLV, the cryogenic upper stage, which provides the final thrust to do the heavy lifting, is where the fault was detected in the abortive EOS-03 flight. ISRO has to ensure that the cryogenic upper stage functions without a glitch. In fact, it has experienced problems with the cryogenic engines earlier also.

The GSLV project was launched in 1990 with the objective of acquiring indigenous capability to launch heavier satellites into geosynchronous orbits. Prior to GSLV, ISRO had acquired considerable expertise with the Polar Satellite Launch Vehicles (PSLVs) to put satellites into polar and similar low earth orbits. Both Chandrayaan-1 and Mangalyaan-1, both successful missions, had been launched using PSLV rockets. For GSLV, which was to be a 3-stage rocket, technical knowhow for the first 2 stages was drawn heavily from the PSLV. For the 3rd and the final stage, cryogenic rocket was required which India did not have. Cryogenic rockets are efficient engines that use a mix of liquid oxygen and liquid hydrogen which on burning provide more thrust for every kilogram of fuel used. An agreement was signed in 1991 with the Russian company Glavkosmos for supplying cryogenic rockets and transferring technology to build such engines in India. Russia backed out of this agreement in 1992 following strong US objections that the technology transfer violated the Missile Technology Control Regime. That forced India to start developing its own cryogenic engine

Meanwhile, India signed another agreement with Russia for supply of 6 cryogenic engines without technology transfer. Russia accordingly supplied 6 such engines which were used to launch satellites by rockets named as GSLV Mk I. There have been a total of 6 GSLV Mk I flights beginning from 2001 out of which only 2 have been successful, 2 partially successful while 2 failed. In the meantime, ISRO developed its own cryogenic engine and the GSLV flights using Indian cryogenic engines were named GSLV Mk II. There have been a total of 8 launches with GSLV Mk II, out of which 6 have been successful while 2 have failed, including the latest August 12 flight of EOS-03 in which the cryogenic upper stage rocket failed to ignite. It is a setback alright but it should not be forgotten that out of 8 flights, 6 have been successful which is a good enough success rate.

In a simultaneous development, ISRO developed a heavier rocket launcher christened GSLV Mk III which is similar to GSLV Mk II and which can put heavier mass into geosynchronous or geostationary orbits. While GSLV Mk II can lift satellites weighing up to 2.5 tons into geostationary orbits, GSLV Mk III can send satellites weighing up to 4 tons into such orbits. Like GSLV Mk II, its 1st stage is a solid propellant and the 2nd a liquid propellant. For the 3rd stage, it uses C-25 which, also indigenously developed, is an improved cryogenic engine. The maiden flight of GSLV Mk III was organized in 2014 and, so far, there have been 4 launches using GSLV Mk III, all of which have been successful. Its notable successes include launching Crew Module Atmospheric Re-entry Experiment (CARE), in its maiden flight, and Chandrayaan-2 in July 2019. It is learnt that ISRO has now begun development of a heavier and more efficient GSLV Mk IV which

would have the ability to put satellites twice as heavy as the capacity of the GSLV Mk III in geostationary orbits.

The upcoming launches planned by ISRO include the first un-crewed orbital flight of Indian crew module (Gaganyaan-1) in June 2022, repeat of Chandrayaan-2 with a lunar lander and a rover in the 3rd quarter of 2022, second un-crewed orbital flight of crew module (Gaganyaan-2) in late 2022, launch of GSAT-20 in geosynchronous transfer orbit also in late 2022, India's first manned mission (Gaganyaan-3) in 2023, launch of Venus orbiter in 2024 (Shukrayaan-1) and India's second orbiter mission to Mars (Mangalyaan-2) in 2024.

In all these launches, GSLV Mk III is proposed to be used which has, so far, had one hundred percent success rate. However, the point to note is that the failure of the EOS-03 was not due to malfunctioning of the cryogenic engine. It failed because the cryogenic engine of GSLV Mk II did not ignite. So, the problem, if any, lay in transferring the ignition sequence from the 2nd to the 3rd stage. ISRO will have to guard against any such glitches in the upcoming GSLV flights. It is learnt that the ISRO has already decided on some minor modifications to improve upon the reliability of the GSLV Mk III. It is further learnt that ISRO is planning to launch two IDRSSs (Indian Data Relay System Satellites) in 2022 in geosynchronous orbits to provide 24x7 communication support to Gaganyaan-3 which would be in a low earth orbit of 400 kms and would need uninterrupted communication support when not visible to the ground stations

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A Lost War and A Lost Peace

– By Dr. Kumar Aniket

2009 was a consequential year for the war in Afghanistan. On June 30, 2009 Bowe Bergdahl, a soldier in the 501st Infantry Regiment of the United States Army serving in the Paktika Province of Afghanistan walked off his post and was immediately captured by the local Taliban. There are differing accounts as to why he walked off his post. What we do know for certain is that the local Taliban in Paktika Province handed him over to another group and he eventually up in the hands of the Haqqani network. His captors knew that having an American soldier as a prisoner of war gave them a significant leverage in any future negotiation with the US. The set of events that were set in motion from his capture and the US effort to get him released changed the course of the war in Afghanistan and led to the February 2020 Agreement between the United States and Taliban.

2009 was a consequential year for the war in Afghanistan for other reasons too. Two Presidents were starting a new term in 2009 in very different circumstances. The United States Army had been fighting the Taliban insurgents in Afghanistan for eight years and a decisive win continued to elude them. President Obama was starting his first term and was determined to find a way to end the wars started by the Bush administration.

2009 also saw the disputed election in Afghanistan marred with terrible violence and allegations of fraud. Even though Hamid Karzai was able to cling on to power in Kabul, he had lost the legitimacy he had gained in Afghanistan after sweeping the election in 2004. His opponent in 2009, Dr Abdullah Abdullah was destined to be the opponent on the losing side in two more disputed elections

in 2014 and 2019. In each of these elections, the US and its allies had to step in and push the candidates towards a unity government. After 8 years of US investment in the terms of blood and treasure, Afghanistan remained a failed state unable to reach a consensus through its democratic process. The 2009 elections undermined the legitimacy of the government in Kabul. Afghanistan's politics never recovered from the disputed Presidential election of 2009 and paved the way for making the Kabul government irrelevant over time in the negotiations between the US and Taliban.

While President Obama was very keen to wind down the war in Afghanistan, the military generals convinced him that a surge of troops could turn the tide and finally eradicate the Taliban for good. The US and its allies increased international force levels as part of a surge strategy. At the same time, Obama ensured that a United States Special Representative for Afghanistan and Pakistan (SRAP) was set up by the State Department to engage the various stakeholders in Afghanistan and Pakistan and create a conducive environment for the US to end its involvement in Afghanistan.

The captivity of Bowe Bergdahl presented a new complication. The US could never exit Afghanistan leaving behind a captured soldier in the hands of the enemy. Thus began the tentative effort to initiate a backchannel with the Taliban to get Bergdahl released. The start was not auspicious. For months in 2010, the US held secret talks with Mullah Akhtar Muhammad Mansour. Or at least that is what the US government representatives thought. Midway through the talks, the US government representatives discovered to their horror that they were talking to an impostor who looked nothing like Mullah

Mansour. It is an intriguing story that still remains shrouded in mystery. It is quite possible that sending in an impostor may have given the Taliban plausible deniability about talking to the US. It is also possible that it is simply an embarrassing faux pas by over eager apparatchiks. The incident reflects the problem of trying to engage with a faceless, inscrutable and wily enemy (Filkins & Gall, 2010).

Since 2006 the British and American forces had been trying to displace the Taliban insurgents from Helmand and Kandahar province without any success. The Taliban had proven to be a resilient and well-coordinated fighting force with an excellent intelligence, communication and propaganda network. Taliban were good at exploiting ethnic tensions, the resentment towards foreign forces and animosity towards the inefficient and corrupt local administration to gain support in rural areas. In the process, the Taliban had been able to achieve its three objectives, i.e., to prevent the British and American forces from getting local support, marginalise the local administration and set up a parallel administration that collected taxes and followed the principles of Sharia in adjudicating disputes (Dorrnsoro, 2009).

After the false start, a staccato conversation began between the US and the Taliban. Qatar played a crucial role in facilitating the talks in Doha (Grossman, 2014). The Taliban came to the table from a position of strength. In a deeply fractionalised society fraught with internecine tribal rivalry, Taliban was the only political organisation that showed a capacity to administer and govern in Afghanistan. The negotiations over Bergdahl's release were extremely difficult and lasted for 4 long years. On May 31, 2014 Bergdahl was released in exchange for 5 Taliban prisoners from Guantanamo Bay. The

The Taliban had been able to extract significant concessions from the United States for Bergdahl's release. The Doha talks had also brought the United States face to face with its enemy on the battlefield and left a clear impression in the minds of the American negotiators that the Taliban was here to stay and needed to be factored into any peace process. In a country fraught with internecine tribal rivalry, the Taliban was the only organisation that transcended the tribal identity of its members. The talks between the US and Taliban continued in Doha for six years after Bergdahl's release and concluded with the February 2020 agreement between the United States and the Taliban. The wording of the agreement implicitly recognises the Taliban as the de facto government in the parts of Afghanistan it controls. The agreement asks the Taliban to ensure that it "will prevent the use of the soil of Afghanistan by any group or individual against the security of the United States and its allies." The negotiations also revealed the complicated internal structure of the Taliban.

Taliban has a hardline wing that would like to adhere strictly to Sharia law. The wing is best represented by Hibatullah Akhundzada, the current Taliban leader. Akhundzada is essentially a cleric with no military experience. He has three deputy leaders. Mullah Abdul Ghani Baradar is its chief negotiator and represents the Taliban's relatively moderate and conciliatory wing. He was influential in convincing the Taliban to start negotiations with the United States in 2010. The other two deputies are Mullah Yaqoob, the son of Mullah Omar and Sirajuddin Haqqani, the head of the Haqqani Network. While the Taliban has evolved as an organisation in the last two decades and is largely focused on Afghanistan's internal problems, the Haqqani network is active on the eastern border with Pakistan and has close links to Pakistan's intelligence agencies.

Bergdahl was held by the Haqqani network for a very long period and it was the Haqqani network's reluctance to release Bergdahl that prolonged the negotiations with the United States.

The two stakeholders conspicuous by their absence in the negotiations between the US and the Taliban were the Afghan government and Pakistan. The agreement ended up creating a domino effect that undermined the legitimacy of the Afghanistan administration and paved the way for the Taliban takeover in the summer of 2021. Pakistan tried its best to create roadblocks in the negotiations between the Taliban and the US. It even arrested Mullah Abdul Ghani Baradar in 2010 to stall the talks. While Pakistan may still have some influence on the Taliban through the Haqqani networks, it is likely that its influence over the Taliban has declined over time. Taliban sees itself as the legitimate government of Afghanistan and would like to obtain official recognition from the international community. It knows that the recognition would be conditional on its adherence to human rights, its treatment of women and other minorities and its ability to ensure that it does not become a fertile ground for terror networks.

The relationship between the various terror outfits in Afghanistan remains extremely complicated. There is enmity between Taliban and Islamic State Khorasan Province (ISKP), the Afghanistan branch of ISIS, over ideology. The US forces have been able to degrade ISKP's operational capacity but it still retains about 2000 fighters in eastern Afghanistan. US airstrikes on core Al Qaeda targets in Kandahar province in 2015 have greatly depleted its strength. Conversely, the Al Qaeda Indian Subcontinent (AQIS) has solidified its presence recently and its fighters have helped the Taliban in its military endeavours. AQIS currently lacks the ability

to operate outside Afghanistan. There is a small but effective contingent of Eastern Turkistan Islamic Movement (ETIM) fighters in Northeast Afghanistan focused on fighting for an Uyghur homeland in China. Similarly, there is a small contingent of fighters from Tehrik-e-Taliban (TTP) that have regrouped in Afghanistan after they were driven out of FATA by the Pakistani army in 2014. The Haqqani network is the key organisation that liaises between the Taliban and these other small organisations. On the one hand, the Taliban has sought support from fighters by organisations like AQIS, ETIM and TTP in its takeover of Afghanistan. Yet, on the other hand, the Taliban is seeking recognition from the international community that would be strictly contingent on its adherence to human rights, its treatment of women and its ability to rein in the smaller terrorist organisations.

The future remains uncertain for Afghanistan. There is likely to be a power struggle between the moderate wing led by Mullah Abdul Ghani Baradar and the radical wing led by Sirajuddin Haqqani. If the moderate wing prevails, Afghanistan under the new Taliban regime may become a theocratic republic along the lines of Iran. If the radical wing prevails, Afghanistan would return to being an anarchic state as it was under the last Taliban regime. The only sliver of hope is that during the negotiations over Bowe Bergdahl's release, the moderate wing was able to prevail over the radical wing.

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Inter-State Border Conflict : A Case of Assam and Mizoram

-By Dr. Nazima Parveen

The recent violent clashes between the Mizoram and Assam security forces has resurfaced the problem of inter-state boundary disputes in India. The incident took place on July 25, 2021 reportedly after eight farm huts belonging to Mizo farmers were burned down by Assam Forces. The violence took place in the border area of Lailapur (Assam)-Vairengte (Mizoram) districts, resulting in the two sides using bullets, tear gas canisters, and grenades against each other. Consequently, around seven people, including six police personnel and a civilian, were killed and over 50 people were injured in this clash. Both the governments have pinned the blame on the other side for the recent violent eruption of the conflict. Assam-Mizoram border violence spotlights the long-standing inter-state boundary issues in the Northeast, particularly between Assam and the states that were carved out of it. Border disputes are not uncommon among the states in India's Northeast. The majority of the border disputes in the frontier region involve Assam since the states of Arunachal Pradesh, Mizoram, Meghalaya and Nagaland were carved out of Assam under the North-East Reorganisation Act, 1972. The state of Assam does has border dispute with all the above mentioned state ,which has flared up occasionally over the past several decade . Apart from this ,Mizoram has a border row with Tripura as well, while Manipur has claimed the Dzukou Valley, which is currently in Nagaland.

North-East - A Zone of Conflict and Peace :

The partition of the country in 1947 further isolated an already geopolitically sequestered North-Eastern region. It is worth noting that the North-East region of India comprises eight states, namely Assam, Meghalaya, Mizoram, Manipur, Arunachal Pradesh,

Nagaland, Tripura, and Sikkim. The boundary disputes in the northeast evolved out of the North-East Reorganisation Act, 1972, which actually challenged the colonial administrative bifurcation of these traditional tribal areas. The region is known for a multitude of conflicts.

The northeast presents an intricate cultural mosaic with over 200 ethnic groups having distinct languages, dialects and socio-cultural identities. The region is highly sensitive and of great significance due to the fact that the region shares an international border , which is about 99 percent of its geographical boundary with several neighbouring countries including China ,Myanmar, Bangladesh,Nepal and Bhutan. Only a slender 22 Kms wide connection through the tenuous Siliguri corridor exists with the rest of India. In such a scenario it is really important to keep the region peace from the perspective of National security.

The Conflict :

The problems in the region primarily stem from the assertion of identity by the different ethnic groups especially in the backdrop of a perception of neglect by the dominant ethnic group of that particular state. Some insurgent groups such as the ULFA in Assam and the Meitei outfits in Manipur etc. have also been playing the card of the neglect of their respective states, the region as a whole and of the Centre and have continued to pursue their secessionist goal wanting sovereignty. The demands from other groups vary from maximum autonomy, to separate states or more empowered District Councils for the political representation of their claimed ethnic communities.

Apart from the ethnic difference and the fight over resources, there are other reasons that led to insurgencies in the region. According to the Report of the Commission on Centre - State Relations , 2007, called the Punchhi

Commission, apart from the 'isolated insurgencies/militant movements in the different states and areas of the region, there is also a commonality of certain reasons that have precipitated the internal security problems in the region. These include economic infrastructural backwardness leading to unemployment and lack of opportunities creating insecurity, particularly among the 'youth'. The report further noted that 'the threatened identity crises among minorities only adds to the problem. It is well understood that economic development and internal security have a direct link with each other.' According to report "it creates imbalances in the society which lead to tensions and ultimately even violence, and once that stage is reached, ensuring rapid economic development in the affected areas also becomes a problem for the Government(s)."

The insurgency in the North-East continues to pose a serious threat to the security and unity of the country even though the situation has, by and large, been kept under control over the last few years. These groups include United Peoples Democratic Solidarity (UPDS), Karbi Longri North Cachar Hills Liberation Front (KLNLF) and Dima Haram Daogah (DHD) in Assam, the Achik National Volunteer Council (ANVC) in Meghalaya, the Kuki National Organization (KNO) and United People's Front (UPF) in Manipur and the National Socialist Council of Nagaland (Isaac Muivah) NSCN(IM) in Nagaland. The situation came under control because some insurgent groups, as a result of political initiatives, interlocutory efforts, administrative actions and sustained counter insurgency operations have given up the strategy of violence and have started participating in the elections. The continuous dialogue process between the central government and the groups eventually led to the agreement on Suspension of Operations

(SoPo).

Besides, the return of total peace in Mizoram with the Mizo National Front (MNF) joining mainstream politics in mid-eighties, the constitution of the Bodoland Territorial Council in the year 2003 and the apprehension of some of the top ULFA leaders to fight also had their impact on the containment of violence. The government records of violent incidents in the region also indicate that there has been some improvement in the overall security scenario in the region over the years especially in terms of a continuous decrease in the deaths and other casualties over border disputes.

Apart from this, the Centre has also played an important role in the emotional and cultural integration of the region through special constitution provisions. For instance, special clauses and provisions, under Article(s) 371(a), (b), (c), (f), (g) and (h), have been introduced from time-to-time starting from 1969 in the Constitution for the States of Nagaland, Assam Manipur, Sikkim, Mizoram and Arunachal Pradesh respectively. These amendments were made for the protection of customary laws, religious and social practices and of the special position of some districts or sub-regions having distinct ethnic identities within a particular state etc. Besides, some of these Articles provide that no Act of Parliament in respect of the specified subjects shall apply to the particular state unless its Legislative Assembly decides that it be so by a Resolution. These provisions have served an extremely useful purpose towards not only maintaining and preserving the ethnic identities, but also giving the communities a sense of security about the same.

In the process of keeping the peace process intact and workable, the eight states of Northeast India formed the North East Democratic Alliance (NEDA) government

after the Assam Assembly Polls in 2016. It is a platform of non-Congress parties. The new agenda for NEDA is to resolve the interstate border disputes which exist between the North-eastern states and to promote emotional integration amongst the states and to focus on common problems like drug maniacs in the region. NEDA is in government in most of the states and Congress is out of all the states. NEDA had its 4th convention in Guwahati in September 2019 to discuss these issues. Presently it has 19 MPs in Lok Sabha out of total 25 seats in Northeast India. Mizoram has a coalition government with the NEDA and other political groups while Assam is governed by a newly formed BJP led NDA government.

However, the clashes continued even after such processes. The Rights and Risk Analysis Group stated that the clashes over the border between Assam and the states carved out of Assam led to the death of at least 157 people, injuring another 365 people and the displacement of more than 65,729 persons from 1979 to 2021 including the current incident. The Supreme Court and the Centre have formed Boundary Commissions from time to time like the Sundaram Commission (1971) and the Shastri Commission (1985) for the resolution of disputes between different states. But it did not help in resolving the issue. It is because the states consistently reject the recommendations of the commission if it is not in their favour.

The Recent Clash :

Media reports suggest that the current tensions at the Assam-Mizoram border originated in June 2021. The governments of Assam and Meghalaya started accusing each other of encroachment over the forest land. On June 30, Mizoram accused Assam of encroaching upon its land in the Kolasib - one of the bordering districts. Assam, in

turn, accused Mizoram of building structures and carrying out plantations of betel nut and banana saplings. Both the states carried out these activities ten kilometres inside Hailakandi – one of the bordering districts on Assam's side.

The Assam Police was reported to take control of Aitlang Hnar, an area about five kilometres from Vairengte in the Kolasib district of Mizoram. Officials and people in Mizoram forced the Assam officials to return. Tension flared up and senior officials came to the discussion table. Then again on July 10, reports came that the Assam officials carried out an 'anti-encroachment drive' at Burachep in Kolasib district of Mizoram. Assam said it was on its side of the border. Tension flared up and on July 26 a grenade was hurled at an Assam government team.

Assam-Mizoram Border Dispute:

At the time of Independence, Northeast India consisted of Assam and the princely states of Manipur and Tripura. Nagaland, Meghalaya, Arunachal Pradesh, and Mizoram were carved out from the large territory of Assam between 1963 and 1987. Unlike the other states in the Southern part of India that were reorganised on the basis of linguistic identity in 1955, the separate north-eastern States were created based on the history and cultural/ethnic identities of people living in these units. Assam and Mizoram share a boundary of about 165 km. The border districts in Mizoram are Aizawl, Kolasib and Mamit while in Assam they are Cachar, Karimganj and Hailakandi.

The dispute between Assam and Mizoram goes back over 150 years. The region was under the control of British rulers, who demarcated the boundary between Lushai Hills (as Mizoram was known at the time) and the Cachar Hills (in Assam). The British government issued a regulation in 1873 for

the demarcation of these boundaries. It was called the Bengal Eastern Frontier Regulation (BEFR) Act, 1873. In 1875, a notification based on BEFR demarcated the Inner Line Regulations, known as the Inner-Line Permit (ILP) system and defined the line between the Lushai Hills and Cachar plains. In 1933, the colonial rulers carried out further demarcation into districts based on culture, linguistic and tribal lines and carved out Lushai Hills district and Cachar district. While BEFR was lifted in Assam and other Northeast states, it continued to be in force in Mizoram and Nagaland. Mizoram was a District of Assam known as Lushai Hills and was included in the Sixth Schedule until 1972. It was renamed as Mizo Hills in 1954. The area experienced severe famines in the late 1950s and early 1960s which led to serious turmoil and insurgency spearheaded by the Mizo National Front (MNF). With the implementation of the North-Eastern Reorganisation Act in 1972, Mizoram became a Union Territory. Later, as a sequel to the signing of the historic memorandum of settlement between the Government of India and the Mizo National Front in 1986, under the 53rd amendment of the Indian Constitution, Mizoram was granted statehood on 20 February 1987 as the 23rd Indian state. It has made rapid strides and has emerged with the highest literacy in the country. Despite its small population and limited territory, it has considerable ethnic diversity. With the conferment of the status of Union Territory the Mizo Hill District Council was dissolved and now the State has three autonomous district councils catering to three non-Mizo minority tribes - Mara, Lai and Chakma.

Initially, Mizoram accepted notified borders with Assam, but later the state started raising the issue of Assamese encroachment of forest lands in the border areas leading to border clashes. It led to continued accusations of

encroachment and violent clashes between the states. Three Mizoram's districts- Aizawl, Kolasib and Mamit share a 164.6 km long inter-state border with Assam's Cachar, Hailakandi and Karimganj districts. The two stretches at Lailapur-Vairengte and Karimganj-Mamit districts are disputed ones

Now, based on the 1873-regulation, Mizoram claims a 509-square-mile or about 1,318 sq km area of the inner-line reserve forest notified 148 years ago. The Mizoram State insists on making this notification as the basis for delineating the boundary with Assam. Mizo leaders have been arguing that the demarcation notified in 1933 was biased since the Mizo society was not consulted before this bifurcation.

Mizoram backed this demarcation with the Inner Line of the Lushai Hills Notification of 1993. Assam, on the other hand, is of the opinion that it is the 1933 order that ought to be the basis for determining the border asserting that the state is not willing to give up any of its territory at any cost.

After the 1993 notification, several attempts were made to resolve the boundary dispute, particularly after the violent incidents in 1994 but it remained unresolved. In 2005, the Supreme Court suggested that the central government form a boundary commission to resolve the dispute.

There were a few instances in 2007 as well when tensions along this border flared up. But because of the timely intervention of the Central Government, the situation was quickly brought under control. Following the 2007 border incident, Mizoram declared its reservations on the present boundary with Assam and demanded that Inner Line Reserved Forest as described in the 1875 notification (under the East Bengal Frontier Regulation of 1873) should be the basis for

demarcating the border or the inner line territory of the Mizo state.

Following the recent clash, Assam has decided to approach the Supreme Court for protection of the Inner Line Forest Reserve in Cachar district from destruction and encroachment by Mizoram. Assam has previously petitioned the apex court for demarcation of the border with Nagaland and Arunachal Pradesh but it failed to produce an outcome.

Mizoram Boundary Committee Resolution:

In 2018, the representatives of Young Mizo Association (YMA), Mizo Zirlai Pawl (MZP), MzoUpa Pawl (MUP), and the Joint Action Committee on Inner Line Reserve Forest Demand of Boundary Dispute submitted a memorandum to the Prime Minister requesting for the establishment of the Boundary Commission for Settlement, Delimitation, and Demarcation of Boundary to resolve the dispute. The memorandum was jointly signed by all the groups. The Mizoram government constituted a boundary commission on July 23 and officially intimated the Centre about it. Mizoram's boundary commission is at present studying the nuances of the dispute by examining old maps and documents to present its case in a stronger manner. But, the violent incident occurred within two days of the formation of the Commission.

The Commission, while strongly condemning the incursion of Assam police into the Mizoram police post at Vairengte on July 26, asserted that the demarcation of the boundary of Mizoram on the northern side is to be found only in the Inner Line of 1875 alone. The experience of Mizoram, where peace was established through negotiations after years of insurgency is an example of what is possible through sincere, wise and good faith dialogue. Any agreement arrived as a result of such dialogue, however, needs to be adhered to

rigorously.

Given the sensitive nature of the northeast region, it is really important to resolve the border issues with a positive and constructive involvement of the Central government, and peaceful cooperation of different states through NEDA. Centre should also utilise the platform such as Inter-State Council and the Northeast Zonal Council to initiate talks and discussion on the matter to find practical and acceptable resolutions. The involvement of the Supreme Court will lead to more conflicts, the way it has been in the case of water-related disputes. The border disputes are not merely the disputes over boundaries. These are over resources, forest and agricultural lands, which have been given an ethnic/cultural colour. The formation of the multiple boundary commissions has also shown no positive results in the absence of the cooperation from the either side of disputing states especially when the decision is not in their favour. Thus, the only possibility of the resolution remains inter-state cooperation, cultural integration and the focus on local problems through the greater involvement of NEDA.

(Author is Senior Associate Fellow with the PPF. Contested Homelands: Politics of Space and Identity' is her recent published book.)

Bio-Medical Waste: The Concomitant of COVID-19 crisis

-By Manika Malhotra

While it is predicted that the COVID-19 virus is here to stay, the problem of accumulated Bio-Medical Waste (BMW) stares us in the face. It is not unusual to spot discarded masks on the streets and other public places. A year ago, management of the medical waste and other COVID-19 related waste was not considered to be a pressing concern and in fact a trivial issue for the nation

battling the deadly and novel COVID-19 virus. However, the littered medical waste has not only emerged as a serious environmental concern but also a potential health hazard as it is a carrier of infectious viruses and pathogens. A recent report by the Ministry of Environment and Forest (MoEF) submitted to Lok Sabha (July 2021) reveals the stark difference between the levels of pre-COVID medical waste (years 2017, 2018 and 2019) and COVID-19 related waste (2020). Furthermore, there was a huge leap noticed in the waste generation between 2020 & 2021, majorly due to the COVID-19 second wave.

The report states that India generated 56,898.4 tonnes of BMW between June 2020 and June 2021. Average waste generation during May 2021 was about 203 tonnes per day and it peaked around May 10, 2021 (250 tonnes per day). A state wise analysis reveals that Maharashtra topped the list (8317 tonnes) followed by Kerala (6,442 tonnes), Gujarat (5,004 tonnes), Tamil Nadu (4,835 tonnes), Delhi (3,995 tonnes), Uttar Pradesh (3,881 tonnes) and Karnataka (3,133 tonnes). In order to circumvent the emerging risk, the CPCB introduced the Guidelines for "Handling, treatment and disposal of waste generated during treatment, diagnosis and quarantine of COVID-19 Patient" under the BMW Management Rules, 2016 in May 2021. The concerned guidelines assist waste generators and common disposal facilities for safe collection, transport and disposal of COVID-19 related waste. The guidelines categorises the waste into Yellow (caps, masks, pathological wastes etc) Red (PPEs, Goggles, face shields etc.), White (Waste sharps including metals) and Blue (Glass and metallic implants). As per information submitted by State Pollution Control Boards (SPCBs) / Pollution Control Committees (PCCs), there are 200 Common BMW Treatment and Disposal Facilities (CBWTFs) operating in India at present. Delhi has only

two CBWTFs at Nilothi and Industrial Area, GT Karnal. Some states like Arunachal Pradesh, Goa, Mizoram, Nagaland, Sikkim do not have any CBTWF operating at present. Further, CPCB also developed a digital application namely 'COVID-19 BMW' in May 2020 for tracking and accounting of COVID-19 waste. Registration of every COVID-19 biomedical waste generator, common facility operator and SPCBs is mandatory. The CPCB in one of its reports highlighted that the bio-medical waste during (and post) the second wave has been increasing at a diminishing rate, broadly stating that there is 'no proportional growth' in the quantity of waste generated in comparison to the number of waste generators. While CPCB has an optimistic approach towards this, the 'ground reality' may not support the same. In May 2021, 186 out of 198 CBWTFs reported the COVID-19 waste generation on the COVID-19 BMW App and only around 5,048 generators registered which shows a startling variation/mismatch as COVID-19 cases were on the peak during this time. Similarly, the guidelines also require the patients and other family members in 'home-quarantine and home-care facility' to follow the necessary precautionary steps such as "disposing the used masks, gloves and tissues or contaminated swabs of COVID-19 patients, including used syringes, medicines, etc., if any generated in yellow bag" and it also clearly mentions that it is the responsibility of the Urban Local Bodies (ULBs) to "provide yellow colored bags (designated for BMW) to the persons responsible for operating Quarantine Camp or home-care". However, in most of the cases the households were not aware about this practice and ended up disposing of medical waste with the regular solid waste (in absence of any distribution of yellow bags). In many cases food waste, medical waste and disposable plastic waste was together disposed in any random coloured bag without any segregation.

This not only accelerated the spread of the virus but also overwhelmed the already overburdened waste management system.

In addition, the guidelines highlight that the “masks and gloves used by persons other than COVID-19 patients should be kept in a paper bag for a minimum of 72 hours prior to disposal, after cutting the same to prevent reuse”. These along with many other measures listed in the guidelines play a crucial role in not only restricting the waste generation but also aid in breaking the chain of the virus. However, the implementation of these measures yet seem to be in pipeline mode either due to poor distribution of resources to waste generators such as hospitals and/or lack of information amongst the households about the same. In an order dated 18.01.2021, National Green Tribunal mentioned that “there are huge gaps in the compliance of the authorization regime. In some of the states, compliance is ranging from 17% to 38% only”. It also highlighted “underutilization of the common bio-medical facilities at many places.” Online grievances have been filed against many health care facilities, quarantine centres and waste treatment facilities for openly dumping heaps of medical waste, without any precautions. In some places, “PPE kits were found being burnt within the hospital premises” and stray dogs were found foraging the waste outside the premises. This is only the tip of the iceberg as the treatment facilities were also found flouting the guidelines- vehicles collecting the waste took multiple rounds in different districts and were not sanitised and disinfected for months (NGT Judgement 27.07.2021). Despite being one of the potent variables in spreading the virus, structured disposal of COVID-19 waste has perhaps not received the desired attention.

COVID-19 related waste is generated during both the treatment as well as preventative

Besides face masks and shields (etc.),the hazardous wastes generated in vaccination drives is another form of visible yet unrecognizable biomedical waste. With every shot, one syringe is discarded and with every 10 doses, one vial is thrown away. Some states have treatment facilities put in place while some do not; however, the cause of concern is that the majority of the medical waste is not even reaching these facilities solely set up for treatment of BMW. With more than one year into this pandemic, the citizens are now aware about the nature of the disease and also the residuals of the treatment process. Hence, they are in a better position to make conscious and cautious choices of substituting the routine practices with sustainable options such as replacing one-time disposable mask with a reusable three-layered cotton mask (etc.)(provided the person is not a positive or suspected COVID-19 patient).

‘Proper waste segregation’ is the first and most important step in COVID-19 waste management. Hence, it is imperative to create public awareness regarding potential hazards of carelessly strewing COVID-19 waste and the ‘do’s and don’ts’ in managing the waste. Further to creating awareness amongst the citizens, it is equally important to ensure that there is a proper system put in place for collection and handling. Sensitisation/ orientation of collectors and aggregators therefore assumes immense importance to perform the required tasks, safely. In addition, monitoring the flow of waste from innumerable sources is another challenge which can be addressed by ensuring proper registration of all waste generators and processors on the BMW app. This will allow the concerned authorities to periodically review the compliance status. COVID-19 has resulted in a new type of pollution and a lingering waste crisis which will have a counter effect if left unmanaged. The fear of a

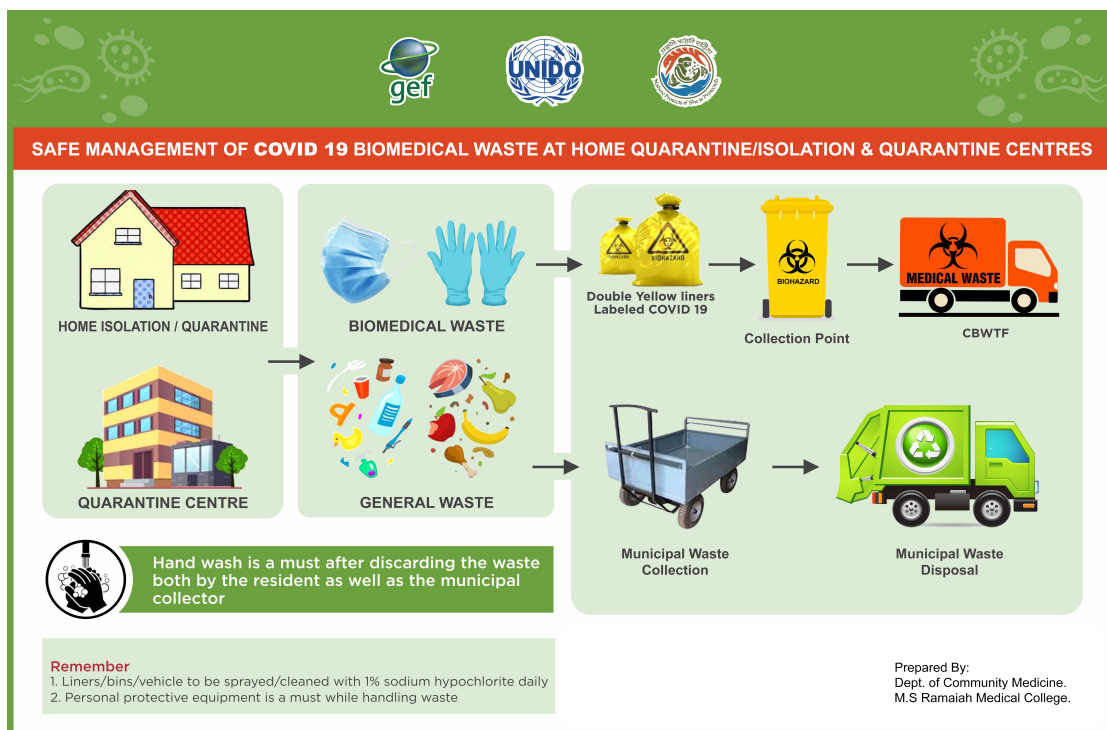
third wave is in the air and therefore, it is the right time for the citizens to gear up, spread

the word and equip themselves in order to protect their family as well as the environment.

Figure 1. Safe management of COVID-19 Bio-medical waste at Household



Figure 2 . Safe management of COVID-19 Bio-medical waste at home quarantine centres



Source: Maharashtra Pollution Control Board (2021)

Do's and don'ts of managing COVID-19 waste

COVID-19 WASTE MANAGEMENT – DO'S & DON'TS (Urban Local Bodies)

Do's



Arrange collection of biomedical waste from every quarantine centers/camps, home quarantine and home-cares.



Provide yellow coloured bags to the persons operating Quarantine Camp and to care takers of homecare.



Identify a Common Biomedical Waste Treatment and Disposal Facility (CBWTF) for collection of biomedical waste from quarantine centers / home-cares from designated locations.



Share details of ULBs with Quarantine Camps / Quarantine Homes / Home-Cares State Pollution Control Boards / Pollution Control Committees to facilitate disposal of biomedical waste.



Provide necessary support and security to waste handlers of CBWTF while collection of biomedical waste.



Establish common waste deposition centers (as stipulated under SWM Rules, 2016) for receiving / collection of biomedical waste.



Provide adequate Personnel Protective Equipment (PPEs) such as three layer masks, splash proof aprons/gowns, heavy-duty gloves, gum boots and safety goggles to workers involved in handling of COVID-19 biomedical waste.



Form a dedicated team of workers for collection of waste from quarantine centers or home care.



Arrange regular awareness programs and training to the workers engaged in Solid waste handling



Ensure dedicated trolleys / cart / vehicles are used for collection of waste and ensure regular sanitization with 1% sodium hypochlorite solution after every trip of collecting biomedical waste from home care / home quarantine.

Don'ts



Never mix general solid waste with biomedical waste at quarantine centre / quarantine home / home-care.



Workers of ULBs shall never deny collection of waste from quarantine center / quarantine home / home-care.



Never store biomedical waste at waste deposition center / collection point for more than 24 hrs, the same should be immediately handed over to CBWTF for final disposal.



Never send worker without PPEs for collection of waste from quarantine center / quarantine home / home-care.



Don't use the trolley / cart dedicated for collection COVID-19 biomedical waste for collection of general waste.

Source: Delhi Pollution Control Committee (2021)

(Author is a researcher with the PPF)

Coal- The Black Bone of Indian Energy Dilemma

-By Nandita Singh

India being a developing nation has been hugely dependent on 'black gold' for a long time to meet a major chunk of its energy demands. This dependency has put us in the second spot on the world's list of both production and consumption of coal. Coal has not just been a mere source of energy but also a primary source of employment, revenue, economic activity, and above all 'livelihood' for a lot of states. To meet the national energy and industrial demands, India produces as much as 756 million tons of coal and a bulk of it is extracted from the central and eastern states of Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha and the Southern state of Telangana. These energy hubs have been major contributors to the development of the country along with being the crucial drivers of the regional economy. Although, when we peek into the future, the redundancy of the outdated technology, inefficiency, and especially the everlasting environmental impact overshadows their historic contribution

The scientific community has collectively warned the world that any rise in worldwide average temperatures beyond 2 degrees Celsius could have a devastating impact on large parts of the world, causing rise in sea levels, stoking tropical storms, and worsening droughts and floods. The Paris Agreement which is a legally binding international treaty on climate change was adopted by 196 parties at the 21st Conference of Parties in Paris, on December 12, 2015, and was enforced on November 4, 2016. As per the Paris accord, the world converged on addressing the issue of climate change, exhibiting sheer determination to keep this increase of temperature worldwide well below 2 degrees Celsius as compared to the pre-industrial levels. This has forced the world to look for

energy alternatives other than non-renewable resources.

India being one of the founding members of the Paris Agreement under the United Nations Framework Convention on Climate Change, has pledged to cut greenhouse gas emissions intensity of its gross domestic product 33% (2005 as the base year) to 35% and increase non-fossil fuel power capacity to 40% from 28% by 2030. Our goal is to swiftly move away from fossil energy and increase renewable electricity capacity, generating 175 GW by 2022 and subsequently 450 GW by 2030 from non-fossil sources.

While India seems to be on track with the second emission reduction commitment, which started in 2013 and lasted till 2020, as compared to most of the Annex 1 nations under the Doha Amendment of the Kyoto Protocol, our ties to fossil energy carriers seem to deepen over time with the upcoming plans for the expansion of the Indian Coal Complex by the government. The coal capacity in the Indian power system will increase to 269 GW by 2030 compared to 235 GW in 2019. Coal being a contested resource, not only leaves a Bigfoot on global carbon emission, but it also does not address the inter-linked socio-ecological challenges of poverty and unemployment, environmental degradation, and the climate crisis. While India's coal trajectory is crucial to meeting global climate targets, unfortunately, the GOI does not seem to have any plans currently for a coal phase-out.

Coal has been the core driver of the industrial revolution across the globe, although, it comes with a price and India has long been taxed since the introduction of industries during the colonial period. In the face of development, coal comes with its own baggage of problems like land dispossession, appropriation of livelihood, water, and air pollution, and so on. Presently, there are as many as 459 operational coal mines in the 51 districts in 13 states of India and invariability can be observed across the regions while looking into

socio-economic dependency at the sub-national level.

The coal industry is one of the largest single sector employers in India with as many as 744,984 direct coal mining jobs in the year 2019-2020. Although, the disparity can be observed across the region in terms of job distribution depending upon the region and the type of mine that's operational in the area. For example, the Dhanbad district in Jharkhand is home to the highest number of coal mining workers and it alone has 122,348 jobs whereas Pakur on the other hand has only 63. The difference in the type of mine operational in a particular area has a direct influence on the number of jobs in the region. It is observed that districts with open cast mines have a lesser number of direct coal jobs as compared to the districts with underground mines, although the production of coal is found to be more in the former than the later. For an instance, the Korba district in Chhattisgarh which produces 120 metric tons of coal has 30 thousand fewer jobs as compared to Dhanbad which produces only 30 Metric tons of coal each year. Needless to mention, the workers of all such mines suffer severe health hazards due to poor working conditions. As per a study, 'the average life expectancy in the coal mines for those starting work at 15 years was found to be 58.91 years and 49.23 years for surface and underground workers respectively'.

There are other issues around coal-fired power plants. Workers and people living around coal mines are susceptible to diseases caused by inhaling coal dust and drinking polluted water. As per the 'Coal Kills' a joint report by Conservation Action Trust, Urban Emissions and Greenpeace, not moving away from coal is causing 80,000 to 115,000 premature deaths annually in India. The long-term effects of the coal mining industry can be hazardous linking millions of cases of asthma and respiratory ailments to coal

exposure, which might get transcended to the future generation if we don't transit to non-fossil energy sources.

Although there has been no new announcement of a coal-fired power plant in the past twelve months, the Central Electricity Authority (CEA) still projects India will reach 269 GW of coal-fired capacity by 2030 which would require adding 58 GW of net new capacity additions – or about 6.4GW annually. This dependency on coal can be attributed to the high variability in production, storage and distribution of renewable energy across the states, thus, lack of expansion of reliable energy access through non-fossil means. Nevertheless, thermal power is not feasible as compared to the ongoing cost reductions of renewables. For an instance, government induced incentives and other initiatives in solar power are turning out to be way more cost-effective than a few of the existing coal-fired plants.

A cumulative account of these facts and challenges is likely to make any new coal-fired power plants a stranded asset in the near future. Even though India doesn't seem to start building any new coal-powered plants, our coal-powered capacity will peak by 2025 and in 2030 about half of India's electricity will still come from coal. Keeping these aspects in mind, it is important that our coal capacity requirements be urgently revised. Needless to mention, while moving to a cleaner energy source is a top priority, it is also very important to have a 'just transition' for coal workers whose livelihood is dependent on coal production.

Amidst these challenges, we have pledged to address the world climate change crisis and so far we have been modestly pioneering the movement, and now it is for us to recalibrate through the problems in hand and redefine the archaic ways of achieving industrial prosperity.

India has been at the forefront of climate change issues since our proactive participation in the first-ever United Nations (UN) Conference on the Human Environment in Stockholm in June 1972. For an economy that is heavily dependent on coal, to stand by our promise and achieve a complete coal phase-out by 2060, smoothly transiting to the future of renewables will be a mammoth challenge. While, the current demand and supply chain and other socio-economic dynamics around thermal energy inhibits us to drastically switch from fossil energy, in order to address the future challenges of poverty, climate change, increasing sea level, and submerging coastal cities it is inevitable to transit whole-heartedly to green energy. Undoubtedly a way forward has to be a sustainable one, yet, for a nation that is witnessing rapid development, only a tailor-made shade of green can successfully canvas the crisis of the future and answer the present 'energy dilemma'.

(Author is a researcher with the PPF)

Recounting India's Greatest achievements since Independence

- By Vaishali Basu Sharma

This August 15 was very special because it marked the beginning of the 75th year of independent India. In these seventy-five years our nation has several achievements to its credit. It has built a modern economy, remained a democracy, lifted millions out of poverty, has become a space and nuclear power and developed a robust foreign policy. There are many milestones that should have figured in this account, but the idea was to attempt to concise some of the nations' proudest achievements. At the time of independence India was despairingly poor as a result of steady deindustrialization by Britain. The abject poverty and sharp social differences had cast doubts on India's survival as one nation. Independence brought dreams of not just individuals, but also economic, social and political freedom. India

has come a long way since Independence, leaving behind a string of landmarks that define its journey from the agony of Partition to a strong, powerful and developing nation with several achievements to its credit. India has become a space and nuclear power and developed a robust foreign policy. In these seven and a half decades the dreams and aspirations of the nation have undergone a change with hopes of becoming an economic and global power.

Independence will forever also be attached with the partition of the country in which millions were killed and many more were forced to flee across borders for safety. Notwithstanding the horrors with which partition is associated, the 1947 break-up of India prevented Hindu-Muslim antagonism from escalating into civil war. India's Partition avoided civil war, and so provided the space for nation-building, a building block of the unified, secular India we have today.

From its first day India gave every adult, including women the right to vote from. Women in India did not have to endure the struggles of suffragette as compared to women in the West. A democracy in the true sense, the country has the largest number of elected persons in the world, thanks to the Panchayati Raj system across the country.

Growth in India has come at a graduated pace but it has done so while pursuing the goals of achieving macro-stability, inclusive and sustainable growth. This gradualist approach helped build a consensus across political parties that enabled the reforms to continue, even as the political parties running the government changed. Economic reforms achieved a significant acceleration in growth and they also succeeded in reducing poverty. After independence the country's leadership identified power and steel as the key basis for planning, and several hydel projects and steel plants were built. These became the temples

of a modern resurgent India. Chronic food shortages and economic weakness, forced the country to focus on agriculture. Geneticist Professor M.S. Swaminathan, and other scientists, spearheaded the introduction of high-yielding wheat and rice varieties, setting off what came to be known as the Green Revolution. This doubled wheat production in just a few years, saving millions from extreme food deprivation and making the country self-sufficient. Despite the massive population growth now at 1.4 billion, India has never again witnessed the distressing prospect of widespread famine, which was persistent under British India and in the decades until the green revolution. The cooperative movement, particularly the dairy sector, in Gujarat's Anand, led by Dr. Verghese Kurien ushered in the White Revolution and self-sufficiency in the dairy sector. Four decades into independence, economic liberalization powered a growth wave unlike any in the country's history, resulting in India becoming a \$3 trillion economy in 2019, defying the disdainful perceptions like 'Hindu rate of growth.' Indian capitalists have significant contributions to the history of manufacturing innovations. Overcoming the adverse effects of COVID-19 pandemic on societies and economies across the world, India Inc.'s contribution to gross domestic product (GDP) is predicted to nearly treble by FY23. Powered by a burgeoning middle class that's expected to grow to 89 million households by 2025 with rising per capita incomes, India will be one of the largest consumer markets by the mid-21st century.

India belongs to the select group of countries that have developed indigenous nuclear technology. It designed and built Asia's first nuclear reactor Apsara nuclear reactor on August 4, 1956. India is among the few countries which have developed ballistic missiles. In 1960, CIRUS reactor attained

criticality and production of weapons-grade plutonium began and in May 1974, India conducted an underground nuclear explosion at Pokhran, Rajasthan. The test with estimated yield ranges from 8 to 12 kilotons was codenamed "Smiling Buddha," and described as a "peaceful nuclear explosion." May 1998 under the codename "Operation Shakti" India conducted a series of five nuclear bomb tests; "a fission device, a low-yield device and a thermonuclear device" had been successfully tested in the Pokhran desert, followed by two more sub-kiloton nuclear tests at the same testing range. The five underground tests range in yield from less than one kiloton to an estimated 45 kilotons. It led to India becoming a full-fledged nuclear state. It currently has 21 nuclear reactors in operation in seven nuclear power plants and has been making advances in the field of thorium-based fuels, working to design and develop a prototype for an atomic reactor using thorium and low-enriched uranium, a key part of India's three stage nuclear power programme. In the field of space science, the nation has the capability to launch GSLV satellites. India is the lowest cost producer of nuclear energy (\$ 1700 per kilowatt). The Power Sector has grown significantly since independence both in the installed electricity generating capacity and transmission & distribution (T&D) system. The total power capacity of generating (utilities & non utilities) has increased from meagre 1362 MW in 1947 to an installed capacity of 383.37 GW as of 31 May 2021.

Since its inception in 1969, the Indian Space Research Organization (ISRO) has since achieved a great feat in space expedition and operations. India's first space satellite was designed in 1975 and named after an Indian astronomer Aryabhata. By successfully launching the Mars Orbiter Mission to probe Mars in 2013 India became the fourth country to reach Mars orbit. Mangalyaan entered Mars Orbit on September 24, 2014, making India the first Asian country and only the fourth country

in the world to enter Mars orbit in its first attempt. Mars Orbiter Mission's objective is to collect data from the red planet and also showcase India's rocket launch systems, spacecraft-building and operations capabilities. In 2019 India successfully launched Chandrayaan in order to explore the moon. The vehicle inserted into lunar orbit in its first attempt. One of the greatest achievements of Chandrayaan was the discovery of the widespread presence of water molecules in the lunar soil. India is among the first countries to develop satellites for domestic communication.

Ours is the fourth-largest army in the world with 3 million active military personnel, after US, Russia and China and has the world's largest ground forces. The nation has joined an elite group by achieving a nuclear triad, inclusion of first deterrence patrol by the 'Made in India' INS Arihant nuclear submarine. Indian Army redefined mountain warfare by fighting at and even transporting battle tanks to 14,000 feet in the Himalayas.

Over the years India has won a total of 26 Olympic medals. It won its first gold medal in men's field hockey in the 1928 Olympic Games. Abhinav Bindra won the country's first individual Olympic gold medal in the 10m Air Rifle event at the 2008 Summer s in Beijing. In the 2010 Common Wealth Games in Delhi won 101 medals, including 38 gold. This year India capped off its best-ever performance in the Tokyo Olympics with a haul of seven medals with javelin thrower Neeraj Chopra becoming only the second Indian to win an individual gold in the Olympics. the country's 12th Olympic medal in Hockey came after a gap of 41 years. It is hoped that these successes in sports which have been realized after years of endeavor and exertions will continue in the future.

Mission e-Governance, coupled with Digital

India, has infused new thinking on how the government engages with its citizens and inter-state & inter-governmental functions. Over the years, numerous initiatives have been undertaken by India to promote e-Governance holistically and improve the dissemination of public services to the citizens. It has seen strides in scaling the country's electronic manufacturing industry, facilitating research and development and strengthening cyber security and data protection frameworks.

Notwithstanding the effects of COVID-19 pandemic, India's health sector has a number of competitive advantages with a large pool of well-trained medical professionals; a flourishing pharmaceutical industry which excels in generic drug manufacturing; and cost-effective and quality medical procedures. India's journey in the past 75 years has metamorphosed it into a force to reckon with. In an international system largely created and guided by the United States and its partners, India has charted its independent foreign policies. This year is also special because it marks fifty years of Bangladesh's independence from Pakistan, in which India has a defining role. India has been a model for much of the developing world and given the velocity of change underway, the challenge for India is to continue to strive for an inclusive and equitable international order, keeping its strategic culture sovereign.

There are still many goals with respect to providing better access to education, health services, and clean drinking water, sanitation and more jobs. The pandemic has demonstrated that despite the advancements in the health sector, there was a long and arduous road ahead as the country continues to grapple with inadequate public spending on health, low doctor-patient ratio and inadequate infrastructure in rural areas. Modern, futuristic and visionary learning system in the new National Policy on

Education is on the course to inculcate a technology-based and scientific temper among the youth. Emergencies like the COVID -19 pandemic has hastened the need to launch mobile-based emergency services and disaster management as key areas of focus. India must also strive towards environmental sustainability.

While there may be a lot to be cynical about, India has achieved political and democratic maturity, economic reforms, social transformation, poverty alleviation, in a graduated and peaceful manner. The nation still faces many challenges and responsible, conscious action from both the leadership and every citizen will be critical in overcoming them.

It is imperative that in the future the nation's progress is not hindered by politico-bureaucratic aims and apathy. The country has witnessed a steady upward trajectory, and in this the direction and intent of our leaders deserve lasting tribute. With the hope that such achievements continue in the future, and we continue to build the necessary state capacity, industrial and economic heft to make India a great nation, I wish our readers Happy 75th Independence.

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