DEFENCE AND DIPLOMACY

IN PURSUIT OF NATIONAL SECURITY

Special Issue: Non-Traditional Security Threats

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EDITOR'S NOTE

Continuing our series of 'theme based' editions of the journal, this issue deals with non-traditional security threats. Arguably, such threats are as important as, and more pervasive in their impact than, pure military threats. This does not lower the requirement for adequate military preparations but emphasises the need for the study of non-traditional threats, particularly as they are many and varied. This issue deals with nine different threats. Almost certainly, there are many more.

Our lead article is by **Tilak Devasher**, the celebrated author of the much read and must read book *Pakistan: Courting the Abyss*. It is a well written article by a well informed writer who is also a master of his craft. He graphically explains how Pakistan is staring at acute water scarcity, but doing little to ameliorate the situation. Pakistan is an agrarian society and dependent on water. There is a crying need for Pakistan to improve its water storage systems and to add to them. The water issue is almost certainly going to impact Indo-Pak relations and we will do well to be conscious of this.

China's commitment to Pakistan to fund and create the China-Pakistan Economic Corridor has been the subject of many debates, discussions and writings. Dr **Siegfried O Wolf**, Director of Research at the South Asian Democratic Forum in Brussels, brings to the debate the views of someone who sees the subject with the benefit of distance. He suggests that the project will be of economic benefit to Pakistan but could lead to regional disturbances as well. He sees an increasing Chinese footprint in Pakistan's internal and external policy formulations and possibly some dissonance in Sino-Pak relations.

Terrorism remains a widely prevalent evil, with no solution in sight. Have we reached a stage where we have to live with

it? The malady took on centre-stage after the 9/11 attacks with the emergence of Al Qaeda and later the Islamic State in Iraq and Syria (ISIS) factions. Terrorism is no longer the preserve of thieves and brigands – terror organisations now have amongst their ranks highly educated personnel adept at using modern technology. They are honing their capabilities and demanding widespread support, besides looting and exacting illegal taxes. **Dr Shalini Chawla** looks at a number of issues from different angles and warns that there is no room for complacency.

The need to reduce greenhouse gases and save the planet from environmental degradation is well recognised. Conventional wisdom unequivocally suggests that we must reduce the use of fossil fuels. For power generation, a shift towards renewable energy systems is needed but these have their own limitations. **Dr Manpreet Sethi** opines that we will do well to have a mix of power generating systems, and nuclear reactors should form an important element in the mix. An added bonus will be that nuclear reactors are the least polluting per kwh of energy production.

The competition in space is increasing and China is becoming a major player, with enhanced space capabilities. Last year, the Chinese conducted more launches into space than even the USA. **Group Captain Lele** looks at Chinese space activities, particularly in the year 2017. China is becoming self-sufficient and confident but it has also suffered some setbacks. The growing Chinese space capability must interest all strategic analysts.

Another area that is causing concern is the arena of cyber space. The word 'arena' is appropriate, given the threats and dangers that the realm foretells. **E Dilipraj** says that cyber space regulation is essential at both international and national levels. Moreover, the regulation process is not a one-time activity. The increased salience and consequent vulnerabilities necessitate ongoing improvements. The author cites examples from different countries, with due emphasis on the Indian scene.

The fact that 80 percent of HIV/AIDS afflicted people in Russia today are intravenous drug users is a frightening statistic. Russia is a huge market for drugs and apart from the obvious health issues, the use of drugs also spawns the growth of organised crime. **Chandra**

Rekha calls it a national tragedy and emphasises the inescapable importance for Russia to win the war against drugs.

One of the downstream impacts of climate change is the inevitable migration that will result. The term 'climate refugees' is gaining currency. In a paper with strong academic overtones, **Dhanasree Jayaram** discusses the security implications and their relationship with law and governance. The writer also makes some cogent recommendations in respect of migration of Bangladeshis to India.

The last article in this issue relates to suicide terrorism, a special and unique category of terrorism. **Radhika Halder** addresses the phenomenon with examples from Sri Lanka and the Liberation Tigers of Tamil Eelam (LTTE), Pakistan, India and Afghanistan. The article demands our attention.

In our Book Review section, **Puyam Rakesh Singh** reviews Jayadeva Ranade's *Cadres of Tibet*. It is a detailed work on Tibet by an author who has studied China and Tibet for many years. In a second book review, **Poonam Mann** discusses Theo Farrell's *Britain's War in Afghanistan*.

PAKISTAN: WATER WOES AND IMPACT ON INDO-PAK RELATIONS

TILAK DEVASHER

During a visit to Pakistan in 1998, President Suleman Demirel of Turkey was flown over the Indus to show him the Karakorams. En-route, he asked one of his ministers to look out of the window and tell him what he could see. The minister replied that he could only see vast barren mountains. President Demirel looked out himself and remarked, "Look at the river Indus, it is untapped power for Pakistan".[1]

This anecdote illustrates the crux of Pakistan's water woes. The Indus has for centuries sustained life and civilisation in this part of the world. Yet, today, this vital lifeline is in serious danger, due to the apathy and sheer lack of governance by successive Pakistani governments. In reality, Pakistan faces multiple water challenges that are fast going beyond the ability of the government to resolve.

WATER AVAILABILITY

The total average annual availability of water in Pakistan is estimated at 200 Million Acre Feet (MAF), of which 145 MAF is surface water

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1. Alauddin Masood, "Running out of Water", *The News*, February 12, 2017, http://tns.thenews.com.pk/running-water/#.WnWKU62B10t, Accessed on September 26, 2017.

and 55 MAF is ground water. Being an arid country, with an annual rainfall of 294 mm, Pakistan has developed an extensive irrigation network that consists of three earth-filled dams, 19 barrages, 12 link canals, 43 irrigation canals extending over a length of 58,500 km and nearly 100,000 water courses,[2] making it the largest contiguous irrigation network in the world.

Why then does Pakistan face a severe water crisis?

INADEQUATE STORAGE

An understanding of Pakistan's challenges has to begin with the fact that it is dependent only on one river system – the Indus – and ground water, for its water needs. While 75-80 percent of the flows of the Indus are from June-September, during the rest of the year, the flows are just 20-25 percent. However, the agricultural demand for water is 60 percent in the summer and 40 percent in the winter. Such a situation clearly necessitates that adequate water is stored during the short surplus period for use during the longer water shortage period.[3]

Since its creation, Pakistan has built only three mega storage facilities: Mangla (in 1967, on the Jhelum), Tarbela (in 1976, on the Indus) and the Chashma barrage (on the Indus). When constructed, the total live storage capacity was 15.73 MAF. There are two issues here. One, due to silting, the storage capacity of the three reservoirs, has been reduced to about 11.2 MAF. After the height of the Mangla dam was increased, the storage capacity was enhanced to 14.15 MAF. It is estimated that the storage capacity of around 8.37 MAF is likely to be lost by 2025 due to silting. An independent Chinese consultant hired by the Water and Power Development Authority (WAPDA) to conduct a feasibility study on de-silting of the Tarbela dam held that desiltation of the dam was not a viable option, either economically or technically, and could even damage the country's largest powerhouse and reservoir. The feasibility study concluded that instead of undertaking such a mammoth exercise, it would be

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2. "Despite Huge Irrigation System, Pakistan's Land Remains Thirsty", *Daily Times*, March 20, 2015, http://www.dailytimes.com.pk/punjab/18-Mar-2015/despite-huge-irrigation-system-pakistan-s-land-remains-thirsty. Accessed on September 27, 2017.
3. Dr Zaigham Habib, "Water Worries", *The Friday Times*, April 24–30, 2015.

more economical to build a new dam of the same size and capacity.[4]

The second issue is that given that the average availability of surface water is 145 MAF, in effect, Pakistan is able to store less than 10 percent or a 30 days supply against an international standard of 120 days.[5] Due to inadequate storage, approximately 30 MAF of water flows into the sea during the surplus months. This is equivalent to more than the entire water of the Chenab river. In monetary terms, this annual loss, due to insufficient storage, has been estimated at $21 billion.[6] Experts believe that Pakistan should have had at least 200 small, medium and mega dams. Unfortunately, it only has 61, out of which only two are mega dams.

POOR WATER UTILISATION

However, inadequate storage is just one part of the problem. The second is poor water utilisation. Pakistan's water utilisation is among the worst in the world. For example, (a) its water intensity rate – i.e. the amount of water, in cubic metres, used per unit of Gross Domestic Product (GDP) – is the world's highest, indicating that as compared to other countries, Pakistan's economy is the most water intensive and water dependent. Against the world average of $8.6, Pakistan's one cubic metre of water contributes only 34 cents to its GDP;[7] (b) It is also indicative of the inefficiency of water usage because only 36 percent of the water reaches the fields, with 64 percent being lost in transmission;[8] (c) Pakistan's crop productivity per unit of water is very low at 0.13 kg per cubic metre. What this means is that "Pakistan is using 97

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4. Javaid-ur-Rahman, "Pakistan Wastes Water Worth Rs 25b Every Year: Wapda Chairman", *The Nation*, July 13, 2017, http://nation.com.pk/national/13-Jul-2017/ pakistan-wastes-water-worth-rs25b-every-year-wapda-chairman. Accessed on September 27, 2017.

5. Simi Kamal, "Pakistan's Water Challenges: Entitlement, Access, Efficiency, and Equity," in Michael Kugelman and Robert M.Hathaway, eds., *Running on Empty: Pakistan's Water Crisis* (Washington DC: Woodrow Wilson International Center for Scholars, 2009), pp. 28–44. However, addressing a conference on "Regulation of Hydraulic Structure for Flood Management" in June 2013, the minister of planning asserted that this had fallen to eighteen days due losing 4.6 MAF of live storage in the existing reservoirs because of sedimentation. "Percapita Water Availability Alarming: Minister", *The News*, June 29, 2013. http://unesco.org.pk/ns/documents/2013/fms/ pc_The-News.pdf. Accessed on September 27, 2017.

6. "Wasting Water", *The News*, November 5, 2017, http://thenews.com.pk/print/242240-Wasting-water. Accessed on February 1, 2018.

7. Ibid.

8. Kamal, in Kugelman and Hathaway, eds., n. 5.

percent of its allocated water resources to support one of the lowest productivities in the world per unit of water;"[9] (d) The UN's Food and Agriculture Organisation (FAO) measures the pressure on national water resources by calculating water withdrawal as a percentage of Total Renewable Water Resources (TRWR). The pressure is considered high if the TRWR value is above 25 percent. Pakistan's water pressure amounts to a staggering 74 percent. This level of pressure is high, even when compared with the neighbouring countries, such as Iran at 67, India at 40, Afghanistan at 31, and China at 19.5 percent.[10]

GROUND WATER DEPLETION
The third issue is of ground water depletion. Ground water has rightly been compared with the family gold, to be used as a last resort, when surface supplies are disrupted. However, Pakistan has been using its ground water indiscriminately. As a result, the Indus basin aquifer is now the second most stressed (i.e rapid depletion, with little sign of recharge) in the world, implying that there is not much ground water left that can be used as the surface water starts depleting[11] Of the estimated 55 MAF of ground water, about 45 MAF is being used already to augment surface water through tubewells, both private and public. When the Indus Waters Treaty was signed, 3,000 tubewells were set up in Pakistan to compensate for the lost water. In 2014, their number was about 1.1 million. Such indiscriminate and continuous use of tubewells has lowered the ground water tables exponentially. Such usage is also unsustainable, given that the gap between withdrawal and recharge is increasing.

For example, according to a study carried out by the International Waterlogging and Salinity Research Institute (IWASRI), part of the Water and Power Development Authority (WAPDA), ground water supplies are depleting at 16–55 cm a year.[12] The irrigation department

9.   Ibid.
10. Neil Buhne, "Water Insecurity", *Dawn*, November 15, 2017, The writer is the UN resident coordinator in Pakistan, https://www.dawn.com/news/1370550/water-insecurity. Accessed on February 1, 2017.
11. Syed Mohammad Ali, "IMF's Advice for our Water Woes", *Express Tribune*, July10, 2015.   https://tribune.com.pk/story/917872/imfs-advice-for-our-water-woes/. Accessed on September 26, 2017.
12. "Looming Water Crisis", *Daily Times*, June 12, 2015. http://www.dailytimes.com.pk/editorial/12-Jun-2015/looming-water-crisis. Accessed on September 25, 2017.

of Punjab has stated that while in the 1990s, water could be extracted in the province at a depth of 20–40 ft below the ground, in the 2010s, drilling has to take place at close to 800 ft below the ground. Additionally, indiscriminate pumping, coupled with heavy use of pesticides, is contaminating the aquifers, and there is now saline water intrusion into the mined aquifers. Resultantly, tubewell salinity is increasing. According to one estimate, 14 percent of the ground water reserves have become highly saline, fit neither for drinking nor irrigation.[13]

EXPONENTIAL GROWTH OF POPULATION
The fourth issue is, of course, the exponential growth of population. Pakistan had a population of 32.5 million in 1951. This was estimated to have risen to 194.5 million in 2015, and as per the 2017 census, it is 207 million and growing at 2.1 percent. To put it in perspective, since 1947, Pakistan's population has been increasing by 2.5 million people per annum. An immediate consequence of such growth has been that Pakistan has had to grow more food to feed its population. At the time of partition, 21 million acres of land was under cultivation. This has now increased to 46 million. Such expansion has meant increased consumption of water, something that Pakistan would find difficult to sustain in the future. If Pakistan's population continues to grow at this rate, it could well be over 350 million by 2050, resulting in massive water scarcity problems that will defy solutions.

These are grave issues for Pakistan because it is an arid country, where 60 percent of the population is dependent on agriculture for their livelihoods, especially in the dominant province of Punjab. Agriculture contributes 20 percent of the GDP, and over 70 percent of Pakistan's exports are agro-based. Not surprisingly, therefore, over 95 percent of all water—surface and ground water—is utilised in irrigation for agriculture. Any reduction in water availability will have severe consequences for Pakistan: water scarcity would cause not only mass drought and starvation, but will inexorably lead to violence.

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13. Kamal, in Kugelman and Hathaway, eds., n.5.

PER CAPITA WATER AVAILABILITY

The net result of this situation is that per capita availability of water in Pakistan has decreased from 5,650 cubic metres (m3) per annum in 1951 when it was a water-abundant country, to roughly 940m3/per capita/year in 2015.[14] Currently, the per capita availability is estimated at 908 m3/ per capita/year.[15] It was estimated that by 2025, water availability would have shrunk to 855 m3/per capita/year[16] when its population could increase to 220 million or more. However, following the 2017 census preliminary report, when the population of Pakistan was shown as 207 million, the per capita availability has already shrunk to 861 m3/year.[17] This is about the same level as drought-stricken Ethiopia. It is estimated that Pakistan could become absolute water scarce – less than 500 m3/per capita/year—by 2035,[18] though some analysts and organisations like the Pakistan Council for Research in Water Resources (PCRWR) even predict this by 2025 i.e seven years from now.[19] Incidentally, absolute water scarcity means drought-like conditions in parts of the country.

CONTAMINATION

Pakistan is not only running out of water, its water is becoming increasingly contaminated. Ground water extraction has been going deeper and deeper into the water table, where the arsenic content is naturally higher. A study carried out by the PCRWR reported that some 50 million people were at risk of arsenic poisoning from contaminated ground water—far more than previously thought.

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14. Mushtaq Ahmed, "Water Saga", *The Nation*, May 31, 2016. http://nation.com.pk/columns/31-May-2016/water-saga. Accessed on February 1, 2018.
15. "Water Scarcity Looming Large in Pakistan", *The Nation*, August 21, 2017, http://nation.com.pk/national/21-Aug-2017/water-scarcity-looming-large-in-pakistan. Accessed on February 1, 2018.
16. "Water Wars", editorial, *The News*, February 17, 2015, https://www.thenews.com.pk/print/24547-water-wars. Accessed on February 1, 2018.
17. "Pakistan's Dry Future'," *Daily Times*, November 4, 2017. https://dailytimes.com.pk/134145/pakistans-dry-future/. Accessed on February 1, 2018.
18. According to the Falkenmark Indicator, an area is water stressed when its annual water supplies fall below 1,700 m3 per capita; water scarce when supplies fall below 1,000 m3 per capita, and absolute water scarce when supplies drop below 500 m3 per capita a year.
19. "Pakistan Could Face Mass Droughts by 2025: PCRWR", *Express Tribune*, September 16, 2017, https://tribune.com.pk/story/1508063/pakistan-face-mass-droughts-2025-pcrwr/. Accessed on September 26, 2017.

This accounts for a third of the 150 million estimated by the World Health Organisation (WHO) to be exposed to arsenic-laced water worldwide. The study also determined that some 88 million people were living in high-risk areas.[20]

A survey submitted to the Parliament in 2016 revealed that nearly 80 percent of water sources in 2,807 villages across 24 districts were contaminated with bacteria or other pollutants, to levels that were unsafe to drink.[21] According to a report by the PCRWR, 84 percent of the country's water supply sources that actually function are not suitable for consumption.[22]

As a result, according to a World Wide Fund for Nature report titled, "Pakistan's Waters at Risk", 20 to 40 percent of the hospital beds in Pakistan are occupied by patients suffering from water-related diseases, such as typhoid, cholera, dysentery and hepatitis, which are responsible for one-third of all deaths.[23] Every year, 53,000 Pakistani children die of diarrhoea after drinking contaminated water, says the UN International Children's Education Fund (UNICEF). The UN Commission on Sustainable Development, however, has a much higher figure, saying that in Pakistan 200,000 children *a year* die from diarrheal diseases alone. The total number of civilians, security force personnel, and terrorists who died between 2003 and September 24, 2017 is 62,483.[24]

Clean drinking water has to be a priority because annually $5.7 billion, comprising 4 percent of the GDP, is spent on dealing with the effects of water pollution such as bacterial infections.[25]

ENVIRONMENTAL ISSUES
Failure to ensure environmental flows in the Indus below Kotri, has resulted in massive sea water intrusion as a result of which two tehsils

20. "50 Million at Risk of Arsenic Poisoning in Pakistan: Study", *Dawn,* August 24, 2017, https://www.dawn.com/news/1353482/50-million-at-risk-of-arsenic-poisoning-in-pakistan-study. Accessed on February 1, 2018.
21. Ibid.
22. "Water Woes", *The Express Tribune,* March 9, 2017, https://tribune.com.pk/story/1349754/water-woes-2/. Accessed February 1, 2018.
23. "Sindh's Water Crisis", *The Nation*, March 6, 2017, http://nation.com.pk/editorials/06-Mar-2017/sindh-s-water-crisis. Accessed on February 1, 2018.
24. "The Big Problem with Water", *The Express Tribune,* September 27, 2017, https://tribune.com.pk/story/1517024/big-problem-water/. Accessed on September 28, 2017.
25. "Water Worries", *The Express Tribune,* January 11, 2018, https://tribune.com.pk/story/1605271/6-water-worries/. Accessed on January 13, 2018.

of District Thatta, i.e. Kharo Chan and Keti Bander have been 'eaten up' along the coastal belt. It is estimated that almost 100 acres of land are being so eaten up on a daily basis. Only a few thousand fishermen now reside along the coastal belt of Keti Bander and Kharo Chan. In 2015, it was reported that sea erosion has not only submerged the two towns but has also destroyed fertile land measuring approximately 1.5 million acres in Districts Thatta and Badin.[26] This would indicate that Pakistan is no longer headed for an ecological calamity, but could well have entered one.

For centuries, there has been a very delicate balance between sweet and sea water in the coastal areas. This balance has clearly been affected impairing the entire ecology of the area. As a result, Pakistan's mangrove forests, previously some of the largest in the world, have been reduced from 0.6 million acres to 0.25 million acres.[27]

If left unchecked, Pakistan's water woes are likely to get worse due to at least two reasons.

• **Climate Change:** According to the Global Climate Risk Index 2016 prepared by German Watch, of the 10 most affected countries by climate change, Pakistan was ranked fifth. Pakistan has consecutively appeared in the past four years' list of most affected countries. One consequence of this is that the Himalayan glaciers that contribute over 80 percent water to the Indus river are receding at the rate of 30 to 50 m/annum.[28] Increased glacial melts have led to heavy flooding followed by periods of reduced availability. For example, a reduction in the long-term average availability of water has already noticed. A statistical comparison of surface water availability between the last 30 and 10 years points towards declining water flows. While average flows for the 30-year period 1978 to 2008 comprised 140-145 MAF,

26. Usman Manzoor, "Arabian Sea Eating up 100 Acres of Sindh Land Daily", *The News,* September 28, 2015, https://www.thenews.com.pk/print/14892-arabian-sea-eating-up-100-acres-of-sindh-land-daily. Accessed on February 1, 2018.

27. Falak Sherkhan, "Time to Take the Water Issue Seriously", *Pakistan Today*, November 21, 2016, http://www.pakistantoday.com.pk/2016/11/21/comment/time-to-take-the-water-issue-seriously/. Accessed on September 25, 2017.

28. Sh. Mushtaq Ahmed, "The Water Picture of Pakistan", *The Nation*, February 14, 2017, http://nation.com.pk/columns/14-Feb-2017/the-water-picture-of-pakistan. Accessed on February 1, 2018.

the same for the later 10-year period 1998-2008 was 128.52 MAF. [29]

Practically speaking, this has resulted in the decline in water availability during the Rabi season (sowing in October-December and harvesting in April-May) in 2013-14 by 10.7 percent, in 2014-15 by 9.1 percent, in 2015-16 by 20 percent and by 25 percent in 2016-17.[30] For 2017-18, the shortage has been estimated at almost 30 percent.

- **Water Demand:** According to UN estimates, water demand in Pakistan was growing at an annual rate of 10 percent. [31] Even if the 2017 census is not factored in and the earlier estimates of the population of 220 million in 2025 are correct, then the demand for water is projected to rise to 274 MAF by 2025. Water availability, however, is unlikely to change from the current 200 MAF. To put this in perspective, this gap of about 74 MAF is almost two-thirds of the Indus river's current annual average flow. The International Monetary Fund (IMF) report, "Is the Glass Half Empty or Half Full?" takes the figures of water availability at 191 MAF and so projects a water shortage at 83 MAF by 2025.[32]

The obvious question is: where will Pakistan get this additional water from? It can be only through one of two ways: The first option is that Pakistan undertakes massive investment in the water sector to build dams, promote rain water harvesting, drip irrigation, improve water infrastructure and water efficiency. However, there are very little signs that any of this is happening at the time of writing.

The second option, the one that Pakistan is exercising, is to blame India for its water woes, accusing it of "water terrorism". Such allegations are likely to increase as will calls to either scrap or 'revisit'

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29. Kaiser Bengali, "Water Management Under Constraints: The Need for a Paradigm Shift", in Kugelman and Hathaway, eds., n. 5, p. 48.
30. Various Economic Surveys of Government of Pakistan.
31. UNESCO, *UN World Water Development Report* (New York: United Nations, 2012), p. 823, cited in Daanish Mustafa, Majed Akhter, and Natalie Nasrallah, eds., *Understanding Pakistan's Water-Security Nexus* (Washington DC: United States Institute of Peace, 2013).
32. Anwar Iqbal, "Water Scarcity may Threaten National Economy: IMF", *Dawn,* June 9, 2015. https://www.dawn.com/news/1187036/water-scarcity- Accessed on September 25, 2017.

the Indus Waters Treaty (IWT). For example, the Pakistan Senate passed a resolution on March 7, 2016, asking the government to "revisit" the IWT with India, something that *Dawn* called "bizarre". In fact, *Dawn* went on to note realistically "What must also be realised is that Pakistan's water woes are more a result of domestic realities than anything connected with the treaty." [33]

IMPACT ON INDO-PAK RELATIONS

Despite *Dawn's* assertion, the fact is that the looming water scarcity in Pakistan will seriously impact Indo-Pak relations. Already, Pakistan has been objecting to any development of water resources on the western rivers that are allowed to India by the IWT. The cases of the Kishanganga and Ratle projects are well-known. Pakistan has invoked the dispute-resolution mechanism of the IWT to stall India's progress in the construction of even run-of-the-river projects.

While India would need to deal with such interventions by Pakistan, it would also need to brace itself, in the near and medium terms, for the potential large-scale exodus of 'water refugees' from the water parched regions of Pakistan. The example of the Middle East is instructive in this regard. The influx of 600,000 Syrian refugees into Jordan impacted the host countries' water resources, leading to a sharp fall in the ground water.

In addition, India also needs to factor in the various nuances in Pakistan's strategy and calibrate its own policies accordingly.

Among the various strands in Pakistan's strategy, the first is the conciliatory approach. This acknowledges that the treaty has stood the test of time, despite wars, but holds that the lacunae in it is that it does not cover the sharing and management of underground aquifers. Since the aquifers are connected, the lack of a system to regulate ground water on either side has led to unregulated extraction. The reasoning behind the approach is that satellite data shows that the ground water aquifer tilts towards India. Thus, to ensure that India does not extract too much water that would affect its own ground water availability, it is projected that both countries

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33. "Indus Waters Treaty", *Dawn*, March 9, 2016, https://www.dawn.com/news/1244492. Accessed on September 26, 2017.

need to work together to better manage their common underground water resources.[34]

The second strand is that though the IWT provides a mechanism for river sharing, hydropower development in India has the potential of threatening Pakistan's water security, especially availability during low-flow periods. Additionally, the treaty does not provide for minimum environmental flows downstream of the international boundary for the eastern rivers — Ravi, Sutlej, Beas, whose waters lie with India — adversely affecting the population living downstream.[35]

A third strand is that given the impact of climate change on water availability and the fact that these are trans-boundary rivers, a system of trans-boundary water management has to be developed. This needs a regional perspective by including both Afghanistan and China.[36]

A fourth strand is to accuse India of completely blocking the waters of the western rivers to cover up its own failures to better manage its water. For example, in December 2017, to placate farmers who were protesting about the lack of water in the Chenab, it was explained that India had stopped the flow.[37]

Fortunately, the record has been set right by no less than the Chairman of the Indus River System Authority (IRSA) Rao Irshad Ali who told the Pakistan Senate Standing Committee on Water and Power that India was not responsible for the water shortage in Pakistan. He dismissed widespread reports that blamed India, clarifying that India was using less than its allocated share under the IWT. He termed all such media reports about India using more

34. Mohammad Hussain Khan, "Will we be Able to go Beyond the Rhetoric to Face the Water Challenges Ahead?", *Dawn*, January 1, 2018, https://www.dawn.com/news/1380112/will-we-be-able-to-go-beyond-the-rhetoric-to-face-the-water-challenges-ahead. Accessed on February 1, 2018.
35. Khaleeq Kiani, "Pakistan to Work with Kabul, Delhi on Water Management", *Dawn*, May 3, 2017, https://www.dawn.com/news/1330768/pakistan-to-work-with-kabul-delhi-on-water-management. Accessed on September 25, 2017.
36. Daniya Khalid, "Pakistan's National Water Policy", *The Express Tribune,* July 29, 2017, https://tribune.com.pk/story/1469030/pakistans-national-water-policy/. Accessed on February 1, 2018.
37. "Farmers Urge Govt to Fight India's Water Terror", *The Nation*, December 18, 2017, http://nation.com.pk/18-Dec-2017/farmers-urge-govt-to-fight-india-s-water-terror. Accessed on February 1, 2018.

water as "propaganda". "India is using water only to produce electricity," he said.[38]

To conclude, as Pakistan marches from "water scarcity" to "water starvation"[39] its leaders have to take immediate remedial steps before it is too late. As the *Express Tribune* puts it: "In reality, terrorism and extremism… have never presented a truly existential threat to Pakistan. Neither has come close to bringing down the edifices of the state and neither shows that capacity on current form nor is likely to in the foreseeable future. But the water problem just might do what all the forces of darkness have as yet failed to do."[40] In fact, water scarcity in the future will dismantle all aspects of Pakistan's national security.[41]

38. Zafar Bhutta, "Clearing the Air: India not Behind Water Shortage in Pakistan", *The Express Tribune*, July 10, 2015, http://tribune.com.pk/story/918101/clearing-the-air-india-not-behind-water-shortage-in-pakistan/. Accessed on February 26, 2017.
39. Farrukh Saleem, "Water Emergency", *The News*, September 4, 2016, https://www.thenews.com.pk/print/147651-Water-emergency. Accessed on February 26, 2017.
40. "The Big Problem with Water", *The Express Tribune*, September 27, 2017, https://tribune.com.pk/story/1517024/big-problem-water/. Accessed on September 28, 2017.
41. "Water Stressed", *The Nation*, September 15, 2015, http://nation.com.pk/editorials/15-Sep-2015/water-stressed. Accessed on February 26, 2017.

CHINA-PAKISTAN ECONOMIC CORRIDOR: ITS GEOPOLITICAL AND SECURITY IMPACTS

SIEGFRIED O. WOLF

INTRODUCTION: OUTLINING THE CPEC PUZZLE

The China-Pakistan Economic Corridor (CPEC) represents a part of a mainly Chinese funded[1] development initiative to connect Asia with Europe and Africa through multi-dimensional connectivity projects, called the 'Belt and Road' Initiative (BRI). This analysis seeks to shed light on the interests, challenges, impacts on regional cooperation, geopolitics and security related aspects' implementation of the

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1. Besides the granting of (currently) around $ 60 billion, mostly in loans, there is some Pakistani co-funding for the CPEC projects. Besides the fact that Pakistan will have to deal with a tremendous amount of debts comprising the repayments of loans and respective interests (some experts are estimating $90 billion of repayments), the country has allocated approximately $ 1.71 billion (Rs.180 billion) for the CPEC and its supporting projects during the 2017-18 financial year which started on July 1, 2017. Furthermore, Islamabad must cover the costs of providing security for the corridor in general and for Chinese companies and workers in particular. "Pakistan Allocates 180 Billion Rupees for CPEC in New Budget", *Xinhua,* May 27, 2017, http://www. xinhuanet.com/english/2017-05/27/c_136320209.htm. Accessed on February 15, 2018; "Pakistan will be Paying China $90b Against CPEC-Related Projects", *Express Tribune*, March, 12 2017, https://tribune.com.pk/story/1352995/pakistan-will-paying-china-90b-cpec-related-projects/.

corridor. It is argued that the CPEC will have a tremendous impact on Pakistan's economy, security, and domestic politics, especially on civil-military and Centre-State relations. The main objective of this article is to elaborate on the CPEC from a geopolitical and security orientated perspective Here, the CPEC might not only further entrench negative socio-economic and political conditions in certain areas but also lead to further regional disturbances. Additionally, to implement the CPEC successfully and to gain maximum benefit out of it, the corridor must be effectively incorporated into the regional infrastructure beyond the China-Pakistan nexus. The latter requires a fundamental reassessment of Pakistan's foreign relations. But till today, there are no indications that Pakistan's civilian and military leadership is willing to change its security-orientated and conflict-driven policy approaches towards India and Afghanistan, which finds expression in the continuing state sponsorship of – or, at least, support to – cross-border terrorism.[2] Besides the growing terrorist challenge with its local and regional dimensions, it is emphasised that the CPEC has the potential to increase China's leverage on Pakistan's internal and foreign policy decision-making. Having said this, CPEC would be able to function as an 'economic backbone' of a 'Chinese guided' new Asian security structure. But being rather a source for further conflicts in China-Pakistan relations, the CPEC has only limited opportunity to increase connectivity beyond the China-Pakistan nexus.

BACKGROUND: PLAN AND IMPLEMENTATION OF THE CPEC PROJECT

The focus on Economic Corridors (ECs) has become a trend of strategic development in various countries and regions worldwide.[3] Basically, an EC is a development project aiming at the increase of economic growth over a certain period of time and in

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2. Siegfried O. Wolf, "Pakistan and State-Sponsored Terrorism in South Asia", in Paulo Casaca and Siegfried O. Wolf O., eds., *Terrorism Revisited: Islamism, Political Violence and State-Sponsorship* (Heidelberg: Springer, 2017), pp. 109-155.
3. Hilmayati Safitri, "Economic Corridor Policy, Land Concentration and 'Social Exclusion': Java's Economic Corridor Policy Implementation, Indonesia," (The Hague: International Institute of Social Studies, 2012), http://thesis.eur.nl/pub/13083/. Accessed on February 11, 2017.

a specific area.[4] Therefore, ECs are linking economic agents along a defined geographical entity and provide important connections among major economic nodes or hubs (usually) centred in urban landscapes.[5] Consecutively, ECs link production, trade and infrastructure within a specific geographic framework of the centre of economic activities and extend benefits to rural areas through transport development and expansion of production activities.[6] As such, an EC is designed to create global, regional and domestic value chains through the creation and/or connection of economic centres and produces (ideally) positive multi-sectoral spillover effects. Having such a conceptional perspective in mind, the China-Pakistan Economic Corridor (CPEC), a multi-billion dollar infrastructure investment project, is heralded as a game-changer for Pakistan's economy and regional cooperation.[7] Being a crucial part of a major development initiative led by China, known as the 'Belt and Road' Initiative (BRI), to connect Asia with Europe and the Middle East with Africa via the "land (belt)"[8] and "sea (road),"[9] for the CPEC project and for those involved, it evokes hopes and

4. Ibid.
5. Hans-Peter Brunner, "What is Economic Corridor Development and What Can It Achieve in Asia's Subregions?", ADB Working Paper Series on Regional Economic Integration, No. 117 (Manila: Asian Development Bank, 2013), http://www.adb. org/publications/economic-corridor-development-and-what-it-can-achieve-in-asia-subregions. Accessed on February 11, 2017.
6. Masami Masami and Ikumo Isono, "Old, New and Potential Economic Corridors in the Mekong Region", in Masami Ishida, ed., Emerging Corridors in the Mekong Region, BRC Research Report No. 8 (Bangkok: Bangkok Research Center (BRC), 2012), pp. 1-42, http://www.ide.go.jp/English/Publish/Download/Brc/08.html. Accessed on February 11, 2017.
7. Siegfried O. Wolf, "China-Pakistan Economic Corridor and Its Impact on Regionalisation in South Asia", in Sumana Bandyopadhyay et. al., eds., Regional Cooperation in South Asia Socio-economic, Spatial, Ecological and Institutional Aspects (Heidelberg: Springer, 2017), pp. 99-112; Siegfried O. Wolf, "The China-Pakistan Economic Corridor: An Assessment of its Feasibility and Impact on Regional Cooperation", SADF Working Paper. No. 1 (Brussels: South Asia Democratic Forum), June 28, 2016, http://sadf. eu/new/blog/sadf-working-paper-1-china-pakistan-economic-corridor-assessment-feasibility-impact-regional-cooperation/. Accessed on February 12, 2017.
8. The sum of all land-based routes of the BRI is also known as the Silk Road Economic Belt (SREB).
9. The maritime part of the BRI is also known as 21st Century Maritime Silk Route Economic Belt, a sea-based path through the South China Sea, South Pacific Ocean and Indian Ocean in order to complement the land route (SREB). It is the modern-day equivalent of old sea lanes and aims to link China with the Mediterranean Sea via the Persian Gulf.

a myriad interests, and spurs a significant geopolitical shift.[10] Lauded as a new economic lifeline, the CPEC is an essential link between the Belt and Road. In order to provide this connection, the CPEC should connect Kashgar in China's western, landlocked province of Xinjiang (also known as Xinjiang Uighur Autonomous Region) with Gwadar port on the Balochistan coast in Pakistan's southwestern region.

According to the "Long-Term Plan for China-Pakistan Economic Corridor (2017-2030)", the CPEC will be implemented through a "1+4 cooperation structure", as follows:[11] the economic corridor as an overall, multi-sectoral development project at the centre, and Gwadar port (Pakistan's ambiguous deep-sea port project and the flagship project of the CPEC), energy, transport infrastructure and industrial cooperation.[12] Within these priority sectors of the CPEC development vision, the following key areas for concrete cooperation between Pakistan and China are identified: (1) connectivity including, construction of an integrated transport system and information network infrastructure; (2) energy related fields; (3) trade and industrial parks; (4) agricultural development and poverty alleviation; (5) tourism; (6) cooperation in areas concerning people's livelihood and non-governmental exchanges; (7) financial cooperation.[13] To operationalise cooperation in these areas, the corridor combines several cross-sectional components such as infrastructure, trade, connectivity, transport, energy and services. More concretely, it consists of different components: roads, railways, airport (Gwadar), local transportation (for example, the metro), and pipelines for oil and

10. Shi Ze, "A Look at a New Concept and the Remarkable Practice of China's Development through the 'One Belt, One Road", Presentation at the International Conference of the Schiller Institute, Paris, France, June 13-14, 2015, http://newparadigm.schillerinstitute. com/media/pr-shi-ze-regard-sur-le-concept-nouveau-d-une-ceinture-une-route/. Accessed on December 21, 2016; Shi Ze, "One Road & One Belt & New Thinking With Regard to Concepts and Practice", Presentation at the 30th Anniversary Conference of the Schiller Institute, Frankfurt, Germany, October 18, 2014. http://newparadigm. schillerinstitute.com/media/one-road-and-one-belt-and-new-thinking-with-regard-to-concepts-and-practice/, December 21, 2016.

11. LTP, Long-Term Plan for China-Pakistan Economic Corridor (2017-2030), Government of Pakistan, Ministry of Planning, Development and Reform, Islamabad & People's Republic of China, National Development & Reform Commission, Beijing, 2017, http://pc.gov.pk/uploads/cpec/LTP.pdf

12. Ibid.

13. Ibid., pp. 14-21.

gas. In this context, in addition to building completely new supporting infrastructure to create connectivity, several major upgrades of the existing outdated infrastructure systems are required (for example. the Karakorum Highway). Besides infrastructure, the major focus (around two-thirds of the investments, roughly $35 billion,[14] will be used to increase the energy capacities, both renewable and non-renewable, such as solar, wind, hydropower energy (dams), and coal. The planned pipeline projects are also expected to improve the imports of natural gas and crude oil. Additionally, all these projects are flanked by substantial security measures to guarantee a safe environment for the development of the CPEC.[15] Essentially, the CPEC encompasses three routes [the Long-Term Plan (LTP) talks actually about axes] through Pakistan, plus a northern extension. First, the so-called route of Eastern Alignment, which passes mainly through central Punjab and Sindh.[16] Second, the Central Route, which passes partly through Khyber-Pakhtunkhwa (KPK), and the hitherto unconnected parts of Punjab and Sindh. The third route known as the Western Alignment passes through the relatively underdeveloped areas of KPK and Balochistan.[17] Finally, there is also a so-called Northern Route (drawing on the existing Karakorum Highway), which will connect all the three Pakistani alignments or axes with the Pakistani-China border at Khunjerab and will continue to the Chinese territory. The whole project in mainly based on loans by China (provided by different Chinese sources) which must be repaid. It is expected that the CPEC will be totally completed in 2030 (i.e., the long-term projects); some parts are supposed to be completed by 2025 (middle-term projects). Furthermore, there are-the so-called "early harvest" projects (short-term projects).

14. Daniel S. Markey and James West, "Behind China's Gambit in Pakistan", Expert Brief. [New York: Council on Foreign Relations (CfR)], May 12, 2016, https://www.cfr.org/expert-brief/behind-chinas-gambit-pakistan. Accessed on February 14, 2017.
15. BBC "Is China-Pakistan 'Silk Road' A Game-Changer?", April 22, 2016, http://www.bbc.com/news/world-asia-32400091. Accessed on January 12, 2018.
16. Shahbaz Rana, "China-Pakistan Economic Corridor: Lines of Development – Not Lines of Divide", *The Express Tribune*, May 17, 2015, http://tribune.com.pk/story/887949/china-pakistan-economic-corridor-lines-of-development-not-lines-of-divide/. Accessed on January 12, 2018.
17. Wolfgang-Peter Zingel, "China's Pakistan Option: Economic and Social Implications of an 'All-Weather Relationship'", *IIC Quarterly*, pp. 14-24 (New Delhi: India International Centre) 42:2, autumn, 2015.

It is important to note that China has four major conditions for Pakistan to implement the CPEC. First and foremost, Pakistan needs to establish a stable security environment; ensure national harmony and consensus; and reach a timely implementation of the CPEC projects. In other words, "the faster, the better" and thus, the *mantra* will be, "the Easiest First".[18]

PAKISTAN'S AND CHINA'S INTERESTS IN DEVELOPING AN ECONOMIC CORRIDOR

To begin with, one should shed some light on the Pakistani and Chinese interests.[19] First, Pakistan is in urgent need for major investments to boost its failing economy. Second, Islamabad is looking to diversify its foreign aid and investment. Obviously, it is keen on reducing its financial dependence *vis-à-vis* the US. Third, Pakistan expects to expand the build-up of its infrastructure, deepen energy capacities, and manufactural hubs, improve the living conditions in its poorer provinces, reduce unemployment, increase the overall knowhow, and reverse the negative impacts of the brain drain and capital flight. Fourth, Pakistan aims to deepen its bilateral ties with China from mainly geopolitical to mutually entrenched economic and socio-political relations. Last but not least, Pakistan's security establishment hopes that an economic uplift will help to contain 'religious radicalisation' and militancy, which also occupies a significant place on China's political agenda.

Beijing is convinced that sustainable economic prosperity in Pakistan will help to reduce terrorism which in the past has already proven to be a great challenge for Chinese economic interests, territorial integrity, and security. Furthermore, the land-based CPEC would provide China with another access route to the Indian Ocean and allow it to bypass the Malacca Strait that could be blocked in times of potential tension. In addition, it is expected that the CPEC will be shorter, cheaper and able to avoid the risk of piracy. Another significant and positive aspect of the CPEC is that it could help to curtail the economic imbalance between the prosperous eastern and the underdeveloped western part of China. In reaction to this, the

18. Wolf, n.7.
19. Please see Ibid, for further references regarding Pakistani and Chinese interests in the CPEC project.

CPEC should contribute to greater economic growth and enable opening up routes to the remote, landlocked Xinjiang province. Against this backdrop, there is hope in Beijing that an improvement of the socio-economic conditions in Xinjiang will help to undermine local separatist tendencies.

CHALLENGES

In order to implement the CPEC successfully, Pakistan has to confront severe challenges and address some unresolved problems. One of the major problems of the CPEC is that it is being developed in disputed territories, such as the area of Gilgit-Baltistan. This area was illegally acquired and, consequently, administered by Pakistan. It is gaining significance since all the CPEC infrastructure projects have to run through this territory because it is the only land connection between China and Pakistan. As such, not only is the political status of Gilgit-Baltistan unclear but also the whole CPEC lacks legal cover since it is not in line with numerous international agreements like the respective UN Resolutions.[20]

Due to Pakistan's handling of the CPEC project, there is a lack of national consensus and harmony among the provinces and other disadvantaged areas, especially between Balochistan, Khyber Pakhtunkhwa (KPK), and the Federally Administered Tribal Areas (FATA)[21] on one side, and Punjab and Sindh on the other, plus between the regions and the federal government. Hence, the following arguments have been put forward in the context of the project's implementation: no adequate inclusion of regions in the decision-making processes; exploitation of regional resources without

20. For example, the CPEC is violating the pending UN Resolutions of August 13, 1948, and January 5, 1949, which envisage that the future status of the state of Jammu and Kashmir will be determined in accordance with the will of the people through the democratic method of a free and impartial plebiscite. Sabahat Akram and Midhat Shahzad, "UN Mediation on Kashmir Dispute: Past and Future", *International Journal of History and Philosophical Research* (UK: European Centre for Research Training and Development), vol. 3, no 2., pp. 1-9, November 2015, http://www.eajournals.org/wp-content/uploads/Un-Mediation-On-Kashmir-Dispute-Past-And-Future---.pdf. Accessed on February 13, 2018.

21. Siegfried O. Wolf, "Betwixt and Between: The FATA Reform Process and the China-Pakistan Economic Corridor", *SADF Focus*, vol. 21 (Brussels: South Asia Democratic Forum), October 11, 2016, http://sadf.eu/new/blog/sadf-focus-21-betwixt-fata-reform-process-china-pakistan-economic-corridor-siegfried-o-wolf/. Accessed on February 14, 2018.

adequate remuneration; land grabbing; (forced) displacement of local people and guided internal migration to change the social demography in restive regions; and severe distortion of fair/free economic competition. Consequently, the rationale is that the CPEC reenforces the already existing Centre-region conflicts, and intensifies socio-political unrest and protest movements.[22]

Furthermore, there is a lack of transparency and communication between Islamabad and the individual provinces creating an atmosphere of secrecy and confusion around the project. The decision-making is not clear, especially since the provinces have not been adequately included. As a result, the smaller provinces are wondering how they can benefit from the CPEC, if at all. In addition, the lack of security is worrisome. There is an ongoing insurgency in Balochistan, in the province where the Gwadar port is located as the central piece of the CPEC.[23] The insurgents identify it as occupation of their homeland and an attempt to marginalise the native Baloch people. In addition, the Pakistani Taliban and other militant elements will inflict another challenge for the safety of the CPEC project. In this context, there is an imminent threat that the international terror groups like Al Qaeda or Islamic State (IS) will identify the CPEC project within their *jihadist* agenda since China is perceived as an anti-Muslim state. Moreover, the latter phenomenon is based on the allegations that Beijing is suppressing its Muslim minorities and applying an anti-Islam cultural policy.[24]

Subsequently, to guarantee a secure environment for the CPEC development, the military is trying to expand its power. This situation is significantly affecting the country's civil-military relations and civilian control over the military, while challenging the process of democratic transition. At this stage, several observations can be

22. Siegfried O. Wolf, "China-Pakistan Economic Corridor (CPEC) and Its Impact on Gilgit-Baltistan", *SADF Focus*, vol. 25 (Brussels: South Asia Democratic Forum), November 24, 2016, http://sadf.eu/new/blog/sadf-focus-25-china-pakistan-economic-corridor-cpec-impact-gilgit-baltistan-dr-siegfried-o-wolf/. Accessed on February 15, 2018.
23. Gordon. G. Chang, "China's Big Plans for Pakistan", *National Interest*, December 10, 2014. http://nationalinterest.org/feature/chinas-big-plans-pakistan-11827. Accessed on December 29, 2017.
24. Siegfried O. Wolf, "Pakistan and Terrorism: China-Pakistan Economic Corridor as Critical Juncture?," *e-International Relations*, May 11, 2016, http://www.e-ir.info/2016/05/11/pakistan-and-terrorism-china-pakistan-economic-corridor-as-critical-juncture/. Accessed on February 15, 2018.

made: first, the way in which the CPEC is being implemented, limits the decision-making powers of the civilian government and hampers civilian control over the military. Second, since civilian control over the military is interpreted as a prerequisite for democracy, the CPEC development is undermining the process of democratic transition initiated by the 2013 general elections. Third, to ensure the CPEC development, the military has to build up a parallel governance structure, exercising tremendous executive and judicial powers and sidelining the civilian government.[25]

Additionally, the CPEC implementation has already shattered many deadlines and is susceptible to the insufficient management capacities of Pakistani authorities (for example, in the allocation of the necessary land for the CPEC projects) as well as corruption. As a result, many of the ongoing CPEC projects have already been delayed and their costs have skyrocketed, which has not been particularly helpful in stifling domestic critics. Plus, the project has to deal with several natural calamities that may negatively affect the Karakorum Highway or the potential threat of an earthquake for Gwadar port, the central piece and flagship project of the CPEC.

REGIONAL CONNECTIVITY
It is argued that the CPEC's potential impact on regionalisation depends entirely on its ability to increase regional connectivity as much as possible. Hence, the CPEC must be integrated into the transportation, energy, and trade infrastructure within the regional networks and beyond the Pakistan-China nexus. For Pakistan, it is essential to include also the neighbouring states, and to open up the CPEC to Iran, Afghanistan, and India. Only then can this project significantly influence the overall regional connectivity and function as a game changer for regional cooperation. In order to facilitate such meaningful input, a normalisation of Pakistan-India ties and a constructive Pakistan-Iran dialogue are crucial preconditions. Furthermore, a fundamental reassessment of Pakistan's predominant security-based approach towards Afghanistan and India is needed.

25. Siegfried O. Wolf, "China-Pakistan Economic Corridor, Civil-Military Relations and Democracy in Pakistan", *SADF Working Paper*, vol. 2 (Brussels: South Asia Democratic Forum), http://sadf.eu/new/blog/sadf-working-paper-2-china-pakistan-economic-corridor-civil-military-relations-democracy-pakistan/ Accessed on February 15, 2018.

Plus, Islamabad must develop a foreign policy free from ideological parameters which allows rational behaviour in its bilateral relations. More concretely, Pakistan needs greater emphasis on trade and broader economic cooperation rather than focussing mainly on security. In India, there should be a debate regarding its position towards the BRI and CPEC.[26] Here, an option might be to evaluate the potential cooperation between New Delhi and Beijing regarding the build-up of infrastructure in Afghanistan. This could also include collaboration in development and civilian capacity-building projects between India and European actors, foremost Germany or Italy (in certain cases – eventually – in coordination with China). This could give a further impetus to the India-Iran-Afghanistan trade corridor as well as act as an catalyst for the Indian supported Iranian Chabahar port. But until now, measures to address the above mentioned requirements have not been initiated. As a result, the CPEC will not be able to contribute very much to the improvement of regional connectivity in South Asia.

CPEC: GEOPOLITICAL AND SECURITY IMPACTS

Based on the observations, one can state that the CPEC has a substantial geopolitical impact on the wider region which can summarised in the following statements. Firstly, the CPEC will most likely increase China's leverage on Pakistan's decision-making processes in domestic political and security affairs, as well as its foreign policy. This could find expression in increased Chinese pressure on Islamabad to find a solution for the undefined relationship between Gilgit-Baltistan and the Pakistani state, for instance, in the form of transforming Gilgit-Baltistan into a constitutionally recognised fifth province of Pakistan. This would not only be a breach of international agreements, but would also intensify the conflict with neighbouring India which is claiming this territory. Secondly, the CPEC will help Beijing to expand its maritime capabilities, particularly in the Indian Ocean Region (IOR). In this context, the CPEC will not only increase Beijing's

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26. Siegfried O. Wolf, "The China-Pakistan Economic Corridor (CPEC): Feasibility and the Need for an Assessment of India's Role", *SADF Comment*, vol. 19 (Brussels: South Asia Democratic Forum), March 16, 2016, http://sadf.eu/new/blog/comment-nr-19-china-pakistan-economic-corridor-cpec-feasibility-need-assessment-indias-role/. Accessed on February 13, 2018.

influence and control over key maritime trade routes but also greatly extend its influence in Central and South Asia. Thirdly, it is important to note that to ensure the safety of the CPEC related projects, several areas, especially Balochistan and Gilgit-Baltistan (troubled and/or disputed areas) will witness the processes of securitisation and militarisation.[27] This will find expression not only in the build-up of Pakistani forces and military facilities but also in the increasing presence of security forces in the public sphere, affecting the lives of the local people. In this context, there are also several claims that China is strengthening its military capabilities on Pakistani soil to secure its investment projects and workers. The enactment of a new counter-terrorism law in January 2016 by China made such international activities of its military possible by using an anti-terror rationale. Finally, the CPEC project has the potential to function as an 'economic backbone' of a new Asian security structure. Not so much in the form of a 'coherent alliance system,' but rather as a loose conglomeration of bilateral and trilateral mechanisms; like the China-Pakistan security cooperation, or trilateral security arrangement in the form of the Russia-China-Pakistan security talks or the recently held China-Pakistan-Afghanistan Foreign Ministers Dialogue.

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27. Wolf, n.22.

TRENDS IN TERRORISM

SHALINI CHAWLA

The face of terrorism has altered today and it undoubtedly stands as the most daunting security challenge, impacting lives globally. The terrorist attacks on September 11, 2001, were a drastic shift from the traditionally known dimensions of terrorism. The terror strikes on 9/11 were enormous in their impact and manifested a well planned attack, where the hijackers were determined to give up their lives to symbolise Al Qaeda's war against the West. 9/11 indeed represented the transformation in global terrorism, in terms of objectives, messaging, as well as methodology. The attacks were motivated by Al Qaeda's 'grievances' towards the West and were aimed at delivering an ideological message about the fight of Islam against the West. The attacks clearly challenged the immunity of the superpowers from terrorism.

Few agreed with Samuel P. Huntington's controversial work, *The Clash of Civilization and Remaking of the World Order*, published in 1996. According to Huntington:

> In the emerging world, the relations between states and groups from different civilizations will not be close and will often be antagonistic. Yet some intercivilization relations are more conflict-prone than others. At the micro level, the most violent fault lines are between Islam and its Orthodox, Hindu, African, and Western Christian neighbors. At the macro level, the dominant division is

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between 'the West and the rest', with the most intense conflicts occurring between Muslim and Asian societies, on the one hand, and the West, on the other."[1]

Jihad against the West caught the world's attention in 1983 when the US Embassy in Beirut was attacked with a truck loaded with explosives. The year 1998 saw attacks on the US Embassies in Tanzania and Kenya. By any measure, the September 11 terrorist strikes on the US comprised the most severe blow to American supremacy – certainly not something the US would not have responded to.

The war on terror commenced in Afghanistan and Pakistan in 2001 and has shown no signs of any containment. The world's leading militaries, with the best equipment and intelligence, fought 'terrorism' in Afghanistan for 16 years and left the country in a worse state, with the Taliban and Al Qaeda more determined to conduct their operations. The years 2016-17 have been the most violent and bloody years for Kabul.

Today, the biggest security challenge emanates from the new face of terrorism which operates on influencing human minds. The use of cyber technology to propagate ideology is expanding as a preferred tactic for terror groups, and leaves us with limited answers on countering terrorism. This paper aims to study the trends in global terrorism for a better understanding of the phenomenon.

TRENDS IN TERRORISM

To understand the trends in terrorism, it is critical to understand the evolution in the objectives of terrorism which have invariably contributed towards alteration in the preferred strategies and tactics by terrorists. Traditionally, the acknowledged drivers of terrorism have been: (1) armed conflicts; (2) political and social exclusion of certain groups; (3) regional alienation; (4) historical baggage of state policies. What the world witnessed after the 1980s Afghan War and during the Iraq War was the networking of the *jihadi* groups and the growth of the anti-West sentiment, more specifically, anti-America sentiment, in the Muslim world.

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1.   Samuel P. Huntington, *The Clash of Civilizations and the Remaking of World Order* (New York: Penguin Books, 1996), p.183.

Without getting into the details of the objectives of specific terrorist organisations, it would not be incorrect to say that the anti-West sentiment contributed towards the agenda of the *global jihadi movement*, changing the motivations/drivers for the terrorist organisations.

Decline in Numbers of Deaths from Terrorism

The 2017 Global Terrorism Index (GTI) brings out a shift in global terrorism. The findings of the GTI show a decline in the number of deaths from terrorism – a 22 percent improvement as compared to 2014 which recorded the peak of deaths from terrorist attacks.[2] According to the GTI "Terrorism has fallen significantly in the epicenters of Syria, Pakistan, Afghanistan and Nigeria, which are four out of five countries most affected by terrorism" (the fifth country is Iraq).[3] The most significant improvement was recorded in Nigeria where the deaths attributed to Boko Haram decreased by 80 percent.[4] An interesting fact, according to the GTI, is that while the global number of deaths projected a decrease, there has been an increase in the number of countries affected by terrorism. The increase is reportedly more than at any time in the past 17 years. The number of countries affected by terrorism has gone up to 77 in 2016, as compared to 65 in 2015. Two out of every three countries in the index of 106 nations has experienced at least one attack.[5]

New Theatres of Terrorism

Terrorism today is much more widespread, compared to what it was two decades ago. The phenomenon today is more diffused and widespread, and has expanded much beyond the traditional theatres of South Asia. New fields of terror acts have emerged in Africa, the Middle and Europe. According to Rohan Gunuratna (2017), "Insurgency, terrorism and extremism will continue to characterize the international security landscape… ."[6]

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2. *Global Terrorism Index 2017: Measuring the Impact of Terrorism*, Institute for Economic and Peace, p.2, https://reliefweb.int/sites/reliefweb.int/files/resources/Global%20 Terrorism%20Index%202017%20%284%29.pdf. Accessed on January 29, 2018.
3. Ibid.
4. Ibid.
5. Ibid., p.2.
6. Rohan Gunuratna, "Global Threat Forecast", in *Counter Terrorist Trends and Analyses*, vol. 9, issue 1, January 2017, p. 3.

Terror groups have managed to penetrate, physically or ideologically into the regions which have never experienced terrorism in the past. The expansion of terror groups into new theatres – Indonesia, Philippines, Bangladesh, Thailand and parts of Europe – is a shift from the traditional theatres of Palestine-Israel, Chechnya South Asia (India, Pakistan, Sri Lanka, Afghanistan) and some parts of Africa. The expansion of the theatres of terrorism can be linked to the evolution in the objectives of terrorism.

Choice of Targets

There is an increasing trend toward targeting civilians as compared to the past, when the targets were military installations, security personnel and VIPs. Military targets are well guarded, difficult to break thorough and, in many cases, do not catch the (desired!) media attention. Civilian targets, on the other hand, are easier to penetrate, and make headlines, which caters to the objectives of the terror groups. Also, civilian targets, being easy to penetrate, have the potential to cause mass casualties and generate more fear. In the case of the Islamic State in Iraq and Syria (ISIS), one would see that the group has repeatedly shown its capability to strike *at will, at chosen targets*.

A review held by experts from Europol and member states in 2015 observed that there have been significant changes in the *modus operandi of Islamic State (IS) terrorist attacks*.[7] The report suggests:

> The escalation of violence and the employment of massive attacks could represent a new phase in IS strategy in the EU. The intended randomness in target selection urges member states to 'expect the unexpected'. Unexpected events, however, are not by definition events that have never happened before. They could very well include repeats of earlier attacks.[8]

The years 2015-17 showed an increase in the civilian targets in Europe. In Afghanistan, post US and North Atlantic Treaty

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7. "Changes in the Modus Operandi of Islamic State Terrorist Attacks," Review held by experts from members states and Europol on November 29 and December 1, 2015, Europol, The Hague, January 18, 2016.
8. Ibid.

Organisation (NATO) withdrawal, there has been a rapid escalation of violence, with civilians being the prime targets.

Change of Tactics and Means

The terrorist attacks in Europe and the Middle East have projected a shift. Use of Improvised Explosives Devices (IEDs) and suicide bombers has been on the rise across the globe. The IEDs are fabricated in a more professional manner and daily use items like mobile phones, pressure cookers, etc. have been the preferred choice for preparing an IED.[9] Reliance on military-grade plastic explosives like C4 and RDX has reduced due to a stricter control by the security agencies, while there has been an increased reliance on commercially available materials like ammonium nitrate to fabricate the IEDs.[10] There is also a growing use of remote controlled devices and mobile phones for detonating the IEDs.[11]

The attacks in 2015 in Paris and Mali were similar to the attacks in Mumbai in 2008. The terrorists used guns and not bombs. The reason being that guns are easy to acquire, as compared to explosives. Large parts of Africa are flooded with assault weapons that are smuggled from Somalia and Libya. In Europe, these weapons are mainly smuggled from the Balkans.[12] Guns do not require much training to be used and the movement of guns is more difficult to detect compared to the movement of IEDs.

One of the most alarming trends is the increasing use of suicide terrorism, where the terrorist conducts the mission with the readiness to die. This has led to the adoption of different tactics of terrorism. The Nice attack of July 14, 2016, which killed approximately 84 people and injured more than 400, was a glaring example of the phenomenon of suicide terrorism which allows the terrorists to adopt completely unconventional and unexpected means to conduct attacks. The purpose is to cause more and more casualties, and spread terror.

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9. Rohit Singh, "International Terrorism Post 9/11: Emerging Trends and Global Response", in Lt Gen Gautam Banerjee, ed., *Twelve Essays on Terrorism: A VIF Analysis* (New Delhi: Pentagon Press, 2017), p. 25.
10. Ibid.
11. Ibid.
12. "How to Respond to the New Tactics of Terrorism", *The Economist*, November 20, 2015, https://www.economist.com/news/middle-east-and-africa/21678907-deadly-style-suicidal-gun-assault-has-spread-across-globe-how-respond. Accessed on January 20, 2018.

Terrorism is all about communication. The purpose of the attacks is to propagate a message, a cause, and impact the decision-makers.[13] The London Bridge and Westminster attacks in 2017 are other very distinct examples of attacks in which no guns or explosives were used, but the determination of the attackers to kill and get killed led to news breaking attacks.

Coupled with this trend is the rising phenomenon of lone wolf attacks which has made terror attacks almost untraceable. The rise in suicide terrorism, with the adoption of unconventional tactics, encourages the lone wolf phenomenon. Individuals and small individual groups may have no linkages with the major groups, but they get their motivation from the leading organisations or events, and conduct the attacks in their home countries.

Extensive Use of Social Media

The internet, especially the social media platforms, have become a force to reckon with in making, as well as breaking, aspects in global affairs. The benefits of the cyber world need no reiteration, as is evident from the everyday dependence of the real world on this virtual space, but its downside cannot be ignored either. One such is the exploitation of these virtual platforms of communications and operations by terrorist and other anti-social elements to carry out their evil missions through cyber-enabled terrorism.[14]

A classic example of the use of social media to propagate hatred and ideology is seen in the propaganda spread by Hafiz Saeed, the chief of Jamaat-ud-Dawa (JuD), a UN, US and India designated terrorist organisation. The JuD has exploited the cyber realm to garner mass support for its ideological propaganda and anti-India sentiments. Its cyber activities are mainly focussed on the aspects of publicity, propaganda, fund raising and psychological manipulation. In this direction, the organisation operates websites, blogs and has a heavy presence in social media platforms like Facebook, Twitter, Flikr, etc. which are created, operated and maintained by its *exclusive cyber team*. The websites run

13. A. Schmid and J. DE Garaaf, *Violence as Communications: Insurgent Terrorism and the Western News Media* (London: Sage, 1982), p.1, cited in Donald Holbrook, ed., *Al Qaeda 2.O: A Critical Reader* (London: Hurst & Company, 2017), p.1.
14. Shalini Chawla and E. Dilipraj, "Hafiz Saeed's Social Outreach: Digitalisation of Terrorism", *CAPS Issue Brief*, 120/18, January 28, 2018. capsindia.org/files/documents/CAPS_IB_28_JAN_2018.pdf. Accessed on January 29, 2018.

by the organisation generally contain all the information of its history, leaders, ideology, agenda, publications, and the speeches and popular statements made by its leaders, apart from photo and video galleries.[15]

The Islamic State (IS), in fact, relies largely on its social outreach to attract fresh educated recruits from different parts of the world. The IS is currently fighting a cyber war with the use of online videos and ideological propaganda to generate a new stream of cyber *jihadists*. A report by the Delhi Times Bureau has highlighted : "One of the reasons behind ISIS' popularity is the Islamic State group's effective media and *jihadist* branding campaigns which have made it the most infamous of the current lot of active terror groups across the world."[16]

AL QAEDA VS ISIS

Al Qaeda: Struggling but Surviving

Al Qaeda is seen as a crumbling organisation after Osama bin Laden. However, the fact is that the global *jihadist* landscape continues to be dominated by two organisations: Al Qaeda and the Islamic State. The objectives and vision of Al Qaeda have been defined in Donald Halbrook's work (in an interview, Zawahiri argues):

> The key to success for the militant movement in respecting popular support, marrying the objectives of the movements with the central grievances of the wider population and recognising the importance of communicating the message of the militant movements to the public. In this sense, Al Qaeda…..was a mission or a message before it was an organisation..[17]

Another statement from Zawahiri, highlights the objectives of Al Qaeda:

> Osama bin Laden sacrificed himself for his religion from his twenties [onwards] and he achieved the highest *jihadi* rank, the

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15. Ibid.
16. "ISIS Supporters in France: The Jihadis Next Door", *The New Delhi Times Bureau*, January 7, 2015, http://www.newdelhitimes.com/isis-supporters-in-france-the-jihadis-next-door123/. Accessed on January 20, 2018.
17. Ayman al-Zawahiri and Al-Sahav, "The Seventh Interview with Sheikh Ayman al-Zawahiri: Reality Between Pain and Hope, May 2014," Holbrook, n.13, p.99.

rank of martyrdom in the path of God. Whoever follows the path of *jihad* will not expect martyrdom, but also wishes for it. The killing of Osama bin Laden makes him a symbol to encourage the *ummah* [nation or community] to give more.[18]

2017 was a difficult year for Al Qaeda, and according to a *Stratfor* report, "The Al Qaeda remains isolated, with much of the group still in hiding in Pakistan. Several senior members of the Al Qaeda core have been dispatched to places like Syria and Libya in an effort to improve links with the Al Qaeda core. But these efforts have struggled amid the conflict and fractured *jihadist* landscape of these locations."[19]

Al Qaeda offshoots and franchises in other nations like Egypt, Somalia, Algeria and Libya have been trying to make affiliations with the local or existing insurgent groups, for survival. This strategy is, in fact, seen as Al Qaeda's strength and many analysts believe that although the organisation is struggling at the moment, it will mobilise its support and regain its momentum.

ISIS: Expanding Outreach

The ISIS grew out of Zarqawi's outfit in Iraq. Zawahiri wrote a letter to Al Qaeda's ally in Iraq, Abu Musab Zarqawi, in which he has very lucidly expressed his concerns (in the letter dated July 9, 2005), regarding the brutal and sectarian nature of Zarqawi's targeting:

> Indeed, questions will circulate among *mujahidin* circles and their opinion makers about the concerns of this conflict with the Shias at this time. Is it something that is unavoidable? Or is it something that can be put off until the force of the *mujahidin* movement in Iraq gets stronger? And if some of the operations were necessary for self-defense, were all the operations necessary? Or were there some operations that weren't called for? And is the opening of another front now in addition to the front against the Americans and the government a wise decision? ……. And if the attacks on Shia leaders were necessary to put a stop to their plans, then why

18. Ibid., p.101.
19. Scott Stewart, "Tracking Global Terrorism in 2018", January 18, 2018.

were there attacks on ordinary Shias? …..and can the *mujahidin* kill all the Shias in Iraq?.....[20]

The letter largely describes the rift between the Islamic State and Al Qaeda.

The ISIS might be losing territory and ground in Iraq and Syria but its ideological appeal and influence is certainly not declining. The organisation might not be functioning as an effective polity any more as it has lost territory, fighters and also sources of financing, but it continues to function as a terrorist group in many other parts of the world. The foreign partners/affiliates of ISIS (for example, in Nigeria, Libya and Egypt) continue to function. Many analysts believe the world will see the Islamic State entering a second phase or *Islamic State 2.0.*

With the ISIS faltering in Iraq and Syria, the natural escape route for the group is South Asia and Central Asia. Contrary to many who believed that the IS would not flourish in Afghanistan, the organisation has managed to establish its footprint there. There have been strong indications of the growing IS presence in Pakistan as well.

CONCLUSION

The trends in terrorism are certainly alarming, with expansion of terrorism, new theatres and a shift in terror tactics. Extensive use of the cyber domain by the terror groups has actually made the identification of terrorists extremely challenging. The ideological appeal of the ISIS is increasing and the organisation is targeting the educated youth in various parts of the world.

India's neighbourhood (Afghanistan and Pakistan) faces a broad landscape of militancy. The security apparatus in Afghanistan continues to be dominated by the Taliban and a large part of Afghanistan is directly controlled by the Taliban, leaving little choices for the leadership in Kabul. The presence of the ISIS Khorasan is growing in Afghanistan and there have been reports of the IS and Taliban conducting joint attacks as well.

Pakistan continues to struggle with diverse militant groups (sharing a varied relationship with the state) and the Tehrik-e-Taliban

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20. Halbrook, n.13, p. 4.

Pakistan (TTP) is certainly the most deadly one. Pakistan, a country with nuclear assets, a large youth population, rising extremism, a struggling democracy and an active state policy to support terror is certainly attractive for the ISIS. There have been reports suggesting that factions of the TTP, Al Qaeda and Lashkar-e-Taiba (LeT) have pledged allegiance to ISIS Caliph Abu Bakr al-Baghdadi since 2014. The ISIS will certainly invest to expand its network in Pakistan and capitalise on the vulnerabilities of the state and the substantial recruitment pool of existing *jihadi* organisations.

India will have to watch these developments in the neighbourhood and the global trends of terrorism very carefully to be able to deal with the spillover effects, and prepare an effective counter-terrorism strategy. A holistic counter-terror approach will include sustained measures at various levels to deal with the causes and symptoms of terrorism.

ELECTRICITY PRODUCTION AND ENVIRONMENTAL SUSTAINABILITY: NUCLEAR ENERGY ACTS AS THE BRIDGE

MANPREET SETHI

Severe weather phenomena and climate change issues are no longer abstract problems confined to books and documentaries. These are real issues today affecting millions of people across the world. Climate refugees are increasing. Their numbers, in fact, will surely grow in the coming years. Many reasons have been identified for bringing us to this pass. A rise in Greenhouse Gas (GHG) emissions and its concomitant impact on the environment has been identified as one of them. While this upsurge itself comes from many factors, electricity production from polluting plants is one major contributor to this situation. According to figures provided by the US Energy Information Administration, electricity generation is one of the leading sources of greenhouse gas emissions in the United States. It states, "Power plants that burn fossil fuels or materials made from fossil fuels, and some geothermal power plants, are the sources of nearly 40% of total U.S. energy-related CO2."[1]

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1. US Energy Information Administration, "Electricity Explained: Electricity and the Environment", https://www.eia.gov/energyexplained/index.cfm?page=electricity_environment. Accessed on February 22, 2018.

In order to alleviate a situation that is the result of a certain human activity, the general human tendency is to call for a stop to it. But, that cannot apply to electricity, which is the lifeline of modern societies since most socio-economic activities are driven by electrical power. In fact, per capita electricity consumption is a significant parameter for assessing the quality of life. Therefore, a nation's aspiration for economic growth and development necessitates rapid and substantial augmentation of its electricity production, not reducing it.

The optimum answer to this problem can then lie in the *kind of plants* that are built for electricity generation. Conventional coal-fired power plants are the biggest contributors to GHG emissions. But they have traditionally been the preferred choice owing to considerations of easy availability of coal and the technology, and the cost of the plant. The environmental impact of the plant and its human cost in the long run were never prime considerations. Ironically, while this increased electricity production ostensibly to enhance the quality of human life, the environment was damaged to an extent that it has severely degraded the quality of human life!

The lesson that needs to be drawn from here is that while trying to resolve the challenge of electricity generation, it is imperative that a nation pays adequate attention to the overall picture of available energy sources and their advantages and limitations, including environmental implications. It would be counter-productive for a nation to anchor its economic growth on energy sources that severely raise its environmental vulnerability, thereby leading to a drain of the economic resources on mitigation strategies. This has been experienced by China and the example is available for all to study, and learn from.

When China embarked on its fast track economic growth, it resorted to rapid construction of coal-fired plants because coal was available indigenously as well as easily through imports, the technology was the easiest to assimilate, and the price of such plants was the lowest. Hungry for electricity to rapidly power its economic growth and industrialisation, China paid scant attention to the long-term implications of its strategy. However, the environmental cost of these plants has been evident in the last two decades. Huge GHG emissions from them have not only resulted in a semi-permanent

smog over most Chinese industrial hubs and urban conglomerates, but also led to an increase in respiratory ailments and huge costs on mitigation and health. Consequently, what the country made up in rapid accumulation of its Gross Domestic Product (GDP), it also squandered in environmental mitigation and disaster management.

Not surprisingly, China changed its strategy of electricity production in the early 2000s. Its focus shifted to low carbon technologies and it embarked upon an ambitious construction of nuclear power plants, and, more recently, towards renewable energy. With 36 reactors already in operation, it has a record number of 21 new units under construction with plans for nearly four dozen more. It also has some other impressive figures to demonstrate its commitment to nuclear power. For instance, of the 22 GWe (Giga Watt Electric) nuclear generating capacity that was added to the existing global nuclear generation worldwide in 2009-15, 18 GWe was added in China alone! With its eyes set on a grand target of reaching 58 GWe by 2020-21 and 150 GWe by 2030, China is certainly bullish on a rapid domestic expansion.[2]

SQUARING INDIA'S ELECTRICITY-ENVIRONMENT CIRCLE

Since independence, India has seen tremendous growth in its electricity generation. In fact, it has grown 100 percent, making the country today the third largest producer of electricity in the world. And yet, the entire country does not stand electrified though this has been the stated target of several governments. Despite the doubling of the figure of per capita electricity consumption to about 1,100 kWh (Kilo Watt Hours) today from about 600 in 2005, it still compares rather dismally with an advanced country like Canada that enjoys a per capita availability of 15,138 kWh.[3] In fact, India's figure is also the lowest among the Brazil, Russia, India, China, South Africa (BRICS) nations. Even China is ahead at 3,300 kWh. According to the Human Development Index, for a developing country to become a developed

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2. Brian Wang, "China will Complete Five Nuclear Reactors in 2017 and Double Nuclear Power Generation to about 420TWh by 2021", https://www.nextbigfuture.com, March 2, 2017. Accessed on September 3, 2017.
3. Electric Power Consumption Data as put out by the World Bank on its website, http://data.worldbank.org/indicator/EG.USE.ELEC.KH.PC. Accessed on January 6, 2013.

one, it must be able to provide at least 4,000 kWh to every citizen.[4] As is evident, India is far from the target, even as the population of the country continues to grow at 1.58 percent. Generating greater electricity is, therefore, an imperative for the socio-economic development of the human resources potential of the country.

At one level, it looks very easy to solve this problem through the construction of more plants for electricity generation. However, if India is to avoid the mistakes made by China in this regard, it must choose the sources of its electricity production rather carefully. Even with such a low per capita consumption of electricity, India is already the third largest emitter of GHG gases. So, the choices it makes for augmenting its electricity production on the way to bridging a huge power deficit will have significant environmental consequences.

Presently, India draws the bulk of its electricity (about 69 percent) from thermal sources, especially coal. In fact, nearly 55 percent of the country's total commercial energy need is met by coal-fuelled plants. Hydropower comes a distant second at 16.2 percent, and then renewable sources provide another small share of the electricity at about 15 percent. Also, 22 operational nuclear reactors produced about 6 GWe electricity in 2017, accounting though for less than 4 percent of the total electricity production of the country. Technology denials and isolation from international nuclear commerce since 1974 stymied the potential for growth of the nuclear sector in the country. While indigenous growth was evident in the construction of several 220 MWe, and subsequently 540 MWe, and now 700 MWe reactors, the pace was slow and riddled with financial and techno-industrial quality and capacity constraints. Just as the situation was about to change with the grant of the Nuclear Suppliers' Group (NSG) waiver in 2008, Fukushima cast a shadow on the situation. Concerns on nuclear safety compelled the government to institute safety reviews of all reactors. The nuclear establishment too has had to scale back its expansion plans. For instance, the 12th Five-Year Plan (2012-17) that was to reach the target of 9 GWe installed capacity through a mix of indigenous and imported reactors is nowhere close to this figure.

4. Qiaosheng Wu, Svetlana Maslyuk and Valerie Clulow, "Energy Consumption Transition and Human Development", *Discussion Paper* 43/10, Monash University, https://www.monash.edu/__data/assets/pdf_file/0010/925453/energy_consumption_transition_and_human_development.pdf. Accessed on February 6, 2018.

It also appears unlikely that the country will be able to achieve the target of 14 GWe by 2020.

This would have a bearing on the environment. Despite its rather meagre contribution, nuclear energy holds substantive promise from the perspective of meeting India's growing energy needs in a secure and sustainable low-carbon way. This is because nuclear power emits the least amount of greenhouse gases. In fact, the complete nuclear power chain, from uranium mining to waste disposal, including reactor and facility construction, emits only 2–6 grams of carbon per kilowatt-hour.[5]

Table 1: Carbon Dioxide Emissions from Power Technologies in g/kWh

Coal	Advanced Coal	Oil	Gas	Nuclear	Hydro	Wind
960-1300	800-860	690-870	460-1230	9-100	2-410	11-75

As can be deduced from Table 1 above, the strategies and technologies adopted by countries with large energy requirements have critical implications for the local and global environment. Illustratively, France, that meets 42 percent of its primary energy consumption from nuclear energy, has the lowest per capita carbon dioxide emissions in Europe.[6] However, the environmental benefits from nuclear energy cannot be quantified only on the basis of the low GHG emissions. Rather, these must also take into account the savings in emissions they cause by replacing thermal plants that would otherwise be required. For instance, according to the estimates made by *Nuclear Engineering International* with regard to the USA, its 100-odd nuclear plants prevent the emission of 650 million metric tonnes of carbon dioxide every year. Or, in the absence of Canada's nuclear plants, its GHG emissions would rise by 12 percent. Or, that in 2011, with the closure of Japan's nuclear plants (that catered for 30 percent of its electricity production) after the accident at Fukushima, the country's emissions rose by 3.9 percent over the last year. For a

5.   Rangan Bannerjee, "Assessment of Role of Renewable Energy Technologies", Greenhouse Gas Pollution Prevention Project – Climate Change Supplement, The Louis Berger Group Inc. Global Environment Team, http://www.climatechangeindia.com/gep_ccs/.
6.   France: Energy Mix Fact Sheet, January 2007, http://ec.europa.eu/energy/energy_policy/doc/factsheets/mix/mix_fr_en.pdf. Accessed on January 5, 2013.

world that is desperately looking to reduce the impact of human-induced climate change, these figures are of critical importance.

In the case of India, where neither population nor electricity demand has yet stabilised, the environmental cost of meeting its surging electricity requirement only through thermal plants would be huge. In fact, given that India's indigenously available coal deposits are of low quality, with a high ash content and low calorific value, the need to adopt low carbon energy sources is even more critical. Moreover, since coal reserves are also concentrated in a few parts of the country, plants in areas far from coal mines need haulage of fuel over long distances, thereby raising the cost, tying down the rail/road network, and creating its own environmental repercussions. India has a strong case for understanding the role of nuclear energy in the future energy mix. The demographic growth, rising aspirations of a young and aspiring populace, lack of indigenous fuel resources, and mounting proof of climate change are challenges that call for a long-term vision and commitment to safe generation of nuclear power.

Of course, besides nuclear, renewable energy sources such as wind, biomass, solar, hydro are the other options from an environmental point of view. However, except for hydro power in the few places where it is plentiful, none of these has proven suitable for large scale power generation where continuous, reliable power supply is needed, and it is well known that reliability and evenness of electricity supply is even more critical for an increasingly digitised society. Therefore, while wind and solar do hold promise, the technologies are still maturing for large scale use.

In such a scenario, if the growing Indian economy continues to rely on traditional thermal energy sources, carbon emissions would rise significantly and environmental consequences like greenhouse effect, global warming and climate change would progressively exacerbate. Despite technology improvements in thermal plants and implementation of stringent environmental measures, pollution is sure to rise with the upsurge in energy production from thermal plants.

In comparison, nuclear plants do enjoy certain distinct environmental advantages over renewables other than just reducing GHG emissions. These are never given due consideration. For instance, the fuel requirements of a nuclear power plant are much

lower compared to a thermal plant. A 1,000 Mega Watt Electric (MWe) plant coal-fired plant has an annual requirement of 38,000 railroad cars of coal, or 40,000 barrels of oil per day, while a nuclear plant of the same size only needs 6 truckloads of fuel. As extrapolated, this "means that for nuclear there are proportionately fewer mining disasters, fewer agonizing deaths from ailments such as Black Lung, and fewer deaths and injuries in railroad accidents while transporting the fuel."[7] This also has significant benefits by cutting down pollution caused by fuel transportation. Also, the amount of waste generated by a nuclear plant is small in volume as compared to the impact that fly ash from a thermal plant causes to several kilometres around it. Lastly, a comparative socio-techno-economic analysis that accounts for location of coal mines, transportation of fuel, availability of railroads, modern systems of construction and resource management, and ash content and associated environmental impact and necessary mitigation measures, etc. skews the equation in favour of nuclear energy. A European Union (EU) study has estimated that inclusion of health and environment costs would double the EU price of electricity from coal and increase that from gas by 30 percent.

Therefore, for India, cash strapped as it is, nuclear energy can play the double role of not only providing electricity from a reliable and mature technology in which the country has nearly 400 reactor years of experience, but also do so in an environmentally friendly manner that further assists the country by reducing expenditure that might otherwise be necessary for environmental and health mitigation efforts. Of course, renewable energy also offers an attractive alternative and the country has substantially exploited its hydel potential. However, both the hydroelectric plants and wind farms also bring problems of human displacement and rehabilitation, besides being poor sources of base load electricity. Meanwhile, though solar energy holds great potential, its commercial viability for large scale electricity generation and storage are issues that still demand more Research and Development (R&D). In the meantime, nuclear energy presents itself as a commercially proven and environmentally sustainable, large-scale electricity source.

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7. Dianne L Durante, "Nuclear Power: How It Works and Why It's Better Than Other Fuels", 2005, https://www.forgottendelights.com/nuclearpower.html. Accessed on February 22, 2018.

Countries facing a growing electricity demand as a result of expanding economies and populations are caught in a tough dilemma. They must be able to meet their national energy requirements while holding on to stringent commitments to reducing global greenhouse gas emissions. The climate change situation is dire enough to require an almost total decarbonisation of energy supply over the coming decades. But dependence on proven low carbon technologies such as nuclear power has taken a serious hit after Fukushima. This confidence will only gradually be restored and will require extensive and proactive outreach by the national nuclear establishments and the industry to assuage public fears. The problems of climate change as well as the fact that nuclear plants have been in operation for over six decades, but have seen the occurrence of only three major accidents will have to be repeatedly and patiently explained to the people. As also that after Fukushima, even greater attention has been paid to the issue of nuclear safety and every country operating such plants has tightened its safety and regulatory oversight.

Obviously, nuclear energy alone does not represent a solution to the complex environmental issues confronting mankind. But, it undeniably has a role to play, especially in a country like India, where increase in electricity production is imperative but which must be undertaken in a manner that causes the least disturbance to the environment. Enhancing energy production and sustaining the environment are, therefore, not an either/or choice. India must be greedy enough to want both. And, nuclear power does provide a solution worthy of consideration. Meanwhile, of course, growth in renewable electricity production and focus on energy efficiency and conservation will continue to be equally important to achieve the optimal solution. The government owes it to the citizens of the country to provide them with electricity while also ensuring the best quality of life from the environmental perspective. Nuclear power offers a useful bridge from electricity production to environmental sustainability that must be prudently built and safely operated.

CHINA'S RECENT FORAYS
IN SPACE

AJEY LELE

INTRODUCTION

China's resolute investments in the field of science and technology have been a part of its peaceful rise strategy. A major aspect of its technological quest is making investments in space technologies. The Chinese space programme, which had its inception in the Maoist era, was a major political symbol of Chinese nationalism and, over a period of time, has emerged as an important economic booster, and an effective dual use technology collaborator with the Chinese military.[1] Comparatively, in a very short period, China has established itself as a major global space power. In this rapid growth of the programme, the present decade (2010 onwards) has been significant, and particularly, the period around the year 2017, was quite eventful for China's space programme, since it witnessed a few failures too, a rare phenomenon for China's space agenda in recent times. There have many a good achievements too, during the same period. To appreciate China's ongoing journey in outer space, it is important to analyse this recent phase of the 'hits and misses' of China's space programme in the backdrop of its scientific, economic, foreign policy related and strategic

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1. William S. Murray III and Robert Antonellis, "China's Space Program: The Dragon Eyes the Moon (and US)", *Orbis*, Fall 2003, p. 645.

realities. Amongst the 19 orbital launches undertaken by China during 2017, some could be considered as routine launches while some require special mention. This paper broadly examines some of the important launches that took place around the period 2017.

China's initial success in the space arena, particularly during the 1970s/1980s period, was attributed to the Russian assistance. Some (unconfirmed) reports did attribute the Chinese success to their reverse engineering of Russian systems. However, today that perception is no longer there and there is a lot of appreciation for China's achievements in the space arena. It also needs to be recalled that a few decades ago, most Chinese efforts in the space domain were shrouded in secrecy, but that is not the case any more. Till date, China has published four White Papers on issues concerning its activities in outer space. These were issued during the years 2000, 2006, 2011 and 2016. It is possible that China has presented only those parts of the programme, which it wants the world to know about. However, even after accepting such limitations, a good amount of information is still available about China's present activities in space. Obviously, there is global anxiety about China's strategic space programme, which even today, remains hidden behind the wall.

As per some estimates, China possibly spends around $6 billion a year on its space programme (Russia spends around $5 billion while the US spends around $40 billion).[2] During 2017, China had undertaken 19 orbital launches (the US undertook 29 and Russia, 20).[3] Actually, China had major plans for space launches for 2017, but there was a lag. It was indicated that China could attempt around 30 rocket launches during 2017. In the previous year (2016), China had managed 22 launches.

RECENT LAUNCHES

Launch Vehicles

Although China did manage various successful space missions during 2017, the year would be recognised more as one which witnessed two

2. Stuart Clark, "China: The New Space Superpower," https://www.theguardian.com/science/2016/aug/28/china-new-space-superpower-lunar-mars-missions/. Accessed on January 3, 2018.
3. Eric Berger, "In 2017, the US led the World in Launches for the First Time Since 2003," https://arstechnica.com/science/2018/01/in-2017-the-us-led-the-world-in-launches-for-the-first-time-since-2003/. Accessed on January 20, 2018.

consecutive launch failures of vehicles on which much of China's future ambitions in space depend. On June 19, 2017, the Long March 3B (Y23) launch failed and on July 2, 2017, the Long March 5 (Y2) launch failed. Unfortunately, these losses of the Long March family rockets took place back to back, within a period of two weeks, surely impacting the morale of the Chinese rocket scientists. Luckily, some Chinese pride was restored by the recovery of the satellite ChinaSat 9A, which was launched by using a Long March 3B vehicle. Owing to this, the failure of the Long March 3B launch vehicle could be termed a partial failure. Broadly, during the Long March 3B launch, there was a problem with one of the upper stages of the vehicle and that impacted the correct positioning of the payload. However, the Chinese scientists succeeded in putting the telecommunications satellite ChinaSat 9A in the correct orbit after some efforts. But, for doing this, a significant amount of onboard propellant was used, reducing the lifetime of the satellite to five years (the designed life period was 15 years).

The major shock to China was the loss of the Long March 5 vehicle,[4] a new-generation heavy-lift orbital launch system, capable of delivering up to 25 tonnes of payload to Low Earth Orbit (LEO), or up to 14 tonnes to Geo-synonymous Transfer Orbit (GTO). This launch vehicle is central for the success of China's ambitious future projects like the lunar sample return mission, the launch of the modules for the Tiangong space station and the Mars probe mission. All these missions were to get spaceborne during the period 2018-22. Now, obviously, China would have to re-evaluate its key space agenda. Prior to this mission, two flight tests, carrying only experimental payloads, had been undertaken for this vehicle. However, during this major test, possibly meant for declaring the launcher operational, an anomaly with one of the two cryogenic YF-77 engines in the core vehicle's first-stage proved fatal for the vehicle. Actually, the LM 5 competes with the best in the world, including the United Launch Alliance's Delta 4-Heavy Rocket and is considered better than Europe's Ariane 5 and Russia's Proton Launcher. The success of this vehicle could have helped China to showcase its technology supremacy to the rest of the world.

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4. "Two Consecutive Failures Threaten Future Chinese Space Missions," https://chinaspacereport.com/2017/07/11/two-consecutive-failures-threaten-future-chinese-space-missions/. Accessed on January 23, 2018.

Apart from these launch failures, China is making good progress towards its overall space agenda. In fact, China began the year 2017 with the successful launch of a new variant of the Kuaizhou (speedy vessel) launch vehicle. On January 9, 2017, China launched the rocket mission Kuaizhou-1A (KZ-1A). This was the first commercial mission for the Kuaizhou launcher and three small satellites were launched during this mission. This is a Chinese orbital launch vehicle, essentially for small payloads. Its first flight took place on September 25, 2013. The KZ-1A has been developed from the Kuaizhou-1 rocket, with improvements in adaptability. It is a low-cost solid-fuelled carrier rocket, with high reliability and a short preparation period, and was designed to launch low-orbit satellites weighing under 300 kg. The success of the mission marks the company's capability of providing flexible, convenient, quick and economical launch services for domestic and overseas clients.[5] China is expected to launch a new model of the Kuaizhou, called the Kuaizhou-11, in the near future. This rocket is scheduled to launch six satellites during the first half of 2018. It has been reported that the launch cost of the Kuaizhou-1A was less than US $20,000 per kg of payload, while that of the Kuaizhou-11 rocket is less than US $10,000 (some reports even claim it to be as low as US $5,000 per kg of payload).[6]

Till date, China's Long March carrier rockets have provided around 60 commercial launches for domestic and international users. Now, China is proposing to develop a new facility for commercial payloads—that is, sea launches. The Chinese are building a sea launch platform by modifying 10,000-tonne freighters. The idea is to develop Long March launch vehicles which will be able to send satellites weighing 500 kg to a 500-km-high sun-synchronous orbit, with an inclination of zero to ten degrees.[7] If such launches are carried

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5. "China Launches Commercial Rocket Mission Kuaizhou-1A", January 9, 2017, http://www.xinhuanet.com/english/2017-01/09/c_135967088.htm. Accessed on March 3, 2017.
6. "China's Kuaizhou-11 Rocket Scheduled to Launch in First Half of 2018", December 31, 2017, http://www.xinhuanet.com/english/2017-12/31/c_136863361.htm. Accessed on January 16, 2018.
7. "China Develops Sea Launches to Boost Space Commerce", July 7, 2017, http://www.xinhuanet.com/english/2017-07/07/c_136425261.htm. Accessed on August 12, 2018.

out in the close vicinity of the equator, they would entail less usage of fuel and, hence, additional payload could be carried. Commercially, such launches could be beneficial for China.

The Chinese Academy of Launch Vehicle Technology is breaking ground on techniques to send satellites into space via rockets shot from airborne Chinese planes: the Y-20 strategic transport plane is likely be the carrier of these rockets. The idea is to release the rocket from the plane's fuselage at a certain altitude. After that, the rocket gets ignited. At present, the academy is in a position (theoretically) to launch a satellite with an approximate payload of 100 kg, and is working towards doubling this capability.

Developing the capability to launch satellites from an aerial platform has various advantages: it allows quick replacement of "dysfunctional" satellites, as well as ad hoc, last-minute launch of satellites into orbit, say as a part of disaster relief efforts (obviously, during wars too). The release of satellites from an airborne platform would require the use of solid fuel rockets. Land-based rockets, using liquid fuel, can take days or even weeks to transport the high volumes of fuel necessary for the launch, while solid fuel rockets can be ready for launch in just 12 hours. The maturing of this technology would significantly assist the armed forces.

Navigation

Apart from developing different types of launch vehicles for specific payloads, for the last few years, China has been making systematic investments towards establishing its satellite-based navigational network. This BeiDou network is a three-phase project, and already two phases of the project have been completed successfully. The overall agenda is to have a system called BeiDou (meaning Big Dipper; the three phases of this system are BeiDou 1, BeiDou 2, BeiDou 3) or the abbreviation BDS (akin to the most commonly known US system called the Global Positioning System—GPS) covering the entire globe, with a minimum of 35 satellites. The phases in the development are as follows:

• Period 2000–03: Experimental BeiDou navigation system consisting of three satellites
• By 2012: Regional BeiDou navigation system. China declared the system fully operational for the Asia-Pacific region in January 2013

- Having a fully operational system by 2020. The system is also known as the Compass.

China is fast completing its BeiDou Navigation Satellite System as 23 of the proposed 35 satellites have already been put into the orbit and the constellation has been made operational for the Asia-Pacific region. It is expected to be fully operational at the global level by 2020. Presently, BeiDou is providing horizontal and vertical positioning precision of 10 m (33 ft.), velocity within 0.2 m per second, timing precision of 50 nanosec, and a two-way, high-precision timing and short-message communications service.[8] As per some estimates, almost two-third of the smartphone users in China depend on the BeiDou system for searching for required locations and using other applications like booking taxis, etc. China has already established partnership agreements with Russian and the European space-based navigation agencies for interoperability with their navigational constellations (GLONASS and Galileo). The BeiDou system is of great significance to China's Belt and Road Initiative (BRI) as well. It also proposes to jointly develop space-related infrastructure with the relevant nations involved in this project.

In 2015, China started the build-up of the third generation BeiDou system (BDS-3) for a global footprint, and the first satellite in this series was launched on March 30, 2015. China launched two BeiDou-3 satellites into space via a single carrier rocket in November 2017 and repeated a similar launch in January 2018. This system would be more accurate than the BeiDou-2 and would be able to send signals that are better compatible with other satellite navigation systems and provide satellite-based augmentation, as well as search and rescue services in accordance with international standards. Till date, China has launched around 31 navigational satellites for all three phases of the BeiDou network. With BeiDou 3, the signal accuracy in space would be higher than half a metre while its positioning accuracy would be 2.5 to 5 m. It has been reported that China is proposing to incorporate the BeiDou into the international satellite navigation system, and make it compatible with GPS of

8. Bradley Perret, "Chinese Beidou Satnav System Fully Operational," January 8, 2013, http://aviationweek.com/defense/chinese-beidou-satnav-system-fully-operational/. Accessed on December 30, 2017.

the United States, Russia's GLONASS, and the European Union's Galileo.[9] For China, the BeiDou is a strategic system with multiple usages. The system is a part of the People's Liberation Army (PLA), so its military utility is known. In fact, China is providing the military grade navigatioal signal to Pakistan also. However, at the international level, China is opening up its system for greater debate, discussion, participation, innovation and cooperation. In May 2017, China had organised the 8th China Satellite Navigation Conference and exhibition. China uses this conference as an open platform for academic exchanges.

At present, BeiDou-based products are being used in more than 30 nations. Recently, China's Ministry of Transport claimed that China's domestically developed navigation satellite system, the Beidou, has been included in a global network that collects and distributes data for search and rescue missions. BeiDou will be part of the International Cospas-Sarsat Programme, a non-profit, intergovernmental and humanitarian cooperative, with 44 members, including the United States, Canada, Russia and China. This programme is a satellite-based search and rescue distress alert detection and information distribution system, best known for detecting and locating emergency beacons activated by aircraft, ships and hikers in distress.[10] By joining this programme, China is trying to showcase its responsibilities in global humanitarianism, in accordance with international conventions. Obviously, it is using this opportunity to project the system's international influence and power in the field of satellite navigation.

Domestically, the BeiDou has emerged as one of the most successful and user friendly systems and is being used by almost everybody, from bicycle riders to taxi/bus operators to cargo truckers. It has a wide range of applications and can provide precise positioning services for household gas and heat, power grid, water supplies, drainage and smart transportation. The system has also been used in the Beijing Gas Group to detect and locate gas leaks in pipelines. The system has been

9. http://www.xinhuanet.com/english/2017-11/06/c_136730074.htm and http://www.xinhuanet.com/english/2018-01/12/c_136890656.htm. Accessed on January 24, 2018.
10. "China's GPS Network Beidou Joins Global Rescue Data Network", November 24, 2017, http://www.chinadaily.com.cn/china/2017-11/24/content_34924440.htm. Accessed on December 26, 2017.

used in creating 317 smart cities in China. The value of the BeiDou industrial chain could reach approximately US$ 40 billion by 2020.[11] BeiDou Inc is also collaborating internationally with Western partners for developing autonomous cars for China and beyond. It is attempting to emerge as China's leading driverless car developer.

Remote Sensing

During 2017, China carried out a fewer number of launches. This was essentially because during the middle of the year, it had two failures. Subsequent to this, there was a pause for 89 days. After that, China undertook the successful launch of the Long March 2C rocket on September 29, 2017. Three Yaogan-30 01 satellites were successfully launched during this mission. This rocket launch was carried out without any prior notice and no detailed information about the payload was disclosed by the Chinese media. Subsequently, it has been announced that these satellites are meant for the conduct of electromagnetic probes and other experiments. However, it is common knowledge that the Yaogan series of Earth Observation (EO) satellites, being launched by China since 2006, comprises a network of spy satellites.[12] Since, it was a military satellite launch, China was very careful regarding every aspect.

On January 25, 2018, China launched a series of Yaogan-30 remote sensing satellites on a Long March-2C carrier rocket. A micro-nano 1A satellite was also sent into space along with the Yaogan-30 satellites. China has declared that these satellites conduct electromagnetic environmental probes and other experiments.[13] No other details about this mission are available.

China's interest in launching remote sensing satellites is continuing. Apart from classical military (covert) launches, in mid-June 2017, China launched two remote-sensing micro-nano satellites on a Long March-4B rocket. These satellites, the OVS-1A and OVS-

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11. "BDS Precise Service System Covers over 300 Chinese Cities", June 12, 2017, news. xinhuanet.com/english/2017-06/12/c_136359838.htm. Accessed on January 20, 2018.
12. "China Launches Three Satellites", October 1, 2017, http://www.spaceflightinsider. com/organizations/china-national-space-administration/china-returns-flight-secretive-launch-three-satellites/#DT0kED8PshPAL7J4.99. Accessed on October 8, 2018.
13. "China Launches Remote Sensing Satellites", January 25, 2018, http://eng.mod.gov. cn/news/2018-01/25/content_4803410.htm. Accessed on January 28, 2018.

1B, the first two satellites of the Zhuhai-I remote-sensing micro-nano satellite constellation, are expected to improve the monitoring of geographical, environmental, and geological changes across China. These are video satellites with the function of conducting fast "gaze" observation. The Zhuhai-I satellite constellation, composed of video micro-nano satellites, hyperspectral satellites and radar satellites, is expected to be completed by 2019-20.[14]

China also has a series of video satellites called Jilin-1. Currently, it has 10 Jilin-1 satellites. These are high-resolution optical remote sensing satellites. China started launching these satellite in October 2015 and during 2017, four of these were launched. Now, China has much bigger plans, and proposes to have 60 such satellites by 2020.[15]

China has announced that it is proposing to launch satellites to assist remote sensing coverage over the South China Sea. It would be a mission with three optical satellites to start with. The mission would began by 2019, and by 2021, three more similar satellites, along with two hyperspectral satellites and two Synthetic Aperture Radar (SAR) satellites would be added. The basic aim is to develop a capability for conducting round-the-clock remote-sensing over the tropical sea area.[16] Such capability would serve multiple purposes ranging from the strategic to the economic.

Meteorology and Scientific Missions

Meteorology is another area where China has been making planned investments over the years. In November 2017, a new meteorological satellite called the Fengyun 3D was launched by a Long March 4C rocket. This is China's second generation polar-orbiting meteorological satellite, which can provide global three-dimensional all-weather and multi-spectral remote sensing images. This satellite would work in tandem with the Fengyun 3C satellite, which was launched in September 2013.[17] China is known to have

14. "China Launches Remote-Sensing Micro-Nano Satellites", June 15, 2017, http://www.xinhuanet.com/english/2017-06/15/c_136368683.htm. Accessed on July 23, 2017.
15. "China to Launch 60 Jilin-1 Video Satellites by 2020", January 27, 2018, http://www.xinhuanet.com/english/2018-01/27/c_136929344.htm. Accessed on January 27, 2018.
16. "China Plans Remote Sensing Satellites over South China Sea", December 18, 2017, news.xinhuanet.com/english/2017-12/15/c_136828640.htm. Accessed on December 26, 2017.
17. "Long March 4C Launches Fengyun 3D Meteorological Satellite", November 15, 2017, http://www.spacedaily.com/reports/Long_March_4C_launches_Fengyun_3D_meteorological_satellite_999.html. Accessed on January 2, 2018.

launched around 15 meteorological satellites so far. These satellites are immensely useful for the agriculture sector. Also, China gets routinely battered by tropical cyclones and typhoons, and during these, such platforms are of great help.

In mid-June 2017, China successfully launched its first X-ray space telescope to study black holes, pulsars and gamma-ray bursts. This was a launch by a Long March-4B rocket which had carried the 2.5-tonne telescope into orbit. This telescope which has been named Insight, is a Hard X-ray Modulation Telescope (HXMT). This telescope is also expected to help scientists search for gamma-ray bursts corresponding to gravitational waves and study how pulsars can be used for spacecraft navigation.[18] Investments like this in the space arena clearly show China's long-term scientific focus and interest to learn more about the universe.

Path-breaking Missions

The unique achievement of China in regards to quantum computing was witnessed by the world during the period 2016-17. On August 16, 2016, China announced that it had launched a quantum satellite called Micius into space. Today, when the entire world is concerned about the issues related to cyber security, a major breakthrough in quantum computing has been accomplished by China. This technology allows it to develop expertise in hack-proof digital communication.

Private and secure communications are fundamental human needs in the internet era. On September 29, 2017, China gave a demonstration to the rest of the world by organising the first quantum-safe video conference.[19] It has demonstrated the capability of sending data over long distances by using satellites which are potentially unhackable. This could be regarded as the beginning of next generation encryption based on the so-called "quantum cryptography". Using this satellite, Chinese researchers at the Quantum Experiments at Space Scale (QUESS) project, have succeeded in transmitting secret

18. "China Launches its First X-ray Space Telescope", June 15, 2017, https://phys.org/news/2017-06-china-x-ray-space-telescope.html. Accessed on January 8, 2018.
19. "China Builds World's First Space-ground Integrated Quantum Communication Network", September 29, 2017, www.sciencenewsline.com/news/2017092918070008.html. Accessed on October 8, 2017.

messages from space to Earth at a longer distance than ever before. The technology is called Quantum Key Distribution (QKD).[20] Such technology has significant utility for business since the key focus of any business model today is on e-commerce. The strategic utility of this technology is going to be immense.

Another arena which the world needs to take note of, is China's investments in the development of the nuclear-powered space shuttle. China's larger ambitions in space have been made evident by the report issued by the China Aerospace Science and Technology Corporation in November 2017. It has highlighted plans to develop technologies leading to nuclear-powered space shuttles around 2040. Such developments would be able to support large-scale exploration and development of space resources, and make mining on asteroids and space solar power plants possible.[21] China expects that by 2045 much progress would have been made in human travel to outer space and other planets, and it wants to be the global leader in this arena too.

The Chinese are working systematically on various areas of strategic relevance and they are open about it. In November 2017, the *South China Morning Post* reported that the Chinese government is working to deploy spy satellites within 10 years that could track stealthy targets like the US B-2 Spirit stealth bombers. For this purpose, Chinese researchers have embarked on a project to send into space satellites capable of taking pictures with the assistance of ghost imaging research. Ghost imaging is a process that allows satellites to take pictures through semi-translucent or opaque objects like clouds.

IN CLOSING

It is important to view the activities undertaken by China in one year not in isolation, but more as a continuum of its overall space programme. The year 2017, was an important year for advancing

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20. Arjun Kharpal, "China Uses a Quantum Satellite to Transmit Potentially Unhackable Data", August 10, 2017, https://www.cnbc.com/2017/08/10/china-uses-quantum-satellite-to-transmit-potentially-unhackable-data.html. Accessed on October 12, 2017.
21. "China Plans for Nuclear-Powered Interplanetary Capacity by 2040", November 19, 2017, www.spacedaily.com/.../China_plans_for_nuclear_powered_interplanetary_capacity. Accessed on November 20, 2017.

China's overall space agenda. It witnessed significant progress towards development of the BeiDou navigational system and situating it in the global context by undertaking agreements with other major space-based navigational networks. During this year, some major steps were taken towards expanding the existing remote sensing set-up. China also made an entry into the new territory of quantum satellites. It is important to take special note of this achievement, since China was the first state to gain success in this path-breaking technology. Complete maturing of this technology may disrupt various existing cyber and communication technologies and, obviously, would provide China an economic and strategic edge.

The failure of the Long March 5 vehicle was definitely a setback for China. It would delay some of its Space Station, and Moon and Mars missions' related agendas. But, since such missions are more scientific and futuristic in nature, the delay of a few years will probably not matter too much. However, China is also watching the progress made by agencies like the National Aeronautical and Space Administration (NASA), Japan Aerospace Exploration Agency (JAXA), and Indian Space Research Organisation (ISRO) or even by private companies like Space X. These agencies are expected to take the lead in some of these areas and their missions could get spaceborne before China's. Since all this is more about the demonstration of the global technological leadership, it is expected that China would work over time to ensure the success of the Long March 5 vehicle in the near future.

At present, various recent Chinese initiatives in space, should also be looked at in the backdrop of their Belt and Road Initiative. This programme comprises China's long-term strategy, designed for assuming a major role in global strategic affairs through the business route. Various space-based platforms will play an important role in making this strategy successful. From navigation to remote sensing to communication, every arm of space would have a major relevance for the Belt and Road Initiative. Correspondingly, in the future, China would be required have a few exclusive Belt and Road specific space missions.

Overall, in 2017, the Chinese space programme progressed largely as per their plans, barring a few exceptions. Essentially, Chinese space investments have shown that they look at space as an important constituent in furtherance of their scientific, economic and geostrategic agenda.

CYBER SPACE REGULATION: THE NEED OF THE HOUR

E. DILIPRAJ

It is observed that the biggest problem or complication that the cyber world is facing at present is not of its being a universal domain but being a domain which is still highly unregulated. For a domain which is clearly three decades old, the existing regulations are clearly not sufficient. Cyber space is replete with conflicts, and threatened by a variety of threats caused by different players like unethical hackers/crackers, terrorists and non-state actors, and also by the use of covert cyber capabilities by nation states. However, the global cyber community is more focussed on enhancing and upgrading the technology in use, rather than taking coherent measures to stabilise and secure the domain, in spite of awareness about the growing threat perceptions. This is evident from the fact that new advances and further upgradation in technology are taking place daily and, as a result, new threats are emerging, while safety and security related developments are put on the back burner, and are not so often in the news. Hence, there is an urgent need to rectify this scenario and a pragmatic solution has to be found to regulate cyber space to the extent possible.

Regulation of cyber space is, however, not a one-time activity but an ongoing process, similar to cyber governance. While countries around the world have collectively started to discuss cyber

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governance seriously, every country now needs to start looking into the issue of regulating its own cyber space. To make it more coherent in conventional terms, it could be stated that countries around the world have agreed on certain norms of management of air space in a collective approach, but that does not stop any country from regulating its own air space by declaring no-fly zones, no-low flying zones, authorising airlines operators, issuing licences, building airport infrastructure, etc. Likewise, in cyber space too, a country could regulate and thereby establish its sovereignty over its own cyber space. Unlike the air space domain, cyber space comprises more global players than domestic players in the form of tech giants, internet giants, service providers, etc., whose activities could also be regulated along with regulating the users' activities.

The regulation of cyber space is not a new concept but is one which is often not implemented by countries, except for a few, such as China. Although, the Chinese system of regulating cyber space is authoritarian in nature, the country has implemented this strategy to suit its national interest, thereby achieving a certain level of sovereignty in its domestic cyber space. A few other countries have taken initiatives to regulate their cyber space from time to time. Some highlights of the efforts made in the past by different countries for regulating their respective cyber space are given below.

- In December 2015, the Brazilian court blocked WhatsApp, a mobile based messaging application, for a period of 24 hours in Brazil after the company refused to hand over the content of communications between alleged drug dealers involved in a drug trafficking case. Also, on March 1, 2016, Brazil's Federal Police arrested Facebook's Latin American Vice President Diego Jorge Dzudan for failing to comply with the court orders to help investigations in a drug case that involved WhatsApp, owned by Facebook.[1] Brazil is one of the countries which openly voices its views on keeping the data of the country in domestic servers. In this case, as the company did not comply with the Brazilian court orders, the country attempted to punish the company,

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1. "PF Cumpre Mandado de Prisão em Desfavor do Representante do Facebook no BR", *Notices*, Federal Police of Brazil, March 1, 2016, http://www.pf.gov.br/agencia/noticias/2016/03/pf-cumpre-mandado-de-prisao-em-desfavor-do-representante-do-facebook-no-br. Accessed on June 20, 2016.

thereby expecting some form of regulated service from the multinational company in the future.

- Another country, apart from China, which has strict regulations in cyber space, is Iran. In fact, Iran's cyber monitoring and censorship technologies have mostly been imported from China. In May 2016, Iran's Supreme Council of Cyber Space made new regulations by asking all the foreign messaging companies active in the country to transfer all data and activity linked to Iranian citizens to the country in order to ensure their continued activity.[2] Even though this move by the Iranian government has not been welcomed either by the tech companies, or the users in Iran, the country is following its regulations to suit its national interest.

- Being the cradle of cyber technology, US companies enjoy a sort of monopoly in many aspects of cyber space, including operating systems. This pattern has continued in the age of mobile phones too where the three most popular mobile Operating Systems (OS) used around the world are Google's Android, Apple's iOS and Microsoft's Windows mobile OS. However, the US is exploiting the monopoly of its companies to conduct its covert cyber operations on other countries by manipulating the operating systems. In order to avoid becoming a victim of such covert cyber operations and also to challenge the US monopoly, Russia is developing its own mobile operating system. The Russian company Open Mobile Platform has been chosen for the project and the project is underway. The new operating system being developed by Russia is a Linux-based OS developed on top of the Sailfish OS—an open source platform.[3]

- While Russia is working on its version of mobile OS, China, on its part, has already executed a similar strategy by developing its own version for personal computers, known as the *Kylin* (麒麟) operating system. The operating system was developed indigenously by the National University of Defence Technology

2. "Iran Orders Social Media Sites to Store Data Inside Country", *Reuters*, May 29, 2016, http://www.reuters.com/article/internet-iran-idusl8n18q0in. Accessed on June 24, 2016.
3. Mohit Kumar, "Russia to Get Rid of Android and IOS by Launching its Own Mobile Operating System", *The Hacker News*, June 6, 2016, http://thehackernews.com/2016/06/russian-mobile-os.html. Accessed on June 24, 2016.

in 2001 and there are nearly four versions for public use. This is again a strategy adopted by China to regulate the operating systems market in the country and also to avoid exploitation through foreign developed OS by China's rivals through covert cyber operations.

- The Infocomm Development Authority, a government agency under the Government of Singapore had blocked access to the internet on computers at work for public servants since May 2017. The agency stated that this change was necessary to ensure a more secure working environment and to stop any potential leaks from e-mails from the work premises and shared documents amid heightened security threats.[4] In an age when sensitive information has become a target, the Singapore government's regulation may be seen as an effort to contain data leak from its government offices.

- In June 2016, the Cyber Space Administration of China imposed new regulations on the distribution of mobile apps. The list of criteria that the app stores and app developers must meet when operating in China are:
  - App providers must verify users' identities by asking for their mobile numbers or other information.
  - Providers should protect their users' information, and cannot use the information without their consent.
  - Providers should improve censorship and punish anyone releasing illegal information through warnings, closing the accounts or suspension of service.
  - Providers are forbidden from collecting users' location data and reading their contacts stealthily.
  - Providers are also banned from pirating the products of their rivals.
  - Providers must record user logs and keep the information for at least 60 days.

These regulations by China on app distributors may be seen as a new move by the Chinese government to tighten its control over the

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4. "No Internet for Singapore Public Servants", *BBC*, June 8, 2016, http://www.bbc.com/news/world-asia-36476422. Accessed on June 24, 2016.

trending mobile applications. However, similar regulations, barring the negative ones on censorship, could provide many other countries like India where the situation now is chaotic, a regulated distribution of applications.

- Post the Snowden revelations, it is clear that government agencies of different countries around the world are desperately putting secret backdoors in the networks, devices and software of other countries. In order to avoid such actions, Bulgaria has passed legislative amendments to its Electronic Governance Act that require all software written for that country to be fully open-sourced and developed in the public Github repository.[5] This means that whatever computer software, code, databases and programming interfaces the government procures, will be freely available for others to read, modify and use, thereby enabling public sourcing for fixing bugs in the government software.

The abovementioned experiences of different countries in regulating their respective cyber space at different levels are minor examples of what is happening around the world. However, with some exceptions like China, the efforts of other countries are limited to a few aspects of cyber space which dilutes the purpose of regulation to a large extent.

On the other hand, China has institutionalised cyber space regulation in its domestic cyber space with its new Cyber Security Law. On November 7, 2016, the 24th Session of the Standing Committee of the 12th National People's Congress of China passed the country's Cyber Security Law. The new law which came into effect on June 1, 2017, has 79 Articles divided into 7 different Chapters. Some of the highlights of the law are:

- The network operators are to adopt technological measures for monitoring and recording network operational statuses, security incidents, and follow relevant provisions to store network logs for at least six months.

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5. Chris Merriman , "Bulgaria Passes Law Requiring all Government-Developed Software to be Open Source", July 7, 2016, http://www.computing.co.uk/ctg/news/2464089/bulgaria-passes-law-requiring-all-government-developed-software-to-be-open-source. Accessed on July 10, 2016.

Such measures would require enormous investments from the network operators and, hence, small firms such as start-ups would suffer a setback as a result of the financial crunch.

- The network operators are required to provide technical support and assistance to public and state security organs to preserve national security and investigate crimes.

  This clause again could be exploited by the Chinese authorities to extract the foreign companies' technologies on the pretext of gathering evidence for investigating crimes. Although it is believed that the authorities would not go to the extent of requesting the disclosure of the source code, the vaguely worded clause makes this uncertain.

- According to the law, a plethora of infrastructures such as public communication and information services, power, traffic, water, finance, public service, electronic governance, and more, fall under the category of Critical Information Infrastructures (CIIs). And in order to avoid any data leak from these CIIs, the Security Council would formulate specific scope and security protection measures.

  The categorisation of almost all public infrastructures in the CIIs clearly exhibits the protectionist attitude of the state. Also, the law has not defined what constitutes a CII, and keeps open the possibility for any infrastructure in China to be termed as critical by the state authorities in the future if need arises.

- An important aspect of the law is that it also favours localisation of data. According to the law, any personal information or other data gathered or produced by the CII operators inside China must be stored in servers physically located inside the country. But if the operators require the data to be transferred outside the country's territory, they have to obtain prior permission from the authorities, i.e. from the relevant departments in the State Council.

  This clause in the law is a direct blow to the Western promoted global cyber governance model, which promotes global free flow of data that is currently available around the world. It also restricts the operations of foreign operators associated with China's CIIs and puts their operations at the behest of China's state authorities.

- The law also prohibits persons or organisations from subverting national sovereignty or overthrowing the socialist system which is also a very important aspect of China's 2015 National Security Law. Also, the law authorises the State Council and other government entities to temporarily restrict internet access in a particular region, as required by national security or to preserve social order.

  This clause, in particular, could be used to virtually cut off communications in parts of controversial Xinjiang province or any other region inside China in the case of a crisis or whenever the state authorities feel the need for it.

- The law also details the list of punishments for violators, ranging from fines to prison terms for individuals, and hefty fines to freezing of assets for organisations.

- One of the highlighting positive aspects of the law comprise the provisions to restrict the amount of personally identifiable information that can be collected, limit how it can be treated, and give an individual the right to request that the information be deleted if mishandled.[6]

  This aspect of the law has been well received in the Chinese community, especially by the advocates of privacy.

With regard to India, while there is not much cyber space regulation, there is huge potential to bring order into the tumultuous space, if regulated. For instance, in a rare scenario, the internet giant Google was fined Rs 135.86 crore by the Competition Commission of India in February 2018. Google was found abusing its dominant position by preventing its Indian partners, who sign negotiation search intermediation agreements, from using similar services provided by competing search engines. However, this was not the first time Google had faced such regulative punishments, as even earlier, in July 2017, the European Union had slapped a record-breaking fine of $2.7 billion on Google for manipulating search

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6. Chris Mirasola, "Understanding China's Cybersecurity Law", *Lawfare*, November 8, 2016, https://www.lawfareblog.com/understanding-chinas-cybersecurity-law. Accessed on December 29, 2016.

results in a manner that gave it an illegal advantage.[7] Nevertheless, India's fining Google in February 2018, was a reality check for the global internet companies operating in the country which has the second largest internet users. This was also seen as a welcome move in favour of net-neutrality by India. Unfortunately, such welcome moves towards regulating the country's cyber space do not occur frequently in the country. Therefore, India could take a cue from the efforts undertaken by various countries in regulating their respective cyber space and formulate its own strategy in order to stabilise the country's cyber space and also to ensure better safety and security.

To start with, as a step towards encouraging indigenous technology development, India could look into the feasibility of publicising its indigenously built operating system "Bharat Operating System Services (BOSS)"[8] by having the government agencies operate their systems with dual OS by installing a version of BOSS as a standby to the existing operating system (in most cases, Microsoft Windows). This might enable wider public reach and publicity for the OS and when the OS becomes competent enough in the future, the government might also look at the possibility of switching all computers being used in government offices to BOSS versions in multiple phases.

The country might also consider encouraging Indian app developers to develop new messaging apps for domestic consumption, with localised servers, and encourage the public to use the same which would enable the data of Indian users to stay within the country—this would also make it easy for the Indian government agencies to acquire data whenever required for any legal procedures.

Moreover, as a strategy in the long run, regulation could also be implemented effectively through enhancing, and better monitoring,

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7. "Google Fined in India for Search Bias", *The Telegraph*, February 9, 2018, https://www. telegraphindia.com/india/google-fined-in-india-for-search-bias-207314, Accessed on February 16, 2018.

8. BOSS (Bharat Operating System Solutions) is a GNU/Linux distribution system developed by C-DAC, Chennai, in order to benefit the usage of Free/Open Source Software in India. BOSS GNU/Linux is a key deliverable of NRCFOSS. It has enhanced Desktop Environment integrated with Indian language support and other software. The software has also been endorsed by the Government of India for adoption and implementation on a national scale. The operating system is currently in its sixth version and has been tested positively to stand strong against different kinds of cyber attacks.

of the Indian cyber space. Monitoring the cyber space of a country is a necessary evil to maintain equilibrium—it cannot be fully rejected on the claim that it comprises misconduct. Every country has the right to monitor its own cyber space but it has to be ethical in nature. Effective checks and balances should be in place within the framework of the monitoring service to ensure ethical behaviour. The country could also be transparent about its monitoring practice which would help in enhancing trust and confidence among the public and also act as a deterrent against those involved in malpractices. Effective monitoring of cyber space might help in identifying terrorist activities in the cyber domain against the country and also help in curbing them. Monitoring in real-time might also prove successful in foiling the plots of malicious hackers in their data breach operations against the country's critical infrastructure. Also, monitoring the country's networks might enable the agencies to know and identify new malwares and fix them before they can cause any serious damage to the country's cyber resources.

Cyber monitoring, however, is a double edged sword and when a country diverts its cyber monitoring capabilities against other countries, it leads to conflicts of breach of state sovereignty in cyber space. In the age of information, where countries are competing in the race of 'Global Information Supremacy', monitoring and covert breaching of each other's networks have become a common phenomena. Therefore, any country which aims to be a global power like India is forced to develop its own defences against such covert cyber capabilities of other countries and, if possible, also develop its own offensive covert cyber capabilities to suit its national interests.

In order to secure the civil cyber space, India might also consider the option of establishing a fully fledged 'Cyber Police Force' as a paramilitary organisation, as a long-term strategy, provided the country has enough human resource for establishing the same. As it is undeniable that dependence on cyber technology for everyday life is increasing in the future and more new threats would emerge in addition to the existing ones, it is prudent to have a specialised and exclusive police force that could concentrate specifically only on the cyber domain for a country as huge as India. Such a force

would act as a real deterrent against the various forms of cyber crime targeted against the country and could also be used to create counter-narratives to false terrorist propaganda in the various social media platforms.

The regulatory measures discussed above as well as several more can be undertaken by the Indian state for stabilising its cyber space in the long run. Apart from this, India also needs to focus on another area in order to achieve a robust and secure cyber space, which is the enhancement of capability in the country's computer hardware sector. Although the country has a superior Information Technology (IT) industry, the capability is mostly focussed in the software sector and the hardware sector continues to remain a weaker link. It is in this area of the indigenous computer hardware industry that India need to invest to reduce the country's dependence on imports, which would, in turn, reduce the country's vulnerabilities for hardware exploits.

The most immediate task in this direction is to establish a full-fledged semi-conductor industry utilising the 'Make-in-India' initiative and the Foreign Direct Investment (FDI) options. This policy initiative could be used in its favour by encouraging Indian companies to collaborate with foreign companies for establishing their semi-conductor and other computer hardware factories in India. Considering the acute need for developing computer hardware capability, the Indian government could also consider the option of establishing a 'Department for Cyber Space Development' to give special focus and funding to the sector, thereby, ensuring proper monitoring and manufacture of computer hardware. A successful plan of developing an indigenous hardware industry, especially the semi-conductor manufacturing industry in the country, would not only enhance the country's cyber environment but will also establish India as an unquestionable cyber power in the world.

Nevertheless, it would be unwise and an act of overexpectation to think of a fool-proof cyber environment just by implementing a few policies. It has to be understood that all these strategies and even more such measures, even if implemented successfully, cannot eradicate the practice of hacking, abolish the existence of the deep and dark web or stop countries and non-state actors from using covert cyber

capabilities to target their rivals. In fact, in the due course of time, the hackers would become even smarter, countries would develop and build more new covert cyber capabilities and cyber weapons, and the deep and dark web would find more new technologies like 'Riffle',[9] an anonymity network in the making, to mask their locations and operate in the cyber underworld. However, implementation of these long-term and short-term strategies may ensure a more stable and robust cyber environment for the country that would be several notches more secure compared to the existing one. It may also enable India to be a cyber power of the world and could project the country as an equal among the global players. It may ensure a safe and secured cyber domain for the future generations of this country that would be highly dependent on the domain. Finally, a secured and technically superior cyber space in India would not only enhance the lifestyle of every Indian but also elevate the status of India on the global platform.

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9. Researchers from the Massachusetts Institute of Technology (MIT) and the École Polytechnique Fédérale de Lausanne (EPFL) have created a new anonymity network, which they claim fixes some of TOR's weak points. Dubbed Riffle, the anonymity network promises to provide better security against situations wherein hackers introduce rogue servers on the network, a technique to which TOR is vulnerable. Riffle maintains users' privacy as long as at least one of its server remains safe.

RUSSIA IS YET TO WIN THE 'WAR' AGAINST DRUG TRAFFICKING

CHANDRA REKHA

The global security environment has been in a state of constant flux: non-traditional security threats comprised the gravest dangers of the 21st century and are often seen in contrast to traditional security threats. There is a lack of coherence in understanding what non-traditional security threats are. Mely Caballero Anthony has rightly pointed out that non-traditional security threats may be defined as the "challenges to the survival and well-being of people and states, that arise primarily out of non-military sources, such as climate change, cross-border environmental degradation and resource depletion, infectious diseases, natural disasters, irregular migration, food shortages, people smuggling, drug trafficking, terrorism and other forms of transnational crime."[1]

Countries are undergoing a health and moral collapse of the society as a result of the illegal drug trade that has affected people of all age groups and from all walks of life. Drug addiction has a far-reaching impact on the health of an individual who becomes

1. "Traditional and Non-Traditional Security in Eurasia", Institute for Security and Development Policy, http://www.isdp.eu/component/content/article/330-projects/521-traditional-and-non-traditional-security-in eurasia.html. Accessed on July 10, 2015.

captive to substance dependence. The high risk impact on health in most cases results in medical problems such as weakening of the immune system, alcoholism, brain damage, anxiety disorders, bipolar disorder, schizophrenia, depression, susceptibility to infections and communicable diseases such as HIV, AIDS, and tuberculosis. However, the worst impact of drug abuse is the affect on individuals, families and communities. Drug abuse is also highly correlated with crime trends and crime victimisation in society.

The explosion of non-traditional threats has caused anxiety and concern among nation states, and Russia in this regard is no exception. Post the disintegration of the Soviet Union, Russia, the largest former republic and the successor of the Soviet Union, grappled with its internal and external crises. In combating threats to its national interests and security, Russia succeeded in gaining victory in armed conflicts such as the Chechen insurgency (1999) and Georgian War (2008). Unlike the Cold War period, today, the threats to Russian security are no longer confined to armed conflict. Given the fact that Russia has in recent times begun to firmly entrench itself in international politics, the rise and impact of non-traditional threats has become a major cause of concern for its *in toto* growth in international relations. Despite a successful run in terms of military diplomacy, as seen in the ongoing Syrian crisis, Russia has failed to combat some of the most critical non-traditional threats. At the domestic level, Russia today faces a wide range of non-traditional threats such as drug trafficking, human trafficking, insurgency, terrorism, and organised crime that are damaging the very social fabric of the country, including the health and morals of its society.

Drug trafficking, for instance, is not only fast emerging as one of the largest illegal trade enterprises in Russia but has also impacted the already crisis-struck demography of the country. According to the United Nations Office on Drugs and Crime (UNODC), drug trafficking is a global illicit trade that includes *cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws*. The most common drugs of abuse trafficked to countries include heroin, cocaine, inhalants, marijuana and methamphetamines. As per reports by the UNDOC, the two most evident components for drug trafficking include regions that have either emerged as the drug

producing nations or are potential transit routes for the illegal drug trade. For instance, the main heroin trafficking corridors are the Balkan and Northern Routes linking Afghanistan to the huge markets of the Russian Federation and Western Europe. The Balkan Route traverses the Islamic Republic of Iran (often via Pakistan), Turkey, Greece and Bulgaria across Southeast Europe to the Western European market, with an annual value of some \$20 billion. The Northern Route runs mainly through Tajikistan and Kyrgyzstan (or Uzbekistan or Turkmenistan) to Kazakhstan and the Russian Federation.'[2]

This article intends to focus on drug trafficking and its impact on Russia's overall national development. An attempt has been made to draw attention to the various factors responsible for drug trafficking and the measures undertaken by Russia to combat the threat.

DRUG TRAFFICKING: SECURITY FRACTURE AND MORAL DEFEAT

Russia has for long battled a mortality crisis and the main causes are social and health factors, alongside external factors such as trans-regional border insecurities. Drug trafficking is inter-linked to organised crime, smuggling, illegal migration and terrorism. Incidentally, drug trafficking has not only fractured Russia's national security but is a moral defeat as it has impacted the demography in a major way. Statistics reveal that Russia's mortality crisis is alarming as high rates of heavy smoking, drug addiction, alcoholism and poverty coupled with a decline in birth rates after the collapse of the Soviet Union have led to a demographic decline.[3] For example, the fact that 80 percent of the people infected with HIV/AIDS in the Russian Federation are intravenous drug users.[4]

All in all, the implications of drug trafficking have emerged as a national tragedy for Russia as it has hampered the positive

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2. Drug Trafficking, United Nations Office on Drugs and Crime, https://www.unodc.org/unodc/en/drug-trafficking/index.html. Accessed on February 20, 2018.

3. "Heroin Addiction Threatens Russia's Economic and Demographic Health," *Deutsche Welle*, April 18, 2011. http://www.dw.com/en/heroin-addiction-threatens-russias-economic-and-demographic-health/a-14996763. Accessed on January 20, 2018.

4. Alexander Marshall, "From Drug War to Culture War: Russia's Growing Role in the Global Drug Debate", Global Drug Policy Observatory, *Policy Brief 5*, July 2014, pp. 4-5 http://www.swansea.ac.uk/gdpo/files/GDPO%20Russia%20Article-1.pdf. Accessed on January 20, 2018.

development of its demography. This phenomenon of drug related deaths was visible during the period of the Soviet collapse. In fact, prior to 1917, the large scale use of opium and hashish was visible in the Russian Empire's Primor'e oblast in the Far East and in Tsarist Central Asia. Despite the challenge of unavailability of data, it is found that following the Russian Civil War of 1917–21, Soviet clinics in European Russia reported an epidemic of drug use amongst the underage orphans in particular. During the inter-war years, Soviet laws became stricter, by prohibiting drugs, and tighter border controls. The Soviet Union also took various other measures which included a Union-wide ban on the cultivation of opium and 'Indian cannabis (konopli)' for anything except medical use. As per the official statistics of the Soviet Ministry of Health, there were 23,714 drug addicts in 1965, and by the end of 1971, there were already more than 50,000 officially recorded cases undergoing treatment. The alarming figures called for a prompt response and renewed medical and legislative attention. The Union framed the introduction of what many have characterised as the Soviet Union's first true "drug law", the 1974 law on "strengthening the struggle with drug addiction".[5] Despite the imposition of strict laws, reports suggest that in 1989, across the whole of the USSR, there were officially recorded some 131,000 drug users, and by 1997, across the Russian Federation alone, between 2.5 to 6 million citizens were estimated to be regularly using illegal drugs'.[6]

One can also establish a correlation between how Russia coped with its mortality crisis and alcoholism through reforms such as the anti-alcohol campaign initiated by Mikhail Gorbachev during his tenure. The main approach of the campaign was to raise the cost of drinking, and to subsidise substitute activities. Initially, the campaign began to bear fruit when alcohol consumption declined markedly, and "Russia's crude death rate fell by an average of 24 percent per year, implying roughly 1.61 million fewer deaths during the latter 1980s."[7] However, the unpopularity of Gorbachev's 1985-88

5. Ibid., pp. 4-5, http://www.swansea.ac.uk/gdpo/files/GDPO%20Russia%20Article-1. pdf. Accessed on February 10, 2018.

6. Ibid.

7. Jay Bhattacharya, Christina Gathmann, and Grant Miller, "The Gorbachev Anti-Alcohol Campaign and Russia's Mortality Crisis", *American Economic Journal. Applied Economics*, *2013*, pp. 232-260. https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC3818525/#. Accessed on January 10, 2018.

anti-alcohol campaign and the public finance impact (note: the Soviet Union had already begun experiencing the economic crisis during this period) led to its repeal shortly before the collapse of the Soviet Union. Consequently, the Russian death rate once again soared to roughly 2.15 million deaths. As a matter of fact, the decline in male life expectancy at birth (by nearly 7 years, to 57.6) would tie Russian men with their counterparts in Bangladesh, falling short of male longevity in the less-developed countries with troubled population health histories. [8]

Before the Soviet Union's disintegration, the last similar 'drug epidemic' had taken place during the collapse of the Tsarist Empire and the emergence of the early Soviet regime. One needs to bear in mind that during the Soviet period, the Union did not participate significantly in either the production of illegal drugs or transporting them to the final destination countries. However, post Soviet collapse, Russia is a country in which a variety of illegal drugs are produced and transported to the final markets in Western Europe.[9]

Heroin addiction in particular has become the most common in drug substance dependence which, in turn, has accelerated the demographic decline. Russia rates third in heroin addiction in the world. Its geographical proximity to potential drug trafficking countries – particularly Afghanistan – is cited as one of the main reasons for this. Afghanistan today has emerged as the world's top heroin producer and its long porous borders make trafficking relatively easy.[10] In this study, a section has been dedicated to Afghanistan as a case study to further understand the impact of illegal trans-boundary transportation of drugs from Russia.

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8. Ibid., pp. 232-260.
9. "Drug Trafficking and Related Organized Crime in Russia", the study was carried out on behalf of the United Nations Office for Drug Control and Crime Prevention (UNODCCP). It is a part of the larger project "Immediate Technical Assistance on the Control and Prevention of Drugs and Related Organised Crime in the Russian Federation", which was launched by the UNODCCP early in 1999. Head (s) of Project: Prof. Dr. Letizia Paoli Eliko Ciklauri (Freiburg); Jacov Gilinskiy, Yakov Kostjukovski and Maya Rusakova (Institute for Sociology, Russian Academy of Sciences); Irina Korobko (Freiburg); Ljudmila Majorowa (University of Krasnoyarsk); Ljudmila Obidina (University of Nizhniy Novgorod) and other external researchers, Max Planck Institute for Foreign and International Criminal Law.
10. n.3.

President Vladimir Putin's 'speech act' on September 4, 2002, further designated drugs as a national security threat. President Putin proclaimed that the current crisis of drugs and its impact on Russian society is a 'calamity', and called for a revival of existing programmes and initiation of *new proposals that would lead to a significant change in the fight against drugs*. New national security agencies were set up, charged with tackling the problem, most notably the Federal Service for the Control of the Drugs Trade (FSKN) established in 2003, followed by the State Anti-Narcotics Committee (GAK) in 2007.[11] Although the official figures were held at 30,000-40,000 drug-related deaths, in 2013 these shot up to 100,000.[12]

Following the expansion of, and growing demand for, illegal drugs use, the market has gained immensely in terms of both turnover and its geographic extension in Russia. Several factors are responsible for the growing illegal drugs trade. As mentioned earlier, drug trafficking has been identified by experts as being unavoidably associated with violence and organised crime, and, in many cases, linked to terrorist activities. It is also connected to other criminal activities, like money laundering, arms and human trafficking, and corruption.[13]

Organised crime groups have been a major challenge for Russia in its quest to eradicate drug trafficking. Drug dealing is carried out by individuals, small groups as well as larger criminal organisations. The structure of drug dealing comprises drug producers, laboratories (if necessary), a network of couriers (who often do not know each other), wholesale markets, and retailers, as well as additional units such as killers, extortionists, and money launderers, who, in Russian-speaking areas, are called *krysha*, which is the slang for "roof" as well as "corrupted officials of all levels." Due to the drug market's huge capacity and the necessity to operate covertly in order to preserve the key units and avoid punishment, the illegal drug trade is not

11. Marshall, n.4, p.2.
12. Mark Galeotti, "Narcotics and Nationalism: Russian Drug Policies and Futures", Foreign Policy at Brookings Improving Global Drug Policy: Comparative Perspectives and UNGASS 2016. https://www.brookings.edu/wp-content/uploads/2016/07/Galeotti-Russia-final.pdf, p.2.
13. "Successful Fight against Drug Trafficking, Transnational Organized Crime Requires Interlocking National, Regional, International Strategies, Third Committee Told", United Nations Meetings Coverage and Press Releases, GA/SHC/3948, 8 OCTOBER 2009. https://www.un.org/press/en/2009/gashc3948.doc.htm

centralised, which makes it a bigger task for countries to eliminate the threat. Nevertheless, some individuals or groups cooperate with one another, integrating their information on the sale of drugs, conspiracy, counteraction to law-enforcement bodies and money laundering.'[14]

The prevalence of poverty and economic instability in countries such as Afghanistan and the Central Asia Republics, including Russia, makes available potential recruits as couriers. The Russian market is more lucrative than the local ones – the price of heroin in Russia is 15 – 2 times higher than in Tajikistan and Afghanistan, and, finally, drug trafficking is further fuelled by organised crime groups and terrorists networks bartering "drugs for weapons".[15]

Since border security is one of the key elements for stability, deterioration of border security and porous borders comprises another major factor for drug trafficking in Russia. The region of Afghanistan is crucial for Russia to not only understand the alarming reality of drug trafficking in the volatile Eurasian region but also to find possible solutions to combat the menace and its impact on the overall growth of the country.

TRANS-BORDER DRUG TRAFFICKING: AFGHANISTAN

The illegal trans-boundary transportation of drugs makes the couriers use sophisticated methods of concealment. These methods can be subdivided into at least six types: (1) masking drugs in vegetables and fruits transports, industrial goods and raw materials; (2) concealment inside human bodies (swallowing, etc.); (3) concealment in baggage, under a carrier's clothes and inside shoes; (4) fitting up inside cars, lorries and train carriages; (5) concealment in packed lots of products and industrial goods (including factory wrapping and built-in hiding places; and (6) discarding drugs before arrival at checkpoints, to be later picked up by accomplices.'[16]

14. Sergey Golunov, "Drug Trafficking through the Russia-Kazakhstan Border: Challenge and Responses," International Fellowship Programme of George Soros Foundation, pp.331-332.
15. "Illicit Drug Trends in the Russian Federation," United Nations Office on Drugs and Crime Regional Office for Russia and Belarus and the Paris Pact Initiative, a partnership to counter traffic in, and consumption of, Afghan opiates, April 2008.
16. Golunov, n.14, p.339.

For Russia, the two main channels of access of non-traditional threats are the 'Golden Triangle' of Southeast Asia via the Far East; and Southwest Asia, mainly Afghanistan and Pakistan via Central Asia and the Caucasus.[17] Sadly, the transnational and non-traditional threats to human security like trade in illicit drugs have risen in prominence in Russia which is struggling to get a grip on the demographic crisis. Arguably, drug trafficking entails the most unpleasant social, political, and economic consequences as it threatens the very fabric of the state. With galloping production of opium in war-torn Afghanistan and increasing trafficking of heroin northward through post-Soviet Central Asia to markets in Russia, China, and Europe, the adverse impact of the drug trade is increasingly becoming apparent.[18]

Producing up to 80 percent of illicit drugs in the world, Afghanistan remains one of the main hubs of "hard" drug production in the Eurasian region. Most opiates from Afghanistan are transported to the European Union (EU), which is the market with the largest purchasing capacity, via the Balkan Route, which crosses Iran, Turkey, and the Balkan countries. The importance of the Northern, or Silk Route, which goes through Central Asia, Russia and the states of Eastern Europe is increasing at a rapid rate and Afghanistan's narcotics are steadily being redirected through this region. It should be noted that the Middle East and Central Asia provide a small percentage of the world's cannabis supply. But at the regional level, areas such as the valley of the Chu (Shu) river – that traverses Kazakhstan and Kyrgyzstan – are large suppliers of marijuana and hashish northwards to Russia. [19]

As per the report by the UNODC, there was a sharp increase in the total area under opium poppy cultivation in Afghanistan in 2017, which was estimated at 328,000 hectares. "This was a 63 percent increase compared to 2016. Some of the key poppy cultivating provinces that experienced a sharp increase include the Hilmand province which alone cultivated 63,700 hectares (+79 percent)

17. V D Chopra, *New Trends in Indo-Russian Relations* (New Delhi: Gyan Publishing House, 2003), p. 214.
18. Saurabh Chaudhuri, "Defining Non-Traditional Security Threats", Global India Foundation, http://www.globalindiafoundation.org/nontraditionalsecurity.html. Accessed on May 19, 2015.
19. Golunov, n.14, p.333.

accounting for about half of the total national increase. Strong increases were observed also in Balkh (+10,000 hectares or almost five times more than in 2016), Kandahar (+7,500 hectares or +37 percent), Nimroz (+6,200 hectares or +116 percent), and Uruzgan (+6,000 hectares or +39 percent). The majority (60 percent) of cultivation took place in the south of the country. The western region accounted for 17 percent of total cultivation, the northern region for 13 percent and the eastern region for 7 percent. The remaining regions (northeastern and central) together accounted for 3 percent. Hilmand remained the country's major opium poppy cultivating province, followed by Kandahar, Badghis, Faryab, Uruzgan, Nangarhar, Farah, Balkh, Nimroz and Badakhshan.[20]

Interestingly, another key observation made by the UNODC was of the number of poppy-free provinces in Afghanistan which decreased from 13 to 10 in 2017. The number of provinces affected by opium poppy cultivation increased from 21 to 24. For instance, Ghazni, Samangan and Nuristan provinces lost their poppy-free status. Ghazni had been poppy-free for more than two decades (since 1995), Samangan and Nuristan for almost 10 years (since 2007).[21]

Why is Afghanistan today one of the leading countries in the illicit drug trade? There are several factors responsible for Afghanistan gaining this status in drug trafficking. To begin with, rule of law-related challenges such as political instability, lack of government control and security, as well as corruption, have been found to be the main drivers of illicit cultivation. Socio-economic factors also impact the farmers' decisions, for example, scarce employment opportunities, lack of quality education, and limited access to markets and financial services continue to contribute to the vulnerability of farmers towards opium poppy cultivation.[22]

Since the US declaration on the "Global War on Terror" post 9/11 terror attacks, it is interesting to observe that in the period between 2000-14, the acreage of opium poppy cultivation in Afghanistan increased by almost a third. The provinces of Kandahar

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20. Afghanistan Opium Survey 2017, Cultivation and Production, UNODC, November 2017, p.5.
21. Ibid., p.5.
22. Ibid., p.6.

and Helmand in particular have produced new varieties of opium poppy seeds — more resistant to drought, fast ripening and with increasing yield. Hence, the key deduction made by some experts is that opium production increased during the time of the US' presence in Afghanistan. Afghan opium production climbed from 3,400 metric tonnes in 2002 to a record 8,200 metric tonnes in 2007, partly because US and NATO-led troops put a low priority on curbing it. Thereby, heroin flooded into Central Asia, and on to Russia.[23]

Russia has voiced its displeasure at the US looking away in combating the Afghan drug trade such as the declaration in 2009 by the US special envoy to Afghanistan Richard Holbrooke that the US "would no longer pursue poppy eradication, due to its counter-productive economic consequences".[24] The increase in opium production is also attributed to the deteriorating of the military and political situation in the country. This created convenient conditions for criminal groups to organise their warehouses and laboratories near the borders. For the illicit trade of opium from Afghanistan to Russia, Central Asia becomes a key region as a transit hub for organised crime groups and drug traffickers. Hence, Russia is paying special attention to prevent a possible destabilisation of the situation in Central Asia and, above all, on Afghanistan's borders with Turkmenistan, Tajikistan [25]and Uzbekistan. Fig 1 further bolsters the argument.

23. Tom Lasseter, "Flood of Afghan Heroin Fuels Drug Plague in Russia", *McClatchy Newspapers*, June 29, 2009. http://www.mcclatchydc.com/news/nation-world/world/article24543595.html. Accessed on January 10, 2018.
24. Marshall, n.4, pp. 4-5.
25. "Afghanistan: A Repetition of the 'Iraqi Scenario?'," Independent Analytical Centre for Geopolitical Studies, June 5, 2015, http://bintel.com.ua/en/article/af2015/. Accessed on January 1, 2018.

Fig 1: Opium Poppy Cultivation in Afghanistan, 1994-2016 (hectares)
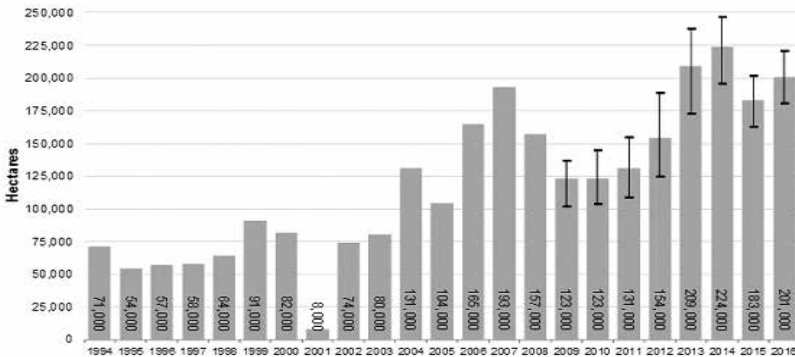
Source: UNODC/MCN opium surveys 1994-2016. http://media.breitbart.com/media/2016/10/Insert2.png

According to Russian academics working in the Institute for Demography, Migration and Regional Development, the decrease in the street price of "Afghan heroin to $5 for a single dose also produced two clear spikes in Russian heroin addiction rates, in 1997–98 and 2003–04 respectively, generating a heroin addicted community conservatively estimated at 2.5 million today. This process has also fostered what is unquestionably a general 'health crisis' on a demographic scale, with heroin-related Russian mortality rates currently thought to run at about 30,000 deaths a year, higher than the comparable annual Soviet death toll from military action in the 1980s in Afghanistan".

In its efforts towards combating illicit drug crop production in Afghanistan, Russia became a leading participant in the Paris Pact initiative, founded in May 2003, whose Rainbow Strategy aimed at "a regional solution to an Afghan challenge", via coordinating the anti-narcotics activities of the regional countries most affected by Afghan drug trafficking. The largest official initial successes in the Paris Pact's 'Rainbow Strategy' were "Operation Transhipment" and "Operation Tarcet", coordinated jointly by Russia, the Central Asian states and Pakistan, which, between 2006 and 2009, targeted the traffic in chemical precursors (including acetic anhydride) necessary for heroin production (such substances were added to the list of controlled substances under the third UN convention of 1988).'[26]

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26. Marshall, n.4, pp.2-4.

Being one of the main countries affected by drug trafficking from Afghanistan, Russia, once again, in 2010, announced the 'Rainbow-2' plan for eradicating opium production in Afghanistan. This announcement declared drug trafficking from Afghanistan to Russia as a threat not just to the state, but to "global peace and security". 'Rainbow 2' also underlined a sharp escalation in the securitisation of drugs as an existential threat at the international level, via a specific "speech act".[27]

It is widely argued that its refocus on the current developments in Afghanistan appears to have played a key role in determining Russia's strategic calculus towards Pakistan since 2014. The US drawdown from Afghanistan has caused anxiety for Russia as it fears the reemergence of the Taliban, and an increase of non-conventional threats such as drug trafficking from the region. In 2015, the international conference on the Prevention of Drug Threats, held in Dushanbe, had concluded that Afghan drug expansion threatens to lead many post-Soviet states, including the Central Asian Republics, to political instability. Tajikistan also hosted a meeting of heads of departments to combat drugs in member countries of the Collective Security Treaty Organisation (CSTO).[28]

To gain an understanding on how Russia is combating the drug culture and drug trafficking, let us look at some of the initiatives undertaken by the country.

POLICIES TO ADDRESS DRUG TRAFFICKING

Within the international experience, there are three main ways to combat narco-trafficking: (1) restriction measures, including strengthening of border and customs control; (2) demand reduction programmes, such as social advertising, health protection, active policy towards the youth; and (3) limited legalisation of some drugs.[29]

At the domestic level, Russia's state efforts to create rehabilitation centres only began in 2000. A national addicts' rehabilitation programme was established in 2012 (to cover the period to 2020). In November 2012, President Putin ordered the formal creation of a state programme for the rehabilitation of drug addicts, a programme

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27. Ibid., p.2.
28. Ibid., pp. 4-5.
29. Golunov, n.14, p.342.

projected to involve an expenditure of Roubles 179 billion (nearly US $5.5 billion). However, the unroll over 2013–20, and disagreements over funding became a roadblock in successfully executing this programme down to the present. In November 2013, President Putin also signed into effect a law, developed by the FSKN, which for the first time allowed Russian courts to sentence drug addicts to compulsory addiction treatment, with financial penalties of around Roubles 5,000 or 30 days incarceration for non-compliance. [30]

The Anti-Narcotics Policy Strategy of the Russian Federation, signed by former President Dmitry Medvedev in June 2010, elaborates on the respective anti-drug provisions of the Russian Federation for the period until 2020 and the Concept of the Long-Term Social and Economic Development of the Russian Federation in the period until 2020. The main aims of the strategy are the substantial reduction of the illicit trade and non-medical use of drugs, and the impact of the illicit trade on the safety and health of individuals, the society and the state. The strategy aims to consolidate the efforts and resources of the society as a whole, authorities at all levels, public associations and citizens. A consistent increase in the cost of the state support to anti-drug activities in all relevant areas is stipulated in order to attain the objectives of the strategy.[31]

The Federal Service for Drug Control of the Russian Federation is a federal body of executive authority, responsible for drafting state policy, legal regulation, control and monitoring in the sphere of combating trafficking drugs, psychotropic substances and their precursors. The president of the Russian Federation oversees the activity of the Federal Drug Control Service.[32]

The Federal Border Service is one of the successors of the KGB, assuming the border control functions previously performed by the KGB Border Troops Directorate. On March 11, 2003, the FPS Russia functions were transferred to the Russian Federal Security Service, which, in turn, created the Border Service (the transformation came into force on July 1, 2003). The border policy

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30. Marshall, n.4, p.2.
31. "Russian State Antidrug Policy Strategy," www.eegyn.com/pdf/Russian%20State%20 Antidrug%20Policy%20Strategy.pdf. Accessed on January 10, 2018.
32. Federal Service for Drug Control, Russian Government, April 2016. http://government. ru/en/department/114/events/. Accessed on January 10, 2018.

of the Russian Federation aims at ensuring the sovereignty, security and territorial integrity, implementation and protection of Russia's national interests, and security in its border area. The border policy is based on the Constitution, laws and other normative-legal acts of the Russian Federation, and generally accepted norms and principles of international law and is implemented through targeted and coordinated activities of the state authorities, local self-government bodies, public associations and citizens, in accordance with their rights and powers this area.[33]

THE ROAD AHEAD

The new millennium brought along with it a more confident Russia through revival of its economic status (mainly through energy diplomacy) and the subsequent acceleration of its military modernisation that necessitated countries to reexamine their perception about Russia. Unfortunately for Russia, its national interests and global aspirations are hampered by some of the crucial internal threats such as drug trafficking.

Drug trafficking has had a major impact on Russia's demography. For a country with a sustained focus to insulate its national security and goals, Russia understands the impact of demographic trends; for instance, the future size of the Russian armed forces is under question due to the demographic decline. Overall, a key implication of the main findings is that despite Russia having implemented strict anti-drug trafficking laws and reforms for years, the country is still in need of a great many reforms to tackle the growing threats of drug trafficking and drug culture in the country.

Russia needs to keep pace with the sophistication with which drug traffickers and organised crime groups function. Drug traffickers and organised crime groups have become more sophisticated than ever before, even in evading the security and checkpoints at the trans-regional borders. It is evident that though resources are being utilised to secure the porous borders, the drug traffickers have often succeeded in finding 'alternative' routes, means and approach to go breach boundaries and laws. Well coordinated efforts among

33. Federal Border Service (FPS) *Federal'naya Pogranichnaya Sluzhba*, Global Security.org, https://www.globalsecurity.org/intell/world/russia/fps.htm. Accessed on February 10, 2018.

countries that share borders with Russia comprise the need of the hour to combat drug trafficking.

The regional stability and security of Afghanistan becomes a crucial factor in the geopolitical calculus of Russia. Russia, alongside the Shanghai Cooperation Organisation (SCO), members should play a proactive role in combating the illicit drug trade emanating from Afghanistan. Although there is zero tolerance to the drug culture by the Russian administration, there are several reasons for the failure of the numerous reforms to eradicate this social menace. To begin, there is lack of 'stock-taking' on the success of the existing anti-drug trafficking laws and anti-drug reforms at the domestic level. Lack of financial backing to successfully execute the reforms and programmes is also seen as a major setback for Russia due to the volatile nature of its economic growth performance. The social and health impacts of drug addiction need new and innovative approaches to spread awareness of the ill-effects of drug addiction among the young population. Finally, use of the diplomatic space is the need of the hour for Russia to collaborate with countries that are equally impacted by drug trafficking in order to find solutions to the issue. All in all, for Russia to sustain its rise in international relations, it needs a healthy demography that carries forward the country's vision. In this direction, Russia needs to eliminate all those factors that pose a threat to its national interests, especially non-traditional threats such as drug trafficking. For Russia, the war against drug trafficking needs to be won.

ENVIRONMENTAL CHANGE AS A "THREAT MULTIPLIER": THE CASE OF MIGRATION

DHANASREE JAYARAM

INTRODUCTION

At a time when migration has become one of the biggest challenges that the European Union (EU) confronts, the debate surrounding the role of environmental factors in fuelling conflicts in the Middle East and North Africa, causing migration, is gaining momentum. Ever since the Arab Spring erupted in 2010-11[1], several studies have linked it to climate factors – affecting wheat production in countries such as Russia, leading to a spike in global wheat prices and, in turn, exacerbating the socio-political crisis in countries like Egypt. Now climate security analysts have found ostensible links between climate change and the ongoing civil war in Syria – mainly, the mishandling of the worst long-term drought that had plagued the country since 2006.[2]

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1. Ines Perez, "Climate Change and Rising Food Prices Heightened Arab Spring", *Scientific American* (New York), March 4, 2013, https://www.scientificamerican.com/article/climate-change-and-rising-food-prices-heightened-arab-spring/. Accessed on January 23, 2018.
2. "Climate Change and the Syrian Civil War", *Climate Diplomacy* (Berlin), https://www.climate-diplomacy.org/videos/climate-change-and-syrian-civil-war-ecc-factbook-conflict-analysis. Accessed on January 23, 2018.

In academic literature concerning climate change, the term 'climate refugee' continues to find a place, especially to evoke the security implications of climate change. However, the deeply political nature of the issue has led most countries to evade any legally-binding obligations. First of all, international law does not recognise "environmental refugees", which renders the act of rehabilitation and enforcement of accountability difficult. Secondly, while referring to migration, countries' positions have traditionally been pinned on socio-economic and political crises rather than environmental ones. For instance, while referring to 'illegal' migrants from Bangladesh to India, the latter has insisted at the policy level mostly that this has very little to do with climate or environmental change. Thirdly, even while talking about migration caused or exacerbated by environmental change (slow disasters like droughts or sea level rise), a large amount of focus is on inter-state migration and not as much on intra-state migration, which is already happening on a large scale across the world. It has emerged as a cause for livelihood insecurity and erosion of the natural resource base, leading to rural-to-urban, coastal-to-inland and other forms of migration, putting excessive pressure on the available resources.

Against this backdrop, this paper delves into the international debates surrounding environmental migration and 'refugees' using a two-layered approach: law and policy/governance. It looks into international law dealing with 'migration' and 'refugee' and problematises them in the context of environmental security and how theoretically, migration has been recognised as a security implication of climate change. The case of migration from Bangladesh (affected by not only annual flooding and cyclones but also the effects of climate change like sea level rise) has been used to provide an overview of the challenges posed by migration to international law, policy and governance mechanisms. The paper analyses the lacunae in international and regional policies in terms of tackling environmental factors that act as 'threat multipliers,' and explores ways in which they could be filled through diplomatic initiatives.

LINKING ENVIRONMENTAL CHANGE TO MIGRATION

In academic literature, environmentally induced migration has been often used as a case for securitising environmental change – for

widening and, thereafter, deepening the scope of security. A few scholars have repeatedly made the case for recognising environmental refugees as an "emergent security issue" and the need for policy responses towards tackling this issue, by providing empirical analyses of environmentally induced forced migration. According to Homer-Dixon, conflict over environmental scarcity could occur in two scenarios. First, "resource capture," in which a decrease in supply of a particular renewable resource such as water interacts with a spur in demand caused by increased population growth to drive powerful groups within the society to get hold of a major share of the resource in order to boost their wealth and power, thus, creating scarcity for the poorer and weaker groups in the society. Second, "ecological marginalisation" in which unequal distribution of resources, along with population growth, leads to "long-term migration of people to ecologically fragile regions such as steep upland slopes, areas at risk of desertification, and low-quality public lands within urban areas".[3] This leads to further land degradation and scarcity due to the lack of resources (knowledge and capital) to protect and preserve the local ecosystem and increasing population densities.[4] Migration forms an integral part of both these conflict scenarios.

Climate change as a "threat multiplier" has been acknowledged at various levels. For instance, a report published by the Centre for Naval Analyses (CNA) in 2007, was one of the first reports (collated by 11 retired military officers) to open the gates of securitisation of climate change by labelling it a "threat multiplier".[5] Similarly, there has been a lot of analysis of how climate-related conflicts due to migration can disrupt peace and stability in the developing world. The Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (WBGU) or German Advisory Council on Global Change report observes, "Trans-boundary environmental migration will mainly take the form of South-South migration, but

3. Thomas F. Homer-Dixon, *Environment, Scarcity, and Violence* (Princeton University Press: New Jersey, 1999), p. 177.
4. Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict", *International Security* (Cambridge), vol. 16, no. 2, 1991, pp. 101-102.
5. "National Security and the Threat of Climate Change", *CNA's Military Advisory Board Report* (Arlington: Centre for Naval Analyses Corporation, 2007), p. 6, sehttps://www.cna.org/cna_files/pdf/national%20security%20and%20the%20threat%20of%20climate%20change.pdf. Accessed on January 23, 2018.

Europe and North America must also expect substantially increased migratory pressure from regions most at risk from climate change."[6] The most oft-quoted example to exemplify this trend is that of the India-Bangladesh border scenario, wherein the WBGU report, for instance, talks about the possibility of strict border control measures enforced by the Indian side to prevent illegal Bangladeshi migrants from entering Indian territory, leading to an armed conflict between the two countries.[7] Such claims have been thwarted by countries like India as unfounded and alarming, to say the least, terming them as means of deflecting the West's historical responsibility and of portraying India's risks to argue that the latter must act on climate change in the same way as the countries in the West.

The United Nations Security Council (UNSC) debate on the security implications of climate change that took place first in 2007, portrayed climate migration almost as the biggest threat that humankind could face, and is already facing, in some parts of the world – specifying "environmental refugees", "unprecedented migration", "population movements", "humanitarian crises," and so on. The Paris Agreement (arrived at, at the Conference of Parties – COP-21) also takes note of migration and seeks to establish a "task force" to "develop recommendations". However, the deeply political nature of the issue forced the parties to avoid any legally-binding obligations. The Pacific Island countries' clarion call to create a "coordination facility" for managing climate refugees was eventually struck down and removed from the final draft of the agreement.[8] Their biggest neighbour in the region, Australia, helped defeat the proposal. First of all, international law does not recognise "environmental refugees". Therefore, the law itself has to be changed to start with, in order to fit an "environmental refugee" into an expanded legal definition of a refugee. Recently,

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6. R. Schubert, H. J. Schellnhuber, N. Buchmann, A. Epiney, R. Grießhammer, M. Kulessa, D. Messner, S. Rahmstorf and J. Schmid, "World in Transition: Climate Change as a Security Risk", *German Advisory Council on Global Change Flagship Report* (Earthscan: London, 2008), p. 3, http://www.wbgu.de/fileadmin/user_upload/wbgu.de/templates/dateien/veroeffentlichungen/hauptgutachten/jg2007/wbgu_jg2007_engl.pdf. Accessed on January 23, 2018.
7. Ibid., p. 123.
8. For more information on the Paris Agreement and its provisions, http://unfccc.int/paris_agreement/items/9485.php. Accessed on January 23, 2018.

in the US, a Louisiana tribe (in Isle de Jean Charles, about 80 miles southwest of New Orleans) was granted the status of first "official climate refugees" in the country. According to reports, the tribe has lost 98 percent of its land due to sea level rise, coastal erosion and flooding; and now the US Department of Housing and Urban Development (HUD) has awarded $52 million to the tribe for "resilient infrastructure and housing projects".[9] Individual countries could take such progressive steps, but at a time when migration is being looked at so negatively through the prism of (in)security – as a security threat (Europe is a case in point) – an internationally coordinated policy can be considered nothing less than a mirage.

INDIA'S POSITION ON ENVIRONMENTAL AND CLIMATE MIGRATION: BANGLADESH AS A CASE IN POINT

India's *National Security: Annual Review 2015-16*, published by the Foundation for National Security Research (FNSR), lists climate change as a "threat multiplier" and as an indispensable part of the changing global imperatives, stressing the need for long-term planning.[10] This can be considered a major shift in the way environmental security is perceived by India as there is greater acceptance of links between environmental change and national security among the academic and policy communities. The Indian establishment is more willing to consider climate change as a threat multiplier rather than a direct cause for conflict or other forms of insecurity, as seen in the case of India's *National Security: Annual Review 2015-16* too. On the other hand, there have also been numerous attempts to de-link the security and climate change discourses and dialogues mainly on the basis that there cannot be a "one size fits all" approach towards tackling climate change, as vulnerabilities vary from region to region and country to country. In certain parts of the world, it

9. For more information, see Chris D'Angelo, "A Louisiana Tribe Is Now Officially a Community of Climate Refugees", *The Huffington Post* (New York), December 12, 2017, http://www.huffingtonpost.com/entry/climate-refugees-louisiana_us_56bbd5efe4b0c3c550501784?section=india. Accessed on January 23, 2018.

10. Chandrashekhar Dasgupta, "Climate Change and India's Security Environment" in Satish Kumar, ed., *India's National Security: Annual Review 2015-16* (New Delhi: Routledge, 2016), p. 392.

might act as a threat multiplier; and in certain others, it can act as a catalyst for cooperation.[11]

Yet, the discourse on environmental and climate refugees or forced migration is highly polemical. In countries such as India, "environmental refugee" has not yet become a part of accepted terminology – in line with its non-recognised (or, at best, only informal) status in international law. Even while referring to migration (in this case, potential) from Bangladesh as a result of climate change, sea level rise and the loss of land, the Indian position has traditionally been pinned on social, economic and political disruptions in Bangladesh rather than environmental factors.[12] The reasons for migration are most often complex and overlapping, with environmental degradation possibly being one among several. Bangladesh is one of the most densely populated countries in the world and any socio-economic, political or environmental disruption invariably results in population movement. Owing to the scarcity of land and other non-renewable resources, as well as economic opportunities and social mobility, people are forced to look for safer pastures across the border – in India, which is culturally not very different and where the fear of persecution is less.[13]

What also cannot be discounted is the nature of the politics of the illegal immigration from Bangladesh. The Indian state of Assam has long provided asylum to Bangladeshi immigrants. However, in recent years, there have been communal tensions in the state between the locals and the immigrants over the shifting religious and demographic landscape, sharing of common property/resources, and granting of constitutional rights to the immigrants such as

11. Sonali Mittra, "Securitising Climate Change will Defeat Democracy in Developing World", *ORF Event Reports* (New Delhi: Observer Research Foundation, February 12, 2015), http://www.orfonline.org/research/securitising-climate-change-will-defeat-democracy-in-developing-world/. Accessed on January 23, 2018.
12. Manish Vaid and Tridivesh Singh Maini, "The Changing Climate of Bangladeshi Migration to India", *East Asia Forum*, March 23, 2013, http://www.eastasiaforum.org/2013/03/23/the-changing-climate-of-bangladeshi-migration-to-india/. Accessed on January 23, 2018.
13. Peter Kim Streatfield and Zunaid Ahsan Karar, "Population Challenges for Bangladesh in the Coming Decades", *Journal of Health, Population and Nutrition* (Dhaka), September 2008, vol. 26, no. 3, p. 261, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2740702/. Accessed on January 23, 2018.

voting rights.[14] There are also allegations that some of the illegal immigrants are involved in "gun running, fake currency rackets and drug running"; and that illegal immigration could be used by radical and terrorist organisations based in Bangladesh to infiltrate into India.[15] Some approve of providing temporary or seasonal asylum but when the immigrants choose to settle in India permanently, there is a significant amount of resistance due to these inherent dilemmas, based on the inclusion versus exclusion debate. Hence, securitising environment-induced migration in such circumstances would be problematic as it would entail taking on obligations to safeguard Bangladeshi citizens' interests.

The predictions regarding mass migration made on the basis of climate models and other relevant independent variables such as ecological or geomorphological properties, socio-economic indicators, and political state of affairs among others, involve a certain degree of uncertainty. This is a good reason for policy-makers to sideline the issue for the moment. Furthermore, the veracity of empirical evidence used to link climate change to conflict and mass migration has also come under the scanner.[16] While the facts presented by analysts in terms of the impacts of climate change may be accurate, one cannot be sure of the extent to which they have contributed to conflict and/ or migration.

The so-called "mass migration", involving millions of people, triggered by climate change is indeed less likely to affect India domestically in the short or medium term.[17] But what the country cannot

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14. Namrata Goswami, "Bodo Violence: Contest for Power and Territory", *IDSA Comment* (New Delhi: Institute for Defence Studies and Analyses), May 9, 2014, http://www. idsa.in/idsacomments/Bodoviolence_ngoswami_090514. Accessed on January 23, 2018.

15. Anand Kumar, "Illegal Bangladeshi Migration to India: Impact on Internal Security", IDSA Fellows' Seminar (New Delhi: Institute for Defence Studies and Analyses, May 7, 2010), http://www.idsa.in/event/IllegalBangladeshiMigrationtoIndia. Accessed on January 23, 2018.

16. Divya Thakur, "'Climate Migration' Proved too Political for the Paris Agreement – And Rightly So", *The Conversation* (Melbourne), December 17, 2015, https://theconversation. com/climate-migration-proved-too-political-for-the-paris-agreement-and-rightly-so-52133. Accessed on January 23, 2018.

17. "Climate Extremes and Migration", *Climate Change 2001: Impacts, Adaptation and Vulnerability* (Intergovernmental Panel on Climate Change and Oxford University Press, 2001), p. 572, http://www.ipcc.ch/ipccreports/tar/wg2/index.php?idp=450. Accessed on January 23, 2018.

afford to do at this stage is to neglect the role of gradual and abrupt changes in the environment in aggravating population movement as well as their long-term first and second-order impacts. History says so. India was struck by the vagaries of environmental change in the 1990s. The island of Lohachara, inhabited by 10,000 people was washed off the map; but this was confirmed by a group of Indian scientists only in 2006. The island lay in India's part of the Sundarbans.[18] There are conflicting reports as to how this might have occurred. It might have been easier to pin the blame on global warming and sea level rise, which is why most reports readily claimed that this was the first time that an inhabited island had become a victim of global warming and rising sea levels. This helped strengthen the argument for securitising climate change and climate-induced migration as well. Another incident in South Asia that grabbed the headlines was the submergence of New Moore Island, which both India and Bangladesh claimed as their territory, in 2010. Many commented dramatically that the rising sea waters had resolved the dispute between India and Bangladesh.[19] However, a few experts discarded these claims and found poor dredging, changes in the river dynamics and the eastward tilt of the tectonic plate as the potential causes for the disappearance of Lohachara.[20] Interestingly, in 2007, a group of scientists using satellite images and on-the-spot surveys revealed that the submerged Lohachara and Bedford Islands are re-emerging.[21]

The fact of the matter is that whether or not climate change caused the disappearance of these islands and whether this submergence was temporary or permanent, environmental change is triggering unpredictable events that India needs to be prepared for. This includes possible migration from many endangered islands, such as

18. Geoffrey Lean, "Disappearing World: Global Warming Claims Tropical Island", *The Independent* (London), December 24, 2006, http://www.independent.co.uk/environment/climate-change/disappearing-world-global-warming-claims-tropical-island-5331748.html. Accessed on January 23, 2018.

19. "Island Claimed by India and Bangladesh Sinks Below Waves", *The Guardian* (London), March 24, 2010, https://www.theguardian.com/world/cif-green/2010/mar/24/india-bangladesh-sea-levels. Accessed on January 23, 2018.

20. Achintyarup Ray, "A Global Warming Hoax", *On the Edge* (Kolkata), April 25, 2009, http://sunderbanislands.blogspot.in/2009/04/great-global-warming-hoax.html. Accessed on January 23, 2018.

21. Achintyarup Ray, "Lohachara Rises from Waters Again", *The Times of India* (Mumbai), April 3, 2009, http://timesofindia.indiatimes.com/city/kolkata-/Lohachara-rises-from-waters-again/articleshow/4352475.cms?referral=PM. Accessed on January 23, 2018.

Lakshadweep, and Andaman and Nicobar Islands, to the mainland. In South Asia, the issue of migration is not restricted to Bangladesh alone. In the long term, the problem of migration could emanate from Nepal (due to earthquakes and floods), Afghanistan and Pakistan (owing to droughts) and the Maldives (because of the submergence of islands and salt water intrusion caused by sea level rise).[22] In a 2015 report, it has been argued by VAdm Pradeep Chauhan (Retd) that the Indian armed forces could be called in to bring stability to regions that are affected by insurgencies and terrorism as climate change could exacerbate the conditions of instability. In this report, it is not just illegal immigration from Bangladesh that is referred to; even migration from rural to urban areas within the country is considered a long-term security threat as conflicts over resources such as water due to demographic pressures, especially at a time when the unpredictability of the monsoons is high, escalate. The vulnerability is also due to the fact that some of the biggest Indian cities such as Chennai, Mumbai and Kolkata are coastal ones, and could be at the receiving end of more frequent cyclones and flooding, as well as a gradual sea level rise and subsidence.[23]

SCOPE FOR REGIONAL AND INTERNATIONAL COOPERATION

An old saying goes: prevention is better than cure. Joint programmes to undertake mitigation and adaptation measures have become a necessity, especially in the wake of the Paris Agreement that refers to "migrants" in its Preamble and also urges nation states to "avert, minimise and address displacement related to the adverse impacts of climate change."[24] If environmental disruption can be prevented or managed to reduce its impact, forced migration and

22. Hamsa Vijayaraghavan and Deepti Somani, "As Climate Change Worsens, India Must Consider a Policy on Environmental Migration", *The Wire* (New Delhi), October 26, 2016, https://thewire.in/75688/environmental-migration-india-need-policy/. Accessed on January 23, 2018.

23. Mayank Aggarwal, "Will Climate Change Exacerbate India's Illegal Immigrant Problem?", *Livemint* (New Delhi), July 15, 2015, http://www.livemint.com/Politics/PiYPchjBPUcfoUk6YP5QEJ/Will-climate-change-exacerbate-Indias-illegal-immigrant-pro.html. Accessed on January 23, 2018.

24. "Migration, Displacement and Human Mobility", United Nations Framework Convention on Climate Change, http://unfccc.int/adaptation/groups_committees/loss_and_damage_executive_committee/items/9503.php. Accessed on January 23, 2018.

displacement can be nipped in the bud. In addition, organisations such as the South Asian Association for Regional Cooperation (SAARC) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) could launch mechanisms to address different kinds of migration that take place in a region like South Asia, and as a part of these mechanisms, look into a myriad environmental factors that play a role. Under their umbrella, both temporary and permanent migration has to be addressed. In cases where displacement is caused by events such as disasters, reconstruction and population resettlement in the affected area is a possibility. Cases in which land is lost or rendered uninhabitable due to several reasons (such as the lack of essential resources like water), a more coordinated and integrated policy, which takes into account social, cultural, legal and political realities, has to be crafted.

Fear-mongering and alarmist views can be counter-productive, and will weaken or even fail securitising moves. There needs to be a shift in the way in which environmental and climate changes are securitised and perhaps the only "morally permissible" and "territorially feasible" way to do it would be at the human security level, without leaving out the national security imperatives that are closely linked to human security. Similarly, there is a dire need to revamp the legal infrastructure concerning environmental migration internationally. More importantly, diplomatic efforts require to be initiated at the regional level to find solutions to shared migration-related issues. Presently, India is being seen as an antagonistic state, trying to ward off illegal migrants from Bangladesh to its territory by fencing the border.[25] Although fencing is nowhere connected to climate-induced migration, this step would ultimately be linked to the latter to create an alarming scenario – where the two countries are at war with each other due to climate change, thereby stretching the debate too far. Instead of delving deeper into the potential for conflict, the South Asian countries should identify potential entry points for cooperation both bilaterally and regionally. Since India is at the centre of this debate, it could, instead, lead from the front when it comes to South Asian regional climate diplomacy.

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25. Vijaita Singh, "India Plans Big Project Along Bangladesh Border", *The Hindu* (Chennai), October 14, 2015, http://www.thehindu.com/news/national/india-plans-big-project-along-bangladesh-border/article7758328.ece. Accessed on January 23, 2018.

In fact, it is imperative for India to join hands with its neighbouring countries to undertake contingency planning so that it does not find itself in an uninformed and unprepared situation when unusual conditions are encountered. Take the case of the Maldives: according to the current predictions made by a few scientific studies, 77 percent of the country could be submerged by the end of the century.[26] It has also been predicted that a 45 cm sea level rise may inundate 10-15 percent of the land of Bangladesh by 2050, resulting in over 35 million climate refugees from its coastal districts.[27] These predictions are not completely reliable but they portend uncertain changes that India needs to be prepared to tackle. No country can afford to be complacent about uncertain changes in the environment that could trigger socio-economic transformations. One can neither wait for complete information about a certain change, nor for the uncertainty to disappear. Attempting to achieve strong prediction may narrow the scope of futuristic assessments, as argued by many experts.[28]

Migration itself need not be seen through the 'negative security' lens – as a security threat. Besides, the traditional way of analysing migration in terms of people from the poor countries – depicted as dangerous and disruptive – moving to the rich countries – considered largely advanced and refined – is ludicrous and objectionable. Not only does it have racial overtones, it also starts the debate on the wrong foot, without leaving room for any practical policy proposals to address the issue. India is neither a party to the 1951 UN Refugee Convention, nor does it have a national refugee protection framework. Yet it has given refuge to thousands of asylum seekers from Tibet, Sri Lanka, Bangladesh, Myanmar, Afghanistan, and so on. India has also allowed the United Nations High Commissioner for Refugees (UNHCR) to

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26. Cole Mellino, "Which Country Will Be First to Go Completely Underwater Due to Climate Change?", *Eco Watch*, May 22, 2015, http://www.ecowatch.com/which-country-will-be-first-to-go-completely-underwater-due-to-climate-1882044955.html. Accessed on January 23, 2018.

27. Md. Shamsuddoha and Rezaul Karim Chowdhury, *Climate Change Impact and Disaster Vulnerabilities in the Coastal Areas of Bangladesh* (Dhaka: Coast Trust, 2007), p. 11, http://www.unisdr.org/files/4032_DisasterBD.pdf. Accessed on January 23, 2018.

28. Chad Briggs, "Climate Security, Risk Assessment and Military Planning", *International Affairs* (London), vol. 88, no. 5, September 2012, p. 5.

operate programmes for some of them. Therefore, a country that has a history of managing refugees and asylum seekers from across the region is well-placed to work jointly with its neighbours to tackle environmental change (including climate change and extreme weather events) and related future migration.

THE GLOBAL PHENOMENON OF SUICIDE TERRORISM: A SOUTH ASIAN PERSPECTIVE

RADHIKA HALDER

On January 15, Baghdad witnessed twin suicide bombings in one of the city's busy areas, causing 38 civilian casualties and around 100 wounded. Within the next few days, the Islamic State (IS) took responsibility for the attacks which appear to be the deadliest since the declaration of victory over the IS in Iraq. While the Iraqi forces have managed to successfully drive out the militants from the territories once captured by the IS, the group has been resilient and is expected to carry out more such attacks in the future involving suicide bombings and targeting of civilians, especially the Shia population.[1] For an organisation like the IS which is trying to reinforce its presence and threat in the region, suicide bombing seems like the best bet. Just like for the IS, suicide terrorism has proven to be a tactical and useful tool for terrorist organisations all over the world. Today, suicide terrorism has become the new face of

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1. As stated by the IS in its online statement claiming responsibility for the attacks and its intention to target the Shia community of Iran, available at https://www. washingtonpost.com/world/middle_east/is-claims-responsibility-for-twin-suicide-bombing-in-baghdad/2018/01/18/d694e70c-fc47-11e7-9b5d-bbf0da31214d_story. html?utm_term=.55a741d0e6ca. Accessed on February 2, 2018.

terrorism, making it one of the most crucial non-traditional security threats that the world faces today. Further, in the 21st century, with advancement in information technology and the proliferation of social media, terrorism has become a transnational phenomenon, making the task of monitoring and surveillance of communication a challenging one. Such platforms of communication serve as the ideal ground for terrorist propaganda to spread and propagate in an uninterrupted manner, facilitating the recruitment of individuals and widespread circulation of their 'cause', which is exactly what such outfits strive for.

Suicide terrorism has also evolved in many ways and affected different countries of the world. Needless to say, the countries from where certain campaigns of suicide terrorism have originated, have faced the horrors of the phenomenon to a much deeper extent. Thus, it becomes important to understand how suicide terrorism has spread as a global phenomenon affecting the entire world today and specifically certain regions of the world. South Asia is one such region which has encountered suicide terrorism in different forms and degrees. From the largest campaign of suicide terrorism orchestrated by the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka, to the state sponsored terror entities emanating from Pakistan, and the Af-Pak theatre, posing as the global hub of terrorism today, South Asia has seen the most lethal forms of this phenomenon. Some of these campaigns require a deeper investigation in order to understand the way in which suicide terrorism is evolving as a tactic and proving to be a compelling non-traditional security threat facing the world.

SRI LANKA'S TAMIL NATIONALISM

Until the British colonisation of Sri Lanka, the Tamil minority governed itself in the northern and eastern parts of the country which was then called Ceylon. Under British colonisation, the Tamil minority was favoured by the colonial policies. However, after the independence of Ceylon from the British in 1948, the Sinhalese nationalist wave took root, owing to a systematic policy

of reverse discrimination by the government which left a large number of Tamilians disenfranchised and disadvantaged[2].

In the 1970s, the frustration among the Tamilian youth, faced with unemployment and educational restrictions, resulted in the creation of the Tamil United Front (TUF), calling for political action against the government, and in May 1973, it officially demanded an independent Tamil state, to be known as Tamil Eelam.[3] It was in this backdrop that Vellupillai Prabhakaran came into prominence, as part of the Tamil Students League[4], which eventually came under his leadership in 1976, and was renamed the Liberation Tigers of Tamil Eelam (LTTE) by him.

Prabhakaran's personality was known to command a certain kind of respect and devotion. His strict and disciplined way of life was evident in the way the LTTE conducted its activities: the Tamil Tigers were in constant fear of him and were encouraged to strive to impress him. He was the man who promised a separate Tamil state to the Tamils most convincingly, with his speeches during various rituals that the Tigers celebrated, serving as a major source of motivation for his fighters. Prabhakaran understood the need for a military-like organisation in order to fight the Sri Lankan Army and convert Tamil territory into an independent state. Thus, the LTTE comprised a differentiated special operations capability, with attack units that included the Sea Tigers (naval wing), Air Tigers (the air wing), Baby Brigade (child soldiers), Leopold Brigade (orphaned children), Freedom Birds (female unit), Internet Black Tigers (the first cyber terrorist group), and the elite group of the Black Tigers. Each of the units of the organisation had a specified and clear role. The Black Tigers or the suicide squad of the LTTE were given the highest form of respect and honour as their role was considered the most noble.

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2. A new Constitution was drafted in 1972 which stated that Sinhalese (the language of the Sinhala ethnic group which constituted the majority population in Sri Lanka) was the national language and Buddhism (followed by the Sinhalese people) the national religion. In addition to this, a quota system was introduced in universities which favoured the majority ethnic group and the same was done for government jobs/posts in Sri Lanka.

3. Jeffrey William Lewis, *The Business of Martyrdom: A History of Suicide Bombing*, (Annapolis, Maryland: Naval Institute Press, 2012), Part I, ch. 3, p. 90.

4. The Tamil Students League was formerly part of the TUF, after which it became more radical and changed its name to the Tamil New Tigers (TNT) in 1973-74. The TNT's leader was arrested in 1975 and thereafter the organisation came under the sway of Prabhakaran, who changed its name to Liberation Tigers of Tamil Eelam (LTTE) in 1976.

The LTTE fought four Eelam Wars[5] for over two decades, after which they were militarily defeated by the Sri Lankan forces during the Fourth Eelam War (2006-09). The selfless dedication and commitment of the LTTE cadres towards the cause was all the more evident among the Black Tigers who were required to keep capsules of potassium cyanide with themselves, as they were willing to die rather than betray their organisation or leader. The use of suicide terrorism by the LTTE, however, was purely tactical, as it intended to assassinate targeted political leaders or high risk targets that were hard to reach. The idea was to counter the Sri Lankan forces and raise the cost of resisting the demands of the LTTE.

The LTTE essentially functioned like an army that was fighting for its "homeland" and protecting its people. Thus, the act of suicide while on a mission to achieve this goal was considered no less than martyrdom among the Tamilians. In this manner, suicide terrorism gained legitimacy within the LTTE, wherein the Black Tigers were willing to kill and die just like army soldier would be. Prabhakaran is known to have gained inspiration from groups that were also fighting for a homeland and using suicide as a tactical tool in order to achieve the goal.

PAKISTAN'S ANTI-INDIA TERRORISM

The Lashkar-e-Taiba (LeT) was responsible for the devastating attacks in Mumbai in 2008 and went on to undermine India's security as well as the fragile Indo-Pakistan relations.[6] The LeT continues to pose a dangerous threat to India till date and is the militant wing of the Jamaat-ud-Dawa (JuD), a Sunni fundamentalist group, originating from Pakistan. The JuD was earlier known as Markaz-ud-Dawa-wal-Irshad (MDI) or the Centre for Religious Learning and Propagation, however, it was banned in 2002 by Pakistan, and it reemerged with a new name. JuD was formed in 1985, headquartered in Muridke, Pakistan, by a group of clerics and scholars of the Ahl-e-Hadith, a

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5. The Eelam Wars took place in several phases and refer to the armed conflict between the Sri Lankan forces and the LTTE, marking the period of civil war in Sri Lanka from 1983-2009.

6. D. Suba Chandran and Rekha Chakravarthi, "Lashkar-e-Toiba," in Arpita Anant, ed., *Non State Armed Groups in South Asia: A Preliminary Structured Focused Comparison* (New Delhi: Pentagon Press, 2012), pp. 245-262.

sect within Sunni Islam. It was formed post the Soviet withdrawal of troops from Afghanistan and, thus, consisted of Mujahideen who felt obliged to continue their battle in other lands where Muslims were suffering. The LeT's goals naturally resonated with its parent body, the JuD, which believed that *jihad* was a religious duty that all Muslims must undertake, especially for those fellow Muslims who are being attacked by non-Muslims. In line with this thought, the JuD and LeT focussed mainly on South Asia and, in particular, India. The LeT's core objective is "to bleed India through *jihad* and in doing so, extend Islamic rule over all of India"[7]. Thus, the LeT's main area of focus has been the Indian state of Jammu and Kashmir (J&K) which it wishes to "liberate" from the "clutches of the Hindus". In addition to this, the LeT has also voiced its desire to liberate Hyderabad and Junagadh from India, bringing them under Pakistan's control.[8]

The JuD represents the Ahl-e-Hadith sect of Sunni Islam, and, thus, on the agenda of the group's founding members was also the unity of the Ahl-e-Hadith community, bringing smaller groups of the sect under the MDI/JuD. Thus, there are three main functions that the organisation carries out in order to achieve its goals: *dawa* (preaching or missionary work); *khidmat* (provision of social services); and *jihad* (waging holy war). The LeT was responsible for the last function i.e. *jihad* and its role entailed using extreme violent means to achieve strategic objectives including recruitment and training of "*jihadis*" as well as procurement of equipment in order to carry out the "holy war".[9]

Hafiz Saeed, the current leader of the JuD, was one of the founding members of the organisation. He was responsible for the *jihadist* unit of the MDI which won support from Pakistan's Inter-Services Intelligence (ISI) agency in the 1990s to advance the *jihadist* agenda in what they saw as Indian Administered Kashmir. Saeed took over the MDI in 1993 and made his thoughts with respect to Kashmir clear, hugely emphasising *jihad* as the basis of Islamic politics. His

7.   Stephen Tankel, *Storming the World Stage: The Story of Lashkar-e-Taiba* (New Delhi: Hachette India, 2011) pp. 33-44.
8.   n. 1.
9.   C. Christine Fair, "Lashkar's Empire of Jihad," *India Today*, September 11, 2015, available at http://indiatoday.intoday.in/story/the-lashkars-empire-of-jihad/1/470905.html. Accessed on January 27, 2018.

ideology has been widely publicised across all forms of media and has resonated with a large number of people in Pakistan. This is also because of the philanthropic activities that the JuD's charity wing, the Falah-i-Insaniyat Foundation (FIF) carries out. Thus, Saeed is one of the most influential radical leaders in Pakistan today and has been instrumental in justifying *jihad* as the ultimate solution to helping Muslims all over the world, especially in India.[10]

It is in this manner that the LeT, under Saeed's leadership, brought to India a unique kind of terrorist attack – the *fidayeen* attacks. These are known to be a form of suicide attacks wherein the perpetrator fights until his/her death and aims to cause the maximum amount of damage to the target before such death.[11] India has witnessed a large number of *fidayeen* attacks. Among some of the major attacks that the LeT has been charged with was the Parliament attack in 2001, the car bombings, pressure cooker bombs placed in buses, trains and the market areas of Mumbai and New Delhi in 2002-03 and the most devastating attack which lasted for three days in the city of Mumbai on November 26, 2008. More recently, the LeT has perpetrated attacks on security bases in Pathankot and Uri, killing armed forces personnel through illegal infiltration across the border. The ultimate goal of LeT cadres is to achieve *shahadat* or what can be termed as martyrdom. Thus, while on their missions, they attempt to escape, if they have not been overpowered, in order to return home, and prepare for more such missions. The attempted escape is not due to cowardice, because their ultimate and eventual goal is death.

SUICIDE TERRORISM IN AFGHANISTAN

Afghanistan witnessed its first suicide attack in 2001, significantly influenced by Al Qaeda and its allies in the global *jihadi* movement that helped in imposing, and in a way, importing, suicide terrorism to Afghanistan.[12] The Afghan government collapsed in 1992 and the

10. Wilson John, *The Caliphate's Soldiers: The Lashkar-e-Tayyeba's Long War* (New Delhi: Amaryllis, 2011) pp. 67-93; and Tankel, n.7, pp. 33-44.
11. Ayush Puthran, "Gurdaspur Terror Attack: All You Need to Know About Fidayeen Attack," India.com, July 27, 2015, available at http://www.india.com/news/india/gurdaspur-terror-attack-all-you-need-to-know-about-fidayeen-attack-478371/. Accessed on June 23, 2017.
12. Jeffrey William Lewis, *The Business of Martyrdom: A History of Suicide Bombing* (USA: Naval Institute Press, 2012), ch. 8, pp 219-247.

conflict among the warring tribal warlords in Afghanistan ensued. It was in this backdrop that the Afghan Taliban was formed under the leadership of Mullah Muhammad Omar. It was an organisation devoted to implementing the *Sharia* law[13] and ending corruption among the Mujahideen warlords. Most Afghans welcomed the Taliban as it gave them a ray of hope in the war-stricken and lawless Afghanistan, where it seemed to be the only stabilising factor. By 1996, the Taliban became a force to reckon with; so much so, that it made Osama bin Laden, who was looking for shelter, return to Afghanistan from his place of hiding in Sudan.[14]

Osama bin Laden worked together with Mullah Omar, although their mandates varied. Bin Laden had expertise in leadership, politicking skills, networking, as well as access to funds which Mullah Omar stood to gain from. Omar's focus was solely directed towards the local rebellion within Afghanistan and the establishment of the Afghan Taliban. On the other hand, bin Laden had a global mandate and his followers looked towards it. Soon, the Taliban started adopting new tactics, including the use of suicide bombings and Improvised Explosive Devices (IEDs), causing heavy casualties. Only 14 suicide attacks were witnessed post the US invasion between 2001-05. But, a sharp rise was seen in 2006, with 93 attacks that year. This increased to 137 and 136 in 2007 and 2008 respectively. The steady increase in suicide attacks perpetrated by the Taliban was due to the increased training of Taliban soldiers by Al Qaeda operatives as well as the funding received from poppy cultivation.[15]

Before 2005, suicide bombing was not common in Afghanistan. Originally, the Taliban was militantly anti-technology, but the newer factions of the Taliban were tech-savvy and used the internet for recruitment and propaganda purposes. They connected with Al Qaeda's global agenda and were the first to bring suicide terrorism to Afghanistan through Al Qaeda's ideological narrative in 2005. The Afghan fighters, mostly Pashtuns, were not accepting

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13. Law of the Quran, the holy book of Islam.
14. Available at https://www.britannica.com/event/Afghanistan-War. Accessed on: January 27, 2018.
15. Robert A. Pape and James K. Feldman, *Cutting the Fuse* (Chicago: University of Chicago Press, 2010), Part II, ch. 4, pp. 112-137.

of suicide bombing right away as it was a concept alien to their culture, but by 2005, it had become one of the most commonly used tactics to take down targets. The suicide bombings in Iraq recorded by Abu Musab al-Zarqawi of the Al Qaeda faction in Iraq in 2003, were useful in convincing the Afghan militants of the effectiveness of the tactic.[16]

By 2014, US troops began to withdraw and this was seen as a prime opportunity for the Taliban to strike back. The year saw a massive hike in suicide attacks. The Afghan Taliban took advantage of the situation and intensified their fight.[17] However, the targets of most Taliban suicide attacks were high-risk, including US and other Western bases and troops. Suicide terrorism gained prominence in Afghanistan due to several reasons. First, the Mujahideen had been successful in overthrowing the Soviets and this boosted their confidence to fight against the next superpower, the United States of America. Thus, the Al Qaeda and Taliban, along with other militant factions, had successfully managed to penetrate into the broader *jihadi* community, gaining knowledge on suicide tactics from Al Qaeda. Second, Osama bin Laden's narrative and propaganda mechanism helped spread an ideology that no longer spoke of protecting the land but of opposing the West in every possible capacity. This led to justification of the use of suicide attacks and the attainment of "martyrdom", proving to be the most effective tactic in targeted killings. The long lasting psychological impact of suicide bombing was also realised, which was providing a visibility and image that no other previous guerrilla tactic had.

SUICIDE TERRORISM IN PAKISTAN

Pakistan witnessed suicide terrorism only in 2002,[18] following which each year saw an increase in the employment of the tactic. The Tehrik-e-Taliban Pakistan (TTP) was officially formed in 2007 and was backed by Al Qaeda in its suicide missions in Pakistan. The TTP and other Taliban factions trained suicide bombers to also operate in

16. Lewis, n. 12.
17. Kay Johnson, "Civilian Deaths in Afghanistan War Reach New High in 2014: UN", Reuters, December 19, 2014, available at http://www.reuters.com/article/us-afghanistan-casualties/civilian-deaths-in-afghanistan-war-reach-new-high-in-2014-u-n-idUSKBN0JX1ZS20141219. Accessed on January 28, 2018.
18. Except for an isolated attack in 1995.

Afghanistan, targeting the Western troops. Thus, suicide terrorism within Pakistan was targeted mainly against the state and security forces, as well as for targeted killings by the militants retaliating against the occupation of Afghanistan by the Western forces and the role of Pakistan in enabling the West in doing so.[19]

Al Qaeda carried out the first suicide attack in Pakistan in 1995, after which it has collaborated and encouraged Pakistani *jihadi* groups in using the tactic to achieve their goals and eliminate their desired targets. In this manner, Al Qaeda managed to set the "trend" of suicide terrorism in both Pakistan and Afghanistan.[20] What complemented Al Qaeda's encouragement of suicide bombing was the radical *madrasas* in Pakistan that were responsible for the indoctrination of suicide bombers. However, religion was never the sole driver of such a wide suicide campaign in Pakistan. There were other reasons which contributed towards this. The Western military operations near the Federally Administered Tribal Areas (FATA) and Khyber Pakhtunkhwa (KPK) that were supported by Pakistan caused major civilian casualties. This left the surviving family members with a feeling of betrayal by their own state and enmity towards the West. Thus, personal revenge became one of the primary reasons behind the voluntary recruitment of suicide bombers. In fact, US drone strikes have been known to accelerate the rate of recruitment of suicide bombers to various militant organisations operating in the area.[21]

Apart from personal grievances, there has been general disaffection among most Pakistanis because of their country's support to the West post the 9/11 attacks. Pakistan that had been responsible for creating these organisations in the first place, now had to treat them as the enemy. This led to anti-US sentiments among the tribals of Pakistan who were incurring massive civilian losses due to the military operations; it further led to their antagonism towards their own government that was supporting the US. Pakistan extended support to the factions of the Taliban as a hedging policy against India in Afghanistan, and was soon exposed to the Central

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19. Also according to the UNAMA Report in 2007, mentioned in Rohan Gunaratna, and Khurram Iqbal, *Pakistan: Terrorism Ground Zero* (London: Reaktion Books, 2011), ch. 6, p. 230.
20. Gunaratna and Iqbal, Ibid., ch. 6, pp. 229-247.
21. Ibid.

Investigation Agency (CIA) and most of the world for its selective definition of support to militant elements. While peace deals would be signed, in reality the number of training centres and the intensity of militancy in tribal Pakistan were only increasing, so much so that the TTP was eventually formed as a conglomerate of all the anti-state militant factions operating under a single umbrella in 2007.[22]

This created an inherent aversion towards Pakistan's support to the West among the masses. The recruiters of militant organisations would manipulate such grievances and channelise these sentiments to serve their agenda. Further, the areas from where most of the suicide attackers originate are extremely impoverished. This is why false promises are made to most recruits, about better prospects in their afterlife and an "easy ticket to paradise". Such communities have also inculcated a sense of prestige and pride towards those who kill themselves in militant operations, attaching honour to the act of suicide terrorism. These are all the contributing factors towards the growing use of suicide terrorism in Pakistan and the heightened hatred against the state amongst its wider (militant) population. Suicide bombers, thus, became a strategic asset to the militants who used it for physical destruction as well as psychological defiance against the state.[23]

CONCLUSION

It would be fair to say that suicide terrorism is an effective tool used by terror outfits in order to advance their goals. In South Asia particularly, the nature of terror outfits has evolved over the years. In the case of the LTTE, the ideology of the organisation was based on ethnic identity and the "homeland" that the group envisioned for itself and felt obliged to protect. However, among terror organisations emanating from the Af-Pak theatre, religion has been the sole driver of their ideologies, creating a major challenge in countering terrorism, not just in that particular region, but the entire world. Suicide terrorism today is solely driven by ideology, predominantly based on a religious foundation. Since religion has now become the

22. Moeed Yusuf, *Pakistan's Counterterrorism Challenge* (Washington, USA: Georgetown University Press, 2014).
23. Gunaratna and Iqbal, n. 19.

basis of most terrorist ideologies, it cuts across territorial borders and is no longer confined to its area of origin. Such ideologies are formulated by the leaders of terror outfits who understand what the people need to believe in, to the extent of giving up their lives. Unfortunately, today, religion is being misinterpreted and used as a tool to mobilise people for a "promising cause" – a case in point would be the Islamic State (IS). The organisation had managed to control some parts of Iraq and Syria, forming a Caliphate and calling upon all Muslims, and on non-believers to convert, and come to the Islamic Caliphate. Further, technological advancement and social networking makes it easier for such outfits to gather a community of support based on ideology online, making its campaign borderless, and its indoctrination effortless.
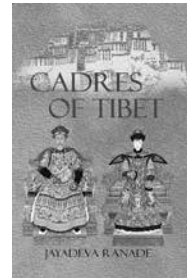
BOOK REVIEWS

Cadres of Tibet
Author: Jayadeva Ranade
Publisher: KW Publishers Pvt Ltd, 2017
Rs. 1120

PUYAM RAKESH SINGH

Jayadev Ranade's book, *Cadres of Tibet*, is a detailed study of the officials of the Communist Party of China (CPC) and the Chinese military leaders who are associated with the Tibet Autonomous Region (TAR). The author claims this book is a collection of relevant information on Tibet and will pave the way for researchers to delve deeper into issues relating to Tibet which is part of China's Western Theatre Command. It should be of immense help to policy-makers who have to deal with China and, most importantly, the security situation along the Line of Actual Control (LAC) and the short section of the border in Sikkim. In the wake of the Doklam standoff and several other Chinese ingressions into India, such a book on Tibetan affairs is a valuable study to help understand China's activities and long-term policies in Tibet.

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In terms of organising the contents, the author introduces the TAR and briefly discusses the natural resources, geography and infrastructure development in the TAR. While reiterating the position of the People's Liberation Army (PLA) in the Tibetan affairs, the book also highlights the "The Aid Tibet Programme" that has created a well-organised political force, with substantial influence in shaping the policy on Tibet. Some of the cadres of this force have been recruited by the Chinese State-owned Enterprises (SoEs) with economic interests in Tibet. The author also highlights how Tibet has become a fertile ground for ambitious CPC cadres to make better careers elsewhere in China. Furthermore, it highlights the infrastructure development, water resources, mining and anthropogenic activities causing environmental degradation to the fragile ecosystem in the Tibetan plateau.

The book emphasises the Communist cadres in Tibet as important stakeholders in Tibetan affairs. Thus, the identities of the important officials, their professional details and ethnicity comprise the valuable data compiled in the book. The main objective of the book is to provide a compilation of details of the important officials related to China's Tibet policy and it will serve the purpose for all those interested in long-term research projects on Tibetan affairs. However, it is not meant for the common readers to understand the "Roof of the World" and its history, rich cultural heritage and scenic landscape. It falls in the realm of the specialists who are dealing with Tibetan affairs on both sides of the Himalayas.

As highlighted by the author, the number of CPC cadres of the Tibetan nationality was estimated to be 220,000 as of January 2014 – these cadres could become the biggest impediment to any future settlement of the Tibetan issue. Hence, Party building in the TAR could be Beijing's long-term policy of maintaining stability in Tibet and checking the political designs of the Dalai Lama and the Tibetans in exile. In this context, the book gives valuable inputs in terms of the biographical sketches of the various Party officials, along with their photographs, who have had a long association with Tibet. While some officials including PLA officers, have limited influence on China's Tibet policy, the book reveals that many have been playing a key role in this regard. Many of them will continue to influence policy-making and there lies the relevance and significance of the topic.

Interestingly, the personal connections of these officials with the top brass of the CPC as well as major initiatives for education, economic development, cultural advancement, Party organisation and infrastructure development provide an understanding of both change and continuation in China's policy on Tibet. In addition, the conservative outlook of the officials and the developments taking place in Tibet could also provide valuable inputs to help shape India's policy on China with respect to the Tibetan issue.

The book provides the biographical details of the important officials working at different levels in the six prefecture-level cities and one prefecture in the TAR. Of these, seven administrative divisions, Ngari prefecture, Shigatse (Xigaze), Shannan (Lhoka) and Nyingchi (Nyingtri) share borders with India. Moreover, Shannan and Nyingchi prefecture-level cities also cover territories in Arunachal Pradesh which is termed as "South Tibet". Asserting its claims on Arunachal Pradesh, China has renamed six places in the Indian state bordering the TAR in 2017 following the visit of the Dalai Lama to the northeastern Indian state.

Some changes have taken place in various departments and Party committees since the 19th Party Congress of the CPC, including the replacement of Sun Chunlan by You Quan as the head of the United Front Work Department (UFWD) in November 2017. Hence, the author may be intending to bring out another updated edition of the book.

Annexure-I shows many Tibetan Buddhist monasteries that require some improvement. With some good maps in addition to the ones already given in *Cadres of Tibet*, the work can be more informative for readers. Also, the book could have been made more informative with the inclusion of key infrastructures in the TAR that have security implications for India. Nevertheless, the author has done justice to the title of the book by focussing the study on the important cadres involved, and working on China's policy on Tibet.

Jayadeva Ranade has in-depth knowledge of China and Tibetan affairs and is currently president of the Centre for China Analysis and Strategy, New Delhi. The author is straightforward in terms of the valuable sources of information gathered from people whom he cannot acknowledge in public. Having served as additional secretary

in the Research and Analysis Wing (R&AW) and with a long career of 35 years in the agency, the author's valuable insights on China in general and the Tibetan issues in particular will be a source of reliable inputs for both policy-makers and academicians.

The book will be of immense help to those who are looking for China's plans and intentions along the LAC as well as Tibet. The issue of stability in the TAR and other Tibetan-inhabited areas becomes a key issue for the national security of China. Amidst the ongoing military reforms and modernisation of the Chinese PLA, the Western Theatre Command, which covers the TAR, calls for greater attention from the Indian security analysts and strategic planners. *Cadres of Tibet* deals with hundreds of Communist China's cadres and the author has been successful in gathering valuable information about them. The book will be a handy companion for policy-makers and scholars on China.

Unwinnable: Britain's War in Afghanistan 2001-2014
Author – Theo Farrell
Publisher: The Bodely Head, London, 2017
GBP 18.99
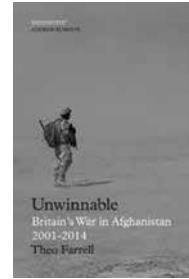
POONAM MANN

Sixteen years after the Western intervention in Afghanistan, the country remains plagued with war, tribalism, lawlessness, corruption and grinding poverty. The Taliban controls more territory now than it did before the arrival of North Atlantic Treaty Organisation (NATO) troops in the aftermath of 9/11. It remains a haven for more than a dozen recognised terrorist groups. After sixteen years of combat, peace-keeping operations and spending billions of dollars, we still have not reached a point where we can bring a successful political conclusion to the "War Against Terrorism" in Afghanistan. The Taliban is still a force to be reckoned with. Clearly, the strategies and tactics adopted by the US-led forces of NATO and the International Security Assistance Force (ISAF), which aimed at fighting the insurgency and bringing peace and stability to this war-stricken country, have not proved to be efficient.

A major contributor to these forces in Afghanistan, has been Great Britain. It became part of NATO-led operations – ISAF – in 2002. By April 2002, British forces were concentrated in Kabul, with 1,700 soldiers working alongside other allied units. In 2006, British forces moved into Helmand province in the south, one of Afghanistan's most volatile regions. Camp Bastion was built in the desert, providing the launch pad for thousands of British service personnel stationed in

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the south. By 2011, calls were growing for the British to pull out, and Prime Minister David Cameron pledged to end combat operations by 2015, saying, "I believe the country needs to know there is an end point to all of this". In spring 2014, Task Force Helmand was closed, and Camp Bastion was handed over to the Afghan security forces. The last UK combat troops left Afghanistan in October. About 450 troops remained, their role to train, advise, and assist local Afghan forces.

The United Kingdom's military role in Afghanistan brought with it a heavy human toll**.** It lost approximately 456 of its brave soldiers that included members of the army, Royal Air Force (RAF), Royal Marines and special forces, in the fight against the Taliban. The conflict had cost the UK £40 billion. Hence, Afghanistan turned out to be painful for the British. However, the Taliban are still a potent force. Theo Farrell's *Unwinnable: Britain's War in Afghanistan, 2001-2014,* provides a detailed account of the British involvement in the US-led "War Against Terrorism" in Afghanistan. The main hypothesis of his work centres around the fact that "British and American forces could have successfully withdrawn from Afghanistan in 2002, having done the job they set out to do: to defeat Al Qaeda and stop it from launching further terrorist attacks against the West. Instead, British troops became part of a larger international effort to stabilize the country. Yet over the following thirteen years, the British military paid a heavy price for its presence in Helmand province; and when Western troops departed from Afghanistan in 2014, they had failed to stop a Taliban resurgence".

Farrell's well researched work provides a broad overview of the origin and causes of the war, the 9/11 attack and a deep insight into the British government's decision to support, and take part in, this war. While doing so, the author has explored the British government's dilemma between high-minded promises made to Afghanistan and backdoor deals with the United States and Pakistan. His narration gives a fair account of the fact that it was hard to overlook the impact of US decisions and priorities. The US was looking with intent at Iraq: President Bush indicated that this war would be a pebble dropped in a pond. "We focus on the first circle" – Afghanistan – "and then expand to the next circle" – that was Iraq. Consequently, in a significant shift

in his policy, Prime Minister Blair started to align himself with Bush's increasingly belligerent position towards Iraq.

In addition, the work is heavily referenced i.e. drawing on unprecedented access to military reports, government documents, interviews with Western commanders, senior figures in the Taliban, Afghan civilians and British politicians. The author describes the experiences of the British forces through a variety of counter-terrorism operations and development activities from 2001-05 on to their decision to deploy the British Task Force in Helmand in 2006 – with minimal understanding of the physical terrain and importance of Helmand to the Taliban insurgency. Initially, the British adopted an overmilitarised approach and relied on firepower in their campaign in Helmand and failed to focus on protecting the people. However, over time, they adapted and changed their tactics towards less use of firepower and more focus on protecting the people and supporting the civilian effort to rebuild Helmand and reestablish governance. Consequently, the British did get some tactical and operational successes, but the author asserts that ultimately, the British campaign in Helmand was characterised by political absenteeism and military hubris.

Towards the end, the author also explains how the Taliban changed its tactics, away from frontal assaults by large groups of insurgents towards greater use of 'shoot and scoot' ambushes, sniper fire and IEDs (Improvised Explosive Devices). This proved deadly for the British and ISAF troops. This aspect has been discussed briefly in the book. A detailed account of the shift in the tactics of the Taliban towards the coalition forces could have been more insightful. Britain and its allies succeeded in achieving much good in Afghanistan but failed to stop the Taliban. In this regard, Farrell, has shone the light on some of the main support structures of the Taliban, for example, he contends that the Taliban cannot be defeated as long as Pakistan continues to provide support. Camps and *madrasas* in Pakistan have given the Taliban secure areas for the fighters to recuperate, train and muster. Secondly, widespread corruption at the government level proved a major help for insurgent recruitment, and remains a profound threat to the functioning and sustainability of Afghan national institutions. Therefore, whatever little improvements the British forces were able to make, all are in jeopardy, given major Taliban gains in the province.

Another strong point in *Unwinnable* is the author's detailed analysis of the lack of a well-defined British strategy on Afghanistan to address the many great challenges to the campaign, and recognition of how little the UK government could do about them. He has highlighted that "British strategy was motivated simply by the desire to be in the world 'game' and to be partnered with the United States....Britain wishes to stay in the strategic game, the rules of which are set in Washington." Therefore, it was caught in the same dilemma that the US faced again and again, i.e. lack of knowledge of Afghan society, culture, politics and history in all its complexity. Thus, this research work from the author gives us an important lesson that incomplete knowledge or dismissing the existing knowledge, for an outsider intervening in an insurgency or a civil war, would only complicate the things that it wishes to do.

Therefore, to conclude, although there is no dearth of books on the subject, this book provides a lot of interesting first-hand information for scholars. Theo Farrell's astounding research on Britain's role and his clarity of thought keeps the reader mesmerised. Thus, the book makes a valuable contribution to the debate on Afghanistan, a country, which is in a state of continuous conflict. Further, it would be fascinating to dig deeper into the issues which have been underlined but left unanswered. For instance, factual details regarding the number of combatants, Britain's future strategy for Afghanistan and its interests as the war has not concluded. The British forces have witnessed the change in the strategy and battle tactics of the Taliban for over a decade. They have witnessed the evolution of the Taliban. Their experience can contribute towards the future developments of policies against terrorism and can, thus, aid policy-makers and enactors simultaneously. Furthermore, the book offers an insight into a pattern which has been followed by the allied forces against terrorist organisations and can help in providing a rough definition of future Western policies in the field. As the author suggests in his conclusion, Afghanistan will hold on its own and eventually reach a stage where an armistice with the Taliban forces is possible. However, this is merely a calculated prediction and again, as the author rightly states, "the West is increasingly irrelevant," since this future armistice will be signed between only two parties i.e. the Afghan government and the Taliban.

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