

**Field Marshal SHFJ Manekshaw
Memorial Lecture 2018
India's National Security
Challenges and Priorities
Short and Long Term Perspectives**



V K Ahluwalia



Centre for Land Warfare Studies
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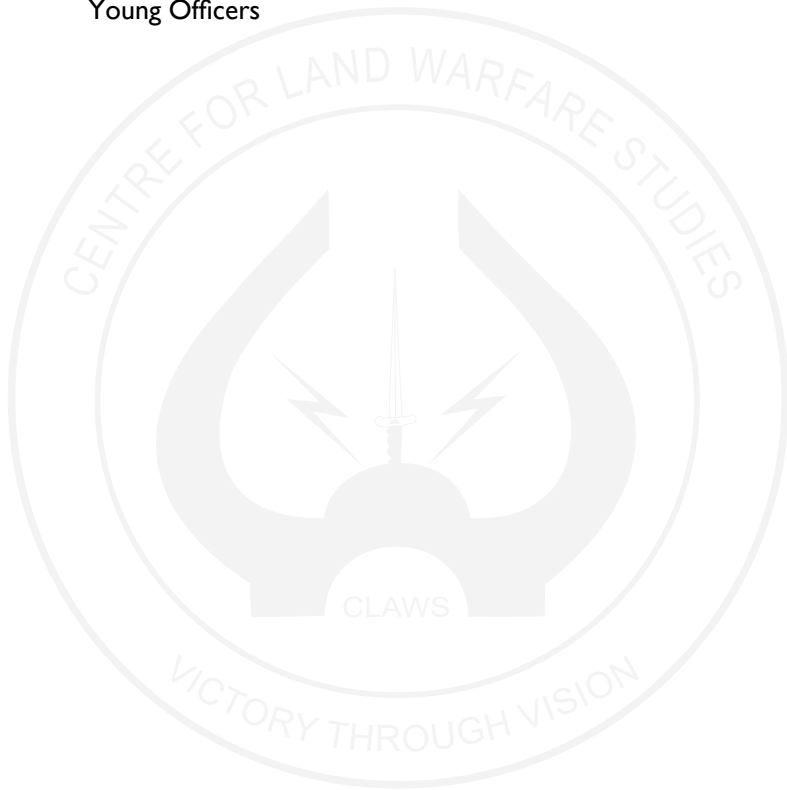
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List of Acronyms

ANC	Andaman and Nicobar Command
AIPAC	American Israel Public Affairs Committee
ASEAN	Association of Southeast Asian Nations
AI	Artificial Intelligence
AGPL	Actual Ground Position Line
BC	Before Christ
BRI	Belt and Road Initiative
BPL	Below Poverty Line
BIMSTEC	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BSF	Border Security Force
CLAWS	Centre for Land Warfare Studies
CDS	Chief of Defence Staff
COSC	Chiefs Of Staff Committee
CoE	Committee of Experts
C-in-C	Commander-in-Chief
CBRN	Chemical Biological Radiological and Nuclear
CNP	Comprehensive National Power
CPC	Communist Party of China
CMC	Central Military Commission
CPEC	China – Pakistan Economic Corridor
CAIR	Centre for Artificial Intelligence & Robotics
CCS	Cabinet Committee on Security
CMD	Credible Minimum Deterrence
CNSS	Comprehensive National Security Strategy
DIA	Defence Intelligence Agency
DRDO	Defence Research and Development Organisation
DoD	Department of Defence
DIB	Defence Industrial Base
EEZ	Exclusive Economic Zone
FATF	Financial Action Task Force
Gol	Government of India
GoM	Group of Ministers
GWOT	Global War On Terrorism
GPI	Global Peace Index

GDP	Gross Domestic Product
HDO	Higher Defence Organisation
HDI	Human Development Index
HMI	Human Machine Interface
HQ	Headquarters
IS	Internal Security
ISIS	Islamic State in Iraq and Syria
IOR	Indian Ocean Region
IONS	Indian Ocean Naval Symposium
IT	Information Technology
ITBP	Indo-Tibetan Border Police
ISR	Intelligence Surveillance and Reconnaissance
J&K	Jammu & Kashmir
JCPOA	Joint Comprehensive Plan of Action
KRC	Kargil Review Committee
LAC	Line of Actual Control
LoC	Line of Control
LTIPP	Long Term Integrated Perspective Plan
MoD	Ministry of Defence
MENA	Middle East And North Africa
MSR	Maritime Silk Road
MP	Member of Parliament
MLA	Member of Legislative Assembly
MR	Military Region
MHA	Ministry of Home Affairs
MUM-T	Manned-Unmanned Teaming
NEFA	North-East Frontier Agency
NTRO	National Technical Research Organisation
NSP	National Security Policy
NSS	National Security Strategy
OEM	Original Equipment Manufacturer
PLA	People's Liberation Army
PoK	Pakistan occupied Kashmir
PAPF	People's Armed Police Force
R&D	Research & Development
RPA	Remotely Piloted Aircraft
SFC	Strategic Forces Command
SLOC	Sea Lines of Communication
SAARC	South Asian Association for Regional Cooperation
SSB	Sashastra Seema Bal

ToT	Transfer of Technology
UAVs	Unmanned Aerial Vehicles
UN	United Nations
US	United States
USA	United States of America
UK	United Kingdom
UAS	Unarmed Aerial System
VNSAs	Violent Non-State Actors
WMD	Weapons of Mass Destruction
WSI	Weapon System Integrated
YO	Young Officers



Field Marshal SHFJ Manekshaw Memorial Lecture 2018 India's National Security Challenges and Priorities Short and Long Term Perspectives

Field Marshal SHFJ Manekshaw Memorial Lecture 2018 was held at the Manekshaw Centre, Delhi Cantt, on the Infantry Day on October 27, 2018, on the topic "India's National Security Challenges and Priorities: Short and Long-Term Perspectives." The lecture was delivered by Lt General (Dr.) V. K. Ahluwalia, PVSM, AVSM,^{**} YSM, VSM (Retd), Director, Centre for Land Warfare Studies (CLAWS), New Delhi. The lecture, along with the gist of answers to the questions asked and references, has been given in the text below.

Introduction

In the introductory talk, the General gave a brief historical perspective of the signing of the Instrument of Accession by the Maharaja of Jammu and Kashmir (J&K) on October 26, 1947. He recounted the manner in which the Indian troops were flown into Srinagar on the very next day, i.e., October 27, to save the Valley from the tribal raiders, who had commenced their invasion on October 20 from a number of entry points into Jammu and Kashmir. They were fully supported by Pakistan's regular troops who were ready with an infantry brigade, pre-located at Kohala, to move into the Valley on achieving initial success. Their aim was to annex J&K by any means. However, the most significant aspect that emerged was the overwhelming response from the local population (*Awaam*) who welcomed and greeted the Indian troops with pro-India slogans like **Hindustan Zindabad** and **Hamlewar, Hoshiar, Hum Kashmiri Hindu-Muslim-Sikh Sabhi Tayyar** (Raiders, beware, we Kashmiri Hindu-Muslim-Sikh are fully prepared). However, the narrative and perception of the people in Kashmir Valley is different today.

General Ahluwalia briefly narrated the essence of a lecture delivered by Lt General S. K. Sinha, former Vice Chief of the Army Staff, a scholar warrior, a statesman, a historian and an author, that he heard in 2007, when

the former was posted at the Army HQ. General S. K. Sinha had spoken about the genesis of the Infantry Day and about the then Lt Colonel S. H. F. J. Manekshaw's acumen as a professional and his caring attitude towards fellow Indians. Lt Colonel Manekshaw, Major Yahya Khan and Captain S. K. Sinha were the only three Indian army officers posted in the Military Operations Directorate in 1946; the rest were British. He mentioned that during the 1971 Indo-Pak War, General Yahya Khan was the President of Pakistan, and General S. H. F. J. Manekshaw was the Chief of the Army Staff of the Indian Army. General Sinha also gave an account of the thought-process of Lt General Dudley Russel, British Officer and the first Army Commander of the newly formed Delhi and East Punjab Command (later Western Command), in selecting first battalion of the Sikh Regiment (1 SIKH) to be the first lot of Indian troops to be flown into Srinagar on October 27, 1947. The new Command was raised on September 14, 1947. Within one week of his taking over as the Army Commander, he visited eight infantry battalions deployed around Gurgaon, which were tasked to maintain law and order. After visiting 1 SIKH, the eighth battalion the same day, General Russel made the famous statement which remains an important lesson for the Indian Army:

“The performance of a battalion is the direct reflection of the personality of its commanding officer.”

The Army Commander was so impressed by both the battalion and its commanding officer, Lt Colonel Dewan Ranjit Rai, that he decided, without a second thought, to nominate 1 SIKH to be the first battalion to be flown into Srinagar to save the Kashmir Valley from the raiders. Another important lesson that emerged was that Lt Colonel Ranjit Rai, operating in an absolutely uncertain and ambiguous situation in the Valley with hazy information about the enemy, took the most bold, offensive and timely decision to face the tribal raiders as far forward as possible at Baramulla. That was the offensive spirit and valour of the Indian Army that saved the Valley! October 27 was hence, justifiably declared the **Infantry Day**.

National Security Challenges

South Asia is considered to be one of the most violent and unstable regions of the world. Despite geographical, historical, cultural, and linguistic linkages and similarities, South Asia has been acknowledged as an unstable region with interstate disputes, and, more importantly, intrastate conflicts due to a host

of factors. (According to Uppsala Armed Conflict Data Program, South Asia experienced 298 conflicts between 1946 and 2002, of which 277 (93%) were intrastate in nature.)

Although India is emerging as a regional power, it continues to face many complex threats and challenges to its national security, a few of which are predictable and well-defined. However, over the years, the very concept of national security has also undergone a change due to a number of reasons. Therefore, it would be in order to first briefly discuss the concept of **National Security**.

Concept of National Security

Traditionally, **National Security** as a concept was always associated with protection of territorial integrity and borders of the country against any external aggressions. Since it referred to protection against military attacks, it presented a rather parochial view of the security challenges. The concept of National Security has undergone a change since the **Treaty of Westphalia** (1648), which ended the Thirty and Eighty Years Wars in Europe, and brought in two important aspects to the concept of sovereignty—one, recognition of the absolute sovereignty of the nation states; two, provision of equal legal rights to sovereign states. Initially, in the seventeenth and eighteenth centuries, this concept was generally applicable only to European countries as the colonised countries did not possess the requisite political and economic potential to be acknowledged as independent entities.

However, in the recent times, particularly after the Cold War, the concept has been discussed at different forums and has been widely acknowledged to include non-traditional dimensions—the threats that impact **Human Security**. This includes threat to energy security, food security, health security, water security, economic security, financial transaction security, cyber security, technology security, social cohesion, environmental security, information security, security from disasters, and pollution. In fact, human security complements state security in a number of ways.

Post-World War II, internal armed conflicts, also referred to as “small wars,” are predominantly intrastate, with or without external support. In fact, there have been more than 200 armed conflicts, of which more than 90 percent are intrastate conflicts, pertaining to reasons like sub-nationalism, ethnic and religious fundamentalism, socio-economic exclusion, increasing population with unemployment among the youth, and heightened competition for the fast diminishing natural resources. Therefore, internal threats are multifaceted, including insurgencies (internal armed conflicts), terrorism, low intensity conflicts, and transnational forces, especially the violent non-

state actors (VNSAs) indulging in abetting insurgencies, acts of terrorism and organised crime; thus causing instability in the neighbouring countries. In addition, drug trafficking, human trafficking, counterfeit currency, illegal migrations that result in demographic inversion also affect national security. One must remember that most of these threats are interconnected with one or more threats. For example, terrorism has links with two or more threats like insurgency, drug trafficking, support of VNSA, support of external powers, radicalisation, illegal transfer of money, etc.

While we have been discussing traditional and non-traditional security threats in the recent times, especially Post-Cold War, Kautilya (321-296 BC), during the period of Chandragupta Maurya, had discussed these very multidimensional threats 2,300 years ago in his book *Arthashastra*. He spoke about the threats of internal and external origin, their abetments, and the king's role to protect his subjects. While looking at the external threats was important, internal threats were considered far more dangerous, described by Kautilya as "...the fear of snakes lurking in the grass."

Although the concept of National Security is still evolving, it has three important facets to safeguard and promote the core interests of the nation state and its people: one, security of the society; two, security of the state; and three, participation of the state at the regional or global level on issues that have an effect on security.

National Security: Scope

The scope of National Security—traditional and non-traditional security challenges—is vast. Therefore, while the endeavour would be to focus on those traditional threats and challenges which have a direct impact on the Armed Forces, non-traditional threats would be discussed very briefly towards the later part. To seek answers to the short and long-term perspectives of the national security challenges, it is important to briefly discuss certain basic considerations pertaining to reports of previous committees, the changing character of conflicts and the global strategic environment. Given the fact that India is an emerging power, the recommendations would then be considered at three different levels: global and regional, national and armed forces level. The subject being vast, only essential features of the various factors have been discussed.

BASIC CONSIDERATIONS

Various Security Committees

We have had numerous security-related committees, ordered both at the level of the Government of India (Gol) and at the level of the respective services,

and other defence organisations. The first such committee was appointed in 1950-51, under the chairmanship of Major General Himmat Singhji, the then Deputy Minister of State for Defence, with a broad mandate to review the security of the North-East Frontier Agency (NEFA), Assam and other regions. As this report was not placed in the public domain, its contents, rationale and recommendations could not be known. Given the vast scope, it is proposed to discuss the relatively recent security committees, their deliberations and prominent recommendations.

Post the Kargil Conflict in 1999, the Kargil Review Committee (KRC) Report had addressed the glaring deficiencies in the national security, and had made valuable recommendations, particularly in the fields of Intelligence, Border Management, and Defence Management. Given its mandate, the KRC, naturally, did not address matters concerning internal security (IS), which is also a matter of serious concern to India's national security. KRC report was published with a sense of urgency, tabled in the Parliament, but it was not really discussed.

Group of Ministers (GoM) was set up in April 2000, to review the national security system in its entirety and, in particular, to consider the recommendations of the KRC. GoM appointed four task forces to study and make recommendations to improve the national security apparatus. These Task Forces were on Intelligence, Internal Security, Border Management and Defence Management. While most of the recommendations of the Task Forces were made public, the majority of deliberations on "Intelligence" were, for understandable reasons, not placed in public domain. The Report had observed, inter alia, that there is a multiplicity of forces on the same borders, which has invariably led to the lack of accountability and problems of command and control. It further stated that the principle of "one border one force" may be adopted while considering deployment of forces at the borders. It also recommended the appointment of Chief of Defence Staff (CDS) with specific roles and responsibilities.

During an interview with CLAWS in 2009, 10 years after the Kargil Conflict, Mr. K Subramanyam, Former Secretary Defence Production, MoD, and Chairman of the KRC, had said that his most important recommendation in the Report was about **Intelligence and its gross inadequacies**. He drew great satisfaction from the fact that the KRC Report had resulted in the creation of National Technical Research Organisation (NTRO) and Defence Intelligence Agency (DIA).

Again, in 2010-11, the high-powered Naresh Chandra Committee was appointed by the government to review the security apparatus. Among many important recommendations, one pertained to appointment of Permanent Chairman, Chiefs of Staff Committee (CoSC) with a two-year tenure.

The above-mentioned committees, by and large, had laid emphasis on the following issues:

- Improvement in Intelligence system at all levels, organisation structures, capacity building, integration and coordination; and an oversight to provide resources to the intelligence agencies and to monitor their performance and activities.
- Integration of Ministry of Defence (MoD) with the Armed Forces HQ.
- Jointness among the Armed Forces.
- Appointment of a permanent Chief of Defence Staff (CDS) by the KRC and the GoM, and Permanent Chairman, Chiefs of Staff Committee by the Naresh Chandra Committee.
- Better management of borders, by ensuring the principle of “One Border One Force.”
- Emphasis on technology, innovations, and indigenisation of production.

One of the major shortcomings of the recommendations was that, by and large, no timelines were given for the implementation of the recommendations. Most of the recommendations of the “Report of the Task Force on Defence Management (GoM Report)” were apparently contingent on the appointment of a CDS, which has not got implemented till date. As a result, the majority of the other contingent recommendations did not get implemented as well.

A Committee of Experts (CoE) was constituted by the MoD under the Chairmanship of Lt General Shekatkar to recommend measures to enhance combat capability and rebalance defence expenditure of the armed forces. The Committee made a total of 188 recommendations, out of which 99, dealing directly with the Tri-Services, were accepted by the MoD for implementation. Out of those chosen, 65 have been accepted for implementation by the Army.¹

One of the main reasons for instituting so many security committees to review the national security system has been due to the fact that the recommendations of the previous committees have either not been implemented or have been implemented in parts. But for major transformational changes like the raising of Rashtriya Rifles or the establishment of Andaman and Nicobar Command (ANC) or Strategic Forces Command (SFC), most of the recommendations that were implemented were cosmetic and incremental in nature.

Higher Defence Organisation (HDO)

At the time of the Partition, the Indian government requested Lord

Mountbatten, then Viceroy of India, to formulate a defence organisation for India. Considering the communal tensions and fluid situation on the subcontinent, the defence organisations and structures, proposed by Lord Mountbatten and his Chief of Staff, Lord Lionel Ismay, were the time-tested defence structures that would cause the least amount of turbulence. Broadly, they recommended a Commander-in-Chief (C-in-C) to look after operations and administration, and a Chiefs of Staff Committee (COSC) to be responsible to coordinate not just between the three services, but also between the Ministry of Defence (MoD), other departments of defence, and other ministries. COSC was to have a number of committees with civilian members. And the armed forces HQ were to be considered as Departments of Defence, both of which did not really get implemented. These structures were based on the World War II model and were more suited to take care of the then existing conventional threats.

Changing Character of Conflicts

Over the years, we have entered into an era of complex and uncertain threats and challenges, due to dynamic changes in the geo-politico-economic landscape and revolutionary changes in technology. These threats include traditional, non-traditional, cyber, information, space, Chemical, Biological, Radiological and Nuclear (CBRN) and propaganda.

Given the changing character of conflicts, a study of the recent events in Middle East and North Africa (MENA), particularly Syria, Iraq, and Afghanistan would suggest that they are characterised by uncertainty and ambiguity, with a vast array of networked surveillance devices and weapon-systems like precision-guided munitions, unmanned aerial vehicles (UAVs), miniaturised drones and space-based technologies. The character of conflicts has continued to evolve not only due to changes in technology, geo-politico-economic-strategic conditions, but also on account of inter-related changes in the capabilities, circumstances and motives of the nation states.

Considering the global geostrategic environment, under the shadow of nuclear weapons, the probability of all-out wars between the global powers is low. However, given the unresolved territorial and boundary disputes on the Indian subcontinent and the legacy of Partition, the probability of limited conflicts, with the potential to spill over into a major conflict with hybrid contents, remains fairly high.

Threat and Capability Centric Points of View: South Asia

With rapid changes, it is extremely difficult to crystal gaze into the future, beyond a decade or so. In order to ascertain the preparedness of our defence forces, it would be prudent to analyse it both from the threat and the

capability-centric points of view. It is visualised that India will face an ultra-high technology adversary in the North, with hybrid warfare as the key feature, or a low to high technology adversary in the West with greater focus on the sub-conventional threats including proxy war, cross-border terrorism and information warfare, or a combination of both against a nuclear backdrop. With the increased focus on Asia, the Indian Ocean and the Indo-Pacific region and their strategic importance, maritime security would also require extra attention. In other words, the future conflicts will be fought in a high-tech environment, with predominant employment of information, cyber and space assets; and on three or more domains like land, sea, air, cyber, outer space, information, trade and economy, etc.

From the capability-centric point of view, we should be prepared for operations against both our adversaries. We require a force-structure that would not only combat conventional forces with cyber and space-based assets, but also, and more importantly, the intrastate conflicts involving insurgents, terrorists and VNSAs. Therefore, we may find ourselves in a dichotomous situation: while we are preparing for a conventional conflict, the employment, more often, may be in an active sub-conventional environment. This dichotomy requires careful consideration.

Fundamental Questions

General (later Fd Marshal) SFHJ Manekshaw, Chief of the Army Staff, as the Reviewing Officer at the National Defence Academy in December 1970, had said for the first time, **“There are no runners-up in war, and a nation has no room for losers.”** He repeated this motivational statement a number of times, to all ranks at different forums, as we drew closer to the Indo-Pak War of 1971.

If this be our dictum for all the future conflicts, and correctly so, there are a few fundamental questions that need to be answered:

- Are we really prepared for the envisaged threats and challenges of the future? In terms of our thinking, doctrines, organisational structures, equipment, absorption of new technologies, training proficiency, operational logistics and preparations of our strategic leadership?
- What actions should India take to prepare for the conflicts of the future: Military “modernisation” or “transformation”? Should we carry out some reforms or remain status quoist?
- If the answer to above question is “transformation,” who / what should transform: should it be the army alone, or the entire armed forces (army, air force and navy) or the armed forces, Higher Defence Organisation (HDO), MoD, defence production organisations, DRDO and defence procurement process?

- What should we prepare for: conventional threats with the ability to take on hybrid threats, or sub-conventional / hybrid threats with the ability to take on conventional war?

India's Status as Economic Power

To underscore the importance of economy in the current day environment, it would be appropriate to quote the PM of Israel, Mr. Benjamin Netanyahu, who, while speaking at the AIPAC Policy Conference in Washington on March 07, 2018, said, **“Good news does not stop with Israel's strong Military. It continues with its tremendously strong Economy.”**²²

Resultantly, as also for other reasons, for a population of 8.4 million, Israel has done extremely well as far as science and technology, economy, and defence industry, etc., are concerned.

Geo-economics are driving, and will continue to drive, the nations and sub-nations, which in turn give the nations their rightful place in the world. Fortunately, India is one of the fastest growing economies of the world, as also the sixth largest. We have grown at an average pace of 7% growth since the late 1990s. As the third largest military, and also one of the leaders in information, missile and space technology, India is an undisputed emerging power. If this be so, what should India's strategic aims be?

India's Strategic Aims

India's strategic aim should be: one, to maintain a conducive and secure environment for human security and country's growth; two, to build Comprehensive National Power (CNP), which requires sustained high economic growth, among other parameters; three, aspire to become a regional power by 2030, and a global power by 2050.

GLOBAL AND REGIONAL STRATEGIC ENVIRONMENT

The rapid shifts in the geo-politico-economic–strategic landscape have made the global environment volatile, uncertain, unpredictable and complex. Some of the recent events that bear testimony to this are: the US pull-out from the multilayered Iranian nuclear deal called Joint Comprehensive Plan of Action (JCPOA) and the re-imposition of sanctions on Iran, US sanctions on Russia due to a number of reasons, and the US-China trade war and China's efforts to offset the trade imbalance. The world has also witnessed large fluctuations in the oil prices, and financial crises in Venezuela, Turkey, Iran and Pakistan. However, the positive streak has been the Korean Peninsula Peace Process and the success against the ISIS in Iraq and Syria.

US, Asia, China and India

United States has remained the sole superpower in the world for about three decades, due to the following reasons: (i) It has been and continues to remain the global leader in economy. (ii) It is the strongest military power. (iii) It is a global leader in science and technology, innovations and partly in the defence industry. (iv) It has a good control over the high seas, airspace, and outer space. (v) It has abundant natural resources.

Going by the current trends, the US will continue to retain its sole superpower status for a few more years, with ever increasing competition from China and Russia challenging the US-sponsored international order.

With the progressive shift in the economic centre-of-gravity from the West to the East, the economic-cum-strategic significance of Asia, the Indian Ocean and the Indo-Pacific region would remain at the centre stage in the foreseeable future. The Indo-Pacific region has about 61% of the world's population, and more than 64 countries are directly or indirectly affected by whatever happens in this region. We, in Asia, are already witnessing the improvements in the economic indices of at least four major powers, namely, China, India, Japan and the countries of ASEAN. With the rise of Asia in general, and China and Russia in particular, we are likely to witness the world moving towards bipolarity or multipolarity, thus challenging the US power and influence in Asia and other parts of the world.

Rise of China

The defining trend of the twenty-first century has been the rise of China as witnessed in its rapid economic growth, replacing Japan to be the second largest world economy in 2010. By 2030, it is likely to be the largest economy of the world. It is undisputed that Xi Jinping has consolidated his power in the Communist Party of China (CPC), in the People's Liberation Army (PLA) and in the Central Military Commission (CMC), with an indefinite tenure. Adding to China's profile is the focused transformation of its armed forces. It has been observed that China is not only upgrading the weapon platforms, but is also examining the whole gamut of transformation. The official defence budget of China in 2018 was US\$175 billion (in stark contrast to India's US\$ 45 billion). Furthermore, with its growing ambitions of becoming a world power, China has become increasingly assertive in its actions.

Important issues that concern India are: first, the strategic encirclement of India with the Belt and Road Initiative (BRI); second, the territorial and boundary disputes; third, repeated transgressions that take place on the Line of Actual Control (LAC) and the tension that builds up between the two countries (Post the Wuhan Summit, there has been significant reduction in

the transgressions and tension); and fourth, the China-Pakistan Economic Corridor (CPEC), wherein while developing CPEC through Pakistan-occupied Kashmir (PoK), China has increased its presence by positioning its security personnel in Gilgit and Baltistan. This makes CPEC a greater cause of concern and demands analysis of its impact on the region as a whole and India in particular. These concerns notwithstanding, we need to understand that China is an important neighbour, and India's biggest trading partner with a bilateral trade of US\$72 billion in financial year 2017, which accounted for almost 10% of India's overall trade.³ China also accounts for nearly half of India's total trade deficit.

Pakistan has continued to remain the epicentre of armed Islamist insurgency and terrorism. Due to its unique geostrategic location, Pakistan was expected to play a key role in the Global War on Terrorism (GWOT) post 9/11. However, since mid-2011, there has been a progressive decline in the relationship between the US and Pakistan over Pakistan's support to and links with the terror groups in Afghanistan. It came to a head during the past one year when President Donald Trump curtailed the aid and tweeted that Islamabad had given his country "lies and deceit" in exchange for billions of dollars in aid. Simultaneously, Pakistan has been placed on the "Grey List" by the Financial Action Task Force (FATF) for money-laundering, transferring funds and supporting terrorist organisations. Due to some of these reasons, Pakistan has been making efforts to further strengthen its relationship with China and Russia. In fact, Russia and Pakistan have carried out joint military training exercises, and Russia has also offered weapons to be sold to Pakistan. Today, along with other internal conflicts, Pakistan faces an acute economic crisis which may push it further into instability in the future.

Increase in Violence and Instability

According to the Global Peace Index (GPI) 2018 which examines 23 quantitative and qualitative parameters, "Peacefulness" has deteriorated by 2.38 % over the past 10 years.⁴ Out of nine regions of the world, Middle East and North Africa (MENA) is the least peaceful, closely followed by South Asia. Out of 163 countries, the ranking of the least peaceful nations in South Asia and our strategic neighbourhood is: Afghanistan—162, Pakistan—151, India—136, China—112, Bangladesh—93, Nepal—84, Sri Lanka—67, Bhutan—19. The least peaceful nations at the global level are Syria (163rd least peaceful), Afghanistan, South Sudan, Iraq, Somalia and Yemen.

Religious Fundamentalism

Religious fundamentalism will continue to pose a serious threat to both regional and global peace. ISIS, as a terrorist geopolitical entity, has been

defeated in its strongholds in Syria and Iraq; but its virulent idea, identity and motivation to achieve its aims and objectives continue to remain vibrant and active. Even today, thousands of ISIS jihadists are spread over different parts of Syria. ISIS group is progressively spreading itself into different parts of North Africa, South Asia and South East Asia. It will continue to carry out random terror strikes by its affiliated groups. IS Khorasan has already spread to Afghanistan since 2014, and has been carrying out deadly terrorist attacks. If the religious fundamentalist and VNSAs make efforts to gain access to weapons of mass destruction (WMD), these could then pose a serious threat to global peace and security.

According to a UN Report, al-Qaeda is also reviving itself to spread its influence in other parts like Sahel region, South East Asia, South Asia.⁵ Besides these, the very competition among various religious organisations may result in increased instability, violence and mass displacement of people. In Syria, more than 11 million people have been displaced, including internally displaced, due to the ongoing conflicts in MENA.⁶

Crypto-currencies

Terrorist organisations and individuals continue to change their modus operandi by increasingly using the darknet, encrypted messages and crypto-currencies, such as bitcoin, ripple, etc., to trick the security forces.

SECURITY THREATS AND CHALLENGES

Dichotomy in Thought

It has been interesting to note that, by and large, the thought process of uniformed personnel and civilian research scholars to a simple question on national security challenges was widely different. On being asked what they thought was the single most critical threat and challenge to India's national security, the majority of the uniformed personnel spoke about the well-defined external or internal threats or the challenges of hybrid warfare in the future. Very few spoke about the non-traditional threats. On the contrary, the response of the civilian research scholars of CLAWS was prompt, interesting and thought-provoking. A few of their responses and their subsequent amplifications to my query are: first, lack of education among the masses, consequent to which the most suitable leaders are not elected. These leaders, oblivious of the complete gamut of national security, do not engage in any meaningful parliamentary discussions on critical issues like threats and challenges to national security and our preparedness for the same, defence budget, etc. This is in contrast with the US and other Western countries. Second, the triangle formed by the huge youth population, unemployment among the youth and threat to food security is a deadly recipe detrimental to national

security. Third is that we tend to look at the existing threats but do not foresee the threats on the horizon and beyond the horizon. Fourth, lack of social cohesion and harmony, dilution in the integrity of institutions, polarisation of people along the lines of religion, caste and region, and non-inclusive growth pose a potent threat and challenge to national security. If looked at dispassionately, some merit can be found in each response. A few of these issues would have an indirect and long-term impact that would have serious repercussions on the national security.

External Threats and Challenges

Two neighbours of India—China and Pakistan—are not just the principal source of her external security threats, but are also nuclear-armed states who share a deep friendship “stronger than steel” and “sweeter than honey.” The territorial disputes and external threats on our sub-continent are a result of its unique geostrategic location, its neighbourhood, its history and the Partition. The relationship that blossomed with China providing nuclear warhead technology, including design, material, and delivery means, has further got reinforced with the US\$62 billion CPEC project. Their partnership goes beyond the development of civilian infrastructure to joint manufacture of military tanks, missiles, etc., which has received a fillip in recent times. All this notwithstanding, there are many concerns in Pakistan over the predatory economics behind this project and its overall benefit to the Pakistani economy. With the ongoing CPEC projects, presence of PLA security personnel/soldiers in Gilgit and Baltistan region would certainly have security implications for India in the future.

Given the significance of the Indo-Pacific region in general, and the Indian Ocean in particular, security of India’s long and porous coastline, offshore islands, Exclusive Economic Zone (EEZ) and sea lines of communications (SLOCs) in the Indian Ocean are of great concern to us. We require a high level of surveillance, situational awareness, rapid response capability, and synergy between all enforcement agencies to provide effective maritime security.

In addition, we need to critically examine the economic and security implications of CPEC, Belt and Road Initiative (BRI), and the twenty-first century Maritime Silk Road (MSR) being pursued vigorously by China, on India and the region. Its economic-cum-strategic impact on India, South Asia, the Indian Ocean and the Indo-Pacific region merits detailed examination.

Internal Threats and Challenges

According to Barry Buzan, Emeritus Professor of International Relations at the London School of Economics, “**India is a country of several nations.**” Given India’s size, its population base and the scope of the security arena,

internal security challenges are truly complex. There is huge diversity in geographical regions, ethnicity, religions, and languages. This coupled with social discrimination, inequality in human development indices (HDI), lack of inclusive growth, polarisation of population based on religion and caste, and mass unemployment among the youth, makes India vulnerable to internal armed conflicts.

The aim of the armed conflicts in India is primarily to capture political power, or seek separation or secession or greater autonomy. Since the mid-1950s, when the Naga insurgency commenced, a number of insurgencies have “mushroomed” in the country. We have resolved only two classical insurgency/militancy situations, resolved in Mizoram in 20 years and Punjab in 13 years respectively. We have been more successful in conflict-management, and not conflict-resolution.

Internal security is a function of political morality, responsiveness of the governance system, integrity of institutions, social cohesion, status of the economy, wealth distribution in the population, and social justice. With the extraordinary diversity, social cohesion and integrity of institutions are vital for the internal security of India. Dysfunctional institutions only further add to the problems in the internal security environment.

Pakistan has continued to indulge in proxy-war-cum-cross-border-terrorism in J&K since 1989 with a view to destabilising India, which poses a serious threat to India’s security. The major turning point was in July 2016, when Hizbul Mujahideen militant Burhan Wani was killed in South Kashmir by the security forces. Pakistan has taken advantage of the sustained unrest and has made renewed efforts to indigenise the conflict in the Kashmir Valley by indoctrinating the youth to raise the tempo of disturbances and instability. With the current twin-strategy of improving governance and conducting operations against hard-core terrorists, the situation is likely to start improving, facilitating development and economic growth to take place.

Dynamics of Limited Conflict

Considering the geo-political-economic-strategic environment in Asia in general and South Asia in particular, with nuclear armed states, the probability of a total war appears less likely. However, given our unresolved border disputes with our neighbours, history of our earlier conflicts, and the continued proxy war-cum-cross-border terrorism from Pakistan, the probability of limited conflicts or border skirmishes, with irregular, information and asymmetric threats would always remain high. Such conflicts would have the potential to spill over to a larger area/region.

Economic Cost of Violence

According to GPI 2018, economic cost of violence refers to the direct and indirect costs incurred in preventing, containing, and dealing with the consequences of violence. The economic cost of violence to India has been 9% of its GDP.⁷ The statistics are phenomenal! It merits a mention that our defence budget of 2018 is about 1.57 % of the GDP. The allotment of budget for education and health services is also rather low. It is time to address our internal armed conflicts, improve governance and bring about better social cohesion and harmony among the people so that the economic cost of violence can be minimised and the budget be allotted for improving the quality of life of our people. As a matter of interest, economic cost of violence for a few other countries as a percentage of their GDP are: Syria 68 %, Afghanistan 63%, Pakistan 12%, Sri Lanka 8%, Nepal 6%, China 4%, Bangladesh 4% (GPI 2018).

THE WAY FORWARD

General

Based on the national vision, national aim and national interests, national security policy (NSP) and national security strategy (NSS) of a country are formulated. While there are some guidelines on national security, strangely, we do not have the latter two, i.e., NSP and NSS, to give a firm direction to our “National Security.”

Strong Economy Is One of the Most Powerful Weapons

Given the current global environment, it is undisputed that a strong economy is one of the most powerful weapons of a country. To illustrate this point further, China’s thoughts and model should be examined. When the Soviet Union collapsed in 1991, the CPC made concerted efforts to analyse the reasons for the implosion. The key lesson was that a strong economic performance is essential to political legitimacy. CPC remained fully focused on achieving economic growth targets over the next three decades (1991 to 2017), and China delivered an economic miracle, with nominal per capita income shooting up from US\$333 in 1991 to US\$7,329 (22 times) in 2017. Her foreign reserves are about US\$3.1 trillion (2018), and defence budget was US\$175 billion (2017). China devoted her economy towards addressing both traditional and non-traditional security challenges. She achieved excellent results in addressing the issues of poverty, food, health, energy, water, education, pollution, employment, etc., thus improving the quality of life of its people. China has been able to pull out in excess of 500 million people out of below poverty line (BPL). Strong economic growth is perhaps

the single most important reason why CPC, one party rule, has retained unquestionable power till date. They could do so because they maintained strong armed forces and ensured a secure internal environment.

Therefore, the main takeaway for a developing country and a rising power like India is that we have to remain focused on improving our economy, and maintain a secure environment. Strong economy is essential to take care of a host of traditional and non-traditional threats of a country, and to give it a rightful place in the comity of nations. It is also essential to maintain peace and stability in the region to ensure sustained growth.

REGIONAL AND GLOBAL LEVEL

Our Strategic Neighbourhood

South Asia comprises eight nation states constituting about one-fifth of the world's population. Despite historical and cultural linkages, this region has not grown together to realise its full potential. Relations with our strategic neighbourhood is perhaps the most crucial and relevant for our national security. While we have good relations with our extended neighbourhood—in the east with the ASEAN countries, and in the west with Afghanistan, Iran, Saudi Arabia, Israel, Egypt, etc.—our relations with most of our immediate neighbours could certainly be more friendly and cordial. Politico-economic-diplomatic initiatives should be taken to resolve pending disputes with our smaller neighbours, based on the principle of mutual trust, respect and cooperation. SAARC, as a regional organisation, has been defunct and least economically connected region to facilitate any meaningful trade among its members. In fact, India should go an extra mile to strengthen regional organisations like SAARC and BIMSTEC, and reduce the prevailing interstate tensions.

Strategic Partnership

Given the emerging strategic environment in Asia, the Indian Ocean region (IOR) and the Indo-Pacific region, and in keeping with India's enhanced political, economic and military status, there is a need to develop defence cooperation and build cooperative partnership at strategic levels with leading global powers and strategically located countries. While we have developed strategic level cooperation with the US, we need to further enhance our strategic partnership with Russia, the UK, France, Germany, Japan, Australia, Vietnam, etc. The aim should be to analyse the envisaged threats, and find measures to counter them. This would help us maintain peace and stability in the affected regions and thus ensure our national interests are taken care of.

Military Diplomacy

As a part of military diplomacy, the Indian Armed Forces have been conducting training exercises with a number of friendly countries, both in India and abroad, for a number of years. In September 2018, the Indian Army organised a field training exercise named “MILEX-18” at Pune, for the armies of India, Bangladesh, Bhutan, Nepal (Nepal had pulled out of the exercise during the later part), Sri Lanka, Myanmar, and Thailand (BIMSTEC). The core theme of this military exercise was counterterrorism in a semi-urban backdrop. It was followed by a conclave of army chiefs of the countries of BIMSTEC. Similarly, on the navy-to-navy level, the Indian Navy has been organising the Indian Ocean Naval Symposium (IONS) since 2007-8. India has been conducting Hand in Hand and Yudh Abhyas type of training exercises with a number of countries. With added positive role of our defence advisors abroad, it would be correct to state that we have done well in military diplomacy to further enhance our national and foreign objectives abroad.

Role in Regional and Global Affairs

India should, progressively, start playing a substantive role in the regional and global affairs, including espousing the cause of least developed and developing nations. India has strategic interests in the Indian Ocean region, and vital interests in the areas east of the Malacca Straits. It should, therefore, increase its role in the fragile Indo-Pacific and Indian Ocean regions.

Strategic Culture

There are two aspects to this subject: one, promotion of strategic culture; two, institutionalised mechanism to provide inputs to the government in power. There is a need to promote awareness of rudimentary aspects of national security, and promote strategic culture in colleges, universities, training academies and among the young officers (YO) in the Armed Forces. Secondly, in India, our think tanks, academia and non-government organisations do not really contribute towards formulation of national policies on various aspects. There is a need to have an institutionalised system to further promote non-government organisations and think tanks to analyse strategic affairs and international relations, and make recommendations for consideration by the government.

Unfortunately, we do not hear any meaningful discussions on national security issues including our defence preparedness, our hollowness and defence budget in our Parliament. To promote awareness of national security and strategic culture, national level seminars and workshops, both on

traditional and non-traditional type of threats to national security, could be conducted. We should get a wide cross-section of people, including elected representatives (MPs and MLAs), academia, think-tanks, armed forces and paramilitary personnel and policymakers to attend them.

NATIONAL LEVEL

Military Deterrence

What does “military deterrence” mean? It means that a country has the capability, both qualitatively and quantitatively, in that order, far superior to that of its adversary, and that it would take a timely decision and action. Therefore, effective military deterrence can only be achieved by improving our military capabilities in both conventional as well as non-conventional warfighting mechanisms, soft power and demonstrated power. Military deterrence would be credible if it is backed by comprehensive national power (CNP): political will, strong economy, social cohesion, vibrant industrial base, supportive public information system, and a strong technology and innovation culture. Thus, India needs to progressively build capabilities of hard military power, soft power and demonstrated power which can deter threats to its stability and territorial integrity from potential adversaries.

Integration and Jointness

“... We need forces that are agile, mobile and driven by technology, not just human valour. We need capabilities to win swift wars, for we will not have the luxury of long-drawn battles ...”

— Narendra Modi, Prime Minister, on-board INS Vikramaditya,
December 6, 2015

A number of suggestions and options have been doing the rounds at various levels: jointness, theaterisation and integration, having a CDS, as recommended by GoM or a ‘Permanent Joint Chiefs of Staff’ as recommended by the Naresh Chandra Committee, and whether to have theaterised commands or functional commands?

Before making any recommendations, we must know the emerging threats and the changing nature of conflicts—today and two decades later. Over the next two decades, the future conflicts would be rather short, intense, multidimensional and hybrid in nature. We could expect them to straddle land, sea, air, space, and cyber and information domains. Hybrid domains coupled with non-contact, non-kinetic operations are likely to dominate the

future conflicts. In addition, we, on our subcontinent, have an extraordinary responsibility towards territorial integrity, as loss of any territory is not acceptable under any circumstances. Therefore, in a short and intense nature of conflict, we will not have the luxury of delayed decision-making, delayed mobilisation and delayed application of forces. We have to take a number of lessons from the Kargil Conflict of 1999, where from initial knowledge of the intrusions in early May, it took us almost 70-80 days to complete the operations (July 26, 1999), a few major constraints like not crossing the LoC, induction of troops from counter-insurgency into intense mountain-warfare environment and their mindset, acclimatisation of troops, etc., notwithstanding. Timely and synergistic application of forces can only take place if we have unity of command, which would further ensure unity of effort. How can we achieve an effective unity of command and effort (joint warfighting capability) in such short and intense conflicts?

While it should not be our endeavour to ape any country vis-à-vis their system of defence organisations, we need to at least analyse the rationale for the decisions taken by them to review their higher defence organisations, as also analyse their effectiveness on implementation of the changes. In the US, what was the rationale for the “Goldwater-Nichols Act” of 1986, the guiding legislation for their armed forces to go for the “Theaterised Command Concept” by amending the Act after four decades? The Department of Defence (DoD) in the US was established by the National Security Act of 1947. It was restructured by an act in 1986 due to two main reasons: one, gross inadequacies observed in the operational effectiveness during the Vietnam War; two, the catastrophic failure during the Iranian hostage-rescue mission in 1980. It may be recalled that 52 Americans were held hostage in Iran in 1979-80 for 444 days. The rescue mission launched by the Americans was a dismal failure due to a number of reasons. Despite huge resistance from various quarters, the US Senate and the Congress insisted on the Theaterised Command Concept. After 1986, the US has been involved in difficult operations such as those in the Gulf Wars, Kosovo and Afghanistan. Though the results have been mixed, the US Armed Forces have done reasonably well.

Having studied the Gulf Wars and the Kosovo conflict, and based on the lessons learnt, China also took a number of years to deliberate and decide on the new defence organisations and structures. China decided to carry out three major transformations; one, large-scale mechanisation; two, to prepare to fight under conditions of informationisation; three, to carry out theaterisation of their military regions. Process of mechanisation and informationisation is already in progress. Based on the directions of the

CMC, China's PLA has moved ahead to convert seven military regions (MRs) into five theaterised commands since February 2016. It is a separate issue that PLA continues to have some understandable teething problems as the new organisation is yet to stabilise.

The bottom line is that we should be effective operationally, with the ability to ensure synergistic application of all available resources for that operation in the very limited window of opportunity. Integrated organisations would certainly produce better results. To move ahead, the first and foremost requirement would be to arrive at a consensus on whether we want to transform or not. Whether we want just jointness or want to integrate, and move towards the theaterised concept of warfighting. Which of the following options would help us achieve our stated aims (only four have been listed from among many):

- Appointment of CDS.
- Jointness among the services.
- Jointness among the services, with integration of the MoD with the service HQ (referred to as integration).
- Integration along with theaterised commands (geographical and/or functional commands).

Due to multidimensional changes in the geo-politico-economic-strategic landscape, and technology, the pace of change is too rapid to imagine. It has a direct effect on the changing character of conflict. It also means that our historical warfighting concepts and procedures will be outdated. Therefore, we must look at transformation of the armed forces in a planned manner, despite all resistance.

Rather than commissioning committees after an operation/conflict, it is better to hold a security review committee now and take hard decisions regarding jointness, integration and/or theaterised command concept to synergise our efforts and improve our operational preparedness. Broadly, the aim should be to ensure optimum employment of each service based on its specialisation, and recommend a suitable concept to address our country's security concerns. This can happen only if we look at the requirement holistically "**National Outlook for National Security**".

Civil–Military Relations

There is apparently a difference in the perception of civil and military officials regarding their respective roles, functions, responsibilities, accountability and authority, due to which there is some ambiguity in smooth functioning of the country's defence organisations. It is a much talked about subject at

various forums, and reflects poorly on our national security apparatus. Civil-Military relations should be clarified in the NSP or in the NSS or national security document, so as to optimise our capabilities in a harmonious manner. Integration of MoD with armed forces HQ and higher defence management, as recommended by various committees, would be the first step towards further improving national security, which will also pave the way for improvement in the civil-military relations. The Army also needs to take actions to prevent any form of polarisation between various arms and services, which could well be done by respecting the strength of each arm and service to fight as a team. The Kargil Conflict (1999) was an excellent example wherein all arms and services fought as a homogenous team.

Defence Industry and Capability

India has one of the largest Defence Industrial Bases (DIBs) among the developing countries. It primarily consists of Ordnance Factories, Defence Public Sector Undertakings (DPSUs) and Defence Research and Development Organisation (DRDO). We have 41 ordnance factories, 52 DRDO laboratories and 9 major DPSUs with their subsidiaries. Despite such a large DIB, according to SIPRI data of 2013-17, India was the largest arms importer in the world, with a share of 12% of global arms import.⁸ It is ironic that even after 71 years of Independence, India still imports about 60-70% of its defence requirements. The primary reasons for India's huge military imports are its underdeveloped organisational structures and defence industry, inadequate capabilities, and lack of accountability. In addition, excessive bureaucratic controls that dissuade initiative and support inefficiency, lack of fair competition and poor work culture also add to the problem.

There have been many long-pending, over delayed cases pertaining to infantry weapons, tanks, guns, aircraft, etc., due to which we have not made much headway either in procurements ex import or in their indigenous production. However, the "Make in India" initiative of the Government has given a much needed push to the development of sustainable ecosystem of defence production, R&D and technology absorption in the private and public sector. The recent successful induction of 155 mm/52 calibre K-9 Vajra (SP) gun system which has been manufactured through transfer of technology (ToT), and Advanced Light Helicopter (Utility Helicopter) & Weapon System Integrated (WSI) versions designed, developed and manufactured in India are a few good examples of success in defence production. The induction of 155 mm/45 calibre Dhanush Gun system and 155mm/52 calibre ATAGS are around the corner, with trials being conducted of the systems. The push to indigenous production and R&D

is a step in the right direction and will certainly bear fruit in time to come. However, there are miles to go in the area of niche technologies of surveillance, AI and autonomous systems.

While importing weapon systems, we have always encountered two basic problems: “technology denial” and “post-import dependency” on a foreign country for ammunition, spares and maintenance of equipment.

Historically, it is a well-known fact that no country has become a global power by importing a major portion of their weapons. Therefore, we have to achieve self-reliance with quality products. It is undisputed that our DIB requires an urgent and thorough “transformation,” i.e., review of the complete structures, organisations, processes and procedures. There is a need to holistically and pragmatically review the existing system of defence production in India, with greater focus to boost indigenous manufacturing. Cosmetic changes will certainly not help.

Revolutionising the Industry

We all realise that today, technology is driving the world in all facets of our lives, not on matters military alone. Although India has done reasonably well in IT, nuclear energy, missile and space technology, it is not a global leader in any of them.

It may be worthwhile to have a look at Israel’s industry. The Israeli PM, at the AIPAC Policy Conference 2018, said that they have revolutionised their industry due to the confluence of “Big Data, Connectivity and Artificial Intelligence.” Israel is in fact the leader in military technology, cyber technology, precision agriculture, recycling waste water, etc.

Culture of Innovation. To produce state-of-the-art weapon systems in India, innovation has to be accorded very high priority, with substantial investment in R&D to revolutionise our industry. Given the huge potential of our private industry, a much greater role must be given to the private sector in defence production, with adequate incentives and a level playing platform. Thus, we may encourage a culture of innovation and indigenisation in the country.

Technology Drives the World:

Improve Our Technology Threshold

During a seminar between CLAWS and the US Air War College in September 2018, one of the panelists, a Chinese professor, was asked whether it would be feasible for the PLA to achieve the level of military modernisation as per the timelines stated by him, particularly the absorption of technology. He was hopeful that they would meet the deadlines as they have tackled this phenomenon by a multi-pronged strategy:

- Firstly, the benchmark of educational qualifications for enrolment of soldiers into PLA has been raised, which automatically gives better understanding and application of technology.
- Secondly, the PLA National University of Defence Science and Technology has been established, in which all soldiers are required to undergo compulsory training.
- Thirdly, officers with a higher technology base, drawn from the universities, have a proper technology-oriented training capsule during their initial training, and subsequently during the refresher training.
- Fourthly, there is regular interaction between the Original Equipment Manufacturer (OEM) and the troops using the equipment. In fact, a representative of the OEM is positioned in the unit to facilitate its understanding and raising observations for rectification.
- It would be good to study the actions taken by the PLA to absorb technology in order to ensure operational preparedness.

Border Management Strategy

India has land borders with seven countries, and extends over 15,106 km. While the Sino-Indian border is 3,488 km, the border with Pakistan is 3,323 km, including 742 km of Line of Control (LoC) and 126 km along the Actual Ground Position Line (AGPL) in the Siachen Glacier sector.

Deployment of multiple forces on the same border has often led to problems of command and control, responsiveness, sharing of intelligence and accountability. In addition, while a large segment of the land borders are not demarcated on the ground, the maritime boundaries are also not clearly defined.

In India, a plethora of armed police forces has continued to guard our borders (BSF, ITBP, SSB and Assam Rifles). As each border has unique threats and challenges, “**One Border One Force**” was recommended by various committees, which has actually not happened, particularly along the LAC.

In the case of China, they have a border-guarding police force, the People’s Armed Police Force (PAPF), which operates under the People’s Liberation Army (PLA), along with the PLA border regiments. Recently, PAPF and the coast guard have also been placed under the CMC.

The aim of border management strategy should be to effectively maintain the territorial integrity of the borders, and to take care of the multifaceted threats and challenges along each border. Besides utilising technology to manage borders (smart management), there is a need to have clarity in responsibility, command and control, authority and accountability for each border, more importantly, the borders under dispute.

In our case, ideally, the management of disputed and unresolved borders must be the responsibility of the Indian Army, functioning under the Ministry of Defence (MoD). In fact, in principle, BSF and ITBP, the border guarding forces on the Pakistan and China borders respectively, should be placed directly under the MoD till such time our disputed borders are resolved. If that is not feasible, at least all forces and agencies deployed along the disputed portions of the border should be placed under the MoD. The management of the remainder borders should be readjusted with the other police forces, under the Ministry of Home Affairs (MHA). It requires a call at the national level.

Intelligence Architecture and Developments in Intelligence Surveillance and Reconnaissance (ISR) Sensor Technology

The recommendations by various security committees aside, the ineffectiveness of our intelligence agencies has been debated after various operations/conflicts and terrorist attacks (the 1999 Kargil Conflict, the December 2001 attack on our Parliament, the November 2008 Mumbai attack, the 2015-16 attacks in Gurdaspur, Pathankot, Uri, Nagrota). To further improve the performance of the intelligence architecture at the national level, we have to focus on capacity building, integration and coordination, timely dissemination, and oversight to provide resources and to evaluate their performance.

As regards ISR, acquisition of accurate and timely intelligence at the tactical and operational levels has been one of our major weaknesses. Path-breaking innovations in the field of information technology, artificial intelligence, big data computing, communications, data storage and data processing have enhanced the ISR capabilities. With imported systems, we run the risk of embedded platforms, which can compromise our security system at crucial moments. We need to indigenously develop ISR capabilities for ground, aerial, sea and space-based systems to improve our response mechanism.

Cyber and Space Domains

Due to competition among the leading powers to dominate strategic space, cyber and outer space, and information warfare have moved ahead at a rather fast pace. Cyber weapons are the new weapons of mass destruction and disruption, where the “mass” is made up of information and critical assets. Besides a large number of networks in the civil domain (financial, banking, railways, transportation, education, medical services, etc.), the armed forces have widely networked systems like the command and control, communications, fire control, air defence, intelligence, surveillance, logistics, and information systems. All these are highly vulnerable. While looking at the offensive aspects of cyberwarfare, it is important to first take actions

to protect our networks from cyberattacks. Militarisation of space is yet another dimension that needs to be explored for military purposes.

However, the recent news about cyber, space and special forces organisations being raised at the national level is a positive step to face the challenges of the future.

Artificial Intelligence (AI): Critical Element of NSS

AI is a branch of computer science concerned with the simulation of the intelligent behaviour of human beings. In simple terms, it is the capability of a machine to take decisions that are normally taken by a human being, and at a much faster pace, handling much larger data. AI technology has tremendous applications in social, economic, medicine, transportation, mining and military fields. AI has the potential to change both the nature and character of future wars.

USA and China are far ahead in their research on AI and its application, especially in the military domain. The Chinese have been refining the autonomous systems to undertake swarm attacks by UAVs. In January 2018, it was reported that the Russian forces were attacked at the Tartus Naval Base in Syria, by a swarm of home-made drones.

Though we have a DRDO laboratory specifically dedicated to AI, called Centre for Artificial Intelligence & Robotics (CAIR) and a policy formulated on the subject, it is not enough. AI should form a critical element of our NSS, with clear milestones laid down. If we do not utilise AI to meet the military's requirements, we will be found wanting in the future.

Allotment of Defence Budget

It is a fact that as a percentage of GDP, our defence budget has continued to shrink, due to which the capital budget is rather limited to facilitate any meaningful capital acquisitions or military modernisation. That said, it would be prudent that rather than always discussing the defence budget as a percentage of the GDP, we should put in place the Long Term Integrated Perspective Plan (LTIPP) for 15 years, which flows out from the National Security Strategy. In principle, the LTIPP should be approved by the Cabinet Committee on Security (CCS), the highest security body of the country. Once it is approved by the CCS, it would ensure that adequate funds are provisioned by the Government of India (GoI) and a planned modernisation of our Armed Forces takes place. Such an action would also ensure that an assured Defence Budget would be allotted at least for the first five years. Secondly, there should be a provision to allow the unspent budget to be carried forward to complete the capital acquisition process, which is a time-consuming exercise.

The major flaw of this thought process is that LTIPP, in its current avatar, is not an integrated perspective plan. It is merely a compilation of the respective services' plan (army, navy, air force) to acquire and modernise their respective service. In all fairness, all three services should come to an understanding of the holistic, envisaged threats over the next two decades, if not more, and then work out pragmatic operational requirements of each service. At least the requirements of the first five years can be firm and definite, and in subsequent years, a mid-course correction can always be considered. Unfortunately, the three services have not been on the same page to come to a consensus to project the budgetary requirements. Stephen Cohen in his Book, *Arming Without Aiming: India's Military Modernisation*, has stated that each service in India tends to function independently, and are not keen on jointness. We must correct this perception.

Credible Nuclear Deterrence Capability

India promulgated its nuclear doctrine in January 2003, which is defensive with sound deterrent capability. With two nuclear armed states as our neighbours, with whom we have unresolved border disputes, reservations have been expressed at different forums on whether our nuclear doctrine, being 15 years old, needs a review. Credible minimum deterrence (CMD) capability should be based on Triad (precision delivery means), survivability and second strike capability, and a sound command and control system. With changes in the security environment, it would be correct to review our doctrine periodically. While it may not necessarily result in any change, a review allows us to take stock of the situation in the emerging strategic environment.

Also, there is a need for "threat perception and scenario building exercises" to be held periodically with the concerned stakeholders, to make them aware of the threats and capabilities, and to take timely decisions during the various contingencies that may arise.

Development of Infrastructure

The pace of infrastructural work, especially close to the border areas, has been rather slow due to a number of constraints. Generally, these result in delay in completion of the project along with cost overruns. More importantly, it has an adverse impact on operational preparedness, of which logistics are a vital part. We need to improve our work output towards development of infrastructure along the borders in terms of roads, helipads, airfields, telecommunications, power facilities, infrastructure for logistic nodes in critical areas. Roads and infrastructure of strategic importance should be prioritised and completed with a sense of urgency. A holistic review of Border Roads also be undertaken.

Strategic Leaders on National Security

It is desirable that strategic leaders should contribute to national security. It is important for leaders to comprehend the emerging politico-economic-social scenario, and analyse its impact on the strategic scenario under different contingencies. This is essential because the leader would be required to analyse the strategic risk profile of various options available, and then make strategic choices. Subsequently, while the operations are in progress, managing the emerging uncertainties would be the key function of the leader. This would be possible only if they are fully involved in analysing the strategic scenarios. Therefore, to deal with complex situations, a leader needs clear vision, clear direction, agility of mind, and high tolerance for ambiguity. It is expected of our strategic leaders to make recommendations through various forums for the betterment of national security.

ARMED FORCES LEVEL

Vulnerability of Front Line Soldiers

As we have territorial and boundary disputes with two of our neighbours, there is a great emphasis on not losing even an inch of ground of one's territory. It is also a fact that the Pakistan-based terrorists continue to infiltrate across the LoC, taking advantage of the extremely difficult nature of terrain. With the limited development of ISR capability to provide the desired transparency along and across the borders, we must not compromise on "boots on the ground" in the foreseeable future. Therefore, it again reinforces the need to develop indigenous ISR capability to achieve a high degree of battlefield transparency.

Given our operational commitments along the LoC, LAC, Siachen Glacier and deployments in management of internal security, our soldiers remain most vulnerable. As the front line brigade commander along the LoC in 2001-2, and even subsequently, I observed that the terrorists, who were neutralised while infiltrating from across the Pakistani side of the LoC, were carrying the most sophisticated assault rifles, walkie-talkie communication sets (Kenwood sets), light web equipment, survival rations and Indian currency. It meant that the terrorists have had enormous financial and material support, something like a flourishing industry to sustain the ongoing proxy-war-cum-cross-border-terrorism.

Our troops, both in the front line and hinterland, deserve to get the best weapon systems, night vision devices, equipment, communication systems, training, medical, and logistics facilities. As a nation, we have to address this

issue with great seriousness, to provide state-of-the-art weapon systems and equipment that facilitate the requisite agility, mobility, lethality, protection, battlefield transparency and situational awareness at different levels. Recently, the army has taken action to procure state of the art infantry weapons and combat gear.

Defensive-cum-Static Mindset

Due to prolonged deployments on fixed defences along the LoC, LAC and Siachen Glacier, a soldier unknowingly adopts a “defensive-cum-static mindset.” Army’s leadership must be conscious of this malaise, keep troops informed of the changing character of conflicts, and take suitable actions by way of conducting offensive exercises, operational discussions, case studies, encourage innovative techniques to be offensive and win the wars of the future.

Army Aviation’s Role

Army aviation continues to remain the arm of the future. Increased employment of unarmed aerial systems (UAS)/remotely piloted aircrafts (RPA) from tactical to strategic levels needs no emphasis. With swarm miniaturised drones being increasingly employed, there is a need to graduate to Manned Unmanned Teaming (MUM-T). Technologies like AI and Human Machine Interface (HMI) need to be imbibed in order to manage a number of UAS missions. Also, for effect-based operations, concentrated employment of aviation resources should become the norm. We certainly need to further improve our operational capability to operate our aviation assets at night.

Impact of Environmental Degradation on Security

Environmental degradation occurs due to land degradation (deforestation, desertification, soil salinisation), atmospheric degradation (climate change, greenhouse effect, ozone depletion), water degradation, biodiversity degradation, and pollution. Given the tasks of the armed forces, the army in particular, we have to understand that environmental degradation has huge implications on our security at strategic, operational and tactical levels. To analyse the long-term impact, a study be conducted on environmental degradation on the Indian subcontinent and its effects on security at various levels.

Non-traditional Threats

The genesis of non-traditional threats and their significance has already been discussed. However, to highlight the magnitude of the problem, a

non-traditional threat pertaining to “water security” would be in order. According to NITI Aayog report, 600 million people face acute water shortage and 200,000 die each year because they do not have access to clean water.⁹ By 2020, 21 cities will run out of ground water. Michael Kugelman, Deputy Director at the Woodrow Wilson International Centre for Scholars, Washington DC states that the root causes of the farmer’s woes in India is water shortage. He feels that Pakistan and China face similar water woes.¹⁰ Water crisis has the potential to increase tensions and conflicts, both intrastate and interstate. As water is the survival need of all living beings, its non-availability could manifest in different form of agitations, violence and organised movements, thus leading to instability.

Energy security will also be of great relevance to India’s security challenges. India has about 0.6% of the world’s reserve oil and is the fourth largest importer of oil in the world.¹¹ Similarly, with climate change and warming of the Indian Ocean, food self-sufficiency may also be adversely affected. As it stands, India has one of the world’s highest numbers of children under nutrition rates. We are aware that non-traditional threats emanating from cyber, information, propaganda, fake news, environmental and health would have a serious effect on the national security. Such type of threats would have an enormous impact on human security, unless some action is taken urgently to mitigate them.

MOST IMPORTANT TAKEAWAYS

Comprehensive National Security Strategy (CNSS)

For a country like India, with complex security threats and challenges, formulation of CNSS is of utmost importance in order to give a clear direction to its national security. It is a well-established fact that no single authority or agency can address the complex nature of threats to national security. As all elements of national power have certain responsibilities, either directly or indirectly, towards national security, CNSS should spell out major responsibilities of each element, both in the short and long-term perspectives, especially in the ongoing insurgencies. If the responsibilities are not defined, every element is not really clear about its short and long-term responsibilities, and hence not accountable.

Focus on CNP

We have to focus on building our CNP, with the highest priority on achieving sustained high economic growth, as that alone will give the desired impetus to address traditional and non-traditional threats.

Transformation

The Army needs to be complimented for conducting studies on modernisation/partial transformation to improve its operational effectiveness for the conflicts of the future. It is time to transform all organs of the defence structures (not the Army alone) like the armed forces, HDO, MoD, defence production agencies, DRDO and defence procurement procedures in a calibrated manner, to make it more responsive and operation-oriented. The aim should be to formulate an India-centric security model for the integration of the armed forces, MoD, and other instruments of national power.

Internal Security: Mission Oriented Approach

A thorough review of the internal security apparatus is required to create a secure environment, and to make sustained efforts to resolve the ongoing insurgencies on a mission oriented basis, so as to facilitate India's growth story to flourish. Also, in the larger interest of the country, it is important to address the root causes of internal security threats.

Defence Industrial Base (DIB)

It requires an urgent and thorough "transformation of the DIB," i.e., review of the complete structures, organisations, processes and procedures, with better participation of the private sector and accountability of the public sector.

Conclusion

India continues to remain affected by traditional and non-traditional threats. Although a number of security review committees have been formed, their recommendations have been implemented in parts, majority of which actually tantamount to incremental and cosmetic changes. Having visualised the conflicts of the future, it is important to take proactive steps to transform our armed forces and integrate them, so that all available resources can be applied synergistically during the short window of opportunity in an intense and short duration conflict. The economic cost of preventing and containing violence can be minimised if we make efforts to resolve the ongoing insurgencies. It would then be possible to channelise additional resources for addressing the problems pertaining to food and nutrition, health care, education and job opportunities for the youth, among others.

India has to use all instruments of its national power—political, economic, diplomatic, military, social, technological, psychological, cultural—in a coordinated manner to address its security concerns. CNSS is perhaps the first step to place everyone on the same page. This can happen only if we put an end to turf wars between different elements of national power, and

look at the national security with a national outlook. We need to adopt the slogan—“**National Outlook for National Security**” to address our security concerns.

A celebrated Pakistani historian acknowledged the valour of the Indian Army (1 SIKH) at Baramula on 27-29 October 1947, when he wrote,

“Two tricks of fortune conspired to rob the Qaid-e-Azam of the Kashmir Gaddi, the loss of a day and half of pillaging at Baramula, and the reckless bravery of an Indian Officer, who with NO reserve of men and ammunition, made an attack on the invading force believe as if he had the support of the entire Army division.”

References

1. Gp Capt T. P. Srivastava, “Shekatkar Committee Report: Genuine ‘Reforms’ or Cosmetic ‘Re-grouping?’” *Indian Defence Review*. Accessed on January 3, 2019, available at <http://www.indiandefencereview.com/news/shekatkar-committee-report-genuine-reforms-or-cosmetic-re-grouping/>
2. HAARETZ, “Full Text and Video: Benjamin Netanyahu Addresses 2018 AIPAC Confab.” Accessed on September 12, 2018, available at <https://www.haaretz.com> › *Israel News*
3. “The Chinese Conundrum: India’s Road ahead.” *The Financial Express*, June 29, 2018. Accessed on October 20, 2018, available at <https://www.financialexpress.com/opinion/the-chinese-conundrum-indias-road-ahead/1170665/>
4. Global Peace Index 2018. PDF. Australia: The Institute for Economics and Peace, June 2018. Accessed on October 13, 2018, available at <http://visionofhumanity.org/app/uploads/2018/06/Global-Peace-Index-2018-2.pdf>
5. “United Nations Official Document.” United Nations. Accessed on September 17, 2018, available at http://www.un.org/en/ga/search/view_doc.asp?symbol=S/2018/14
6. “About This Website.” *Syrian Refugees*. Accessed October 24, 2018, available at <http://syrianrefugees.eu/>
7. “Economic Value of Peace 2018.” PDF. Sydney: The Institute for Economics and Peace, October 2018, available at <http://economicsandpeace.org/wpcontent/uploads/2018/11/Economic-Value-of-Peace-2018.pdf>
8. “Trends in International Arms Transfer.” PDF. Sweden: SIPRI, 2018, available at https://www.sipri.org/sites/default/files/2018-03/fssipri_at2017_0.pdf
9. Kant, Amitabh. “Composite Water Management Index.” PDF. New Delhi: NITI Aayog, Government of India, June 14, 2018, available at https://niti.gov.in/writereaddata/files/new_initiatives/presentation-on-CWMI.pdf
10. Kugelman, Michael. “Water Woes.” *The Hindu*. December 23, 2018. Accessed on January 1, 2019. available at <https://www.thehindu.com/opinion/op-ed/water-woes/article25814399.ece>
11. “Home.” India Energy Site. Accessed January 3, 2019, available at <http://indiaenergy.gov.in/iess/background.php>

