"We can win respect in the world only if we are strong internally and can banish poverty and unemployment from our country." -Lal Bahadur Shastri

INTERNAL SECURITY

India's geopolitical position, its neighboring factors, the country's historical experience with its extensive and vulnerable land, air and maritime borders make it vulnerable from a security point of view. Certainly, the government has made partial efforts in this direction, such as establishment of National Security Agency, establishment of Indian National Security Council, establishment of Defense Planning Committee etc but all these bodies are working at their own levels. There is a need for such a policy and such a structure which will take all these together. Today the situation is such that it has become difficult to differentiate between external and internal security. The real threat to our security comes from covert operations activities.

Pharmaceutical Pollution: Essential Causes and Remedies

■ **DR. RAJKUMAR SINGH**

Pharmaceutical pollution is the contamination of the environment with pharmaceutical compounds, which can include a wide range of substances such as antibiotics, hormones, painkillers, antidepressants, and other drugs. This type of pollution is a growing concern due to its potential impact on ecosystems and human health. The primary sources of pharmaceutical pollution are: a. Human Excretion: After consumption, some number of pharmaceuticals is excreted by humans and enters the sewage systems.Improper Disposal: Disposal of unused or expired medications down the toilet or in household garbage. b. Pharmaceutical Manufacturing: Waste from pharmaceutical manufacturing facilities can contain high levels of drug residues. c. Agricultural Runoff: Use of pharmaceuticals in veterinary medicine can lead to runoff from farms into water bodies.d. Environmental Impact:Aquatic Ecosystems: Pharmaceuticals can disrupt aquatic ecosystems, affecting the health and behavior of fish and other wildlife. e. Development of Antibiotic Resistance: The presence of antibiotics in the environment can contribute to the development of antibiotic-resistant bacteria.Human Health Concerns: While the concentrations in water are generally low, there's concern about long-term exposure to a mixture of these substances and their potential synergistic effects. e. Detection and Analysis: Detecting and analyzing pharmaceutical pollutants requires sophisticated technology, as these substances are often present at very low concentrations.f. Regulation and Management:Many countries lack specific regulations for pharmaceuticals in the environment.Efforts include improving waste management and wastewater treatment processes, and promoting the safe disposal of medications. g. Research and Awareness: Increasing research into the effects of pharmaceutical pollutants and raising public awareness are crucial for addressing this issue. h. Global Variation: The extent and impact of pharmaceutical pollution can vary greatly from one region to another, depending on factors like the local pharmaceutical industry, healthcare practices, and environmental regulations.It is a complex issue that intersects with healthcare, environmental science, and regulatory policy, requiring a multifaceted approach to address effectively. Causes of pollution: The major causes of pharmaceutical pollution include a variety of sources and activities that contribute to the entry of pharmaceutical compounds into the environment. These causes can be broadly categorized as follows: a. Human Consumption and Excretion:After pharmaceuticals are consumed by humans, a significant portion is excreted and enters the sewage system. These substances can include prescription medications, over-the-counter drugs, and supplements.Conventional sewage treatment processes often fail to completely remove these compounds, resulting in their release into water bodies. b. Improper Disposal of Medications:Disposing of unused or expired medications in toilets or trash bins can lead to pharmaceutical compounds entering the environment.Inadequate waste management systems, especially in some developing countries, exacerbate this problem. c. Pharmaceutical Manufacturing:Manufacturing facilities can be a significant source of pharmaceutical pollution. This includes not only the production of the drugs themselves but also the production of intermediates and by-products.In some cases, inadequate treatment of wastewater from these facilities leads to the release of high concentrations of pharmaceuticals into the surrounding environment. d. Agricultural Use:Pharmaceuticals, especially antibiotics and hormones, are used in livestock and aquaculture. These can enter the environment through runoff from farms and leaching into soil and water bodies.Manure, which is often used as fertilizer, can contain pharmaceutical residues. e. Hospital Waste:Hospitals and other healthcare facilities generate waste containing pharmaceuticals, which can enter the environment if not properly treated and disposed of. f. Lack of Regulation and Awareness:In many regions, there is a lack of stringent regulations governing the discharge of pharmaceuticals into the environment.There is also a general lack of public awareness about the proper disposal of medications and the potential environmental impact. g. Global Trade and Supply Chains:The global nature of pharmaceutical production and distribution means that pollution can occur in different regions from where the drugs are consumed.Outsourcing production to countries with laxer environmental regulations can contribute to higher levels of pollution.Addressing these causes requires a coordinated effort involving improved waste management and wastewater treatment technologies, stricter regulations, and increased public awareness and education about the proper disposal of pharmaceuticals. Remedies of pollution: Pharmaceutical pollution requires a multifaceted approach, involving changes in regulations, technology, and public behaviour. Some potential remedies include: a. Improved Wastewater Treatment Technologies:Upgrading wastewater treatment plants with advanced technologies that can effectively remove pharmaceutical residues.Implementing additional treatment processes like ozonation, activated carbon adsorption, advanced oxidation processes, and membrane technologies.b. Regulations and Enforcement:Establishing stricter regulations for the discharge of pharmaceuticals from manufacturing plants and healthcare facilities.Implementing guidelines for the proper disposal of pharmaceutical waste.Enforcing existing environmental laws more stringently. c. Pharmaceutical Take-Back Programs:Encouraging the public to return unused or expired medications to pharmacies or specific collection points.Raising awareness about the importance of not disposing of medications in the toilet or trash. d. Green Pharmacy and Biodegradable Pharmaceuticals:Research and development of pharmaceuticals that are more environmentally friendly and biodegradable.Encouraging the pharmaceutical industry to design drugs that minimize environmental impact without compromising therapeutic efficacy. e. Education and Public Awareness:Educating healthcare professionals and the public about the environmental impact of pharmaceuticals.Promoting the responsible use of medications and the importance of adhering to prescribed dosages to minimize waste. f. Research and Monitoring:Conducting research to better understand the environmental impact of pharmaceutical residues.Establishing monitoring programs to track the levels of pharmaceutical pollutants in various environments.g. Policy and International Cooperation:Developing and harmonizing policies at the international level to address pharmaceutical pollution.Encouraging cooperation between governments, the pharmaceutical industry, healthcare providers, and environmental organizations. h. Sustainable Practices in Healthcare and Agriculture:Promoting the judicious use of pharmaceuticals in healthcare and agriculture.Encouraging alternative practices, like the use of probiotics in animal husbandry, to reduce dependence on antibiotics.i. Innovative Drug Delivery Systems:Developing targeted drug delivery systems that reduce the amount of pharmaceuticals released into the environment. In nutshell, the goal is to reduce the environmental footprint of pharmaceuticals while ensuring access to essential medications.

(The author is a youth motivator).

Making India a World-Leader in Quality

■ **PIYUSH GOYAL**

India is on a mission to become a world leader in providing top-quality products that meet the highest global standardsin line with Prime Minister Narendra Modi's call for 'zero defect, zero effect' in manufacturing. Supply of high-quality products at competitive rates is a key part of the Prime Minister's mission to make India a developed country by 2047. The government is taking determined steps to ensure that the 'Made in India' brand is a stamp of quality that delights Indian and foreign consumers.The Prime Minister has emphasized that a profitable market can be sustained when there is a balance of interests of producers and consumers. A key plank of this strategy is a thrust on Quality Control Orders (QCOs)which mandate that specified products conform to prescribed norms of the Bureau of Indian Standards. This is a boon both for consumers, who are assured reliable, safe and high-quality products, and businesses, which have to deal with increasingly demanding and discerning consumers in the domestic and international markets. Prime Minister Modi's Digital India initiative has helped the family of 140 crore Indians connect with the world and know about the best products and practices. They routinely check customer reviews for performance, durability and dependability before buying a product. They publicly highlight deficiencies if they are dissatisfied with the product.Therefore, striking a balance between product quality, price, and innovation is the need of the hour. The Modi governmentis focused on developing a robust quality ecosystem to provide safe, reliable and superior-quality goods, and promoting exports of Indian products. Prior to May 2014, only 14 QCOs covering 106 products had been issued. The list has now been expanded to 148 QCOs covering 653 products. These include household products like ACs, toys and footwear.

Quality Control on Exports

QCOs have accelerated the mission of 'Make in India for the World'.Many products under QCOs are being exported.Cast Iron products, solar DC cables, door fittings, ceiling fans, helmets, smart meters, hinges, air coolers and air filters are quality-controlled products that are exported much more than they are imported. Cast Iron products covered by QCOs had exports of $535 million last year, while imports were barely $68 million. About 25QCOs are on products where exports exceed imports. This clearly demonstrates that QCOs are focused on building robust quality consciousness in India. This also helps reduce dumping poor-quality goods into the country. Access to the best quality goods is the right of every Indian citizen in our Amrit Kaal. QCOs are also critical for the health and safety of people. Sub-standard products can be extremely hazardous for households because of riskssuch asfires due to cheap electronics, hospitalization of children because of toxic chemicals in toys and electrical short-circuits.

Shining Example

A shining example of how quality-control can dramatically upgrademanufacturing to help consumers and manufacturers is the toys industry. Prior to the implementation of this QCO, the Indian toy market was plagued by cheap, sub-standard products.

A survey by the Quality Council of India in 2019 showed that barely one-third of the toys adhered to the relevant BIS Standards, and most of them were hazardous for children. This was completely unacceptable to the Modi government, which responded swiftly with a QCO for the sector from January 1, 2021. Thissubstantially improved the quality of toys in India. Arecentsurvey showed that 84% of the toys in the Indian market adhered to BIS standards. The QCO has not only provided Indian children safe, high-quality toys, but has also increased their exports by 60% in 2022-23 compared with 2018-19. Several quality norms have been enforced on consumer durables and other products used in households. These include smart meters, bolts, nuts and fasteners, ceiling fans, fire extinguishers, cookware, utensils, water bottles, domestic gas stoves for use with Piped Natural Gas, wood-based boards, insulated flask, and insulated containers, among others. The government consults all stakeholders, including industry representatives to make sure their feedback, technical inputs and practical suggestions are considered before implementing QCOs. Special care is taken to make sure that the interest of micro and small units is protected by giving them longer transition period.The government is always ready to help industry become more competitive and support manufacturers who want to upgrade quality.

Quality Governance, Quality Products

The driveto upgrade products to global standardsis a subset of the Prime Minister's broader vision to improve the quality of life for his family of 140 crore Indians. He has responded to their aspirations with a series of decisive steps to provide basic necessities such as roti, kapda aur makaanalong with healthcare, and superior infrastructure. His compassionate, corruption-free governance has accelerated growth, moderated inflation and made India sparkle globally. About 13.5 crore people have moved out of poverty in five years. People have responded to the PM's high-quality governance with their vote in recent assembly elections. This has a strong message for Indian manufacturers. When people make a selection -- with their vote or their wallet - they choose top quality. As Philip Crosby, author of 'Quality is Free'once said: "If you're out of quality, you're out of business."

(The writer is Union Minister of Commerce and Industry, Consumer Affairs, Food & Public Distribution and Textiles).

Swami Vivekananda's teaching and Indian's Knowledge System (IKS) paving the path for Viksit Bharat @2047

■ **DR. VISHAL SHARMA**

As the clock ticks towards 2047, India stands at the cusp of a transformative era, where tradition meets innovation, and heritage paves the way for a promising future. Envision a time where the old and the new come together, where our rich cultural heritage shapes the path to a promising tomorrow. In this flight towards progress, the guiding lights are none other than the profound vision of Swami Vivekananda and the rich reservoir of India's ancient knowledge system (IKS)cultivated over centuries.

Viksit Bharat @2047: Voice of Youth:

Viksit Bharat @2047 is the vision to make India a developed Nation by 2047, the 100th year of independence.Hon'ble Prime Minister of India Shri Narendra Modi has launched 'Viksit Bharat @2047: Voice of Youth' on 11 December, 2023 with the vision to involve the youth of the country in formulation of national plans, priorities and goals of the country. The vision encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance.The Prime Minister said that in the life of any nation, history provides a time period when the nation can make exponential strides in its development journey. For India, "This Amrit Kaal is ongoing" and "this is the period in the history of India when the country is going to take a quantum leap".

Indian Knowledge System (IKS):

The Indian Knowledge System (IKS) is the systematic transmission of knowledge from one generation to next generation. It is a structured system and a process of knowledge transfer rather than a tradition. Rooted in the Vedic literature, Upanishads, Vedas, and Upvedas, it forms the cornerstone of our rich heritage. The NEP-2020 (National Education Policy) also recognizes this ancient wisdom as a guiding principle for education. Comprising Jnan, Vignan, and Jeevan Darshan, the Indian Knowledge System has evolved through experience, observation, experimentation, and rigorous analysis. This tradition of validation and practical application has left a lasting impact on various facets of our society, including education, arts, science, administration, law, justice, health, manufacturing, and commerce.There was an imperative need to acknowledge and draw inspiration from the groundbreaking discoveries of our ancient Rishis like Aryabhatta, Banbhatta, Bhaskaracharya, Chanakya, Chakrapani, Charaka, Panini, Patanjali, Pingala, Susruta, Sankardev, Thiruvalluvar, Varahamihira, and many others, spanned across an array of fields including architecture, astronomy, physics, engineering, fine arts, mathematics, metallurgy, medical science, surgery, navigation, and yoga. At the core of Viksit Bharat is India's rich knowledge system, a repository of ancient wisdom that has withstood the test of time. From the holistic healing practices of Ayurveda to the philosophical depth of Vedanta, the country's intellectual heritage forms the bedrock upon which the vision is built. Blending India's age-old wisdom with contemporary sciences opens up a distinctive route to innovation and sustainable development, truly transforming our nation into a Viksit Bharat, embodying progress that is not only dynamic and forward-looking but also rooted in the rich tapestry of our cultural heritage.

Swami Vivekananda's Vision:

Often referred to as the wandering monk of India, Swami Vivekananda earned acclaim not only among saints and seers but also resonated with the scientific minds of his era.

It is really difficult to understand whetherSwami Vivekananda was anAstounding Scientist or a Wandering Monk. He became more popular after his historic speech in the "Parliament of the World's Religions" at Chicago, USA in 1893. Most of the people understand that "Parliament of the World's Religions" was attended only by religious persons from all over the world, but very few knew the fact that the great scientists of that era like Lord Kelvin, Prof. Von Helmholtz, Nicholas Tesla were also the part of the audience.These luminary scientists were captivated by the profound knowledge embedded in ancient Indian scriptures, leading to frequent meetings with Swamiji to delve into the scientific insights concealed within these texts. During his time in the West, he left an indelible impression on leading scientists and inventors, including Nikola Tesla, Hiram Maxim (inventor of machine guns), and Lord Kelvin, among others. Swami Vivekananda's teachings spanned various facets of science, religion, spirituality, education, philosophy, and social issues, emphasizing character building.Presenting Vedantic views in a scientific language, Swamiji discussed concepts ranging from atoms, energy, and matter to space-time, dark energy, and the fundamental question of the universe's creation. He envisioned from Vedanta that the micro-world and macro-world follow the same building scheme, emphasizing the unity of existence.Swami Vivekananda modernized Vedanta to make it accessible and appreciable even for scientifically-minded individuals. He preached the unity of existence, highlighting the oneness of matter and energy, and the ultimate unity of God, man, and nature-the cornerstone of Hindu thought and life.

In conclusion, Swamiji envisioned India as a guiding force of scientific knowledge, human strength, and spiritual enlightenment for all of humanity. His vision surpassed mere economic prosperity, stressing the importance of comprehensive development that balances both the material and spiritual aspects of life.As he eloquently put it:"When the real history of India is unearthed, it will be proved that, as in matters of religion, so in science and fine arts, India is the primal Guru of the whole world." Swami Vivekananda's profound vision becomes the guiding light for Viksit Bharat@2047, shaping the nation's destiny with inspiration drawn from his teachings.

Achieving Viksit Bharat@2047:

The fusion of the Indian Knowledge System (IKS) with the teachings of Swami Vivekananda offers a potent framework for realizing the visionary concept of Viksit Bharat@2047. Drawing from the structured transmission of knowledge ingrained in the Vedas, Upanishads, and other ancient scriptures, IKS provides a comprehensive foundation for education and societal progress. When combined with Swamiji's emphasis on character development, values, and a holistic approach to growth, this amalgamation creates a powerful synergy. Viksit Bharat, guided by the profound wisdom of IKS and Swami Vivekananda, envisions a nation that seamlessly blends its cultural heritage with modern advancements. This harmonious integration not only nurtures scientific and spiritual coexistence but also fosters innovation and sustainability that propels us towards embodying a true Viksit Bharat - a nation balancing tradition and modernity, innovation and sustainability, fostering a comprehensive and resilient development paradigm.In essence, the fusion propels our nation toward a future where progress is dynamic, rooted in tradition, and shaped by a balanced synthesis of timeless wisdom and contemporary vision, fostering a society that is both forward-looking and deeply connected to its cultural roots. Concluding this article in the spirit of Swami Vivekananda, envisioning Viksit Bharat@2047:"Let us all work hard, my brethren; this is no time for sleep. On our work depends the coming of the India of the future. She is there ready waiting. She is only sleeping. Arise and awake, and see her seated here, on her eternal throne, rejuvenated, more glorious than she ever was-this motherland of ours".

(The writer is Convener Viksit Bharat@2047 & HOD Electronics MAM College Cluster University of Jammu).

Leading Change in NCC: Through Advocacy and Implementation

■ **MAJOR GENERAL RK SACHDEVA**

Introduction: Having assumed the mantle of leadership at the National Cadet Corps (NCC) in the Jammu Kashmir and Ladakh Directorate in Feb 2023, as a team we endeavoured to make the Team embark on a journey of transformative advocacy and resolute implementation. This article provides insight into our collective commitment to advocate for positive change and it's my determination to see these advocacies manifest in impactful and tangible implementations. Advocacy for Unity and National Pride: My advocacy begins with fostering unity and national pride. Through seminars and dialogues, we underscored the strength in unity, instilling a sense of national identity that transcends geographical and cultural boundaries among our cadets. We profess, "Unity is our foundation, and national pride is our collective strength."

Implementing Inclusivity Through Training and infrastructure Development : Inclusivity is not a mere concept but a guiding principle embedded in our training programs. We believe in ensuring that cadets from diverse backgrounds learn the true essence of Teamwork and Camaraderie. The cadets both Boys and Girls from the border villages are also participating in the upcoming RDC Camp and some of them would be marching on the Kartavya Path on Republic Day on 26 Jan 2024. As we maintain"Inclusivity is not just about acceptance; it's about celebrating our differences and growing stronger together." To facilitate exponential improvement in training the NCC Directorate of Jammu Kashmir and Ladakh has embarked on the journey of establishing NCC Academies at Nagrota and Lehand one is under consideration at Srinagar. We wholeheartedly convey our gratitude to the UT Administrations of Jammu Kashmir and Ladakh for positively and proactively giving fillip to all infrastructural improvements. Achievements in Camps, Sports and Adventure Activities: As Directorate we have accumulated various laurels; despite being the smallest in strength, punching beyond our weight in performance in all National Camps, sporting events as well as adventure activities. Our Directorate has elevated the standing from 14th in 2022 to 4th in 2023 in Republic Day Camp. The improvement in Thal Sainik Camp in 2023 securing 4th position is another feather in our cap as a team. We are slowly but surely building a mindset of imbibing a winning streak. Many of our NCC Cadets have brought laurels to the region by creating moments of Podium Finishes in sporting events. Shivani Charak in rock climbing is one such elite sportsperson who has accumulated 24 National levelmedals and has participated in many International Championship . Shivani Katal, (APS Samba) ,Ridhima Sambyal (APS Samba) and Alankrita Sharma, (APS Udhampur) have been selected to participate in Fencing in upcoming 67th National Games at Latur. It would be our earnest endeavour to utilise the infrastructure created under the aegis of Department of Youth Sports and Services as well as J&K Sports Council by selecting the right talent to represent the UT at National and International level. At the grass root level, NCC Directorate has distributed 30 TT Tables with playing equipment to 30 colleges/schools located in farflung areas of JK&L.

Transformation from NCC Cadets to Commissioned Officers: While there has been a huge contribution towards Agniveers and other belted services, Girl Cadet Zubiksha Thakur has joined Air Force Academy in July 2023. In boys category NCC boys Cadet Raghunandan Kesar and Cadet Mayank Sudan have joined OTA Gaya in 2023 and Cadet Amit Singh and Cadet Mohit Saini have joined NDA . Cadet Manik Sharma of GGM Science College is awaiting to join AF Academy. Cadet Saksham Sharma has got commissioned as flying Officer and Cadet Charanjeet Singh Gill of MAM College has joined AF Academy. There are many more such achievers and numberstoday stand at 20 officers, 400 Agniveers and 60 in Police Force. These cadets are shining examples who would inspire generations through their achievements.

Advocacy for Skill Development and Nation Building: Beyond military training, our advocacy extends to equipping cadets with skills for holistic development. We undertake personality and leadership development initiatives, preparation for defence competitive exams interviews, education on various career options, aligning the talents with the skills and abilities and lectures by alumni's to inspire the young cadets. As we implement these advocacies, We emphasize, "Our cadets are not just defenders; they are architects of a prosperous nation, contributing to its socio-economic development."

Environmental and Sustainable Development Practices: Environmental advocacy is a crucial aspect of our shared vision. We actively engage in raising awareness about climate change and sustainable living practices. Plantation drives and clean-up campaigns are not just activities; they represent our commitment to the future. We look forward for an enhanced involvement of the community for which the NCC cadets are acting as the change makers. We believe, "Each tree planted is a promise for a sustainable tomorrow." Its our endeavour to focus upon the Sustainable Development Goals and contribute towards World's Vision of 2030.

Implementing Community Engagement and Disaster Response: Community engagement is a cornerstone of our efforts contributing towards leadership. Disaster response training is not theoretical but hands-on, reflecting our commitment to community safety. I often state, "In times of crisis, our cadets are not just responders; they are beacons of hope for the communities we serve."

Latest Initiative; Artificial Intelligence and Cyber Security Awareness: In keeping with contemporary challenges, NCC Jammu is spearheading an Artificial Intelligence and Cyber Security Awareness campaign. Advocacy for digital literacy and cyber security is crucial for our cadets. As I emphasize, "In a world driven by technology, our cadets must be both guardians and innovators, embracing AI responsibly and safeguarding our digital frontiers." Towards implementation of the same all possible stakeholders from J&K Cyber Cell, Army regional forensic labs, Heads of Computer Science Department from IIT Jammu and Computer Science teachers and Professors have been engaged for a protracted campaign. In last three months 4000 plus cadets and students have benefitted from this campaign which would result into awareness of so many families and relations when these cadets contribute towards a digitally safe environment. Milestones of JK&L Directorate.They include numerous commendable accomplishments such as LG's Unit Citation (first in the country), introduction of AI to NCC Cadets (first in the country) inclusion of approx 500 NCC Cadets as officers, agniveers and police forces, outstanding performance in various competitions, sports and receipt of a large number of awards. These achievements reflect the dedication, discipline and hard-work of the cadets, as well as the effective leadership and guidance provided by the NCC Directorate. The milestones collectively contribute to the positive reputation and impact of NCC in inspiring and motivating cadets to continue striving for excellence and upholding the national values.

Conclusion: In the landscape of advocacy and implementation, we lead with a vision of positive change. Our role goes beyond strategic planning; it involves inspiring and leading cadets toward a shared vision of a stronger, more united India. As we advocate for unity, inclusivity, and sustainable development, the true impact lies in the implementation of these principles in the daily lives of our cadets.

In closing, we remain unwavering in our commitment to advocacy that resonates through the valleys and implementation that shapes the destiny of the region and the nation. NCC Directorate Jammu Kashmir and Ladakh, marches towards a future where advocacy is not just spoken but lived, and positive change is not just a vision but a reality. It's our firm belief that, "The transformation begins with each cadet, and together, we carve a path towards a brighter and united tomorrow."

(The writer is ADG NCC Directorate JK&L).