

BUILDING CAPABILITIES AND CAPACITIES FOR INDIA

**Policy suggestions for the National
Democratic Alliance (NDA) Government 2024**



**Vivekananda
International
Foundation**



VIF REPORT

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Democratic Alliance (NDA) Government 2024**

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3, San Martin Marg | Chanakyapuri | New Delhi - 110021
Tel: 011-24121764 | Fax: 011-66173415
E-mail: info@vifindia.org
Website: www.vifindia.org

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Preface

On 09 June 2024, the National Democratic Alliance (NDA) government led by Prime Minister Modi was sworn for a third time after the conclusion of the Lok Sabha elections. In the second term, the government had laid the foundation for transforming India into a developed country (Viksit Bharat) by 2047. India is likely to emerge as the third largest economy by 2027. India's global profile has become better. This is no mean achievement but the task of building Indian capabilities has just begun. Job creation should be the top priority for the government.

India already has about 1.4 billion population, which will cross 1.6 billion mark by 2047. In order to become a developed country by that time, India will have to maintain a consistently high rate of growth over the next three decades. But that alone will not suffice. We will need to not just increase the GDP but also the per capita income, create high quality jobs and standards of living. This will require a stable environment within and outside the country.

India's growth will have to be accomplished in an uncertain and volatile world. The last five years have seen unprecedented global turmoil due to the Covid-19 pandemic, the ongoing Russia-Ukraine war and the war in Gaza. The global environment in 2024 has become highly uncertain and risky. The US-China strategic rivalry has deepened. Russia-China strategic partnership has consolidated. India's neighbourhood has become unstable. The tensions in the Indo-Pacific region are growing. China's military footprint in the Indian Ocean has risen. Climate change is compelling the countries to undertake costly and risky energy transitions. Artificial Intelligence (AI) is not only creating new vistas for economic development but also social anxiety and challenges for national security, social media, cyber security and digital currencies impact national sovereignty. The question of regularising of AI is becoming urgent. The competition for critical minerals and resources is going to become keener.

While India has navigated the post Covid turbulence well, the geopolitical and geo-economics challenges ahead need to be assessed properly. India will need to deepen reforms process further not only to maintain

its economic growth but also to build its diplomatic capital, technological capacity, and skills. It will need to ensure that the advantage of young demography is fully exploited in a timely manner through higher investments in education, skills, and training. We will need to stem the brain drain from India. An unusually large number of young Indians are going abroad for education and jobs including to areas, that are unstable and prone to conflict. We would also need to be alert to the possibilities of ‘technology drain’ from India if start-ups are not nourished and supported. Many of our technologies-savvy start-ups are being preyed upon by foreign companies. Start-ups are Indian jewels, which need to be preserved.

India has started feeling the adverse consequences of climate change, which have manifested in extreme weather events like unprecedented heat waves, powerful cyclones, floods, landslides, sea level rise, crops losses etc. Extreme weather events have inevitable socio-economic costs and implication for national security. There is urgent requirement of controlling pollution of land, air, water which is beginning to have adverse impact on public health and economy. Our cities and rivers are among the most polluted in the world. Biodiversity and ecological systems need to be protected, nurtured and sustained. Attention need to be paid to improve environmental governance in the country. Mere GDP growth will not be sufficient. Food, water, and health security should be given the high priority they deserve. India is a water stressed country. The situation is becoming worse. Water shortage will have negative consequences for agriculture, industry, economy, health and for society in general. Urban areas are particularly vulnerable to water stress. There is urgent need to invest in water management.

In 2019, the Vivekananda International Foundation had published a paper, which suggested broad reforms in the areas of foreign policy, defence, governance and a few select sector in the economy. This was shared with the government at that time.

As the new government begins its 5-year tenure under the leadership of Prime Minister Modi, broad continuity in policies can be expected. At the same time, several new initiatives will be needed to speed up the reforms and also address new problems. The VIF has been continuously engaged in in-depth discussions on several issues, which have an impact on the nation and national security. Based on these discussions, we have compiled a few suggestions for the consideration of the government. We hope that the paper will also trigger a wider debate on these issues.

The broad directions of reforms that this paper suggests are;

- Greater and deeper engagement with the world based on dialogues and diplomacy. Our diplomatic capabilities and capacities need to be expanded.
- Building comprehensive deterrence through strengthening of armed forces, strategic manufacturing and effective defence diplomacy.

- Economic growth with massive expansion of job opportunities. Preventing brain drain and technology drain should be our concern.
- Focus on youth and their needs and aspirations for good, affordable education, jobs, and livelihood.
- Adequate resources for New Education Policy, skills and training need to be provided.
- Making India a strong technology power house ensuring that there is no technology drain from India. Focusing on Aatmanirbharta through strengthening of R&D.
- Governance should be based on the principles of accountability, sensitivity and transparency. Average citizens continues to face harassment and corruption in daily life. There should be zero-tolerance for corruption.
- Well considered reform of the judicial system, police.
- Factoring in climate change and environment in all policies to encourage sustainable development. Preparing for energy transition which is going to be highly disruptive and expensive.
- Strategic planning for water, energy and food security for the vast Indian population.
- Maintaining and sustaining social harmony, inclusiveness and internal peace. Addressing inequality, regional disparity and societal discord.

I would like to thank Ambassador Satish Chandra, Lt Gen Ravi Sawhney(retd), Amb Skand Tayal, Amb Anil Wadhwa, Amb Anil Trigunayat, Lt Gen Rakesh Sharma (retd), Lt Gen Anil Ahuja(retd), Sh Raghvendra Singh, Sh Dharendra Singh, Dr JR Bhatt, Mr Vikas Khitha, Lt Gen AK Bhatt(retd), Prof KK Aggarwal, Amb DP Srivastava, Prof Hari Babu Srivastava, Capt (retd) Anurag Bisen for their inputs. This paper realised on numerous task force reports and papers prepared by the VIF in the recent past.

Arvind Gupta
Director, VIF

Date: 26 Jun 2024

1

Foreign Policy

Introduction

The external strategic environment for 'Viksit Bharat' has become more challenging because of the rise of inimical China and its ominous ingress in India's immediate neighbourhood. To meet these challenges, there is a need to develop a national consensus and a long term strategy for dealing with China.

The rivalry between the West led by the US, and China and Russia is growing. Multipolarity is on the rise. Partnerships of convenience are becoming more frequent. The days of unipolarity are behind us. Multilateral institutions are not performing to the expectations. The UNSC is paralysed. Global peace is threatened. The adverse impact of climate change on security is visible. Emerging technologies like AI/ML are revolutionary and will have deep socio economic impact which is not fully comprehended at this stage. The transition to net zero is going to be uneven, disruptive, and expensive.

India will have to formulate a foreign policy for an volatile and uncertain world. Undoubtedly, there will be many opportunities for India, but the challenges cannot be underestimated. The government will be well advised to link up with the Indian think tanks and strategic communities to understand and comprehend the emerging challenges.

Suggestions

- There is a need for informed frequent and extensive debates on foreign policies issues in the **parliament**. The members of opposition parties should be regularly briefed on foreign policy and national security issues so that the country can speak with one voice on sensitive issues.

- The government has pursued active engagement with countries in all regions in the last ten years. There is a need to step up the quality of engagement and follow up action with certain regions like **Africa, Central Asia, Latin America, East and Central Europe, the Arctic and the Pacific Islands**.
- The government could consider appointing **special envoys** for the Neighbourhood, Myanmar, Central Asia, West Asia, South-East Asia and other regions where India has strategic interests.
- Similarly, the government could consider appointing **special envoys** in critical thematic areas like terrorism, complete elimination of nuclear weapons, climate change, AI and emerging technologies, maritime issues, critical minerals, public health etc. Intensive diplomacy is required to remain abreast of the developments, safeguard India's interest and make contribution to the global debate. Special envoy would compliment the efforts of the government.
- The government needs to encourage and **engage closely with Track II diplomacy**. For instance, to avoid an 'India Out' scenario in Post-Sheikh Hasina Bangladesh, some Track II channel may be opened in Bangladesh and in exile. A lot is changing in Pakistan. Track II contact with Pakistan may be opened up.
- Ensure enhanced connectivity, quality infrastructure and high level of preparedness on the Indo – Chinese and Indo Pakistan borders.
- Allocate resources for countering the **Pakistani naval threat** arising out of Chinese supply of eight new submarines to Pakistan.
- Take forward the Quad initiative for **Space awareness** and join the tier 2 of AUKUS for sharing artificial intelligence and quantum technologies in order to counter the Chinese threat.
- Forge linkages with selected countries for acquisition of **rare earth assets** in Africa, Latin America and Australia by earmarking funds for this purpose (needs to be done urgently over a 6-month period).
- It should be ensured that the joint working groups and dialogues mechanism etc that are set up during high-level discussions should meet regularly and deliver. We need to **improve delivery mechanism** with regard to the promises made at different fora to other countries. This will require regular monitoring and coordination with agencies and institutions, which back up foreign policy initiatives.

- The government should issue a **Foreign Policy Concept** Paper, which identifies major challenges and outlines feasible coordinated policies, resource commitments, and actions designed to carry out the guiding principles of India's foreign policy.
- A new agency, the **Development Partnership Agency (DPA)** should be created out of the present DPA divisions of the MEA, subsuming other relevant agencies that are presently outside the ambit of MEA, like the EXIM Bank of India etc. Such an agency should have its own steady budget, a board of governors, a planning department and an implementation agency responsible for the execution of projects. The agency should draw on experts from different fields. The private sector should be involved in the conceptualization of the projects right from the beginning. Projects should be undertaken only if they are viable and not on the basis of political considerations.
- Agencies like the EXIM Bank of India and Export Credit Guarantee Corporation should be strengthened. India should start **shipping** lines to ports situated in strategically important geographies.
- **Culture** should form an important part of India's foreign policy. The Indian Council of Cultural Relations (ICCR) should pursue cultural cooperation in line with the strategic interests of the country. A long-term plan on how India's history, culture and civilisational values can be integrated with India's foreign policy aims and diplomacy should be worked out.
- Indian diplomats should be trained in India's history, culture and soft power. The MEA should design a **course** on India's history, culture and soft power, which should be mandatory for every Indian diplomat to pass, during the first five years of service.
- India's **diplomatic service** is too small for the expanding tasks. The number of diplomats and domain area experts and professionals should be increased. The government may consider setting up a Foreign Service Reforms committees on the pattern of Pillai Committee (1965) for a holistic reforms of diplomatic service to deal with the issues of expansion, lateral entry, training etc. It is vital that coordination between MEA and other agencies as well as think tanks and experts should be strengthened. The diplomatic service has to incorporate inputs from professionals and experts in variety of areas. The historical and legal and treaties division need to be strengthened by infusion from outside.
- India should consider setting up an office of the **International Trade Negotiator** to coordinate India's approach to international trade negotiations.

2

International Trade

Introduction

The growth in GDP in the last ten years has been propelled mainly by government consumption and domestic investment and less by international trade. Trade policy instruments like multilateral negotiations and Free Trade Agreements can provide only limited market access. Their outcomes can be augmented by direct arrangements leveraging our strengths as a quality producer, strong power, and a large domestic market.

Suggestions

- Exports need infrastructure support for value addition. There is a need for creating **Common Export Related Infrastructure & De-bottlenecking**. (For instance, creating a flower auction platform in Bangalore with cold storage facility gave a fillip to rose exports to the international markets in Tokyo and Amsterdam. Likewise, the wood seasoning plant in Saharanpur, gave our craftsmen entry into the lucrative photo frame market in Europe and USA. These were two of the many achievements of the Assistance to States for Infrastructure Development for Exports (ASIDE) Scheme of GoI).
- The ASIDE scheme was replaced by Trade Infrastructure for Exports (TIES) scheme in 2014 which was restricted to central level activities. The state component of ASIDE, which catered to small projects identified by states, was the casualty of this change. This adversely affected Centre-State cooperation in de-bottlenecking export related infrastructure based on needs of export clusters. There is a need to look afresh ASIDE scheme. 100 projects can be identified on a 67:33 sharing basis between GoI and states, which will directly add value to our exports from clusters

including those under the **One District One Product** (ODOP) scheme. This needs to be done in collaboration with states and common facilities created. Temperature-controlled facilities for storing and transporting goods and produce (vegetables, fruits and flowers) could be given priority.

- Unlike Japan, Korea, China, India is not able to source commodities and minerals at low cost, which is imperative for any manufacturing power. India should enter **into long term agreements for supply of specific quantities of a few commodities**, raw materials, rare metals and trace elements for cyber optic, solar cells, semiconductors and gold and diamonds required by our gem and jewelry trace elements like gallium and germanium absorb impurities and improve the integrity of semiconductor materials. These are also used in the manufacture of high-end fiber optics and solar cells which are also being increasingly produced in India. Special focus should be given to the long-term agreement with Africa.
- In order to attract more FDI, assure investors and have a **predictable regime for investments** into India, work out a new **Bilateral Investment Treaty** (BIT) with Ministry of Commerce, Niti Ayog having the primary role instead of leaving this to Ministry of Finance which has narrower focus. Create a larger, more **powerful “invest India”** with branches in state capitals
- Reconsider joining RCEP and conclude a BIMSTEC FTA.
- **Conclude FTAs** in 6 month time frame with Australia and Oman. Push for conclusion of FTA with UK and intensify negotiations with EU.
- Widen **the scope of PLI schemes** and strengthen the governing mechanism with in DPIIT for allocation of resources, their redistribution and periodic changes to the schemes.
- Make it compulsory for Ministry of Commerce and the Chambers of Commerce to have **outreach** to Indian industries on how they can take advantage of these FTAs.

3

Arctic Issues

Introduction

With the North Sea Route having opened up due to global warming, the Arctic region rich in resources and a bridge between Europe and Asia, has become new geopolitical, geo-economics hotspot. Russia, China is making deep inroads into the region where Russia has natural dominance. India, as a member of the Arctic council has strategic intension in the region. India now has an elaborate Arctic policy which needs to be implemented in full earning.

Suggestions

- India's Arctic Policy, released on 17 March 2022, needs to be revised to incorporate the changed geo-political situation arising out of Russia's special military operation in Ukraine.
- Set up a separate Working Group (WG) under the IRIGC-TEC on enhancing bilateral cooperation with Russia in the Arctic. Such a mechanism was set up between Russia and China in 2017.
- Decide on the Russian proposal of enhanced BRICS+ engagement in the region.
- Set up an empowered committee to recommend greater Indian investments and engagement in the Arctic.
- Set up a dedicated desk for Arctic Issues in MEA, to coordinate with the UNES, AMS, ERS and CE Divisions within MEA and NSCS, MoES and other ministries, to enable a greater Indian policy coherence to the region.

4

Maritime

Introduction

The focus on maritime issues in India's foreign and defence policy is a welcome development. Security and Growth for All (SAGAR) policy was announced in 2015. This was a positive development. The vision required a credible roadmap and implementing structure for implementation.

Similarly, India has adopted an ambitious policy for the Arctic. This also requires a roadmap for implementation.

There are certain gaps in India's maritime legal framework. These have been discussed but need to be addressed urgently

Suggestions

- Develop a comprehensive framework under the rubric of SAGAR, grouping stakeholders under six functional clusters, each under a coordinating Ministry, with the following verticals. External Relations *Sagar Sambandh* MEA; Security *Sagar Suraksha* MoD; Connectivity *Sagarmala* MoPS&W; Scientific Research *Sagar Shodh* MoES; Culture *Sagar Sanskriti* MoC; Resources *Sagar Sansaadhan* MoAHD&F
- Set up a committee to resolve the following **fundamental flaws in India's maritime security mechanism**: - MHA being responsible for maritime border management of India and yet not having a corresponding maritime border guarding agency unlike the land borders, where the one-border-one force principle is being applied with BSF, SSP, ITBP and Assam Rifles.

- Indian Naval Coast Guard is under DoD while the Indian Army, Indian Navy and India Air Force are under the DMA in MoD.
- **India's Maritime Zones of India Act, 1976**, predates UNCLOS, and **needs to be updated** to incorporate developments since last 47 years. All other littoral countries in India's neighbourhood have updated their respective MZI Acts.
- **Baselines** Promulgate India's baselines pertaining to Eastern Andaman and Nicobar Islands. India's baselines were partially promulgated on May 11, 2009. However, despite the passage of 15 years, India's baselines East of Andaman & Nicobar Islands (ANI) are yet to be promulgated, leading to lack of clarity on maritime security, jurisdiction, governance and resource exploitation. pending since last 15 years.
- **India Led Regional Security Mechanism in Indian Ocean Region (IOR)** Commence work towards a regional mechanism, bereft for extra-regional actors.
- India should play an active role in shaping the security architecture in the Persian Gulf which is critical region for India. India should have regular dialogue with the Gulf countries particularly UAE and Saudi Arabia in this regard.

5

Defence

Introduction

As India undertake theatrisation of the armed forces, it will need to incorporate the lessons of the ongoing Russia-Ukraine war (2022), the Gaza war (2023), the Galwan crisis (2020), the military rise of China and the strategic nexus between Pakistan and China. The widespread use of new technologies like drones, hypersonic missiles, ISR, information warfare have major implications for the military doctrines, military postures, manpower recruitment and training, defence manufacturing, capability development, defence diplomacy etc. India will need to build comprehensive deterrence to deal with security challenges.

Suggestions

- There is an urgent need to formulate a National Security Strategy (NSS) and Defence Policy (NDP), based on the global and regional geopolitical environment. (Release of public version is optional). National Security Council should meet regularly.
- Raksha Mantri's **Operational Directive** to the armed forces should be updated in consonance with the current security and operational environment.
- **Defence planning** is key to Indian military preparedness. The Defence Perspective Planning Process, which has slowed down since 2020 (Post formulation of DAP - 2020) needs to be restarted. In this context, the process of making 15- year Long Term Integrated Perspective Planning and the related Long-Term Integrated Technology Perspective Planning) should be reinvigorated.
- The concept of 10- year integrated **Capability Development** has failed to take off. This may be revived.

Higher Defence Organisation

- With the experience of five years of having **CDS and DMA** in place, review the role, charter and functioning of their offices, to add better value to strategic planning and capability development.
- Initiate a pilot project for structuring and functioning of **integrated military commands** to ensure that the implementation is smooth and does not result in operational unbalancing.
- We need an overriding emphasis on improving **ISR** (Intelligence, Surveillance and Reconnaissance) and 'affordable' Air Defence (against air, drones, ballistic and cruise missiles) of identified critical national infrastructure and, vital civil and military targets.
- Emphasis on enhancing operational capabilities in cyber and space domain and national level integration of organisational structure and resources is needed.
- We should develop capabilities for visualising Future Battlefield / Threat Manifestation Scenarios.
- Need to constitute a multi-disciplinary study group, to professionally analyse future organisational structures, doctrines, and weapons acquisition. Formalise conduct of national level scenario building and war-gaming exercise to ensure appropriate orientation of the armed forces, CAPFs and other agencies. As of now the thinking is in silos and dated.

Capability Development

- Conduct an internal audit of the degree of success of various defence reforms and indigenisation initiatives. Take mid-course corrections, where necessary.
- Institute much-needed defence budgeting reforms, the root cause of India not being self-reliant in defence, yet.

Defence Diplomacy

- An Office of **Political Military Affairs** in charge of **defence diplomacy** should be set up in the Ministry of Defence for working closely with the MEA. A cadre of defence diplomats should be created. This office should be responsible for implementing defence cooperation projects with other countries and should have its own budget.

- Streamlining the functional construct and responsibilities for defence diplomacy between the Services, MOD and MEA.
- Evolve a framework of engagement with major strategic partners and select countries and identify areas of operational, industrial and technology cooperation. This is essential for getting most optimum benefits from the relationship.

Inter-Agency Synergy

- Streamline the organisational relationship between the uniformed and civil personnel in jointly manned defence organisations e.g. Service HQs, BRO, MES etc. The functional disparities are having adverse impact on the assigned tasks.
- Improve functional synergy between the armed forces and CAPFs/PMFs including operational command and control while operating jointly.
- Review the Agniveers scheme. 50percent of Agniveers and 67percent of technical Agniveers need to be retained.
- Review downsizing of Army.

Defence R & D ecosystem

- A **Defence Technology Commission** to be headed by the PM may be established as an overarching body over the total defence and security ecosystem of the country, including private sector industries in defence, academia, military, DRDO, DPSUs, DDP, DoD, NTRO, Space and Cyber Defence etc.
- Provide for long term flexible funding for projects/products with emerging/on-horizon technologies/engineering and blue-sky science research. **General Financial Rules (GFR) need to be modified** to include a chapter on funding/expenditure related to research and development, including grant in aid funding to academia, start-ups, MSMEs and industry.
- Government may allow full ownership of intellectual property to principal investigators/developers of technology for technologies developed under government funded projects, with a provision of 'march-in' rights in case of national emergency.
- Government may consider free-of-cost technology transfer from government labs to Start-ups and MSMEs with the provision of royalty.

- An **independent directorate** under CDS may be established for **testing** of equipment developed by industry/other entities (without QR from Indian armed forces) to certify their military worthiness.
- Mandate of “Make in India, Make for the World” should provide incentives for “Make in India with Indian IP for the World”.
- **Defence R&D budget** should be progressively enhanced to bring it at par with the technological aspirations of the country. This may require R&D funding to be enhanced to 2-3percent of GDP over next 5 years. This is also required to overcome technological challenges towards sustainable development and Viksit Bharat by 2047.
- Defence exports may be liberalized by promulgating negative list of countries and products.
- Tenure posting of working level officers and staff of civil and military establishments of MoD will act as first step towards **civil-military fusion**. Hence, the same may be considered.

6

Strategic Manufacturing and Exports

Introduction

India needs to emerge as a global leader in defence manufacturing. Several areas need attention. The defence manufacturing sector is in urgent need of reform, starting with the acquisition process itself and the structure within the MOD to meet challenges of the future.

The Intellectual Property Rights (IPRs) held by the Indian eco-system of DPSU and private sector collectively, are few and lack sophistication compared to developed nations. For instance, India is dependent on technology for aero and marine engines, propulsion systems and powertrains. The private sector will not invest in R&D unless it is assured of Return on Investment (ROI) and Return on Equity (ROE) on investments already committed in Defence manufacturing.

Suggestions

- For manufacturing to grow in India, dependency on imported machine tools is very high. This is a risk and needs to be addressed by (re)growing the **Indian machine tool industry**.
- The defence manufacturing sector is in urgent need of reform, starting with the **acquisition process** itself and the structure within the MOD to meet challenges of the future. There is a need to professionalise capital acquisition by inducting supply chain and contract management professionals with long tenures. The DAP itself needs to be amended to include a price variation clause in order to compensate successful bidders for the delays in decision making.
- **Economic order quantities** will serve to push the Aatmanirbharta initiative agenda. By placing several orders for the same equipment in limited quantities over a period of time, Government

is losing out on volume discounts while inadvertently promoting imports. Instead, where large volumes are required, it would be beneficial to **place orders for larger quantities** with staggered delivery schedules so that import substitution is the norm.

- The current acquisition cycle of 3 to 7 years and one that is **L1 based**, only ensures that the new equipment being inducted by the user is already obsolete at the time of induction and is not designed for the future. The entire acquisition process needs to be much shorter, in the range of 18-24 months and be based on **QCBS (Quality cum Cost Based Selection)**, rather than be L1 led.
- **A high level mechanism to review all procurement and ongoing execution** is urgently needed, similar to the Pragati review mechanism. Both public sector and private industry projects suffer from cost and time overruns. There is a need to incentivize R&D and such projects need to be treated differently from the usual acquisition procedure.
- It is recommended that the Government sets up task forces for indigenous development of an aero engine, marine engines, engines and powertrains for tanks and armoured vehicles with aggressive development schedules, domestic and exports sales targets. The private sector is still searching for an ROI and ROE on investments already committed in Defence manufacturing.
- A few companies in the private sector, notably those also closely involved in India's Space programme over decades, have the required capabilities to see such initiatives through, if firm orders in economically viable quantities were to be placed in advance. Such initiatives would need to be handled in a strategic and classified manner and away from the usual acquisition process with industry acting as development-cum-production partner.
- In order to boost **Defence Exports, Reciprocal Defence Procurement agreements** need to be formalized before any further sourcing of platforms takes place from developed nations.
- **Financing of Defence Exports** especially to other developing nations needs to be effective, timely and competitive. This is currently not the case. A **separate Defence Exports Financing organization** is needed, as exists in developed nations. Where Exim funding is involved, it is observed that financing proposals linger on for years due to inflexibility on terms on our part and a tendency to inflict Indian GFR on the customer, resulting in the customer usually sourcing the equipment from another country. This is true even for repeat orders.
- Setting up of a **Defence Export Promotion Council**, drawn up from industry with aggressive targets to push Defence Exports via Indian missions abroad, the Indian diaspora and via the

combined network of the Commerce Ministry, MOD and MEA, is an urgent need.

- **Defence Procurement Organisation** With increasing specialisation and complexity there is a need to have a judicious mix of personnel in MoD who are **professional supply chain** specialists in various technological domains, and in contract management. Key to making such a reform succeed would be long tenures for these specialists.
- **Increasing Private Sector contribution** in indigenous defence production: The **Private sector contribution in indigenous production is range bound between 18-20percent for the past 7 Years.** The **80:20 ratio between share of Public and Private sector needs to change** for bringing in efficiency to acquire more capabilities, in qualitative as well as quantitative terms, for the same budget. Major platform defence contracts continue to be awarded to DPSUs on nomination basis. There is an urgent need to **stop nomination** with the exception of repeat acquisition of identical equipment.
- **Operationalizing policy of sharing 25 percent of MoD's R&D budget for R&D** in Private Industry, Academia & Start-up in defence manufacturing: Since announcement of allocating 25 percent of MoD's R&D funds to private Industry, academia and start-ups in general budget of FY 22-23, it **awaits to be implemented.**
- **Implementing Make Programs for development of indigenous IP:** Make-I category in DPP 2016 remains unimplemented. **No tangible design and development program has been awarded.** Exception being one small value program of about Rs 50 Cr to DPSU, without publicly issuing an EoI, under the Make scheme. This lacuna needs to be addressed. There is a need to urgently award design and development programs under the Make Procedure in time bound manner by addressing the following: -
 - Enhance MoD share of funding to 90percent as in DPP 2016.
 - Bid evaluation model to be changed to QCBS model
 - Incentivise Higher IP ownership of critical technologies & Larger Indigenous Content by treating these as "Enhanced Performance Parameters" as introduced in DPP2016, retained in DAP2020.
 - Ownership and Custody of IPRs should be with Developing Agency with March-in rights to Govt.
- **Incentivising R&D in Industry using own Funds: Most countries with capabilities in defence manufacturing provide incentives for defence R&D. On the contrary,** the FY16-17 announced

a roadmap for phasing out incentives and benefits under Section 35(2AB) of the Income Tax and Section 80(IA) for R&D investments by Industry. Given Defence is a monopsony; these **incentives need to be brought back and enhanced.**

7

India as a Drones Hub



Introduction

The government has an ambitious target of making India a global hub for drones by 2030. Liberalised Drone Rules were passed in 2021. Production linked Initiative Scheme for manufacturing drones and drones component. This will result in an investment of over Rs 5000 Cr by 2025. The drone industry will generate over 10000 jobs by 2025. The success of making India a drone's hub will depend upon a number of factors relating to finance, technology, R&D, innovation, policies and regulations.

Suggestions

- The regulation environment remains cumbersome. There is need to obviate delays in getting necessary permissions.
- There is acute shortage of skilled & trained professions to operate and manage drones. We need greater investment in skill and training.
- Reliable communication network is essential for drones operation.
- We need to focus on counter drone technologies, a weak area so far.

8

Space

Introduction

Important policy initiatives by the Government, which included the release of the National Geospatial Policy 2022, Indian Space Policy (ISP) 2023, Indian Telecommunications Act 2023, New FDI Policy for Space 2024, and laying out the Decadal Vision and Strategy by IN-SPACE, has given the much-needed impetus to the private space sector. However, this needs to open up further opportunities in the space sector through consultation. The issue needs finalization as regards to the following.

From the perspective of national security, a robust Space based Missile Defence Programme, is needed by the nation. However, in order to reach this stage, the Space sector itself needs significant expansion in both civilian and commercial areas, with benefits accruing to the general population via distance learning and education, communication, tele-medicine, navigation and entertainment.

In 2022 India's Space Economy stood at US\$ 8.4 Bn which was 2percent of the global market, but has projected growth at a CAGR of 16percent by 2033, by which time the global space economy is expected to be around US \$ 440 Bn.

By 2033, the downstream segment is expected to be UD \$ 32.1 Bn and would drive growth, with Upstream at US \$ 9.4 Bn and Midstream at US \$ 2.5 Bn respectively.

By 2033, 25percent of the revenues are projected from Exports, primarily to the Southern Hemisphere, i.e. US \$ 11 Bn of US \$ 44 Bn.

The private sector is expected to take the lead and invest approximately US \$ 22 Bn by 2033. This is currently ongoing.

Suggestions

In order to achieve these objectives, Government needs to act as the anchor customer, ensure continuity of orders, and enable the following:

- Localisation of Space Grade Materials (Composites), electronics, sensors & Semi-conductors, setting up of Launch Ports, establishing Space Parks (Manufacturing Clusters), creating Tiered Eco-Systems & Supply Chain
- Pass the Space Activities Bill urgently, aggressively promote the space FDI policy, announce incentives for Space R&D, address the inverted GST Structure (5percent on launch vehicles; 18percent on input materials), adoption of strong QCBS (Quality cum Cost Based Selection) for procurement.
- Consider posting Space Attaches at Indian Missions in the Southern Hemisphere to promote exports.
- **Develop** Indian SPACE STANDARDS, Joint Design & Development collaborations between ISRO and other Government entities and the private sector; Provide access to Test Facilities for the private sector; allow import of Space Grade Propulsion for Launch vehicles – Material and Technologies especially for Semi-Cryogenic Engines; Introduce space & Systems Engg as a discipline in Engineering Colleges; create skills programme urgently to meet the demand for space technology skill.
- Admin allocation of Satcom Spectrum with reasonable Spectrum Usage Charges.
- Draft new Space Activities Bill to facilitate Attributably, Liability and Insurance.
- Catering for Space requirements in allocation of National Research Fund.
- Implementation of new supply-driven model (vis-à-vis demand-driven model). We need Consolidated Demand Generation (from Govt Ministries) for Indian industry to survive and sustain in face of foreign competition and avoid risk of closure.
- Increasing Govt adoption and absorption of space data by mandating its use for Infra/Service Projects and making the process auditable means.

- Create big-size Indian Funding Resources to ensure Indian ownership of niche space companies remains in India.
- Improving ease of raising Capital and Cost of Raising Capital. Revisit Bank Loan Criteria which cater to supporting Space Tech Startups; more grants and financial support; Investment programs tailored for early-stage startups; and, extend debt for infrastructure projects.
- Facilitate private industry participation in govt project as well as to fulfil International space-related requests supported by EXIM Bank line of credits for industry projects.
- Tax and Financial Incentives include, GST exemption, tax holidays, customs duty concessions, Production-linked Incentive scheme for space-grade components.
- R&D and Standards Compliance: Certifying authority for Standards compliance.
- Capital Subsidy for infrastructure investments, especially in remote areas.
- Additional Technical Centres needed at Bengaluru & Hyderabad. Further, simplified access processes needed including single booking calendar with pricing details for various testing facilities. Simplification of IN-SPACE & DoT approval and licensing procedures.
- Incentivize Capability building, skilling and training initiatives.
- International Collaborations: Joint ventures and ToTs with leading Global Companies.

9

Shipbuilding

Introduction

Ship building is a strategic sector. India's share in global shipbuilding is miniscule. Much of our trades is in foreign bottoms. This has major financial and security implications. There is a need to pay utmost attention to shipbuilding industry in the country.

Suggestions

- In the areas of Shipbuilding, the competition is primarily from China & South Korea. While industry and DPSUs have demonstrated productivity gains, they remain non-competitive in international markets. For a limited period, **incentives need to be formulated in order to promote Indian shipbuilding exports.**

10

Cybersecurity Startups

Introduction

In the last two years, a cybersecurity industry has begun to develop in India. This is however in a nascent stage. The Make in India policy is good but the implementation is weak. The Indian startups are still facing a number of problems which need to be addressed. Among the Indian users, their continues to be a bias towards foreign product which is detrimental to indigenous industry. This bias is reflected even in the government procurement.

Worldwide, we are observing cyber-security consolidation taking place while are seeing the rise of many Indian cyber security companies, some have already been sold. Unless the government. acknowledges its cyber security industry, appreciates, and promotes them we will witness technology drain - leading to loss of IP and much needed talent.

Suggestions

- The bias in procurement for foreign OEMs should be given up. Product procurement should be based on technology and not on the reputation of the OEM. There is need for standardization in technical specifications for cyber security products. Indian Testing agencies need to be the benchmark for product certifications - meeting International norms.
- To make it easy to do business in India, the Govt. introduced Self-certification by OEMs. There is not audit or verification as many foreign companies are **misusing** this.
- Use of **Made in India products for critical infrastructure** is essential to enforcing national

security. We shared some findings and observations on Information leakage from cyber security products.

- **System Integrators** should be encouraged to adopt Indian cyber security companies for their projects - both in India and abroad.
- There is a need for **strong marketing push by Industry** forums (FICCI, NASSCOM, DSCI, etc.) and government in India and abroad for Indian cybersecurity product.

Project Implementation

Introduction

There has been considerable improvement in project implementation. This is evident in faster pace of infrastructure construction in India like roads and highways, airports, metro lines, solar power plants etc. Gati Shakti was an useful intervention. Impressive outcome were possible when clear objectives were laid down and high quality leadership was available. In the journey to Viksit Bharat, quick project implementation in a transparent way with accountability will be absolutely essential.

Suggestions

- For priority domains like: drones, green hydrogen, solar cells, semiconductor chips etc , Government may identify experienced experts as ‘mission leaders’ for a five year term. They should be given full financial autonomy and freedom to build their core team to pursue defined objectives with timelines and measurable outcomes. These ‘Authorities’ or ‘Commissions’ should be out of any Ministry’s administrative control.

Climate Change and Biodiversity

Introduction

The adverse impact of climate change is being felt across the world. Sea level rise, melting of glaciers, extreme weather events like powerful cyclones, heat waves changes in terrain, reduce agriculture productivity, loss of bio diversity, the effect on planetary system etc are associated with climate change. India has an ambitious forward looking climate action plan which includes transition to net zero, boost to renewable energy, adaptation etc. International negotiation on climate change are extremely complex and have yet to make a discernable impact on preventing rise in the global mean temperature. The adverse impact of climate change are manifesting on daily basis and is need to be taken on board in policy formulation and implementation.

In order to deal with climate change an all of government and all of society approach will be needed. The climate change can impact growth and development which will remain the top priority for India. India will need to build climate resilience, address environmental degradation, restore the disturbed ecological balance, arrest the loss of biodiversity, address the serious problems of land, air and water pollution while continuing to pursue the path of high economic growth.

Indian socioeconomic policies must factor in climate change in policy formulation.

Suggestions

- It may be useful to set up and empowered Commission on Climate Change and Sustainability under the Prime Minister to formulate India's policies for pursuing sustainable growth. The Commission should include the Chief Ministers and other stakeholders. This should provide guidance to relevant ministries and departments.

- *Energy for India's Growth and Development* : Create an Energy Transition Advisory Council under the aegis of the Prime Minister, akin to the PM's Economic Advisory Council, that would be tasked with dealing with all the issues of Energy Transition.
- *Enhancing our Green Assets*: Launch a wide ranging 10 billion trees a forestation programme in the country covering a variety of indigenous fruit, medicinal, and herbal trees, taking into account local climatic factors and water availability in each region. The entire work should be entrusted to Eco-Task Forces comprising ex-servicemen with people's participation. The extant borders of Protected Areas should be rationalised. The concept of core and buffer areas should be invoked for the success of Protected Areas. Shifting out local people from the Protected Areas does not solve any problem. Local people are our strength and partners in conservation and enhancement of forests. Given an appropriate opportunity, they can provide protection to forest from fire and act as sentinels against poaching of rare and endemic plant and animal resources. The crown cover density, which is on decline in all major forest types in India should be enhanced by planting indigenous tree species in the gaps within Protected Areas by employing local people.
- The government should come out with a concrete policy of **greening the highways**. This will give a massive boost to job creation the economy and environment of the region.
- There is a need to be **cautious** of non transparent **carbon credit mechanisms** proposed under the Paris Agreement. Many such scheme has turned out to be scams. There is no justification for rewarding global polluters at the expense of our own carbon budget.
- **Create a National Institute for Environmental Strategies** to deal with the complex web of environmental questions, domestically and internationally, with the stated aim of preparing our scientific community to present and counter narratives from an Indian and Global South perspective.
- **Waste management**, both for solid and liquid waste, including hazardous waste, is the need of the hour. Need to create decentralised waste management systems at the level of RWAs, Panchayats, etc. Close scrutiny of legal and policy measures is required on a constant basis.
- **Complete overhaul of the Water Act, 1974; the Air Act, 1981;** and the Environment Protection Act (EPA), 1986. These legislations, in particular, the EPA has perpetuated a system of excessively delegated legislation in the fields of environmental impact assessment, waste management, and setting standards for pollution. **An Environment Protection Authority** may be created to set environmental standards by combining these three Acts.

- Lay the foundation for at least **10 model villages** that are based on sustainability and economic development, with a focus on Indianness in terms of conservation and planning, architecture, and way of life—realising the objectives of **Mission Life**.
- **Sacred groves** need to be protected, nurtured and their diversity restored. Providing legal status to sacred groves as Biodiversity Heritage Sites under the Biodiversity Act 2002.
- Give a 360-degree nurturing to the topic of **water conservation** and its sustainable utilisation. Tackling all forms of water pollution, rainwater harvesting, revival of Himalayan springs—nearly 50percent of which have dried up, recharging aquifers in the catchment area, sustainable management of ponds, **wetlands**, and **lakes**, small dams on numerous rivulets and tributaries, and surface streams should be put in place as a priority.
- Institute a **comprehensive flood management** plan to help in disaster recovery and flood resilience planning. Integrate flood hazardous assessment and mapping and national flood recovery programme.
- Strengthen **monitoring and evaluation mechanism** of climate change adaptation intervention.
- Set up a strong multi **disciplinary climate change research institution**. India should aim to develop its own climate model.
- Set up **credible financial framework for climate adaptation**. The National Adaptation fund for climate change has been ineffective so far.
- Incorporate **Eco based adaptation as a key tool** for climate change mitigation and adaptation. Restore wetland, mangrove forests.
- **Empower municipalities** and civil society organisations to lead the fight against the climate change.
- **Updated NDCs:** No further mitigation commitment, only adaptation centric contribution(s)
- The Defence Geo-Informatics Research Establishment (DGRE), a lab of DRDO, is to be urgently tasked with looking after all aspects of **research on glaciers**. The subject of glaciers, which at present has not been allocated to any ministry, may be given to the Ministry of Defence under the

government's Allocation of Business Rules because of the strategic nature of the problem at hand. Other scientific ministries to cooperate and contribute.

- Interlinking of rivers, creation of storage reservoirs are urgently needed.
- Government needs to take up large scale water de-salination projects in earnest – these are already implemented throughout the Middle East region and some of the projects have been executed by Indian companies.

13

Economy

Introduction

Indian economy is one of the fastest growing economy in the world. It is likely to become the third largest global economy in a few years. But what is that mean for the average citizen whose concerns are about jobs, price stability, basic needs, housing, living condition, education etc? **While targeting GDP growth, Government needs to look for significantly raising per capita income.**

There is an urgent need for Government to generate demand and create jobs. Private sector investment in the economy is below par. Growth in IT Services alone cannot achieve this as the number of high paying jobs are far lower than needed, and in any case the sector tends to be volatile given its dependency on corporates in developed economies. Other services sectors will not help in raising per capita income. Therefore, only infrastructure development and manufacturing sectors can be relied upon to meet this requirement. **Speed and Scale will be the mantras for success !** The main issues for the average citizen are around the following :

Jobs & Source of Income

- Labour reform especially the alternative of contractual employment has been implemented only in select States, but this needs to be carried in all States.
- Infrastructure development being the mother industry for job creation; focus on marquee projects such as high speed rail, dedicated freight corridors, rail connectivity to remote areas, metro rail, intercity highways, responsible mining, minerals, and rare earths, inland waterways etc. should be enhanced. Some of these projects remain affected by land acquisition issues.

- Intra city road infrastructure has all but collapsed in metro and most Tier 1 cities, resulting in frequent traffic congestion, increased fossil fuel consumption and unsustainable levels of both air and noise pollution. Political and bureaucratic appetite at the State level to fix these issues on a war footing, are conspicuous by their absence.
- The impact of the prolonged **heat wave** in the country on food production and consequently on prices needs to be examined and measures taken immediately to prevent prices from rising further.
- Petrol & Diesel need to be brought under the GST regime.
- MSMEs are creators of millions of jobs. They face a number of problems and connected with credit, payments, marketing, technology, skills, taxation etc. A holistic approach to support and grow the MSME section is needed. A high level task force should be set up to book into the problems of MSMEs.
- Tax reforms are needed especially on GST input credit, where significant working capital is locked up.
- R&D activities, especially in Defence & Strategic sectors are urgently required to be boosted. Government needs to incentivise R&D by way of tax breaks.
- Double tax avoidance treaties need to be signed with countries where they are yet to be formalised.
- A financial security network is needed, especially for senior citizens.

Energy Transition and Power Sector

Introduction

India's per capita electricity consumption is 1/3rd of the global average. This has to be significantly enhanced. Coal currently provides nearly 75 percent of India's power generation, and is critical to India's energy security. While the Government's decision to create 62 GW of new coal capacity is welcome, we need to bear in mind China's example, which is creating nearly 200 GW of new coal capacity.

As we move towards the goal of clean energy, nuclear power, the only source of stable, base-load power apart from coal, needs to be ramped up rapidly in tandem with the phasing down of coal. Nuclear power currently provides only 3 percent of India's generation as compared to 18.6 percent in the US in 2023. The US, along with a group of 20 countries has pledged to triple Nuclear power by 2050. Japan has joined this pledge despite the Hiroshima and Nagasaki, and Fukushima accident. India has to do much more than just tripling.

As the EU Carbon Border Adjustment Mechanism will become effective by 2026, there is a need to rapidly augment nuclear capacity with existing technologies that can quickly facilitate clean energy transition.

With worsening climate conditions, and increasing pressures to cap emissions, the next 10 years will be critical in scaling up electricity generation from all sources. New coal plants take 5-10 years while nuclear plants take 10-15 years.

Suggestions

- Nuclear power should be given the status of green energy and provided incentives on par with renewables.

- 100 GW of nuclear power capacity to be achieved by 2035.
- For hard-to-abate sectors, Indian industry should be encouraged to set up captive nuclear power plants in collaboration with DAE and NPCIL. The government may give the mandate to NPCIL build nuclear power plants through Public-Private Partnership (PPP) mode.
- The government may also take necessary legislative and administrative measures to ensure that finance and technology is available. The Atomic Energy Act may be amended as necessary.
- The government may review liability/insurance law for growth of nuclear power to sustain India's development trajectory.
- The existing 220 MW PHWR is a small reactor of proven design which can be used to meet the demand of Indian industry. This may be used to supplement 700 MW PHWR to quickly ramp up nuclear power rapidly in a cost-effective manner. Necessary mandate and funding may be provided to DAE and NPCIL.
- The government to provide a mandate, and funding to DAE for the development of **High-Temperature Gas Reactors** to be used for production of **Hydrogen** using thermo-chemical processes.
- Existing **Joint Venture of PSUs with NPCIL** should be activated.
- PSUs or government departments with surplus land, especially those with large power requirement such as Railways, should be encouraged to form **Joint Ventures** with NPCIL.
- **Augmenting nuclear capacity** is important for energy security of the entire country at a time when climate concerns are putting pressure for transitioning away from fossil fuels. Therefore, a **comprehensive approach** including central and state governments is needed to ensure land availability and environmental clearances in a timely manner.
- The Government may ensure **nuclear fuel availability** through all sources and accelerate development of **thorium-based fuels** as a long-term energy security measure.
- DAE should be asked to ensure timely **project completion**.
- Modular nuclear power plants of small capacity would go a long way in providing for base load as dependency on fossil fuels reduces. Government needs to lead the way. The economics of nuclear power reactors need to be worked out.

Power

- The financial health of generators, distributors and transmission companies is precarious. Competitive populism to supply free electricity to consumers is doing great harm to the power sector. A reform is needed. The practice of subsidising electricity must be stopped.
- There is a need to promote a culture of conserving energy through building energy efficient buildings, encouraging the use of traditional Indian construction practices, promoting the use of energy efficient appliances and cutting down on energy wastage. The government could consider incentives to consumers if they save energy.
- The Electricity Act needs to be amended and implemented without further delay.
- Construction power for projects of national importance is still being quoted at Rs 20 per unit for bulk requirements, sharply underscoring the need for open access.
- Offshore wind energy and Geo Thermal energy, the latter having a 10 GW potential in India need to be tapped, in addition to the ongoing thrust on renewables.

Agriculture and Rural Development

Introduction

Since independence, India has made significant progress in agriculture and allied matters. It has perhaps a cropped area second only to the US, employing nearly 50 percent of the workforce and contributing 16-20 percent of the GDP. Export of agricultural produce has grown and India is the 7th largest exporter of agricultural produce. In many products, which includes marine products India is the largest exporter.

In spite of this and considering its population and need to provide all with proper nutrition it is necessary to pay attention to Agriculture and allied subjects and to devise special programmes to enhance production and yet take care of environmental problems and soil maintenance.

Science and technology in agriculture has improved but implementation at field level is necessary. Also items like drones, satellites and new Software specially developed for agriculture should be taught to students and in some manner to farmers.

Prolonged heat waves, uncertainty about monsoons is having a negative impact on agricultural productivity. The farmers should be sensitized about the impact of climate change and agricultural productivity. Long term planning to proof Indian agriculture from the adverse impact of climate change is required. How climate change is affecting Indian agriculture needs to be properly researched and understood.

Suggestions

- The farm laws introduced by the previous government has a some logic but could not be implemented due to a lack of consensus. A fresh attempt must be made to build the consensus.

- Rural economy should be strengthened in all area in all dimension including agriculture, rural infrastructure, health and education, food processing, rural industry, banking and finance, sustainable agricultural practices, water conservation, biodiversity, afforestation, wetland restoration etc. We need a holistic strategy for a rural development.
- Studies at micro level to ascertain low productivity causes (being 30 to 60 percent of world leaders like Israel, the US and Western Europe as well as South Korea and Japan) both physical and human. This will indicate districts where special attention has to be bestowed.
- The activities of agriculture universities and ICAR have to be at the field micro level especially in low productivity areas.
- The use of fertilisers and pesticides has not been controlled and guided and has resulted in vast areas being now contaminated. Organic farming which has succeeded in many areas needs to be encouraged even though more well to do farmers are approached and initial costs may be high.
- The number of small holdings has increased. This raises a number of issues of productivity, farmers engagements in the field etc. Many studies are available but what is needed is to implement suggestions.
- Rural infrastructure will have a great impact on agriculture and needs to be planned meticulously .
- As agriculture improves and mechanization increases the number if people depending on it will decrease. Advanced planning to take care of such problems is needed.

Higher Education

Introduction

Education and skills is the foundation on which a knowledge economy will be built. The New Education Policy is still work in progress and requires interventions for better implementation.

India is blessed with youthful population but access to higher education is uneven in quality and affordability. Up gradation of facilities and curriculum at engineering colleges is a priority area if the country is to achieve Viksit Bharat status by 2047. Currently, the vast majority of fresh engineering graduates are not even employable directly in industry. India's ratio of doctors with MBBS and MD degrees, to patients is disturbingly low. In the last years, there have been numerous instances of paper leaks and other malpractices in various examination including NEET. This has created a crisis of confidence among millions of aspirants in the fairness of the examination system and credibility of testing agencies. It is essential that our examination system should be absolutely fair and responsive. The government needs to act immediately and effectively to stop the malpractices and restore confidence in the system.

We also focus on improving the school education. The quality of basic schooling available to our children is of very low quality. A knowledge economy cannot be built on poor quality of school education. The state must improve the quality of basic education and enforce minimum standard across the country.

India spend only 2.6 percent of the GDP on education which is much below the OECD average of about 6.5 percent. We need to raise the education expenditure substantially.

Suggestions

- NEP emphasizes several attributes such as ethics, human values, collaboration, creativity, sustainability, communication skills etc. for all students., A few such courses during the entire education span must be made compulsory and monographs developed on various dimensions of ‘Life Skills and Values’.
- A series of monographs (with not more than 100 easily readable pages) should be developed with a title ‘Bharat Gyan Series’, each one of this could deal with one aspect in a user-friendly language such as Indian Knowledge system, Our History, Our Culture, Our Ancient languages, Our Kalas, etc.
- The process of accreditation in the NEP is cumbersome. A lot of precious human resource meant for teaching is spent on data collection and analysis for accreditation. We must switch to binary (Yes/No) accreditation as prevalent in most of the academically developed countries.
- We must devise systems for effective ‘autonomy’ to many more higher educational institutions in the real sense. Although lot of effort has been made in this direction, the results are not very encouraging. A set of institutions may be identified amongst the autonomous institutions, which are in existence for last several years and doing well to be given the University status immediately.
- Artificial Intelligence is an area which is extremely important for making an impact on the society and also has a potential to enrich the economy. It may be useful to set up specific application centres for AI in prominent institutions connected with agriculture, medicine, defence, manufacturing, education’ etc,
- There is a felt need for integrating STEM Education and AI, which is necessary for preparing the students for an AI-driven economy. We also need to strengthen the development of ‘Cognitive India’, by better collaboration between humans and AI.
- There is an urgent need to regulate tuition and hostel fees being charged for medical education by private colleges. The current levels of fees and charges will only promote corruption.
- The number of seats offered in NEET PG needs to at least be **doubled** with immediate effect in existing medical colleges. The current level neither does justice to India’s growing population, nor to its 2047 aspirations. This is an urgent requirement for India to cater to its own population and for growing the medical tourism sector.

- Health facilities for the common man especially in semi-urban and rural areas, are practically non-existent, promoting quackery. This issue must be addressed. More health facilities and infrastructure should be opened in rural area.
- Unless doctors and medical staff receive emoluments in comparison to their peers in developed nations, we would be facing brain drain at a time where India needs specialists in all areas of health and medicine.
- India loses a significant portion of IIT graduate to other countries. A majority of IITs take up jobs in non core, non manufacturing areas. This **brain drain** must be stopped by having a relook on the IIT system. More resources should be sent on M-Tech and Ph.D in engineering discipline so that the country can benefit from education in the IIT. Further, the colleges in the next rung (NIITs etc) should be strengthened and brought to the level of IIT. They should speed into the IIT and M-Tech programme.
- **National Education Policy 2020** needs to be implemented properly. Its progress also should be monitored and evaluated regularly. A annual roadmap to meet the NEP goals should be drawn up. In view of regional and local diversity, there is a need to map each district and block to identify to bottle neck in achieving the goal of the National Education Policy.
- The **National Skill Development Corporation** may act as the nodal point for measuring progress in the NEP implementation. Retired professionals with experience and knowledge may be invited to join the monitoring and evaluation exercise on voluntary basis.
- Innovative partnerships between the government machinery, civil society and private industry should be forged to **impart skills training** for the student and teachers.
- The functioning of examination agencies which conduct entrance exams in the centre and the state should be reviewed and improved. Their credibility has been questioned due to recent controversies surrounding paper leaks, grace marks etc.
- Coaching classes and institutions have mushroomed in the country. Millions of aspirants studies in these institutions where they spent large amount of time and resources to get into institutions of higher learning as well as in government jobs. Over the years, coaching institutions have also been tainted for various small practices and overcharging. In China, coaching institutions have been banned. The government needs to regulate these institutions.

Higher Education in Mother Tongue

- Create a National Textbook Translation Bureau for producing textbooks in all branches of the Sciences, Engineering, Medicine, Nursing, Aviation, and other technical subjects. To begin with, in each subject a book of terminologies and concepts must be written with Hindi as the base language and Sanskrit as the root of the terms. Since Sanskrit is the mother language for almost all Indian languages except Tamil (and even it has nearly 40 percent Sanskrit content) creating a standard set of terminologies would not be difficult. Where convenient some English terms can be retained. In all cases the English terminology should be carried in parenthesis for easy reference. In creating standard Indian terminologies simplicity, accuracy and easy adoption should be kept in mind. Where terminologies have already been created in one of the leading Indian languages these should be vetted by the Translation Board and utilised for the Hindi text.
- Translation of the best textbooks from English, Russian, Japanese, French and German to Hindi should be considered as the initial step. Once a standard Hindi text book is prepared it should be translated into all other major Indian languages.
- For the Liberal Arts/ Social Sciences most terms already exist in some of the more advanced Indian languages-- Bengali, Malayalam, Kannada, Tamil and Marathi. A textbook of terminologies and concepts in Hindi would be relatively easy to prepare. Thereafter the Hindi text should be translated into other Indian languages with the terminologies common to all languages.
- In each subject the standard terminologies and concepts must be approved by the National Board where top scientific and linguistic experts from all languages must be present. It must be a collective and top priority scientific endeavour.

Entry of Foreign Universities

- Entry of Foreign Universities into India should be promoted to raise standards of teaching, bringing in new knowledge and expertise in areas where the current educational institutions are weak. While they must be given the freedom to craft courses and introduce new teaching methods, they should be regulated to follow a set of standard rules and also focus attention on national priority fields.
- These Universities must be restricted to only STEM and Technical Subjects such as advanced engineering, biotechnology, material sciences, architecture, town planning, environmental studies, agriculture, etc.

- Foreign Universities should be kept away from teaching Liberal Arts/Social Sciences. These subjects have become highly ideological in the US and Europe and their content and are unsuitable for India. In these fields textbooks must be commissioned using holistic Indian approaches, a comprehensive understanding of Indian society and philosophy, and civilizational values.

National Scholarship Scheme

- The Government should also initiate a national scholarship programme for bright young academics employed in Central and leading Universities, as well as leading research centres to undertake Ph.D and Masters studies in the Sciences, Urban planning, Architecture and Energy Transition in select Universities in Germany, Japan, US, France, Russia, etc. These scholars must sign a bond to serve the country for 10 years and must be inducted as academics in the leading Universities and research institutes where they can undertake advanced research and teaching in their respective fields. The scholarship must be tied to guaranteed jobs on completion of studies and not permitted to settle abroad once the course is completed. This is a national mission work and must be well crafted to secure knowledge and skills in areas where we can learn from foreign academia.

Making IITs and AIIMS Centres of Advanced Research and Innovation:

- The IITs should become centres of M. Tech, Ph.D and advanced research. They should be freed from bachelor level teaching. The Regional Engg Colleges and other top Colleges should undertake Bachelor teaching with a syllabus drawn up in consultation with the IITs. This will enable the country to create some of the most advanced centres of science and technology in the world. The AIIMS, the Indian Institutes of Science also would be developed on this model. With urbanisation becoming a critical area of focus, building a new generation of green cities must be a key mission of the government. This would require world class education centres in the field. For this mission, National Institute of Green Urban Planning should be created –to start with one in each of the six regions. They must serve as the feeder for recruitment in Central and State governments and municipalities.

School Education

- Expansion of quality education in government schools is essential to educate all children, especially for the middle class and lower income groups, over the next ten years. India would need a fully educated population for reaching the goal of Vikasit Bharat. The Centre needs to invest in a massive expansion of Central Schools, Navodaya Vidyalas, Sainik Schools, as well as Vocational, Sports, Arts, and Sanskrit Schools to build an advanced educational foundation for Bharat. Each

of these type Study of the evolution of the Indian Knowledge System from ancient times and the methodologies developed by it to study both scientific and social phenomena must receive high priority in our schools and colleges.

Ayurveda

Introduction

Holistic health approaches, practiced in many countries, can play an important role in realizing the dream of global health. Ayurveda, unique nature-centric healthcare system which encompasses life in totality, finds a prominent place in the domain of holistic health. Just like yoga, Ayurveda **also needs international recognition. The G-20 presidency gives India an excellent opportunity to showcase** Ayurveda, and more generally the Indian experience of ‘Ayush.’

Suggestions

- Persuade the UN to declare one day in the calendar as ‘The International Day of Traditional Medicine and Ayurveda’ (Similar to International Yoga day).
- To promote integrated approach to health, there is an urgent need to promote a regular and in depth dialogue between different systems of medicine, particularly, Ayurveda and
- Allopathy. Ayush minister and other forums could facilitate such dialogues. The practitioners of the different systems should have mutual understanding and mutual trust through dialogues and collaborations.
- Resources should be deployed to enhance research regarding Ayurvedic treatments, particularly Ayurvedic theory of tridoshas (vata, Pita & Kapha), systemic approaches, classifications of medicinal plants used in Ayurveda, case studies of Ayurvedic treatments, the role of Ayurveda in curing non-communicable diseases etc. A task force of experts should be set up to identify new areas of research.

- There should be affirmative regulations on Ayurveda to enforce quality control of Ayurvedic medicine and discover fraudulent practices. This will help to improve the public image and reliability of Ayurveda both in India and abroad.
- Training and Skill development programs should be introduced in Ayurvedic practices at both state and national level.
- Major hospitals in Ayurveda and Allopathy should work together to promote an integrated, holistic approach towards health. But care should be taken to ensure that Allopathy, which is the dominant system of medicine, does not overwhelm Ayurveda which is distinctive in its approach to health and medicine.
- Awareness of Ayurveda should be raised among the Allopathy doctors and vice versa. This will help resolve many of the miscommunications between these two fields and promote an integrated health approach.
- Along with improving the quality of Ayurveda, there should be efforts to make Ayurveda affordable to the masses. Presently, in their eagerness to attract patients from abroad, many Ayurveda hospitals have become inaccessible for Indians in terms of treatment costs. Both public and private parties in Ayurveda should think about how Ayurveda could be made cost-effective.
- Ayurveda should be included in Medical Value Tourism (MVA). While we may expect to invite more patients from foreign countries to visit India for treatment, Ayurveda should also travel abroad. Strategies to export Ayurveda must be done mindfully and carefully. It should be region specific rather than one Ayurveda for all countries. In each country, the knowledge of Ayurveda and herbs could reach in different forms based on its climate, biodiversity, etc. In its international outreach, Ayurveda should also engage and promote indigenous traditional medicine of other countries like Africa, China, and other Asian countries especially.
- We are losing precious biodiversity to other countries through mindless export of top quality herbs. We should also pay due attention to the distinct plants and herbs grown in different climates abroad to develop indigenous Ayurveda abroad and for importing to India as per requirements.

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Legal system

Introduction

The causes for delays in dispensing justice must be addressed on priority. The need for the reform of legal system in the country has been felt for a long time. Recently, the government has brought out several new laws to improve the criminal law. The impact of technologies on legal system is also palpable. International law is becoming important as India negotiates complex issues of international trade, human rights, environment, climate change, AI, maritime security, space security etc. The expertise in International law in India is limited.

Suggestions

- Depute legal attaches in Indian missions abroad including in the relevant UN organisations. The skill and education of international law in the country also need to be improved.
- There is a need to reform tribunals. They are dominated by retired judges and bureaucrats instead of domain experts. This leads major deficiencies in their work. The relevant ministries should have a trained secretarial pool of experts paid by the government.
- Time limits given in an arbitration case should be strictly adhered to.
- There should be timelines mandated for investigations. This should not exceed the length of the trial.
- Infrastructure at the courts needs to be updated urgently. Data base of judgements of all white collar crimes should be made easily accessible to all prosecutors.

- There should be focus on quick disposal of cases instead of arrests. Increasing the number of accused takes the focus away from the main accused and lengthen the trial.

Urbanisation, Infrastructure Development, Connecting Bharat with India

Introduction

The pace of urbanisation in India has increased. Rural towns are becoming urban towns. There is huge migration of labour from rural to urban areas. The new towns are expanding in haphazard way. Infrastructure is inadequate. There is a need for better planning for urbanisation.

Suggestions

- Unplanned growth of mega cities needs to be checked. Adequate housing, water, electricity, education and health facilities need to be provided to large segment of population living in slums. The functioning of the municipality needs to be improved significantly.
- Greater attention needs to be paid to the functioning and efficacy of civic and municipal bodies in existing cities. Most cities suffer from traffic congestion, lack of water, unreliable power (including unreliable transmission and distribution) unplanned housing, haphazard parking, litter and accumulated garbage etc., and appear woefully short of either the will, or the means, or both, to tackle this alarming situation head-on.
- Public sector enterprises and DPSUs usually hold vast tracts of land in areas which are now within city limits. Manufacturing operations of such entities need to be re-located to Tier 3 cities, which would both lower the cost of production and aid in development of these cities, while the land vacated in metros and Tier1 cities could be suitably monetized to raise funds.

Delhi, the Capital city

Introduction

Being the capital city of India, Delhi naturally attracts national and global attention. It is one of the world's oldest city which dates back to the times of Mahabharata. Sadly, Delhi does not compare favourably with other capital cities. As India rises, it also time to address Delhi perennial problems. An average Delhi citizen is faced with high degree of pollution, traffic congestion, mountains of waste, a highly toxic river, encroachments, vanishing Aravali and flood plains and relentless increase in population. Multiplicity of agencies has not helps resolve problems. Lack of coordination amongst multiple state and central agencies coupled with bureaucratic apathy and political one-upmanship has made a residents' life difficult. There is urgent need to address these problems. If friction between the Centre and the Delhi government continue to harm the citizens, there may be a logic in bringing Delhi under the complete control of the Centre.

Suggestions

- Set up a task force of stakeholders under the Prime Minister, including citizens, to suggest a plan for cleaning up Yamuna by a set deadline. In the meanwhile launch a multipronged programme to clean the river with the involvement of citizens. Incentive may be offer to citizens organisation who come forward for the mission.
- Undertake a massive green Delhi programme of planting ten million trees in a five year time frame. Give incentive to Resent Welfare Association and other citizens group to plant a tree and look after them for a few years. Schools, colleges and university should also be involved and given proper incentives.
- Undo encroachment on the Ridge and Yamuna flood plain.

- Undertake special mission to clear up the vast landfills in Delhi. Develop a PPP model to ensure that garbage is collected on a daily basis and recycled. Impose heavy fines and penalty for the littering. Develop a business model for garbage collection and disposal. Take the help of technology for waste disposal, and monitoring of garbage.
- Use ecology based model to restore wetlands, Yamuna flood plains and biodiversity as has been demonstrated in several projects undertaken by Prof CR Babu of Delhi University (e.g Yamuna diversity park etc).
- Find a lasting solution to the severe air pollution problem in Delhi which becomes a gas chamber in winter. Many cities of world have addressed the pollution issues. We need political will to do so.
- Put a stop to the practice of demolishing the old residential building and constructing high rise commercial structures in their place. Instead, the freed land should be used to build biodiversity parks, water bodies, city forests, vertical forests, ponds to store water etc.
- Maintain high standard of cleanliness to avoid outbreak of diseases such as Malaria, dengue, cholera etc.
- Delhi gives an impression as if it is a Mughal city. The fact is that Delhi has a history and culture stretching back to several millennia and was known as Indraprastha. Give due attention in the master plan to attention to Delhi's ancient past.

Internal Security

Introduction

In order to make progress towards the goal of developed India, internal peace, social harmony, law and order based on the rule of law will remain a priority for the country. Instruments design to maintain internal security need to function within the framework of the Indian constitution in an efficient and non partisan manner at all time. The traditional problems are Left Wing Extremism, communalism, cross border terrorism, border security, North-East, Jammu and Kashmir will continue to remain in the focus of the government. External security environment also has a deep impact on internal security. Non traditional security issues like climate change, economic disparity, organised crime, human trafficking, cyber frauds, migration disinformation, social media etc need to be addressed.

Suggestions

- Strengthen information gathering and sharing via inter-agency coordination using advanced technologies such as Artificial Intelligence and big data analytics.
- Engage with local communities via dialogue to build trust. This will help in countering radicalisation and induction of youth into extremism.
- Institute and implement of de-radicalisation framework, focusing on education, employment opportunities, and monitoring of *Madrasas*. Creating dialogue platforms for various community leaders to address misunderstandings/grievances will help the process.
- Expand cyber-crime units of States/UTs police to address routine cyber offences.

- Strengthen technology deployment, including thermal-imaging cameras and drones along the International Borders (IBs) to monitor and prevent illicit trafficking and infiltration.
- Undertake infrastructure expansion and improvement in border areas must be considered.
- Enhance cooperation via regular Joint Working Group meetings on security issues, mainly cross-border infiltration and trafficking, with neighbourhood counterparts.
- Ensure swift legal action against individuals/groups inciting violence or spreading misinformation/hate speech. Coordinating with social media platforms for swift legal action against unlawful content is essential.
- Undertake effective socio-economic development, including surrender and rehabilitation programs, in Nasal-affected areas will help in eradicating Naxalism from its roots.
- Addressing drug abuse among youth, especially in Punjab, should be one of the priorities. The surge in consumption of synthetic narcotic substances in Punjab is destroying youth and their respective families. Nationwide awareness programmes about drug addiction should be started.
- North East was making good progress until ethnic clashes in Manipur happened in 2023. Myanmar is in the throes of a bloody civil war. North East can become more unstable. A comprehensive plan of political, economic, social and components should be launched to prevent instability in the North East.
- PM Sheikh Hasina has warned about the danger of conversion to Christianity in the Bangladesh. India needs to be alert to these dangers, particularly in the North East.

Culture and Civilisation

Introduction

There is a need to conceptualise India as a **civilisational state** with unbroken civilisation setting back to at least five millennia or even more. India's civilisational footprint extends far beyond its present day boundary. At the same time, India also absorbed influences from outside. Culture should play an important role in formulation of our policy, especially, the foreign and security policies. A lot more attention need to be given to understand India's contribution to world thought and culture. The New Education Policy should endeavour to teach student the element of Indian culture and civilisation from school level itself.

India is a predominant country in our subcontinent with commonalities of cultural ethos. It is therefore imminently necessary that it takes a lead through the sector of Culture to create strong irrevocable bonds with its neighbours.

India lacks cultural spaces of international standards; it has virtually no tradition of adaptive re-use of heritage structures and no trained reservoir which could be tapped-in to contribute substantially to creation of culture industry.

Some recommendations are suggested to make Culture a self-sustaining activity, an economic one, with sound returns on investment, and at the same time, providing employment to the people of India.

Suggestions

- The Ministry of Culture, the Ministry of External Affairs, Indian missions abroad and Indian think tanks should work together to study and highlight India's interaction with the rest of the world over millennia.

- **Academic studies** on Indian cultural ethos should be supported. The idea of Vasudhaiva Kutumbkam should be studied systematically and disseminated through conferences, seminars events etc. The relevant ideas of ancient Indian texts should be identified for their relevance in today's world.
- The government should hold regular international conferences on India's contribution to world thought and culture.
- Indian institutions like the Archaeological Survey of India (ASI) should be strengthened to conduct archaeological studies which through light on India's past.
- Indian museums need to be modernised. More museums should be set up. The study of local history should be encouraged.
- Indian archives need to be modernised and expanded. Access for public should be made easier. Local archives should be refurbished. Expertise of India's languages should be built.
- There is a need to revive Project MAUSAM and the Manuscripts mission which have been languishing for some time.
- There should be a great deal of focus on the study and writing of India's military history.
- Heritage structures
- To create an inventory of iconic heritage structures in each state of the country, not belonging to The Archaeological Survey of India or State archaeological departments.
- Identify every year at least 30 of these iconic heritage structures and pose them for their adaptive reuse.
- Create a Section 8 Company under The Companies Act with specialized personnel dealing with Conservation, Design, Technology, Visitor Experience and such. This Company will incubate those 30 above mentioned projects for creating cultural spaces of world standard with sound returns on investments.
- These projects should be posed as 'startups' so that the organizations which apply can suitably be vetted by the Section 8 Company. The best of the startup ideas can then be selected and incubated by the Section 8 Company to create those 30 adaptive re-use products. The purpose behind this

venture is to evolve commercial entities in cultural space, *sui generis* in nature. They would not be beholden to the state departments and central ministries for funding in future, nor will they exist on the whims and fancies of individual members in the government. A professional body, the Section 8 Company, will incubate projects after proper identification and encourage viable sustainable commercial propositions to prosper once they are incubated. The more these projects evolve, the more employment it will generate.

- A National Mission on Cultural Mapping (NMCM) is already in existence in the Ministry of Culture. This schematic assistance in Mission mode is meant to identify crafts and its practitioners. A pilot venture connected to the 30 above-mentioned projects, should be started under the NMCM. These 30 cultural spaces will all be typical and unique in their diversity. The NMCM will cater to these cultural spaces by synergizing the requirements of the 30 individual projects, encouraging the highest standards while nurturing the arts and crafts of the area in which they are located.
- Efforts of the Ministries of Tourism, Forests, Tribal Affairs, Textiles, Civil Aviation, Railways, Transport, Skill Development, Rural Development, need to be synergized with these 30 projects.
- Since these 30 projects will be located in different states of India, it is implied that the rest of the infrastructure development that is under the State sector will have to be undertaken by them.
- These 30 projects will be of such magnitude that their resonance and impact is positively felt on the development of a larger eco-system of the service industry, whether it is hospitality, skilling, the commerce of the regional arts and crafts, private transportation system (road, riverine, air or marine) and value addition in various economic chains.
- The Indian Institute of Heritage (IIH) has already come into existence in the Ministry of Culture. Unless we have highly trained and specialized personnel in the field of culture and heritage, be it the field of Conservation, Iconography, Art History, Visitor Experience, Archival Studies, Museology or Design, India would find it difficult to create cultural spaces of world standard. This is a ‘long-haul’ exercise. Immediate implementation of graduate, post graduate, and doctoral programmes in various fields of heritage should be immediately started. This should be accorded high priority.

Special Missions (AI, Quantum Technologies, Cyber Physical)

Introduction

In the last few years, the government has announced AI, Quantum technologies, Cyber physical system missions which lay the foundation of making India as a technological powerhouse. Substantial funds have been allocated for these missions. Relevant institutional structures have been established. What is needed is that these missions are implemented properly and in a time bound session to ensure that India achieves a prominent place in global ranking.

Suggestions

- The mission are being accomplished by different organisation in their different formats. There is a need to establish inter-mission coordination mechanism to promote synergy, avoid duplication, encourage crops fertilisation of idea and build complementarities.
- Emerging technologies are dual use, it is essential that the needs of the defence forces should be built into the mission right from the initial stages.
- Without fundamental research it could be difficult to maintain lead in critical technology. Significant resources should be devoted for this purpose.
- It is important that significant intellectual property rights are created in critical technology this should be one of the aims of special mission.
- The success of the mission will depend upon the quality of the leadership, the nature of rules and procedures etc.

- Monitoring and evaluation will be critical for timely implementation. It should be ensure that excessive bureaucratisation should be avoided.
- One of the major deliverable of the mission should be building large skills in the country. Repository of skilled and trained manpower should be built.

About the VIVEKANANDA INTERNATIONAL FOUNDATION

The Vivekananda International Foundation is an independent non-partisan institution that conducts research and analysis on domestic and international issues, and offers a platform for dialogue and conflict resolution. Some of India's leading practitioners from the fields of security, military, diplomacy, government, academia and media have come together to generate ideas and stimulate action on national security issues.

The defining feature of VIF lies in its provision of core institutional support which enables the organisation to be flexible in its approach and proactive in changing circumstances, with a long-term focus on India's strategic, developmental and civilisational interests. The VIF aims to channelise fresh insights and decades of experience harnessed from its faculty into fostering actionable ideas for the nation's stakeholders.

Since its inception, VIF has pursued quality research and scholarship and made efforts to highlight issues in governance, and strengthen national security. This is being actualised through numerous activities like seminars, round tables, interactive dialogues, Vimarsh (public discourse), conferences and briefings. The publications of VIF form lasting deliverables of VIF's aspiration to impact on the prevailing discourse on issues concerning India's national interest.

VIVEKANANDA INTERNATIONAL FOUNDATION

3, San Martin Marg, Chanakyapuri, New Delhi – 110021

Phone: +91-11-24121764, 24106698

Email: info@vifindia.org,

Website: <https://www.vifindia.org>

Follow us on [twitter@vifindia](https://twitter.com/vifindia)