CHAHAL ACADEMY

AUGUST 2025

YOJANA

NEW FRONTIERS OF FREEDOM

NEW DELHI | AHMEDABAD | ANAND | BHAVNAGAR | CHANDIGARH | DEHRADUN | GANDHINAGAR | HYDERABAD | JAIPUR | KANPUR | KOLKATA | LUCKNOW | MUMBAI | PATNA | RAIPUR | RAJKOT | SURAT | THANE | VADODARA |

1 FREEDOM TO INNOVATE

I. Human Journey of Innovation

- **Innovation as a defining trait of Homo sapiens**
  - Early humans made stone tools and mastered fire.
  - Nomadic groups formed settled agrarian societies.
- **Agricultural revolutions**
  - Built irrigation systems.
  - Practised crop rotation.
  - Used selective domestication.
  - These steps raised productivity and supported urbanisation and trade.
- **Industrial and technological revolutions**
  - Introduced machines, steam power, and mass production.
  - Led to the digital age, service economies, automation, AI, and space exploration.
- **Global contributions**
  - Different societies added unique ideas and capabilities to human progress.

II. India's Civilisational Ethos of Innovation

- **Scholars and knowledge leaders**
  - Pingala, Brahmagupta, Aryabhata, and Bhaskara advanced mathematics, geometry, and astronomy.
- **Centres of learning**
  - Nalanda, Vikramashila, Valabhi, and Pushpagiri were interdisciplinary hubs.
  - They nurtured architecture, metallurgy, medicine, Ayurveda, and linguistics.
- **Resilience of the knowledge tradition**
  - Despite invasions, colonial domination, and global disruptions, India's innovation spirit endured.
  - This shows depth and resilience in the civilisational foundation.

III. Freedom to Innovate and Constitutional Ethos

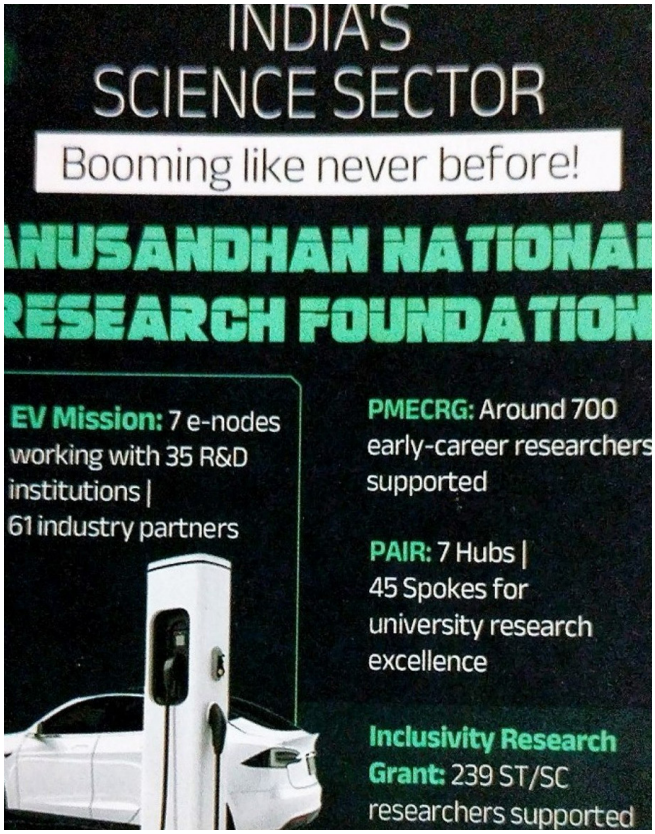
- **Viksit Bharat 2047 and a new meaning of freedom**
  - Freedom now includes the capacity to create, solve problems, and participate in shaping society.
- **Freedom to innovate** = the opportunity, ability, and right to build solutions, imagine alternatives, and create relevance.
- **Expressions of this freedom**
  - Converting indigenous wisdom into **"glocal (global+local)"** solutions.
  - Atal Tinkering Labs, startups, incubation centres.
  - Farm fields practising sustainable agriculture.
- **Decentralisation and substantive freedom**
  - Innovation is spreading from metro cities to rural hinterlands.
  - It extends from startup unicorns to self-help groups.
  - This fosters **development as substantive freedom**.
- **Constitutional linkage**
  - Article 14: Right to Equality.
  - Article 21: Right to Life and Dignity.
  - Article 21A: Right to Education.
  - Article 51A: Duty to develop scientific temper and reform.

IV. Broadening the Horizon of Innovation

(i) Strategic Policy Framework and Budgetary Push

- **Union Budget 2025–26: R&D focus**
  - ₹**20,000 crore** for R&D in strategic and emerging tech: **AI, quantum computing, biotechnology, semiconductors, clean energy**.
  - This is not a generic science budget. It backs **freedom to experiment, to fail, and to commercialise**.
- **Deep-tech financing**
  - Complements the ₹**10,000 crore Deep-tech Fund of Funds (FoF)** under SIDBI.
  - Deep-tech needs long gestation and bears higher risks.
- The government steps in as an early-stage backer to **democratise innovation finance**.
- **Talent pipeline**
  - **10,000 PM Research Fellowships** with ₹**70,000–₹80,000** monthly stipends.
  - **Goal:** attract the brightest minds into science and engineering R&D.
  - **Message:** innovation is a **national imperative**, not a privilege.

(ii) Creation of ANRF and Regulatory Ease



- **ANRF establishment (Parliament, 2023)**
  - **Anusandhan National Research Foundation (ANRF)** replaces SERB with a wider mandate.
- **Funding architecture (2023–28)**
  - Target ₹**50,000 crore** via: **ANRF Fund, Innovation Fund, Science and Engineering Research Fund, Special Purpose Fund**.
  - ₹**14,000 crore** already provisioned by the Central Government.
  - Remaining from PSUs, private sector, philanthropies, foundations, and international bodies.
- **Regulatory agility**
  - Institutes have **procurement autonomy** for scientific equipment and consumables up to a higher threshold.
  - This improves agility and reduces procedural delays.
  - Shift to **trust-based, inclusive innovation governance**.
- **RDI Scheme (01 July 2025)**
  - The Union Cabinet approved **Research Development and Innovation (RDI) Scheme** with ₹**1 lakh crore** corpus.
  - Offers **long-term financing or refinancing**, with **long tenors at low or nil interest rates**.
  - **Purpose:** overcome private-sector funding barriers; provide **growth & risk capital** for **sunrise and strategic sectors**.
  - **Goals:** facilitate innovation, promote technology adoption, and enhance competitiveness.
  - **ANRF** will give **overarching strategic direction** to the RDI Scheme.

(iii) Strengthening Grassroots Innovation

- **Traditional and regional knowledge systems**
  - India's informal sector practises local agricultural techniques, farmers' varieties, plant protection, human and animal health technologies, local engineering, and textile technologies.
  - Innovations often emerge from individuals and communities in remote regions.
- **National Innovation Foundation-India (NIF)**
  - Autonomous institute under **DST**; scouts and nurtures grassroots innovations from **~600 districts**.
  - Provides a **complete cycle of support** through collaborations with industry, research institutions, NGOs, and government bodies.
  - Outcomes: **1,400+ patents filed**, **120+ technology transfers**.

    Several NIF-supported innovators have received the **Padma Shri**.

- This is **freedom from invisibility**, contrasting countries where innovation is limited to corporates, elite labs, and top universities.

- **Unnat Bharat Abhiyan (Ministry of Education)**
  - Connects academic institutions with rural India.
  - Institutes **adopt clusters of villages**, do needs assessments, and design **contextual interventions**.

(iv) Digital Public Infrastructure as Platforms of Innovation Freedom

- **DPI building blocks : Aadhaar, UPI, DigiLocker, ONDC** enable entrepreneurs and developers.
- **ONDC outcomes (as of March 2025)**
  - **7+ lakh sellers and service providers** onboarded; **majority are MSMEs**.
  - **20.4 crore** cumulative transactions.
  - A level playing field versus large platforms.
- **Digital economy trajectory**
  - **State of India's Digital Economy Report 2024**: India ranks **third** globally in digitalisation.
  - By **2030**, the digital economy is projected to be **nearly one-fifth** of the overall economy, outpacing traditional sectors.
- **India Energy Stack (IES)**
  - Unified, secure, interoperable digital infrastructure for the energy sector, like UPI for energy.
  - Integrates renewable energy and enhances **DISCOM** efficiency.
  - Delivers **transparent, reliable, future-ready** power services.
  - Example: a farmer with solar panels feeds extra power to the grid and gets **direct bank payments**.
  - DISCOMs can **track demand**, prevent **theft**, and send **timely alerts**.
  - Improves **reliability and inclusion**, supports **clean energy** and **Net Zero** goals.

(v) Sectoral Deepening: Health, Agriculture, AI, Quantum

- **Healthcare (digital-first shift)**
  - **Ayushman Bharat Digital Mission (ABDM)**:
    - **20 crore** ABHA accounts.
    - **3.49 lakh** facilities on the **Health Facility Registry (HFR)**.
    - **5.23 lakh** professionals on the **Healthcare Professional Registry (HPR)**.
  - Enables **interoperability**, reduces **redundancy**, and eases access to **telemedicine**, **e-pharmacies**, and **AI-supported diagnostics**.
  - **Pharmaceutical Research Incentive Program (PRIP)**: **₹5,000 crore** to make India a global R&D hub in **pharma and MedTech**.
  - **DHR-ICMR Action Plan 2024–29**:
    - Promote **indigenous and affordable** health technologies.
    - Provide solutions for **resistant health problems**.
    - Advance **digital health solutions**.
    - Ensure **research-led translation** into action.
    - Enhance **technology-driven surveillance**.
    - Accelerate **medical countermeasures**.

    Elevate India's **global standing** in medical research.
- **Agriculture (Agriculture 4.0)**
  - Employs **~42%** of the workforce; contributes **~18%** to GDP.
  - Uses **drones**, **remote sensing**, **AI for pest detection**, and **IoT-based soil and water management**.
  - **Programmes**: **Drone Didi**, **Akashdoot**, **Agri-India Hackathon**, **ARYA**, **RKVY-RAFTAAR**, and **Agri-Tech Innovation Hubs**.
- Startup solutions include **AI irrigation advisory**, **mobile soil-testing labs**, and **bio-inputs** as substitutes for chemical fertilisers.
- **Incubation and deep-tech missions**
  - **Atal Incubation Centres (AICs)** and **Community Innovation Centres (CICs)** in Tier-II and Tier-III areas.
  - **Atal Tinkering Labs (ATLs/ATLS)** provides **3D printers**, **robotics kits**, and **science equipment** to thousands of schools.
  - These efforts align with **NM-ICPS** (National Mission on Interdisciplinary Cyber-Physical Systems) and the **National Quantum Mission (NQM)**.
  - **Aim:** ensure **freedom to innovate in frontier technologies** and build **domestic capacity** for sovereignty and sustainability.

V. Measurable Global Impact

- **Innovation and IP standings**
  - **Global Innovation Index 2024**: India ranked **39th**, top among prominent economies.

- **WIPO World IP Filings Report 2023**: India ranked **6th** globally in **patent filings**—among leaders like the US, China, Japan, and South Korea.

- **Digital readiness**
  - **Network Readiness Index (NRI)**: improved from **89th (2015)** to **49th (2024)**.
- **Startup ecosystem**
  - **1.57 lakh** DPIIT-recognised startups.
  - **100+** unicorns.
  - **~51%** startup participation from **Tier-II and Tier-III cities**.
  - Progress supported by **stronger patent enforcement** and **reduced regulatory uncertainty**.

VI. Civilisational Awakening and National Vision

- **Atmashakti (inner strength)**
  - Expansion of innovation reflects a deeper **national awakening**.
  - Ordinary citizens innovate with **confidence and courage**.
- **Gandhian oceanic circles**
  - Innovation spreads in **self-reinforcing concentric ripples** from labs, classrooms, farm fields, and tribal hamlets.
  - Individuals and communities are the **nucleus of creative energy**.
- **State–society partnership**
  - The government enables **Srijan (creative expression)** through **Jan Bhagidari (people's participation)**, **grassroots ingenuity**, and **community-driven solutions**.
  - This is a **Swaraj of creativity** where **rural-tribal innovators** and **ISRO scientists** contribute together.
- **Viksit Bharat@2047 and Aatmanirbharta**
  - Spreading opportunities across all layers of society **fosters innovation**.
  - It marks a civilisational shift toward **Aatmanirbharta (self-reliance)** and the vision of **Viksit Bharat@2047**.

2 PEOPLE'S PADMA

I. Shri Pandi Ram Mandavi – Tribal Instrument Maker & Wood Carver

(i) Introduction

- **Full Name:** Shri Pandi Ram Mandavi
- **Place:** Narayanpur, Chhattisgarh (Bastar region)
- **Art Specialization:** Gond wood crafts, **Muria wood art**, and bamboo musical instruments
- **Major Recognition:** Awarded **Padma Shri** for contribution to tribal arts and craft promotion
- **Iconic Creation:** Bamboo wind whistle known as **'Sulur'** or **'Bastar flute'**

(ii) Early Life

- Born **12 February 1957**, in **Garhbengal** village.
- Grew up in a family of skilled woodworkers.
- Father was a renowned woodcarver who passed down the art to him.
- From childhood, began learning woodcraft through making **wooden combs** and **bamboo flutes**.

(iii) Artistic Skills and Creations

- **Expanded his repertoire over the years to include:**
  - Wooden swords
  - Battle axes
  - Bows and arrows
  - Walking sticks
  - Whistling bamboo flutes
- Each creation is more than an object—represents a **story** of the **Muria tribe's** struggles, joy, and traditions.

(iv) Contribution to Cultural Preservation

- Advocated for **Muria wood art** at **regional and national cultural centres**.
- Formed a **community of artisans**, sharing skills and knowledge.
- Organized **workshops and exhibitions** to educate people about tribal narratives embedded in craftwork.
- Acted as a **mentor** for young artisans to preserve **intangible heritage**.

(v) Recognition and Legacy

- Received **multiple prestigious awards** apart from the Padma Shri.
- Seen as a **guardian of tribal cultural heritage**.
- Inspires future generations to value traditional skills.
- His life underscores that preserving intangible heritage is essential not only to honour the past but to **build the cultural foundation for the future**.

II. Dr. Venkappa Ambaji Sugatekar – Gondhal Folk Singer

(i) Introduction

- **Full Name:** Dr. Venkappa Ambaji Sugatekar
- **Place:** Bagalkot, Karnataka
- **Specialization:** Gondhal folk music tradition of Karnataka
- **Major Recognition:** Awarded **Padma Shri** for preserving and promoting Gondhal folk music.

(ii) Early Life and Musical Journey

- Born **1 May 1943**.
- Began folk music training at **age 10**.
- Possessed exceptional memory and deep passion for cultural heritage.
- Mastered thousands of folk compositions including:
  - Dasar Pada
  - Santha Shishunalar Pada
  - Vachan Sahitya
  - Devi Pada

(iii) Artistic Mastery

- Knows over **1,000 songs** and **150 long-form mythological stories** entirely by memory.
- Performs Gondhal folk music with **storytelling elements**.
- Blends devotional songs, mythological narratives, and cultural commentary in performances.

(iv) Training and Mentorship

- Trained over **1,000 students free of cost**.

- Dedicated to ensuring **inter-generational transfer** of Gondhal traditions.
- Encourages youth participation in folk music to keep the art alive.

(v) Performances and Cultural Impact

- Performed widely across Karnataka.
- Raises awareness about Gondhal traditions and inspires emerging artists.
- Recognized as a **living legend** of Karnataka's folk music.
- At age 82, remains an **active cultural ambassador**.

(vi) Recognition and Legacy

- Recipient of **more than 30 awards** for cultural contributions.
- Praised by the **Prime Minister of India** as a "**Cultural Torch Bearer**".
- His dedication shows the **power of cultural preservation** in modern society.
- His work ensures that Gondhal folk music remains **vibrant, relevant, and respected**.

III. Significance of the 'People's Padma' Recognition

- Celebrates **grassroots cultural icons** whose work often goes unnoticed in mainstream media.
- Highlights the importance of **preserving intangible cultural heritage**—from music to crafts.
- Demonstrates that dedication to **community-based traditional arts** has national and global cultural value.

3 INDIA'S WAR AGAINST TERRORISM

I. Context and Trigger

- **Pahalgam Attack (22 April 2025)**
  - **Location:** Baisaran Valley, Jammu & Kashmir's Pahalgam region.
  - **Nature:** Heinous attack on civilians.
  - **Significance:** Reinforced the persistent threat of cross-border terrorism faced by India for over four decades.
  - **Shift in India's Counter-Terrorism Approach**
  - **Past:** India preferred dialogue and restraint with Pakistan over direct coercion.
  - **Present:** Due to Pakistan's persistent use of terrorism as state policy, India now opts for **pre-emptive** and **proactive counter-terrorism (CT)** operations.
  - **Policy Change:**
    - No distinction between terrorists and their supporters.
    - Any terrorist attack on Indian soil/interests will be treated as an '**act of war**.'
    - Plausible deniability by Pakistan will no longer be accepted.
    - **Global message:** "Not the era of war, but also not the era of terrorism."

II. Military Response – Utilising Force

- **Operation Sindoor**
  - Swift, precise strikes against terrorist infrastructure in Pakistan and Pakistan-Occupied Jammu & Kashmir (PoJK).
  - **Targets:** Lashkar-e-Taiba (LeT), Jaish-e-Mohammed (JeM), Hizbul Mujahideen.
  - Use of precision-strike weapons to minimise civilian casualties.
  - Deepest military operation inside Pakistan since the 1971 War.
- **Historical Precedents of Military Action**
  - **2019 Balakot Airstrike** – Targeted **JeM facility** in **Khyber Pakhtunkhwa.**
  - **2016 Surgical Strikes** – Across the LoC after Uri attack.
  - **2015 Operation Hot Pursuit** – Against insurgents in Myanmar.
  - **Pattern:** Increasing depth and intensity of cross-border strikes.
- **Strategic Implications**
  - India is not deterred by Pakistan's nuclear threats.
  - Pressure through suspension of the **Indus Waters Treaty** ("Water and blood cannot flow together").
  - Establishment of new **"rules of engagement"** with Pakistan.

III. Strengthening Institutional Capacity

- **Post-2008 Mumbai Attacks Reforms**
  - **Multi-Agency Centre (MAC)** – Intelligence sharing between agencies.
  - **National Investigation Agency (NIA)** – Established in 2009, main CT agency.
  - **National Intelligence Grid (NATGRID)** – Real-time data sharing.
- **Countering Terror Financing**
  - India's FATF membership; **Financial Intelligence Unit – India (FIU-IND)** created in 2004.
- **Prevention of Money Laundering Act (PMLA)**:
  - Amended in 2009 & 2023 to strengthen anti-money laundering laws.
  - Lowered beneficial ownership threshold from 25% to 10%.
  - Mandatory NGO registration on DARPAN portal.
  - Crypto transactions brought under regulation.
- **NIA Expansion**
  - **NIA (Amendment) Act 2019**: Jurisdiction outside India, more offences added (human trafficking, cyber-terrorism, counterfeit currency, prohibited arms).
  - Creation of Special Courts for faster trials.

IV. Disrupting Insurgency in Jammu & Kashmir

- **Targeting Terrorist Ecosystem**
  - Focus on halting local recruitment; forcing reliance on "hybrid" cadres (sympathisers without criminal record).

- **Proxy groups:** TRF (LeT front) and PAFF (JeM front).

- **Narco-Terrorism**
  - Drug trade proceeds funding terrorism.
  - 26 narco-terrorism cases registered (2022–23), with LeT linked to 17.
  - Property attachment of drug peddlers to cut financial links.
- **Counter-Infiltration Measures**
  - 3-tiered grid along LoC and International Border (IB).
  - Anti-Infiltration Obstacle System, fencing, surveillance drones, night-vision, thermal imaging.
  - **Result:** Significant drop in violence.

V. Countering Radicalisation

- **Nature of the Challenge**
  - Drivers: Peer pressure, victimhood narrative, online propaganda.
  - Influence of IS and Al-Qaeda reduced on ground but active online.
  - Lone wolf attacks (Udaipur, Amravati, 2022).
- **Government Actions**
  - NIA arrests for recruitment and radicalisation.
  - Continuous monitoring of online extremist content.

VI. Diplomatic Collaboration

- **Multilateral Engagements**
  - **Platforms:** G20, FATF, No Money for Terror Conference.
  - **2022:** Hosted UNSC Counter-Terrorism Committee and INTERPOL General Assembly.
  - **Topics:** Cryptocurrency financing, drone technology, terrorist use of ICT.
- **Bilateral Cooperation**
  - Extradition of 26/11 suspect Tahawwur Hussain Rana from the USA.
  - Close cooperation with Bangladesh and Nepal to prevent infiltration.
- **Global Challenge**
  - No agreed global definition of terrorism.
  - India's Comprehensive Convention on International Terrorism (1996) still stalled.
- **Evolving Terrorist Tactics**
  - Past Trends
    - 2005–2008: Mass-casualty attacks in major cities.
    - Post-2015: Shift to targeting border security forces.
    - Post-2019: Rise of proxy groups (TRF, PAFF) after J&K reorganisation.
- **Pakistan's Denial Strategy**
  - Labeling attacks as false flag operations.
  - India's decisive cross-border strikes have weakened this narrative.
  - Way Forward
  - **Understanding Pakistan's Strategy**
  - Terrorism as a substitute for conventional warfare and to counter India's global rise.
  - "**Bleeding India with a thousand cuts**" doctrine.
- **India's Required Response**
  - Maintain military, intelligence, diplomatic pressure.
  - Adapt to evolving threats.
  - Build resilience against terrorism amid changing geopolitical realities.

4 SANSKRIT IN CONTEMPORARY TIMES

I. Introduction: Sanskrit in the Digital Age

- **Surprising Revival in Modern Context**
  - In an era dominated by artificial intelligence and predictive text, Sanskrit—a language over 3,000 years old—continues to attract growing interest.
  - Historically spoken across the Indian subcontinent and central to humanity's intellectual heritage.
  - Often dismissed as outdated, but in reality, it remains a timeless current influencing modern civilization.
- **Central Question**
  - Is Sanskrit merely a relic of the past, or is it a living intellectual force capable of shaping the present and future?

II. Sanskrit: The Soul of Indian Civilisation

- **Cultural and Philosophical Heritage**
  - Language of seminal works: Rgveda, Bhagavad Gita, Natyaśāstra, Ayurveda. Medium for philosophy, classical arts, and rituals.
- **Global Intellectual Legacy**
  - Home to profound metaphysical inquiry and artistic achievements.
  - Integral to India's reassertion of intellectual heritage on the global stage.
  - More than a cultural symbol—an active intellectual tradition.

III. The Grammar of Precision and Logic

- **Panini's Aṣṭādhyāyī**
  - Around 4,000 concise rules forming a highly precise grammatical system.
  - Almost algorithmic in nature, inspiring admiration among linguists and computer scientists.
- **Modern Technological Relevance**
  - Potential applications in Artificial Intelligence (AI) and Natural Language Processing (NLP).
  - Regular structure and minimal ambiguity make Sanskrit suitable for computational modelling.
  - Current efforts to develop AI tools for large-scale parsing and analysis of Sanskrit texts.

IV. A Language of Knowledge Beyond Ritual

- **Beyond Religious Association**
  - Language of Vedas, Upaniṣads, and rituals, but also rich in secular knowledge.
- **Classical Literature's Breadth**
  - **Fields covered:** poetry, drama, linguistics, medicine, astronomy, jurisprudence, statecraft.
  - **Examples:**
    - **Sūrya Siddhānta** – sophisticated planetary motion studies.
    - **Ayurveda** – detailed surgical procedures. **Arthaśāstra** – governance and political economy.
- **Modern Relevance**
  - Revival of interest due to holistic health, sustainable living, and integrative knowledge trends.
  - Texts studied as serious sources of wisdom, not just historical curiosities.

V. Modern Academia and Research

- **Global University Presence**
  - Taught at Harvard, Oxford, Kyoto, Marburg, Zagreb, Heidelberg, and others.
  - Viewed as a key to understanding philosophy, linguistics, comparative literature, and ancient science.
- **Indian Policy Initiatives**
  - NEP 2020 emphasises Sanskrit education, creating new institutions and translation projects.
  - Sanskrit is positioned as a source of modern knowledge across disciplines.
- **Interdisciplinary Research**
  - Projects combining Sanskrit with cognitive science, ecology, ethics, and more.
- **Digital Humanities Projects**
  - Digital Corpus of Sanskrit, Sanskrit WordNet, and GRETIL making texts globally accessible.
  - Transforming reading, study, and interpretation of classical literature.

VI. Spoken Sanskrit and Public Engagement

- **Grassroots Movement**
  - Led by organisations like **Samskrita Bharati**.
  - Immersive workshops, summer camps, Sanskrit radio and TV broadcasts.
- **Global Spread**
  - Learners in places from Kerala to California.
  - Growing Sanskrit newspapers, theatre groups, YouTube channels.
- **Key Message**
  - Sanskrit is shown as a living, vibrant language—not a dead one.

VII. A Global Language of Peace and Wisdom

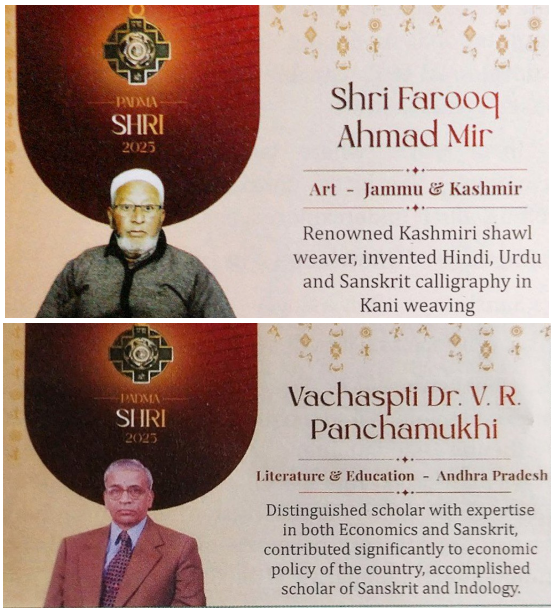
- **Historical Spread Beyond India**
  - Through Buddhism, it influenced Southeast Asia, Central Asia, Tibet, China, Korea, Japan.
  - Presence in inscriptions and manuscripts across these regions.
- **Connection with Global Yoga and Ayurveda Movement**
  - Key terms like prana, asana, dharma, karma, sattva require Sanskrit understanding.
  - International yoga teachers studying Sanskrit to deepen authenticity.
- **Philosophical Offering**
  - Vocabulary of harmony, balance, and self-awareness—important in today's global crises.

VIII. Challenges to Sanskrit's Revival

- **Perception Issues**
  - Elitist image tied to orthodoxy and caste.
  - Need for inclusivity and openness.
- **Teaching Limitations**
  - Outdated, overly text-heavy methods.
  - Lack of contemporary relevance in curricula.
- **Resource Constraints**
  - Vast unprocessed manuscript collections.
  - Shortage of trained scholars, need for digital preservation and modern translations.
- **Relevance Gap**
  - Must engage with modern society in multiple arenas—classrooms, theatres, labs, and homes.

IX. Reimagining Sanskrit for the 21st Century

- **Curriculum Reform**
  - Include both classical and contemporary works.
  - Teach for beauty, richness, and philosophical insight—not just exams.
- **Interdisciplinary Links**
  - Merge with cognitive science, architecture, ecology, ethics, and technology.
- **Public Engagement Initiatives**
  - Films, apps, animations, podcasts in and about Sanskrit.
  - Support translations and storytelling for wider reach.



- **Institutional Support**
  - More research fellowships, digitisation drives, and collaborative scholar platforms.
- **Inclusivity Drive**
  - Promote among women, marginalised communities, and across regions.
  - Break linguistic and social barriers.

X. Sanskrit as a Language for All Times

- **Philosophical Significance**
  - A way of seeing, knowing, and being—offering clarity and continuity in a changing world.
  - Symbolises the universality of wisdom.
- **International Efforts**
  - **Nepal**: Jayatu Sanskritam promoting Sanskrit for years.
  - **Central Europe**:
    - MESIC (Middle European Students' Indological Conference) – ongoing for nearly a decade.
    - DICSEP (Dubrovnik International Conference on Sanskrit Epics and Puranas) – held for 30+ years in Croatia.

Conclusion

- Engaging with Sanskrit is about rediscovering humanity's deeper connections with tradition, nature, and the cosmos.
- In a world seeking ancient wisdom for modern problems, Sanskrit's relevance is not only intact but growing.

5 SANSKRIT KNOWLEDGE SYSTEMS – NEP 2020 INSIGHTS

I. Introduction to Sanskrit's Role in Indian Civilisation

- **Living Testament of Indian Ethos**
  - ➢ Sanskrit is revered as the language of the gods and is deeply woven into India's intellectual, spiritual, and philosophical history.
  - ➢ Wrongly labelled as a "**dead language**," it continues to represent India's vibrant civilisational identity.
- **Recognition in NEP 2020**
  - ➢ NEP 2020 formally acknowledges Sanskrit's cultural and historical significance.
  - ➢ Aims to revive Sanskrit studies and integrate them fully into the modern education system.
  - ➢ Seeks to blend modern learning needs with traditional Sanskrit-based values.
- **NEP's Foundational Statement**
  - ➢ The policy draws inspiration from "**the rich heritage of ancient and eternal Indian knowledge and thought**."
  - ➢ Sanskrit is positioned as a bridge between ancient knowledge systems and contemporary education.

II. Sanskrit as the Language of Indian Knowledge Systems (SKS)

- **Misconceptions Addressed**
  - ➢ Sanskrit is not just a religious or temple language; historically, it was India's foremost scholarly language.
  - ➢ Used for documenting philosophy, logic, science, mathematics, medicine, music, architecture, grammar, and more.
- **Civilisational Significance**
  - ➢ It served as the language of shastras—the sciences, literature, and scholarly debate.
- **Disciplines within SKS**
  - ➢ Includes philosophy, logic, grammar, mathematics, medicine, music, poetics, architecture, linguistics, and others with global relevance.
- **Active Repository, Not a Relic**
  - ➢ Functions as a living storehouse of shared cultural memory.
  - ➢ Can support integrated, multidisciplinary learning in modern times.

III. Reflections from NEP 2020

- **Classical Literature Richness**
  - ➢ Sanskrit literature surpasses Latin and Greek combined in volume.
  - ➢ Contains vast works on mathematics, philosophy, grammar, music, politics, medicine, architecture, metallurgy, drama, poetry, and storytelling.
- **Authorship Diversity**
  - ➢ Created by people from different religions, social classes, and professions over thousands of years.
- **Relevance to Modern Education**
  - ➢ Recognised as vital to India's interdisciplinary and global leadership ambitions.
  - ➢ Positioned as a tool for India's decolonial project—regaining intellectual leadership.

IV. Reclaiming Ancient Intellectual Traditions

- **Ancient Indian Education Ethos**
  - ➢ Inspired by centres like Nalanda, Takshashila, and Vikramashila.
  - ➢ Learning was for self-realisation and spiritual fulfilment, not just professional gain.
- **Holistic Human Development**
  - ➢ Integrated intellectual, ethical, emotional, and spiritual growth.
  - ➢ Education aimed for Jñāna **(knowledge)** leading to Moksha **(liberation).**
- **NEP's Humanistic Statement**
  - ➢ Highest human goal: pursuit of **knowledge** (Jñāna), **wisdom** (Prajñā), and **truth** (Satya)**.**
  - ➢ Education as lifelong self-realisation.

V. Integration of Sanskrit into School Education

- **Mainstream Inclusion:** Offered as a mainstream option under the three-language formula.
- **Pedagogical Shift**
  - ➢ Moving away from rote memorisation to immersive, engaging, and relevant teaching.
  - ➢ Use of experiential learning methods—phonetics, pronunciation, interactive tools.
- **Innovations in Learning**
  - ➢ Simple Standard Sanskrit (SSS) for beginners.
  - ➢ Sanskrit Through Sanskrit (STS) method for natural learning.
  - ➢ Revives oral-aural traditions central to Sanskrit heritage.
- **Curricular Content**
  - ➢ Includes SKS disciplines for broader scientific and philosophical exposure.

VI. Sanskrit in Multidisciplinary Higher Education

- **Mainstreaming Beyond Traditional Pathshalas:** Sanskrit departments to become interdisciplinary hubs.
- **Integration with Modern Disciplines:** Linked with mathematics, astronomy, philosophy, linguistics, dramatics, yoga, etc.
- **Policy Vision**
  - ➢ Encourages collaboration with AI, cognitive science, ecology experts.
  - ➢ Sanskrit as a medium for both heritage preservation and addressing modern challenges.

VII. Preserving Multilingual and Classical Traditions

- **Inclusive Language Approach**
  - ➢ NEP promotes Sanskrit alongside other classical languages—Tamil, Telugu, Kannada, Malayalam, Odia, Pali, Persian, Prakrit.
- **Pedagogical Innovation**
  - ➢ Use of digital modules, gamified content, multimedia storytelling.
- **Learning Opportunities**
  - ➢ At least two years of study in a classical Indian language for students in Grades 6–12.

VIII. Ethics, Values, and Sanskrit Texts

- **Value-Based Education Priority:** Focus on compassion, justice, civic duty, and moral clarity.
- **Sanskrit Literature as Ethical Resource:** Panchatantra, Jataka, Hitopadesh—stories teaching empathy, moral reasoning, social conduct.
- **Core Values Highlighted:** Seva, Ahimsa, Satya, Shanti, Nishkam Karma, tolerance, equality, environmental respect, democratic ideals.
- **Pedagogical Method:** Use of storytelling and discussion instead of rigid moral imposition.

IX. Reviving Teacher Education in Sanskrit

- **Addressing Teacher Shortage:** Professionalising Sanskrit educators.
- **B.Ed. Dual Degrees :** Four-year integrated multidisciplinary B.Ed. in education + Sanskrit.
- **Modern Training:** Digital skills, inclusive education, classroom management.

X. Fostering National Identity and Global Citizenship

- **Bharatiyata as Core Ethos:** Sanskrit as a medium to promote an inclusive and ethical Indian identity.
- **Global Knowledge Superpower Vision:** Education rooted in Indian ethos to contribute to global knowledge leadership.

XI. Challenges and Forward Path

- **Key Implementation Hurdles**
  - ➢ Lack of standardised curricula.
  - ➢ Social stigma against classical studies.
  - ➢ Limited rural resources.
- **NEP's Structural Strength**
  - ➢ Covers curriculum reform, teacher training, technology integration, institutional restructuring.
- **Transformative Nature**
  - ➢ Sanskrit revival in NEP 2020 is structural, not symbolic.
  - ➢ Aims to merge ancient wisdom with modern education for responsible, enlightened citizens.

6 FREEDOM OF GOOD HEALTH

I. Concept & Importance

- **Centrality of Health in Development**
  - Health is a key pillar for human dignity and national progress.
  - A healthy India means not just the absence of illness but access to medical care without financial, social, or institutional exclusion.
- **Ayushman Bharat as the Core Initiative**
  - Government's flagship mission to address healthcare's structural challenges.
  - Integrates financial protection, digital empowerment, and infrastructure reform.
- **Four Pillars of Ayushman Bharat**
  - **Ayushman Bharat Arogya Mandir (AAM):** Strengthening primary healthcare services.
  - **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY):** Financial protection against high healthcare costs.
  - **Ayushman Bharat Digital Mission (ABDM):** Secure, portable, and consent-based digital health data.
  - **Pradhan Mantri Ayushman Bharat Health Infrastructure Mission (PM-ABHIM):** Strengthening health infrastructure at all levels.

II. Evolution of Ayushman Bharat

- **Policy Foundation**
  - **March 2017:** National Health Policy advocated digital technologies and financial risk protection for Universal Health Coverage (UHC).
- **Major Milestones**
  - **2018:**
    - Launch of **AB PM-JAY** – largest public health assurance scheme (₹5 lakh cover per family/year).
    - First Ayushman Arogya Mandir set up to expand primary care beyond maternal/child health.
  - **July 2018:** National Health Stack released – technical blueprint for digital health.
  - **Dec 2019:** National Digital Health Blueprint – privacy-focused, federated architecture.
  - **Aug 2020:** ABDM announced; piloted in UTs.
  - **Sept 2021:** Nationwide launch of ABDM.
  - **Oct 2021:** PM-ABHIM launched with ₹64,000 crore to boost primary & critical care infrastructure and pandemic preparedness.
- **Current Scale (2025)**
  - 41+ crore Ayushman Cards issued.
  - 61+ crore health records linked under ABDM.
  - 1.7 lakh+ Arogya Mandirs delivering care at community level.

III. AB PM-JAY: Financial Assurance

- **Before PM-JAY**
  - High out-of-pocket expenses pushed poor families into debt or denied them care.
- **Scheme Features**
  - ₹5 lakh annual cover per family for secondary and tertiary care.
  - Cashless, paperless transactions.
  - Portability across India – helps migrants, seasonal workers.
- **Impact (as of June 2025)**
  - 9+ crore hospital admissions worth ₹1 lakh+ crore.
  - Coverage in 32,000+ hospitals (46% private).
- **Quality & Inclusivity**
  - 1,961 procedures in 27 specialities (HBP 2.2, 2022).
  - Nearly 400 hospitals are audited for quality certification.
  - Women constitute ~50% of admissions.
  - Transgender community included in 2023 with gender-affirmative care packages.

IV. Ayushman Arogya Mandir & PM-ABHIM: Infrastructure Backbone

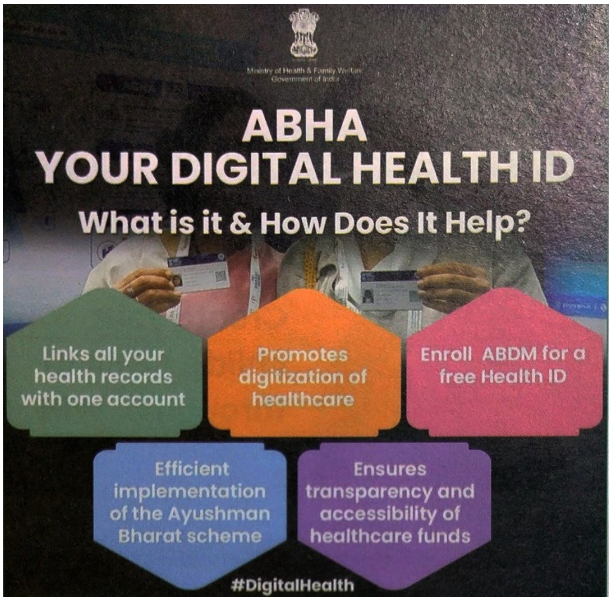
- **Purpose:** Provide physical infrastructure to support PM-JAY and ABDM.
- **Three-Pronged Strategy:**
  - **Surveillance & Response:** Public health labs, epidemic intelligence platforms.
  - **Critical Care:** New hospital blocks, emergency services.

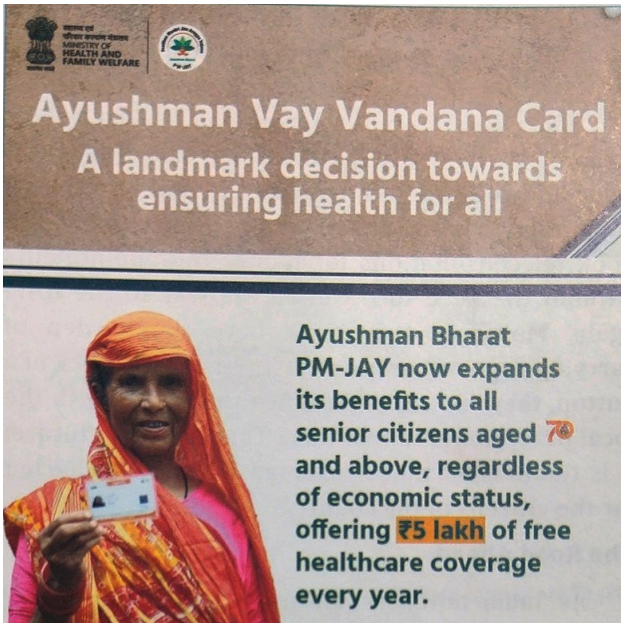
- **Frontline Access:** Comprehensive primary care through upgraded Health & Wellness Centres.

- **Integration**
  - Linked with PM-JAY and ABDM for referrals, follow-ups, and real-time data sharing.

V. ABDM: Digital Empowerment

- **Core Components**
  - **ABHA ID:** Unique 14-digit health account for records access nationwide.
  - **HPR:** Verified registry of healthcare professionals.
  - **HFR:** Single source for all healthcare facilities.





- **Digital Gateways**
  - **HIE-CM:** Consent-based record sharing.
  - **UHI:** Connects citizens to providers (teleconsultations, diagnostics, blood banks).
  - **NHCX:** Transparent, paperless insurance claims.

- **Current Reach (mid-2025)**
  - 79+ crore ABHA IDs.
  - 6.5+ lakh professionals in HPR.
  - ~1 lakh facilities in HFR.

- **Citizen-Centric Innovations**
- **Scan & Share**
  - QR code-based OPD registration in under 5 minutes.
  - 21,000+ facilities issued 12+ crore tokens, saving ~6 crore man-hours.
  - **Scan & Pay:** Pay pending bills via PHR app.

- **Model ABDM Facilities**
  - Digitisation of **130+ key facilities** (AIIMS, state hospitals) with e-registration, e-prescriptions, discharge summaries.

- **Microsites Project:**
  - Onboarding small clinics, labs, pharmacies in 121+ focused areas.
  - 54,000+ facilities and 68,000+ professionals onboarded.

- **Synergy of the Four Pillars**
  - **PM-JAY:** Financial protection.
  - **ABDM:** Data continuity and portability.
  - **AAM:** Community-level primary care.
  - **PM-ABHIM:** Resilient infrastructure.
  - Creates a preventive, curative, and participatory health ecosystem.

VIII. The Road Ahead

- **Goals**
  - Deeper integration across platforms.
  - Wider provider adoption.
  - Bridging last-mile digital gaps.

- **Future Technologies**
  - AI-driven triage.
  - Remote diagnostics.
  - Personalised care pathways.

- **Underlying Principle**
  - Building trust that healthcare will be accessible, equitable, and delivered with dignity.

IX. Social Impact Examples

- A daily-wage worker's wife receives free life-saving surgery.
- Transgender citizens get cashless gender-affirming care.
- Child immunised on time via accessible digital medical records.

7 EMPOWERING THE FARMERS

I. Importance of Agriculture in India

- **Economic Contribution**
  - Agriculture contributes around **18% to Gross Value Added (GVA)** of India.
  - Employs **46% of the workforce**.
  - Growth rate in the last decade: **Average 5% annually**.
- **Achievements**
  - **Self-sufficiency** in major food grains like rice and wheat.
- **Pulse Production**:
  - 2015-16: Large demand-supply gap; heavy import dependency.
  - Strategic measures under PM Narendra Modi:
    - Improve productivity.
    - Increase coverage area.
    - Ensure procurement from farmers.
  - **Result:** Pulse production rose from **17.15 million tonnes (2014-15)** to **25.41 million tonnes (2017-18)**.

II. Crop Production and Productivity

- **Record Achievements (2024-25)**
  - Food grains: **353.96 million tonnes** (↑ 6.5% from previous year).
  - Oilseeds: **426.09 lakh tonnes** (↑ 7.4% from last year).
  - Horticulture: **367.72 million tonnes**, surpassing crop production.
- **Land Use and Irrigation (2022-23)**
  - Net sown area: **1407 lakh hectares**.
  - Gross crop area: **2193 lakh hectares**.
  - Cropping intensity: **155.9%**.
  - Irrigated area: **793.12 lakh hectares** (56.37%).

III. Shift in Agricultural Policy

- **New Policy Goals**
  - Sustain self-sufficiency in paddy, wheat, pulses.
  - Strive for self-sufficiency in oilseeds.
  - **Central focus**: Income security for farmers.
  - View farmers as **agri-entrepreneurs**.
- **Multi-pronged Strategy for Farmers' Income**
  - Increase production and productivity.
  - Reduce cost of cultivation.
  - Ensure the best price for produce.
  - Promote post-harvest value addition.
  - Diversify to higher-value crops.
  - Develop exotic/high-value crop varieties.
  - Risk mitigation via crop insurance and climate-smart agriculture.
  - Technology adoption – Digital Public Infrastructure (DPI) & Artificial Intelligence.

IV. Increasing Productivity

- **Role of ICAR**
  - Apex body for agricultural research.
  - Releases high-yielding, hybrid, climate-resilient, and biofortified seed varieties.
  - Works with the Department of Agriculture, State Governments, and Universities to quickly distribute seeds.
  - Integrated into the **National Food & Nutrition Security Mission** and **National Mission on Edible Oils**.

V. Reducing Cost of Cultivation

- **Kisan Credit Card (KCC) Scheme**
  - Short-term concessional credit up to ₹3 lakh at **4% interest rate**.
  - Provision: 1.5% interest subvention + 3% prompt repayment incentive.
  - Result: Short-term agri credit via KCC reached ₹10.20 lakh crore (March 2025).
- **Agricultural Mechanisation**
  - Subsidised implements through **Sub Mission on Agriculture Mechanisation**.
  - Establishment of **Farm Machinery Banks** for small/marginal farmers.
- **Fertiliser Subsidy**
  - Urea and DAP provided at **highly subsidised rates**.
  - The government absorbs inflationary trends to shield farmers.

VI. Ensuring Remunerative Prices

- **Minimum Support Price (MSP) Policy**
  - Covers **22 crops** (6 Rabi, 14 Kharif, Jute, Copra).
  - MSP fixed at **1.5× cost of production**.
  - Strong procurement system with central and state agencies.
  - Prevents distress sales and stabilises market prices.

VII. Post-Harvest Infrastructure

- **Agriculture Infrastructure Fund**
  - Part of **Atmanirbhar Bharat package**.
  - Loan interest subvention: **3%** (interest capped at 9%).
  - Target: ₹1.5 lakh crore investment.
  - Achieved: ₹1.03 lakh crore in 1,09,436 projects (till May 31, 2025).
  - Infrastructure created: Cold storages, grading units, pack houses, ripening chambers.
  - **Benefits:**
    - Better price realisation.
    - Reduced post-harvest losses.
    - Rural job creation.
    - Attracts young entrepreneurs.

VIII. Farmer Producer Organisations (FPOs)

- **Cluster-based Farming Approach**
  - **Aim:** Overcome fragmented holdings.
  - 10,000 FPOs established.
  - **Roles:** Crop diversification, tech adoption, value addition.
  - **Benefits:** Economies of scale, stronger bargaining power, farm-gate sales.
- **Activities of FPOs**
  - Organic farming.
  - MSP procurement.
  - Certified seed production.
  - Retail licenses for seeds, fertilisers, pesticides.
  - FSSAI & GST licenses for value addition.

IX. Digital Agriculture Mission

- **Digital Public Infrastructure (DPI) / Agri Stack**
  - **Three registries:**
    - **Geo-referenced plots registry** linked to owners.
    - **Farmer registry** with unique Farmer ID.
    - **Digital crop survey** of all plots.
- **Farmer ID Features**
  - Linked to Aadhaar.
  - Contains land, crop, and demographic details.
  - Stored in **DigiLocker**.
  - Enables availing services without official verification.
- **Digital Crop Survey**
  - Conducted via mobile app.
  - Physical verification + photographic evidence.
  - Gives accurate, real-time crop coverage data.

- **DPI Benefits**
  - Instant KCC loan approvals.
  - Direct MSP registration without verification delays.
  - Efficient subsidy disbursement.
  - Precision advisory services: Weather, pest, market info.

X. Seed Quality Assurance

- **SATHI Portal**
  - Seed Authentication, Traceability, and Holistic Inventory.
  - **Phase 1**: Trace seeds from breeder to certified stage.
  - **Phase 2:** Extend to retail level with QR codes for farmers.
  - Ensures transparency, quality seeds, and strong enforcement.

XI. Technology for Sustainable Agriculture

- **Applications**
  - Artificial Intelligence.
  - Precision farming.
  - Digital monitoring.
  - Enhances decision-making for the full crop cycle.
  - Supports **food security**, **nutritional security**, and **sustainability**.

8 FREEDOM WITH A STEEL RESOLVE

I. Historical Context of India's Iron and Steel Industry

- **Pre-Colonial Fame**
  - In the 18th century, before and during British East India Company's political control, India was renowned for its iron and steel works.
  - Major steel-making centres: **Golconda, Mysore (Mysuru), Gwalior, Tanjore (Thanjavur), Lahore, Agra, Jaipur, Amritsar**.
  - Produced high-quality **wootz steel** from charcoal-based iron.
  - Products mainly used for **arms manufacturing**.
- **Reputation of Indian Steel**
  - Indian swords made of wootz steel were highly reputed globally.
  - British colonial powers saw them as a martial threat.

II. Famous Historical Instances of Steel Usage in Warfare

- **Tipu Sultan's Sword**
  - Curved blade made from wootz steel.
  - Used against the British army in **1799**.
- **Rani Lakshmibai of Jhansi**
  - Sword-wielding queen who fought in the **1857 Sepoy Mutiny**.
  - The rebellion spread from Meerut to other parts of India.
  - Indian warriors used **iron guns and cannonballs**.
- **Tipu Sultan & Hyder Ali's Rockets**
  - The **1780 Anglo-Mysore War** saw use of iron-cased indigenous rockets.
  - Superior to British versions due to iron tubes holding the propellant.

III. Limitations of Traditional Iron-Making

- Methods were **primitive**:
  - Ore gathered by hand from open pits.
  - Charcoal made from local trees.
- Short supply of charcoal and inability to transport ore/fuel over long distances led to exhaustion of local resources.
- Attempts to adopt the **English system** failed due to fuel shortages.

IV. Technological & Resource Developments

- **Discovery of Coal**
  - **Raniganj coalfield** in Bengal discovered in **1815**.
  - Enabled coke-fuelled large-scale ironworks.
  - Expanded application of steel to **transportation** (railways).
- **Railway Construction Agreements**
  - In **1849**, the Government of India signed agreements with British railway companies for rail construction.
  - However, steel production in India remained low until **1899** due to lack of knowledge of large underground iron-ore reserves.
- **Discovery of Rich Ore**
  - **1903-04**: Hematite deposits discovered in **Odisha (Orissa)** near Bengal coalfields.

V. Rise of Modern Indian Steel Industry

- **Government Support**
  - **1905**: Department of Industry and Commerce contracted to buy **20,000 tonnes** of steel rails annually from Indian companies for 10 years.
- **Establishment of Tata Steel**
  - Construction of the first Indian steel plant began in **Jamshedpur** (1908).
  - First steel ingots rolled in **1912**.
- **World War I Impact (1914-18)**
  - Demand for steel soared for **railway expansion** and **munitions production**.
  - Steel arms and ammunition used in **freedom struggle**:
    - **Kakori Train Robbery (1925)**.
    - **Chittagong Arms Robbery (1930)**.

VI. Challenges & Influencing Factors in Steel Production (1900–1947)

- **Key influences:**
  - Establishment of Indian steel companies.
  - **Great Depression** (early 1930s) affecting global markets.

- Impact of **two world wars** (1914–18 and 1939–45).

➢ Despite challenges, India developed a **small but viable steel industry** before independence.

VII. Post-Independence Growth

➢ **1947**: Steel production capacity around **1 million tonnes**.

➢ **Present:** India is the **2nd largest crude steel producer in the world**.

➢ Journey from colonial-era industrial constraints to global steel leadership continues.