AATMA NIRBHAR BHARAT ABHIYAN —

Theory, Actions and Way Forward

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GANDHIJI's TALISMAN

"I will give you a talisman. Whenever you are in doubt or when the self becomes too much with you, apply the following test:

Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him.

Will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to Swaraj for the hungry and spiritually starving millions?

Then you will find your doubts and your self melting away"

150 YEARS OF CELEBRATING THE MAHATMA

Mohandas Karamchand Gandhi

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Theme Paper

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Aatma Nirbhar Bharat Abhiyan – Theory, Actions, Challenges and Way Forward

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Abstract

Against the popular belief that the COVID-19 pandemic gave birth to the philosophy of Aatma Nirbhar (Self-Reliant), this theme paper argued that self-reliant philosophy is a more than a century-old concept and it has been re-incarnated in its modern form much before COVID-19. The paper has presented and analyzed various paradigms of self-reliance over the last 100 years ranging from the Swadeshi & Swaraj movement, Gram Swaraj, Kumarappa's Model of Ecological Economics to Integral Humanism. The paper exhibits the reasons for modern self-reliance concepts by analyzing international trade trends over the last 3 decades. Based on this analysis, the paper propogates the modern self-reliant theory and highlights how the Government of India has adapted this theory in the Indian context. The paper further exemplified the ten game-changing reform measures taken by the Government of India since the outbreak of the pandemic to move towards the direction of self-reliance. The paper also points out five key challenges in India's pathway towards self-reliance and suggests a way forward on each of them to ensure Aatma Nirbharata can become a reality.

Keywords: Self- Reliance, Theory of Self- Reliance**,** Aatma Nirbhar Bharat, Reforms, Self-Sustained Development, Sustainable Development, *Vasudhaiva Kutumbakam*

Background

The socio-economic crisis triggered by the COVID-19 pandemic in 2020 gave rebirth to the philosophy of Aatma Nirbhar Bharat (English meaning Self-Reliant India). This time it was launched as a campaign mode, i.e. 'Aatma Nirbhar Bharat Abhiyan' by Prime Minister

(PM) Narendra Modi on May 12, 2020, at 8 p.m. during his third address to the nation after the eruption of COVID-19 and imposition of national lockdown. Some of the political pandits criticized this nationwide campaign as an advertising tactic and re-phrased it as the "Fend for Yourself" Campaign (*Business Standard*, 2021). Although some of the features are similar to the Swadeshi movement launched on August 7, 1905, to take on the British regime of the time but according to PM making India self-reliant is the only way to make the 21st century belong to India (Kumar, 2020).

PM Modi clarified this criticism while delivering the inaugural speech at the India Global Week 2020 "…*Aatmanirbhar Bharat is not about being self-contained or being close to the world, it is about being self-sustaining and self-generating. We will pursue policies that promote efficiency, equity, and resilience*……." He stressed that this self-reliant policy does not aim to be protectionist and rolled a red carpet invitation to global investors to invest in core sectors of the Indian economy like agriculture, logistics, defense, and space, etc. (*Outlook* India, 2020). The Prime Minister has laid down the five pillars of 'Atmanirbhar Bharat'— **Economy, Infrastructure, Technology-Driven Systems, Vibrant Demography, and Demand**. He further, reassured that at the core Aatma Nirbhar Bharat is to create wealth and values not only for ourselves but for the larger humanity as India always believed in '*Vasudhaiva Kutumbakam*' (The Economic Times, 2021).

The Aatma Nirbhar Bharat Abhiyan was further announced in four tranches by the Union Finance Minister in May 2020. The economic stimulus relief package announced by the government was worth ₹ 20 lakh crores (₹ 20 trillion), i.e. about 10% of the GDP of India (*The Economic Times*, 2020). This package also includes the already announced ₹1.70 lakh crore (₹1.7 Trillion) relief packages, as the Pradhan Mantri Garib Kalyan Yojana (PMGKY), for the poor to overcome difficulties caused by the COVID-19 pandemic and the lockdown imposed to check its spread (The Economic Times, 2020). This economic package of Rs. 20 trillion is expected to play an important role in making India 'self-reliant' and benefit laborers, farmers, honest taxpayers, MSMEs, and the cottage industry (Business Standard, 2021).

Apart from emphasizing the announcements that had been made earlier in May 2020 under the Aatma Nirbhar Bharat Abhiyan, the Union Budget 2021-22 continued its focus on Aatma Nirbhar Bharat Abhiyan. The initiatives listed under the Aatma Nirbhar Bharat Abhiyan include upgrading facilities of defense public sector undertakings, modernization of shipyards, launching locally-made defense items, and signing of new memoranda of understanding with the private sector to enhance indigenization, delineating the strategic sectors to where PSUs will continue to remain but in lean shape (India Budget, 2021). The new public sector policy unveiled by the Department of Investment and Public Asset Management (DIPAM) has put the focus back on the government's New Disinvestment Policy and its intention to retain a bare minimum list of Central Public Sector Enterprises (CPSEs) in the strategic sectors. It will be implemented over the next three-four years and will see the number of CPSEs in India reducing drastically (DIPAM, 2021).

Further, to bring the Micro, Small, and Medium Enterprises (MSMEs) sector back on its feet, the Prime Minister announced to include the MSME sector within the purview of the Aatma Nirbhar Bharat Abhiyan. The MSME sector with more than 6.3 crore MSMEs is the most vibrant and dynamic industrial sector contributing significantly to the GDP and export while employing around 40 percent of the Indian workforce (MSME, 2021). The Budget 2021-22 has also emphasized that the MSME sector will act as the bedrock for economic revival (India Budget, 2021).

The COVID-19 pandemic has gravely wounded not just India but the world economy with serious consequences impacting all communities and individuals. The pandemic moved rapidly across borders along the principal arteries of the global economy. The spread of the virus has benefited from the underlying interconnectedness – and fragilities – of globalization, catapulting a global health crisis into a global economic shock that has hit the most vulnerable the hardest (UNCTAD, 2020). It has not just derailed global free trade efforts to achieve Sustainable Development Goals but made the old concepts, policies, and theories of self-reliance, self-sustained development, and nation first relevant again (Sanger, 2020; UNCTAD 2020). The situation emerged after COVID-19 and subsequent Chinese aggression has brought back New Global Economic Order (NGEO) and made self-reliance one of its cornerstones.

This theme paper is focused on analyzing theoretical aspects of Aatma Nirbhar Bharat Abhiyan in the light of various development paradigms related to Self-reliant India and the world in the current socio-economic and political environment. The paper has also highlighted top ten game changing reform measures taken by the Government of India. Finally, the paper has tried to identify various issues and challenges in way of Aatma Nirbhar Bharat and suggested required actions to ensure Aatma Nirbhar Bharat becomes a reality.

Conventional Development Paradigm Vs Aatma Nirbhar Bharat

The self-reliant theory has always been a political project cast in economic terms and has an empirical track record (Pai, 2021). Prime Minister's call for Aatma Nirbhar Bharat with thrust on local economic development to boost the Indian economy is a similar kind of effort in the direction of self-reliance (Pai, 2021; Gireesan & Chathukulam, 2020). This section traces the history of the self-reliant theory in India from its origin to the present day and assesses its relevance in the present business environment context.

Swadeshi & Swaraj Movement

The ideas of self-reliance, self-sufficiency, Make in India, and Vocal for Local form part of the overall narrative of "Swadeshi Movement", a word that means "of one's own country" (Pai, 2021). Mahatma Gandhi is popularly being recognized one of the most prominent advocates of Swadeshi in the past century. But, over a decade before his joining the freedom struggle, the Swadeshi Movement of Bengal (1903-1908) connected the idea to India's struggle for freedom from British colonial rule. The earliest mention of the word "swadeshi" in the English language dates back to 1825, to the time when the East India Company's rulers attempted social reforms in partnership with early social reformers like Raja Rammohun Roy (See Figure 1).

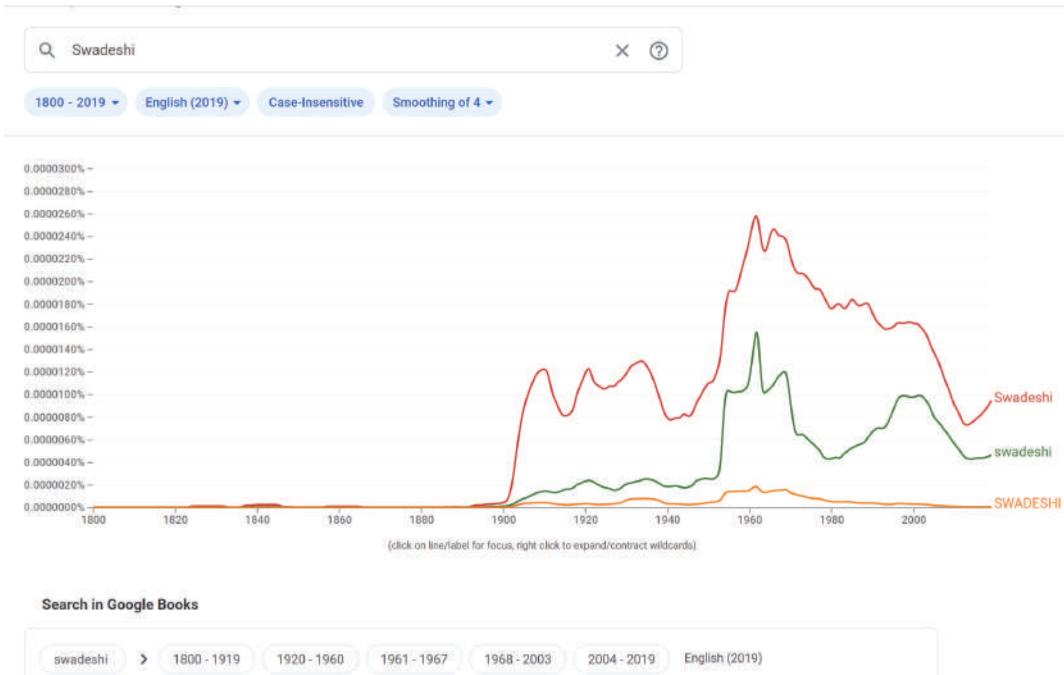


Figure 1: Mention of word Sawdeshi in Google Books over the last 200 years

Source: Google Books Ngram Viewer (2021)

Swadeshi Movement looks on face more concerned with the purchase and production of Indian-made goods, but it is an expression of economic nationalism within an idiom of resistance to outside powers (Pai, 2021). It produced techniques of passive resistance that formed the basis of subsequent nationalist mass mobilizations - sought to overhaul collective and individual patterns of consumption and production, in order both to transform entrenched structures and habits of feeling and perception and to create an autonomous national space and economy (Eaton, 2013). Against the inter-monadic relations envisioned by classical liberalism, swadeshi activists sought to realize a strong form of autonomy founded on the dialectical unity of various isolated freedoms (social and individual, spiritual and material) in a perceived organic social formation, which Rabindranath Tagore termed '*swadeshi samaj*' (Tagore, 1921). Bal Gangadhar Tilak in his famous book '*Gita Rahasya*' gave a comparative exposition of various schools of thought across the world and advocated for the Swadeshi model for the rejuvenation of India (Tilak, 1924).

Gandhi's Self-Reliant Villages - Gram Swaraj

Mahatma Gandhi not just dreamt and advocated for self-reliant villages in India but practiced it firstly in Tolstoy Ashram and then in Sabarmati Ashram showing the pathway for its implementation (Gireesan & Chathukulam, 2020). The operational definition of 'Gram Swaraj' by Mahatma Gandhi is very much similar to the modern concept of sustainable development. His perception of village life contained most of the United Nation's sustainable development goals (Gireesan, 2018). Mahatma Gandhi explained his idea of Gram Swaraj in his writings in *Harijan* magazine in the following words:

> *"My idea of Gram Swaraj is that every village shall be a complete republic. In addition, it shall have the conditions like the following aspects: Independent of its neighbors for its own vital wants; Inter-dependent for many others in which dependence is a necessity; Every village's concern is to grow its own food crops and cotton for cloth; Reserve adequate areas for grazing of cattle; Recreation and playground for children, adolescents, and youth; If more land is available, we can grow more useful cash crops except ganja, tobacco, opium, etc.; Village Theatre; Schools; Public hall/ meeting place; Own waterworks/ source of drinking water to ensure clean water supply through controlled wells or tanks; Compulsory education for all; Vibrant co-operative societies; and, no practice of untouchability."*
> (Gandhi,1942: 308-9)

This definition highlights the independence (sovereignty) of vitals and inter-dependence of villages for necessities for export and imports. He gave equal importance to education, work-life balance, i.e. recreations and social wellbeing (*Village theatre; Schools; Public hall/ meeting place*), and earning from ethical and socially responsible business activities (*grow more useful cash crops except for ganja, tobacco, opium).* He also highlighted the importance of public health, cleanliness, sanitation, equity, and equality in society. Lastly, he also suggested a suitable development model of *cooperative societies* for promoting social goods in economies with limited economic resources.

Kumarappa’s Model of Ecological Economics

Following the Gandhian thoughts Economist, Joseph C Kumarappa presented an alternative economic development model equivalent to modern days Ecological Economics (happiness economics and Degrowth (post-growth) paradigm (Gerber and Raina, 2018; Hanaček et al., 2020). He also advocated for local economic development based on values such as solidarity, self-help, mutual aid, and cooperative efforts. His economic model was deep-rooted to local economic development based on the emergence and sustainability of community-based, community-owned, and community-managed enterprises in the villages (Lindley, 2007; Gireesan & Chathukulam, 2020). In his book *Economy of Permanence*, he promoted peasant and artisan-based economies (Kumarappa, 1946), which became the source of inspiration for several of the forefathers of Ecological Economics and Post-growth paradigms like Ivan Illich and E.F. Schumacher (Gerber and Raina, 2018).

The present call of PM for Make in India and Aatma Nirbhar Bharat also include slogans like “ZERO DEFECT, ZERO EFFECT”, i.e. there should be no adverse effect on the environment by manufacturing. Kumarappa strongly believed and campaigned that ‘only decentralized production will improve the situation of people permanently’ (Chathukulam, et al., 2018). Both Gandhi and Kumarappa were not averse to industrialization, but considering the large agrarian and rural population, they insisted that it should be of a small-scale and agro-based nature (Nair, and John, 2018, 312; Gireesan & Chathukulam, 2020).

> According to Kumarappa *“The capital-intensive economy was highly wasteful of natural resources upon which large capital stocks were created during the period of colonialism, wiping out the indigenous people and their ways of life. India had to do justice to its large pool of human resources……… Under the economic system of [industrial societies], we find that […] a large supply of goods is produced irrespective of demand, and then demand is artificially created for goods by means*

of clever advertisements….. Small-scale operations are less likely to be harmful to the natural environment than large-scale ones, given the ability of nature to recuperate when they are employed. The question of reversibility is hard or impossible when the operations are large. Thus, small groups are more environment-friendly"

(Nair, and John, 2018, 312; Kumarappa, 1938: 27–28)

The PM focus areas such as MSMEs and Vocal for local for self-reliant India are not much different from Kumarappa's Model of Ecological Economics.

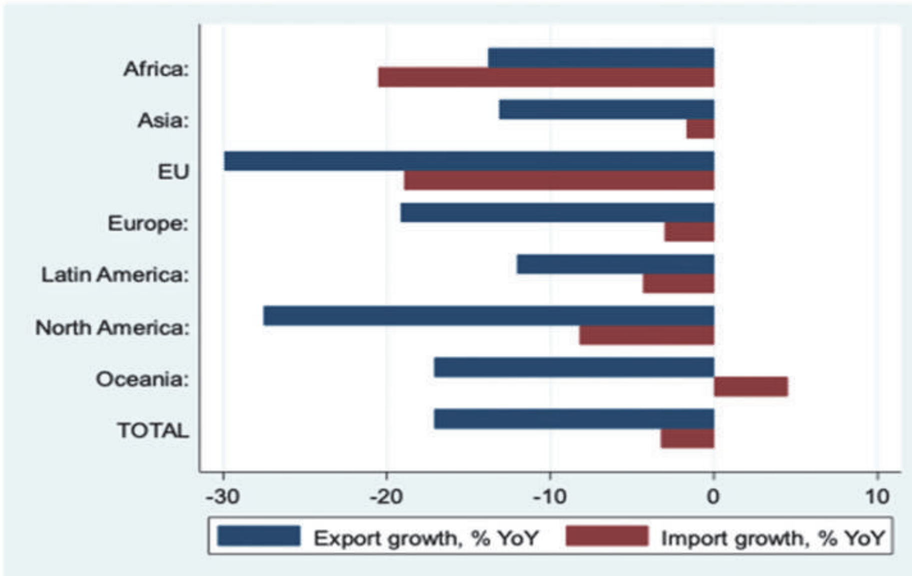
Pandit Deen Dayal Upadhyaya's 'Integral Humanism' Doctrine

Nationalist thinker Pandit Deen Dayal Upadhyaya, propagated an 'indigenous economic model', with a human being at the centre stage as a political program in 1965, adopted as the official doctrine of the Jan Sangh and later BJP. According to him, "Sarvodaya (Progress for all), Swadeshi (Self-reliance) and Swaraj (Self-rule) as the most important components of Integral Humanism" (Gireesan & Chathukulam, 2020). Upadhyaya's ideological contours of integral humanism have originated from the traditional Indian cultural ethos and Dharma. He criticized the social-economic and political philosophies of capitalism and communism on the account of inherent disdain for humanitarian aspects of individual life and their inappropriate emphasis on the financial dimension (Nain and Sharma, 2018). He believed that with the synergic efforts of individuals and society with nature and the ultimate authority of the Supreme harmony, peace, and progress in the life of mankind can be achieved (Upadhaya, 1965). Upadhaya termed the doctrine of integral humanism as Dharma — Bharatiya Approach to Life- i.e. analysis of life as an integral whole. He pointed out, "Over a period of time, an impression was created that Bharatiya culture thinks of the salvation of the soul only and it does not bother about the rest. This is wrong. Our attention to the soul appears unique… progress of human beings (society/country) is a resultant of simultaneous progress of the body, mind, intellect, and soul" (Pandit, 2002, 16-18).

PM Modi declaration that India's progress has been integral to the progress of the world, Vasudhaiva Kutumbakam, Sabka Saath Sabka Vikas spirits upon Updadhya Integral humanism doctrine only (Gireesan & Chathukulam, 2020).

New Global Economic Order & Modern Theory of Self-Reliance

Covid-19 has not just disrupted the Indian economy rather it has impacted the global value chains that connect producers across multiple countries in such a way that its effects may carry on for years (Du et al., 2020). Economists across the globe have started arguing that the COVID-19 crisis would not just unravel globalization altogether rather it may trigger the worst economic downturn since the Great Depression. China being a global manufacturing hub in the global value chain has observed a sharp decline in its exports, i.e. by 17.2% and imports by 4% in the first two months of 2020. Chinese customs statistics further revealed that their exports to the EU and US fell by 29.9% and 27% respectively. Similarly, their imports from the EU and US have also been tumbled by 18.9%and 8% respectively (See Figure 2). According to the World Trade Organization (WTO) in the year 2020 due to Covid 19, world merchandise trade in nominal dollar terms fell by 8% while commercial services exports declined by 20%. Though with the vaccination hope WTO predicted that world merchandise trade volume is expected to increase by 8.0% in 2021 but its growth will likely be slow to 4.0% in 2022 and will remain below the pre-pandemic trend (WTO, 2021).



Source: General Administration of Customs of People's Republic of China (GACC)

Figure 2: Changes in Exports and Imports between China and Regions of the World between Jan and Feb 2019 & Jan and Feb 2020

Richter (2020) and Sułkowski (2020) while analyzing world trade statistics argued that economic slowdown due to COVID -19 health crisis just fueled the trend of the de-globalization that has been initiated way back in the year 2009. Subramanian and Felman (2020) expressed their worry that a historic process of de-globalization is underway as the global export-to-GDP ratio is falling since the sub-prime crisis (See Figure 3).

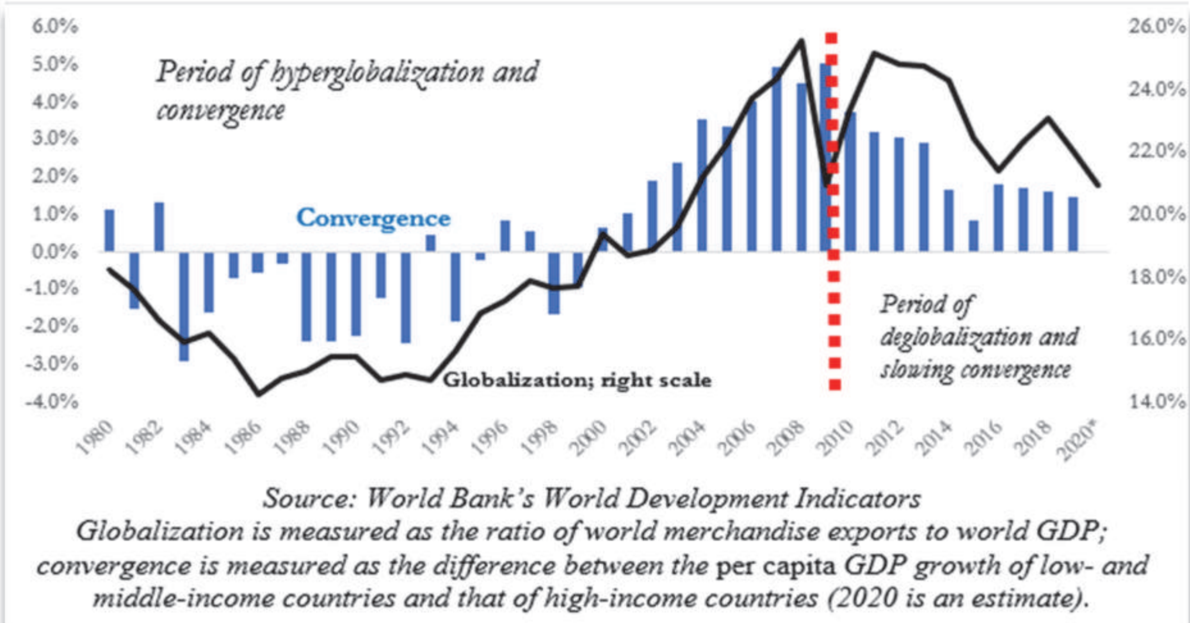


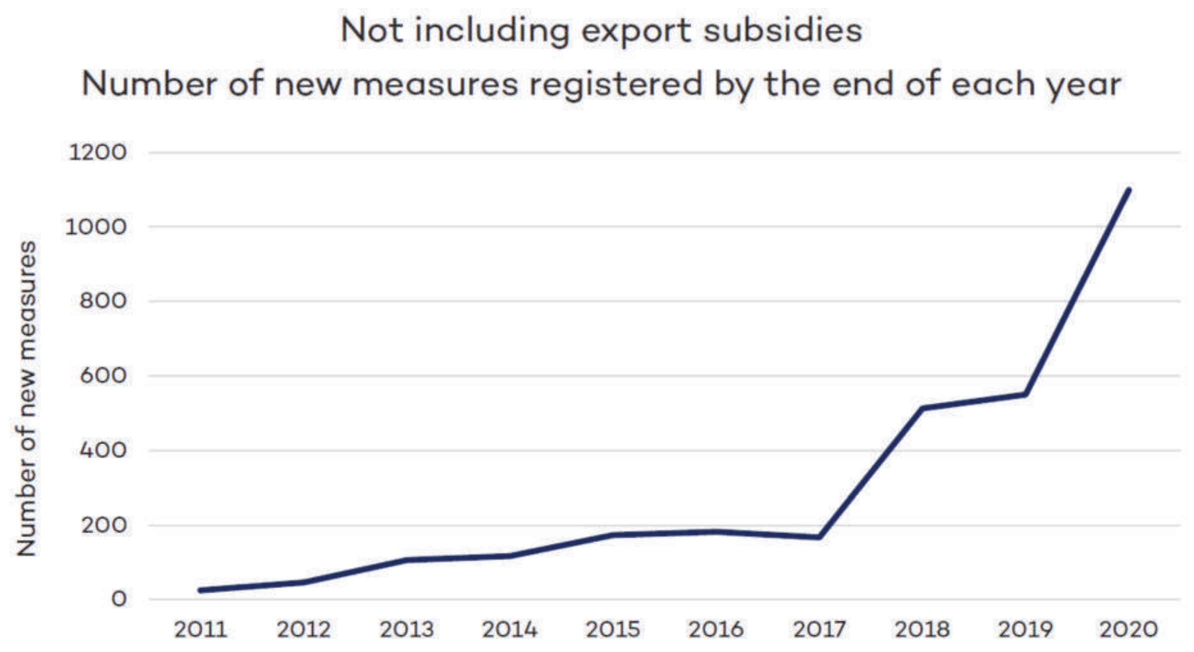
Figure 3: Convergence and Globalization from 1980 to 2020

They argued that since the early 1990s till 2009, the world has observed a hyper-globalization due to technological advances, the container revolution, the fall in information and communication costs, and the dismantling of trade barriers sustaining widespread economic exuberance. This hyper-globalization witnessed an economic convergence between developing and developed countries as the global export-to-GDP ratio has grown 15% to 25% every year which fueled rapid growth in developing countries (See Figure 3). It can be further observed that from 1990 to 2007, the developing economies' average annual *per capita* growth was 2.5 percentage points higher than in the advanced economies. In 2000-2007 this gap increased by 3.5 percentage points (See Figure 4). However, this economic convergence was limited mainly to BRICS and few other Asia-pacific nations, and this convergence seems disbanded after the financial crisis of 2008 (Dervis, 2018). Further, the gap between China and other emerging economies has also been widened. Rodrik (2017) and Acemoglu & Restrepo (2018) argued that this convergence was mainly driven by outsourcing of low-hanging fruits like the manufacturing sector. But such technological catchups are not possible in the service sector which is less labor-intensive and powered by cutting-edge technologies like robotics, artificial intelligence (AI), and bioengineering (Roy et al., 2016).

Figure 4: Percentage Changes in GDP per Person at PPP in emerging markets including and excluding China relative to the USA

At the beginning of 2009, the World Bank reported that 17 out of the G20 members failed to keep promises of not increasing protectionism. Moreover, they have been determined on defending the domestic industry, by filing complaints with the WTO over dumping, flooding another country with goods well below the market price (Gaynulina, 2019). The instability of the global financial system caused by the financial crisis 2008 resulted in a reduced free flow of financial capital; changes in the WTO trade policy; deterioration of the indicators of transnational corporations; re-industrialization and re-shoring in developed economies and persistent inequalities between the developed and developing countries (Baryshnikova et al., 2020).

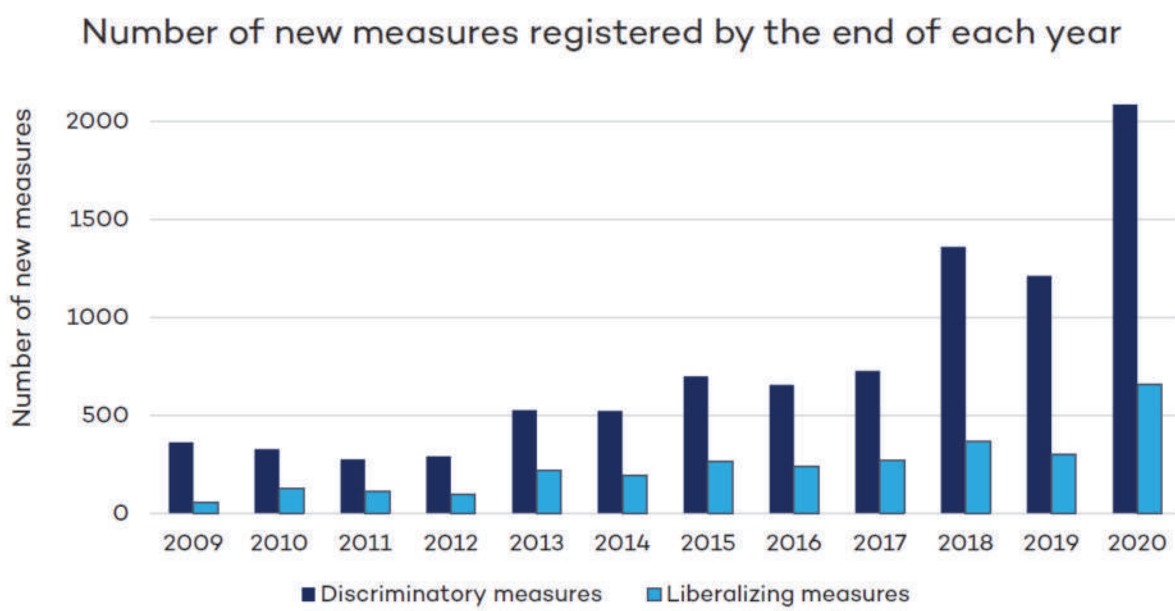
This environment of growing disparities, disbelieves, and lose-lose strategic proposition between developed and developing countries has given rebirth to protectionist culture and renewed New International Economic Order (NIEO) (Gaynulina, 2019; Baryshnikova et al., 2020). However, this time NIEO has been packaged with modern protectionist, self-reliant and self-sustained mechanisms termed as New Global Economic Order (Ghosh, 2020). These modern protectionist mechanisms are very impactful and agile as sometimes these are explicit, other times these are veiled, bi-lateral, discretionary, and non-transparent (Altenberg, 2016; 2021). These sophisticated mechanisms include mainly non-tariff barriers such as subsidies under the banner of development expenditures, domestic content requirements, and restrictions on public procurement (See Figure 5). They are primarily designed to protect the interests of the main groups of domestic companies and restrict the entry of transnational companies that originated from non-preferred countries (Evenett, 2019; Altenberg, 2021). US-Sino trade war under the leadership of Donald Trump has further worsened the world trade trends and powered the nation first and self-reliant trends (Sukar and Ahmed, 2019).



Source: Global Trade Alert

Figure 5: **Domestic Subsidies Given Across World 2011–2020**

COVID-19 pandemic, added fuel to the fire of this new global economic order and further led to a rise in trade protectionism, unilateral economic sanctions, standstill at WTO talks, waning economic and financial institutions, and lack of mutual trust, wisdom, and initiation among global leadership (AIC-EEPC, 2020; Altenberg, 2021). Post-Covid 19, due to the geopolitics of the COVID-19 vaccine, the world has seen an acceleration in de-globalization and decoupling and MNCs are substantively re-localize their supply chains (Javorcik, 2020; McKinsey, 2020). Even, the World Economic Forum recommended that companies should ‘aggressively evaluate near-shore options to shorten supply chains and focus on localization (World Economic Forum, 2020). The race for vaccination initiated a vaccine nationalism, as it has exacerbated tendencies of hoarding, particularly among rich countries. In contrast, India has been quite generous to its neighbors in sharing vaccines pursuing its form of vaccine nationalism (Chatterjee et al., 2021).



Source: Global Trade Alert

Figure 6: Discriminatory vs liberalizing measures across Globe, 2000–2020

United Nations High Commissioner for Refugees (UNHCR) explained these scenarios as a self-reliance mechanism, where community development is concerned about the social and economic ability of an individual, a household, or a community to meet essential needs (including protection, food, water, shelter, personal safety, health, and education) in a sustainable manner and with dignity (UNHCR, 2011). Accordingly, Self-reliance as a programme approach should focus on developing and strengthening the livelihoods of persons of concern, and reducing their vulnerability and long-term reliance on humanitarian/external assistance. As per western scholars, the theory of Self-Reliance has roots in Native American culture and values. The concept of self-reliance was brought by Native American leaders to be the mainstay and way of life that influence the health among Native American people known as Cherokees (Tyler, 1973). Self-reliance has been recognized as a key variable for keeping Cherokees in balance (Stuart, 1993). The main foundation of this middle-range theory of Self-Reliance is to articulate a process for promoting well-being with attention to an appreciation for one's culture.

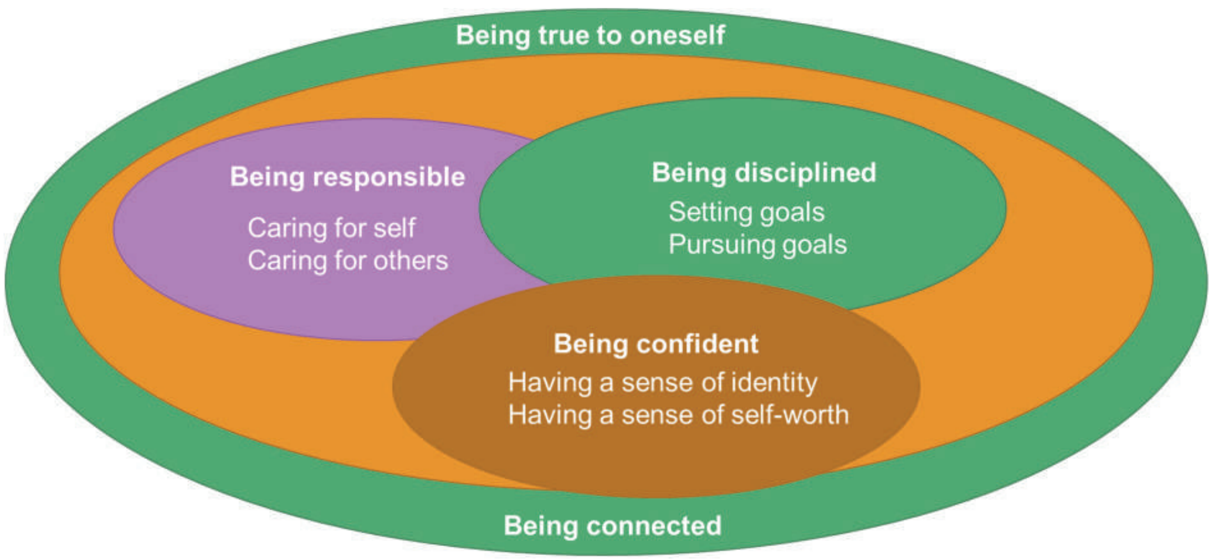


Figure 7: Self- Reliance Theory and its Pillars, Source: Lowe (2003)

The theory of self-reliance has two key assumptions "being true to oneself" and "being connected."

Assumption 1 "Being true to oneself" refers to acknowledging one's heritage and living in keeping with the worldview of one's culture.

Assumption 2 "Being connected" refers to identifying and utilizing resources within creation. The gifts and talents (Competitive advantage) of each person will benefit not only the other persons in his family, and community, and but also cultural groups.

These assumptions cut across all three concepts of self-reliance. The self-reliance theory has three pillars (a) being responsible, (b) being disciplined, and (c) being confident. Figure 7 depicts a pattern of interrelating circles that describe the interrelatedness through intertwining and interlacing of the concepts.

Concept 1 Being responsible suggests that every individual should be accountable to care for self and to care for others by getting assistance, respecting self, respecting others, and respecting the Creator. Respecting others occurs by being dependable and accountable. Honoring traditions, values, and language is a way to respect the Creator. The Creator in this context is the life force that grounds a sense of self.

Concept 2 Being disciplined is setting goals and pursuing goals by taking the initiative to make decisions and taking risks necessary to achieve goals. After decisions are made and goals are set, the pursuit of goals occurs by creating a plan, getting assistance, and redirecting one's effort.

Concept 3 Being Confident refers to having a sense of identity and self-worth. Self-worth refers to knowing self within one's cultural heritage, being proud of one's heritage, and accepting cultural values and beliefs.

Box 1: Theory of self-reliance: Conceptual Framework (Source: Lowe, 2013)

Most of the development literature has recognized that all the above-mentioned features of the self-reliant theory have become relevant for New Global Economic Order (NGEO) stimulated out of COVID-19 (El Namaki, 2020; Gammage and Akinkugbe, 2020; Leach et al., 2021, Jabri, 2021). Internal and external development of nations can only be achieved by being true to oneself i.e. (knowing own strengths) and 'being connected', i.e. close cooperation among the developed and developing nations (El Namaki, 2020; Gammage and Akinkugbe, 2020). In NEGO the developing nations, individually, must do as much as possible for themselves based on their resources. But at the same time, it suggests that collectively the developing nations must exploit a very possible advantage for maximizing the positive effects of the NGEO by cooperation among themselves. Self-reliance is taken here to mean autonomy of decision-making and full mobilization of a society's resources under its initiative and direction. It also means rejection of the principle of exploitative appropriation of others' resources (Hope, 1984). Collective self-reliance is an extension of the concept of self-reliance to embrace truly cooperative relations among self-respecting mobilized societies. In other words, it is self-reliance reinforced by collective solidarity (Hope, 1984; Leach et al., 2021).

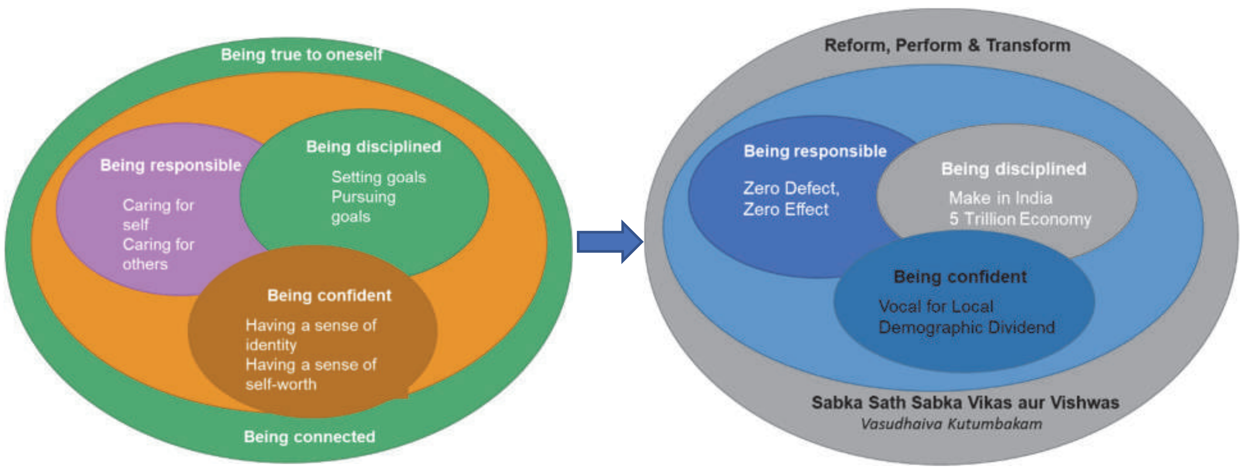


Figure 8: Theory of self-reliance & Indian Policy Initiatives

Policy Reforms for Aatma Nirbhar Bharat

The government of India has put into practice almost every feature of the modern theory of self-reliance (See Figure 8) and carrying out several reforms under the banner of Aatma Nirbhar Bharat. Other than economic relief and revival measures some of the prominent policy reforms to strengthen self-reliance and boost local development and Make in India have been discussed below:

Production Linked Incentive Scheme for Make in India

Considering the encouraging response to the production link incentive (PLI) scheme on large-scale electronics manufacturing Government of India has extended the scope of (PLI) scheme to 10 crucial sectors of the economy. Ten focus sectors chosen for PLI schemes in India include 1. Advance Chemistry Cell (ACC) Battery 2. Electronic/Technology Products 3. Automobiles & Auto Components 4. Pharmaceuticals drugs 5. Telecom & Networking Products 6.Textile Products: MMF segment and technical textiles 7. Food Products 8. High-Efficiency Solar PV Modules 9. White Goods (Air Conditioners and LED Lights) 10. Specialty Steel. The objective of the PLI scheme across these 10 key specific sectors is to make Indian manufacturers globally competitive, attract investment in the areas of core competency and cutting-edge technology; ensure efficiencies; create economies of scale; enhance exports and make India an integral part of the global supply chain (PIB, 2020). Considering the domestic and international future demand for these goods growth in production and exports of these industrial goods will greatly expose the Indian industry to foreign competition and ideas, which will help in improving their capabilities to innovate further (Nayyar et al., 2021). Promotion of the manufacturing sector and creation of a conducive manufacturing ecosystem will not only enable integration with global supply chains but also establish backward linkages with the MSME sector in the country. It will lead to overall growth in the economy and create huge employment opportunities. A typical PLI scheme extends an incentive of 4 percent to 6 percent on incremental sales (over the base year) of goods under target segments that are manufactured in India to eligible companies, for five years after the base year. The PLI scheme contains all the ingredients required to increase investments, employment generation, domestic value addition, capacity building, and innovation to make India 'Aatma Nirbhar'(Nayyar et al., 2021).

Agriculture & Farm Sector Reforms

Strengthening Agriculture Infrastructure, Logistics, and Capacity Building

Most agriculture financing schemes like Minimum Support Price, PM Kisan fund, PM Fasal Bima Yojana have to focus on offering solutions to the immediate and short problems of the farmers. Long-term investment in agriculture infrastructure like cold chain

& post-harvest management infrastructure in the vicinity of farm-gate often not been enough, causing gaps in value chains. To develop farm-gate & aggregation points, affordable and financially viable post-harvest management infrastructure, the Government of India has launched a new Central Sector Scheme of financing facility under the Agriculture Infrastructure Fund of Rs. 1 lakh crore. The scheme will support farmers, PACS, FPOs, Agri-entrepreneurs, etc. in building community farming assets and post-harvest agriculture infrastructure. These assets will enable farmers to get greater value for their produce as they will be able to store and sell at higher prices, reduce wastage, and increase processing and value addition. Under the scheme, Rs. 1 lakh crore will be provided by banks and financial institutions as loans with interest subvention of 3% per annum and credit guarantee coverage under the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGFTMSE) scheme for loans up to Rs. 2 crore.

Agriculture Marketing Reforms

Markets in agricultural products were regulated under the Agricultural Produce Market Committee (APMC) Act enacted by State Governments. Farmers were bound to sell agriculture produce only to licensees in APMCs. The Government of India passed Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020; Essential Commodities (Amendment) Act, 2020; and Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020 to provide choices to farmers to sell produce at an attractive price and enable barrier-free inter-state trade. These laws created a legal framework for contract farming and enabled farmers to engage with processors, aggregators, large retailers, exporters fairly and transparently. These laws also brought risk mitigation for farmers and assured returns and quality standardization to them.

Leverage Technology-based system to Enable Migrants to access PDS

To enable migrants to access PDS (Ration) from any Fair Price Shops (FPS) in India under the One Nation one Ration Card scheme out of 745 districts in India, 733 districts have been brought under the national portability of ration cards. As of September 19, 2021, 79.29 crore beneficiaries have an option to lift their foodgrains from any FPS of choice in any of these 36 States/UTs.

Defence Acquisition Procedure 2020

The Ministry of Defence released the Defence Acquisition Procedure 2020 (DAP 2020) in September last year, in a move to further streamline the procurement process and provide a boost to indigenous arms manufacturing. DAP 2020 has been aligned with the vision of the Government for Atmanirbhar Bharat and empowering Indian domestic industry through the Make in India initiative with the ultimate aim of turning India into a global manufacturing hub. With the new Foreign Direct Investment (FDI) policy announced, DAP 2020 has adequately included provisions to encourage FDI to establish manufacturing hubs both for import substitution and exports while protecting the interests of the Indian domestic industry (Cowshish, 2020). In DAP 2020, each of the categories has seen an increase in the procurement and acquisition of indigenously manufactured products and technologies in the sector. This would also be facilitated by Inter-Governmental Agreements (IGAs) that would help enable import substitution of defence products, technologies, and spare parts. Under the Buy (Global – Manufacturing in India) category the entire or part of the manufacturing procedure for equipment / spare parts/maintenance or repair must be conducted by the Indian subsidiary of foreign investors (Behera, 2021). Some of the highlights on Ease of Doing Business front include– Easier and faster facilitation of operations and decision making through the Project Management Unit; Preference is given to manufacturers producing complete defence products, rather than parts; Increase of multipliers in the offset policy concerning the direct purchase, TOTs and FDI to incentivize the discharge of offsets; Easing of trials and testing such as avoidance of duplicate trials, modification of the scope of trials, removing repeat inspections, etc. (MakeinIndia, 2020). Further, Budget 2021-22 has banned the import of several weapons and created a separate budget provision for domestic capital procurement. This will help to reduce the huge defence import bill and promote self-reliance. Further, to improve the autonomy, accountability, and efficiency of Ordinance Factory Boards, Government has decided to Corporatize Ordnance Factory Boards.

Establishment of International Financial Services Centres Authority

The Government of India established International Financial Services Centres Authority under International Financial Services Centres Authority Act, 2019. The IFSCA will act as a unified authority for the development and regulation of financial products, financial services, and financial institutions in the International Financial Services Centre (IFSC) in India. Before the establishment of IFSCA, the domestic financial regulators, namely, RBI, SEBI, PFRDA, and IRDAI regulated the business in IFSC. As the dynamic nature of business in the IFSCs requires a high degree of inter-regulatory coordination within the financial sector, the IFSCA has been established as a unified regulator with a holistic vision to promote ease of doing business in IFSC and provide a world-class regulatory environment. The main objective of the IFSCA is to develop a strong global connection and focus on the needs of the Indian economy as well as to serve as an international financial platform for the entire region and the global economy as a whole (https://www.ifsca.gov.in/Pages/Contents/AboutIFSCA).

Asset Monetization

The asset Monetization process involves the creation of new sources of revenue by unlocking the value of hitherto unutilized or underutilized public assets. Internationally, it is recognized that public assets are a significant resource for all economies. Monetizing these assets that are under Government's control, including Public corporations, is widely held to be a very important but inadequately explored public finance option for managing public resources. Many public sector assets are sub-optimally utilized and could be appropriately monetized to create greater financial leverage and value for the companies and of the equity that the government has invested in them. The objective of the asset monetization program of the Government of India (GOI), (for which this note lays down procedures and mechanisms), is to unlock the value of investment made in public assets which have not yielded appropriate or potential returns so far, create hitherto unexplored sources of income for the company and its shareholders, and contribute to a more accurate estimation of public assets which would help in the better financial management of government/public resources over time (Source: https://dipam.gov.in/asset-monetisation). The Union Budget 2021-22 has laid out the importance of "monetizing operating public infrastructure assets for new infrastructure construction". Towards this, the budget provided for preparing a "National Monetisation Pipeline (NMP)" of potential brownfield infrastructure assets and an "Asset Monetisation dashboard" for tracking the progress and to provide visibility to investors. Towards this objective, National Institution for Transforming India (NITI) Aayog has initiated an exercise for the creation of the National Monetisation Pipeline (NMP) and prepared a report in the form of two volumes namely National Monetisation Pipeline volume I: *Monetisation Guidebook* and volume II *Asset Pipeline*.

New Public Sector Enterprise (PSE) Policy for Aatma Nirbhar Bharat

The new public sector policy pivots on facilitating the participation of private and foreign capital in areas that have a high potential for growth and multiplying jobs. All these areas, till now, were monopolized and remained under state control leading to inefficiency in production and productivity and absolute inertia in innovation and technological upgradations. The new Public Sector Enterprise (PSE) Policy classifies public sector commercial enterprises as a strategic and non-strategic sector. The strategic sector is limited to Atomic Energy, Space, and Defence; Transport and Telecommunication; Power, Petroleum, Coal, and other minerals; and Banking, Insurance, and Financial Services. The policy further stated that the government has decided to cut back on its holdings even in the strategic sector with the proviso that "the bare minimum presence of the existing public sector commercial enterprises at Holding Company level will be retained under Government control. The remaining enterprises in a strategic sector will be considered for privatization or merger or subsidization with another PSE or closure". In the light of this policy, DIPAM has invited Expression of Interest for the sale of its stake in BPCL, Air India, Pawan Hans Ltd., Central Electronics Ltd., Salem, and Bhadravati Unit of SAIL, Shipping Corporation of India Ltd., BEML Ltd., Nilanchal Ispat Nigam Ltd., CONCOR, HLL Lifecare, PDIL, FSNL, IMPCL, etc.

National Education Policy

The Government of India adopted the new National Education Policy 2020 (NEP 2020). NEP 2020 outlines the vision of India's new education system is expected to play a key role in transforming the education system in India and creating an Atma Nirbhar Bharat (self-reliant India). The policy includes a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India. The policy aims to transform India's education system by 2040. The major reform areas include:

- Encouragement for use of mother tongue or local language as the medium of instruction till Class 5 and beyond. Sanskrit and foreign languages will also be given emphasis. The Policy recommends that all students will learn three languages in their school under the 'formula'. At least two of the three languages should be native to India.
- The "10 + 2" structure will be replaced with the "5+3+3+4" model and students will only attend three exams, in classes 2, 5, and 8 followed by Board exams for classes 10 and 12. The board exam will be re-designed and standardized by an assessment body, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development).
- Reducing the curriculum load of students and allowing them to be more "inter-disciplinary" and "multi-lingual”.
- The Midday Meal Scheme will include breakfasts as well and more focus on students' health, particularly mental health, through the deployment of counselors and social workers.

- 4-year multi-disciplinary bachelor's degree in an undergraduate programme with multiple exit options. These will include professional and vocational areas. Academic Bank of Credit (ABC) will provide multiple entries and exit options for students in Higher education.
- Higher education will be regulated by the Higher Education Council of India (HECI) by regulatory bodies like AICTE, UGC, NAAC, NBA will be merged under it.
- National Research Foundation, to improve research and innovation
- Gender Inclusion Fund, for assisting the nation in the education of female and transgender children.
- Foreign universities can now set up campuses in India. The fees of both private and public universities will be regulated.
- Setting up of a National Mission on Foundational Literacy and Numeracy.
- A common National Professional Standards for Teachers (NPST) will be developed by the National Council for Teacher Education by 2022, in consultation with NCERT, SCERTs, teachers, and expert organizations from across levels and regions.
- Standard-setting and Accreditation for School Education

New Labour Law Codes

The Central Government replaced 29 existing Labour Laws with four Codes to simplify and modernize labour regulation. The main objective of new labour codes is to facilitate employment growth while protecting workers' rights. These laws have been codified and enacted as:

Code on Social Security, 2020

This code is introduced to provide social security benefits by extending its goals to employers and employees. The code seeks to simplify labour laws by amalgamating various enactments such as The Employees' Compensation Act, 1923; The Employees'

State Insurance Act, 1948; The Employees' Provident Funds and Miscellaneous Provisions Act, 1952; The Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959; The Maternity Benefit Act, 1961; The Payment of Gratuity Act, 1972; The Cine Workers Welfare Fund Act, 1961; The Building and Other Construction Workers Welfare Cess Act, 1996; The Unorganized Workers' Social Security Act, 2008. The code has defined four types of employees in an organization other than permanent employees namely: Fixed-term employment, Home-based worker, Self-employed worker, Platform worker. The Central government will frame social security schemes concerning providing benefits under Employees' State Insurance Corporation (ESIC) for platform workers, gig workers, and unorganized workers. The code empowers the Central government to extend its social security benefit schemes to self-employed or to any other class of persons as specified. Fixed-term employees shall be subjected to payment of gratuity on a pro-rata basis by the employer.

Industrial Relations Code, 2020

It introduces provisions for simplifying compliance burdens and promoting ease of doing business in an establishment. The code seeks to simplify labour laws by amalgamating various enactments such as The Industrial Disputes Act, 1947; The Trade Unions Act, 1926; and The Industrial Employment (Standing Orders) Act, 1946. The major highlights of the code include: introducing the provision of a 'sole negotiating union' in establishments where there is more than one trade union. Such sole negotiating union is required to have 51% or more workers as members per Section 14 of the Code. Only a sole negotiating union shall be permitted to negotiate terms with the employer. The code provides provisions for workers to secure their employment after being laid off. A fund shall be initiated consisting of contributions from the employer and the appropriate government. The code has also provisioned for establishing a mechanism for the resolution of industrial disputes comprising a national industrial tribunal and one or more industrial tribunals. As per the provisions of the Code, no person shall go on strikes and lock-outs in breach of contract without giving prior notice of 60 days before going on strike or before 14 days of submission of notice or during the pendency of conciliation or tribunal proceedings including within 7 days of the conclusion of the proceeding.

Occupational Safety, Health, and Working Conditions Code, 2020

It regulates and manages safety and health conditions in industries and establishments. The code simplified labour laws by amalgamating various enactments such as: The Factories Act, 1948; The Plantations Labour Act, 1951; The Mines Act, 1952; The Working Journalists and other Newspaper Employees (Conditions of Service and Miscellaneous Provisions) Act, 1955; The Working Journalists (Fixation of Rates of Wages) Act, 1958; The Motor Transport Workers Act, 1961; The Beedi and Cigar Workers (Conditions of Employment) Act, 1966; The Contract Labour (Regulation and Abolition) Act, 1970; The Sales Promotion Employees (Condition of Service) Act, 1976; The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979; The Cine Workers and Cinema Theatre Workers Act, 1981; The Dock Workers (Safety, Health, and Welfare) Act, 1986; and The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. The salient features of the Act include: An inter-state migrant worker shall be provided benefits to portability and ration, including cess. Employees shall be given a health check-up by the employer once a year and free of cost. The employer shall mandatorily issue an appointment letter to the employee for promoting formalization at the workplace. National Occupational Safety and Health Advisory Board shall be constituted by the Central government as per the provisions of the Code. The board shall advise the Central government on issues related to the implementation of health and safety standards regulated under the Code. State Occupational Safety and Health Advisory Board shall also be constituted on a state level.

Code on Wages, 2019

It enacted to amend and consolidate the laws relating to wages, bonuses, and matters incidental to the same. The code repeals 4 major labour law enactments — The Payment of Wages Act, 1936; The Minimum Wages Act, 1948; The Payment of Bonus Act, 1965; and The Equal Remuneration Act,1976. The main highlights of Code of Wages, 2019 include: it provides for a common definition of the term Wages, this is a significant change introduced to provide a uniform definition of the term Wages as opposed to the different definitions given under the Payment of Wages Act, 1936, the Minimum Wages Act, 1948 and the Payment of Bonus Act, 1965. This will allow the employers to follow standard practice for computation of wages and avoid multiple interpretations of the term wages. According to the conditions applicable in the Code, the employer shall pay wages not less than 50% of total remuneration. Minimum 50% of Cost-to-Company shall comprise of basic pay and dearness allowance. The computation of wages will include basic pay, dearness allowance, retaining allowance, and it specifically excludes house rent allowance, conveyance, statutory bonus, overtime allowance, and commissions.

MSMEs & Ease of Doing Business

COVID-19 spread and the resulted lockdowns have badly hit businesses especially MSMEs. The Government of India has carried several reform measures to revive and promote ease of doing business targeted for MSMEs. Some of the important reforms include:

- Change in MSME definition and criteria from plant and machinery to composite criteria of Investment and annual turnover.

Existing MSME Classification			
Criteria : Investment in Plant & Machinery or Equipment			
Classification	Micro	Small	Medium
Mfg. Enterprises	Investment<Rs. 25 lac	Investment<Rs. 5 cr.	Investment <Rs. 10 cr.
Services Enterprise	Investment<Rs. 10 lac	Investment< Rs. 2 cr.	Investment<Rs. 5 cr.

Revised MSME Classification			
Composite Criteria : Investment And Annual Turnover			
Classification	Micro	Small	Medium
Manufacturing & Services	Investment< Rs. 1 cr. and Turnover < Rs.5 cr.	Investment< Rs. 10 cr. and Turnover < Rs.50 cr.	Investment< Rs. 20 cr. and Turnover < Rs.100 cr.

- Indian Companies especially MSMEs face stiff sometimes unfair competition from foreign companies for government procurements. To protect, promote and support MSMEs, the Government of India relaxed the requirement of global tender for government procurement tenders up to Rs. 200 crores in

General Finance Rules, 2017. This will be a step towards Self-Reliant India and support Make in India.

- For any payment due from Government/CPSEs towards MSMEs, the government has fixed a deadline of 45 days for the settlement of accounts.
- To protect the interest of MSMEs, the minimum threshold to initiate insolvency proceedings was raised to Rs 1 crore. The government amended the insolvency law by way of an ordinance for providing a simple Pre-packaged insolvency resolution process for Micro, Small, and Medium Enterprises (MSMEs). The initiative is based on a trust model and the amendments honor the honest MSME owners by trying to ensure that the resolution happens and the company remains with them.

Challenges and Way Forward for Aatma Nirbhar Bharat

Job Creation and Occupational Transition

India's population is rising and could grow to more than 1.5 billion people by 2030. The working-age population — those over the age of 15 — could increase by 1.3 per cent annually, to 1.2 billion. Based on this demographic surge alone, India would have 60 million more people entering the labour force and seeking employment by 2030.

Another challenge adding to the problem of unemployment is related to occupational shift. India has seen an annual shift of about 3.7 million jobs out of agriculture between 2012 and 2018. Continuing on this pace which looks like a reality, India's farm employment would decline from 44 per cent of the total in 2018 to about 30 per cent in 2030. This is in line with the proportion of agricultural employment found in other low and middle-income countries like China and Vietnam. Accommodating a labour force transition of this magnitude, in addition to natural labour force growth, implies that India needs to create at least 90 million non-farm jobs between 2020 and 2030. The country's current labour force participation rate is just 49 percent, meaning that only about half of people of working age are engaged in paid work.

Another challenge on the unemployment front is related to India's female labour force participation, which has fallen to 21 percent in 2019 from about 32 percent in the year 2005. With policy and programme impetus like '*Beti Bachao Beti Padhao*, Gender Budgeting, etc, female labour force participation is expected to rebound to 30 percent by 2030, with 55 million more women potentially entering the labour market. Such an increment would be a legitimate aspiration for India in line with the South Asian emerging economies such as Bangladesh and Sri Lanka. Including this potential increase in the proportion of working women, and assuming they all seek non-farm employment, India would need to create 145 million incremental non-farm jobs by 2030.

Way forward

Manufacturing (especially agro/farm-based food processing) and the construction sector — have the potential to play a significant role in achieving the requisite growth along with more jobs. If we can replicate the high-growth phase, between 2005 and 2012, when the overall economy grew by 8.2 percent per year, we could see manufacturing contributing more than one-fifth of the incremental GDP that is needed to achieve the growth required, while construction could add as many as one in four of the incremental non-farm jobs.

Problem of Employability

According to the National Policy for Skill Development and Entrepreneurship, more than 54 percent of India's population is below 25 years of age and 62 percent of India's population is aged between 15 and 59 years. But the demographic advantage might turn into a demographic disaster if the skill sets of both new entrants and the existing workforce do not match industry requirements. According to the CMIE, 2019 estimates just before the COVID-19 outbreak unemployment rate was 34% among the 20-24 year-olds. Every year 11 million new job seekers enter the job market annually, but just new 5.5 million jobs are created. As per the World Bank estimates only 2.3% of the workforce in India has undergone formal skill training as compared to 68% in the UK, 80% in Germany, 52% in the USA, 80% in Japan, and 96% in South Korea (World Bank, 2017). As a result, 48%

of Indian employers reported hiring difficulty due to skill shortages in candidates. According to National Employability Report 2019: only 80% of engineering graduates were found unemployable in the knowledge economy and 6 million general degree graduates pass out annually without jobs (Aggarwal et al., 2019).

Another concern is related to the limited availability of training facilities. On an average, approximately 10-12 million youth (15+ age) enter the workforce every year as 9.7 million students p.a. drop out from Class 6-12. On the other hand, the annual training capacity is just 3.5 million. Further to contribute to this problem, Indian business firms do not have the capacity and resources to train or build the capacity of the raw talent as more than 70% of Indian workforce work is working or required in firms having <20 employees. As a result of which 80% of the total workforce is informally employed and only 3% of workers in the informal sector are formally trained. Another cause of concern is the rising trend of contractual employment over the last 15 years from 15% to 25%, where the employer does not want to spend on capacity building. Even with the policy impetus of Skill India in the last 7 years like the setting of sector skill councils, development of industry-relevant curriculums, etc. desired results are not forthcoming. The root cause of these problems is a lack of quality, quantity, and aspiration (motivation to join/branding) in the skilling program. Courses offered at skill institutions like ITI, PMKK, Training Centres are neither aspired by the students nor preferred by parents as there is forward or backward linkage between skills certification and the formal education system. Students are not able to see a career in the acquired skill. Therefore, skill development is considered to be the last resort among youth, i.e 54 percent of the total population.

Way Forward

There is a dire need to break the silos between the Ministry of Skill Development & Entrepreneurship (MoSDE) and the Ministry of Education (MoE). MoSDE has the financial budgets and industry support (in terms of skill councils) but it does not have structure (Institutional infrastructure, faculty, Career Degree option, and required branding) for skilling career while MoE has the structure (Institutional infrastructure, faculty, Career Degree option and required branding) but it does not have the budget and required industry backing for On-job Training, Apprenticeships, placements, industry-relevant content, etc. Universities, Colleges are required to join hands to develop and offer skill embedded degree courses, diplomas to be introduced through content driven by industry & service sectors, with the incorporation of apprenticeship/Internships with multiple entries and exit points based on Academic/Skill Credit Banks.

Competition for Global Supply Chain & Ease of Doing Business

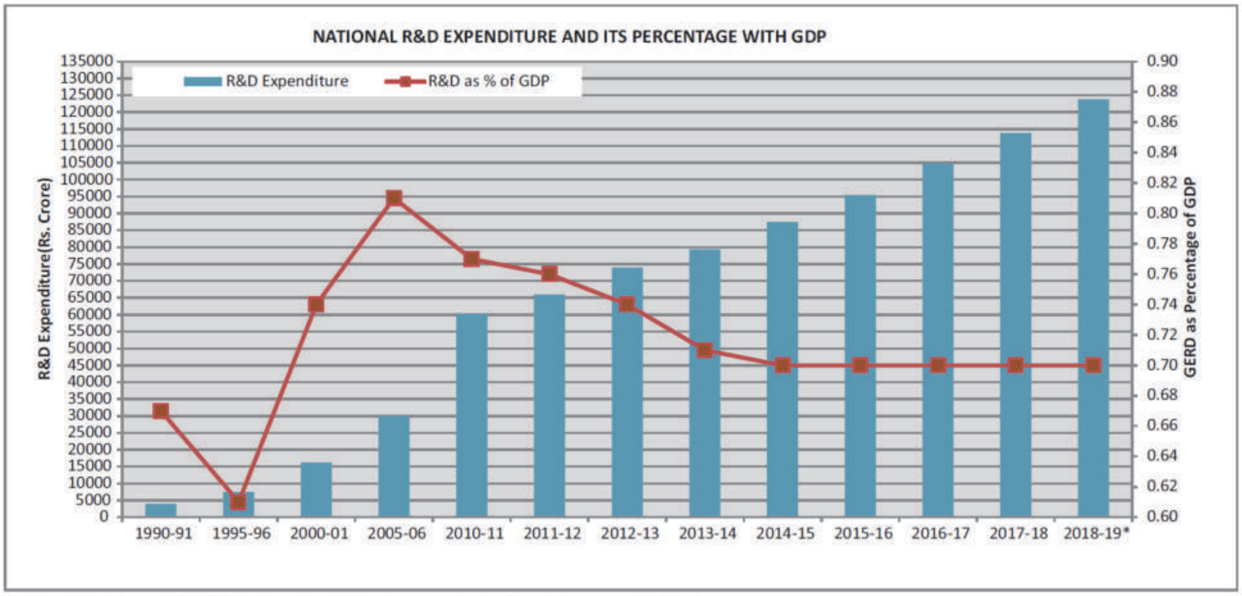
The coronavirus pandemic has shown the world how easily supply chains can weaken and in some cases, even break down entirely. Nations across the world recognized the need to diversify supply chains for both economic and national security and global business leaders like Apple, Amazon, Walmart, Samsung, Ford, Tesla, Bosch, etc. realized that they cannot rely on unsuitable sources for their markets. Though multinational corporations are seriously considering moving out of China as they are looking for the “China +1” model (Husain, 2015). The core reason behind these manufacturing centres continuing their operations in China is the fear of losing out on the Chinese market if they leave. The Chinese authorities are also giving benefits to these companies to stay on. But countries like Taiwan and Japan have spent a considerable amount of money to encourage their companies to resettle and create local manufacturing units in the self-reliant race (Bloomberg, 2020). In the “China+1” model, India is not yet one of the first options for companies; they prefer Thailand, Mexico, Vietnam, or Indonesia as most of them have either better or very competitive Ease of Doing Business Ranking (Mohanty, 2021).

India has made a massive leap in its Ease of Doing Business ranking from 140 spots in 2014 to 63rd position in the last rankings. Further, the Indian market, which consists of 400 million strong cash-rich consumers, is increasingly a lucrative option for US companies. Under the Trump administration, the U.S. has blocked some parts of its market to China and is working on curbing more. India can use its domestic market and improve ease of doing business ranking as leverage against China to gain some concessions from them and tilt the balance of trade in favor of India (Mohanty, 2021).

Despite having improved overall ease of doing business — that ranking is down to 63, out of 190 economies, which is an incredible progress — India still ranks at 136 for starting a business, 154 for registering property, and 163 for enforcing contracts. These factors ultimately hurt India's chances of getting FDI. Further, the World Bank has thrown a new challenge for the government by adding another criterion of procurement to the next ranking. Government procurement amounts to 20% of India's GDP — a strategic tool for achieving fiscal, economic, and social objectives. Aatma Nirbhar Bharat initiatives like reserving procurement below Rs. 200 Cr. for Indian companies/MSMEs has put forward a question mark on the notion of self-reliance and restriction to market access. US government has raised concerns over issues like data localization, intellectual property rights, high tariffs, duplicative safety, and security testing, price controls, and FTI restrictions in sectors like insurance. Digitalization of business and government processes re-engineering is the only answer to these challenges.

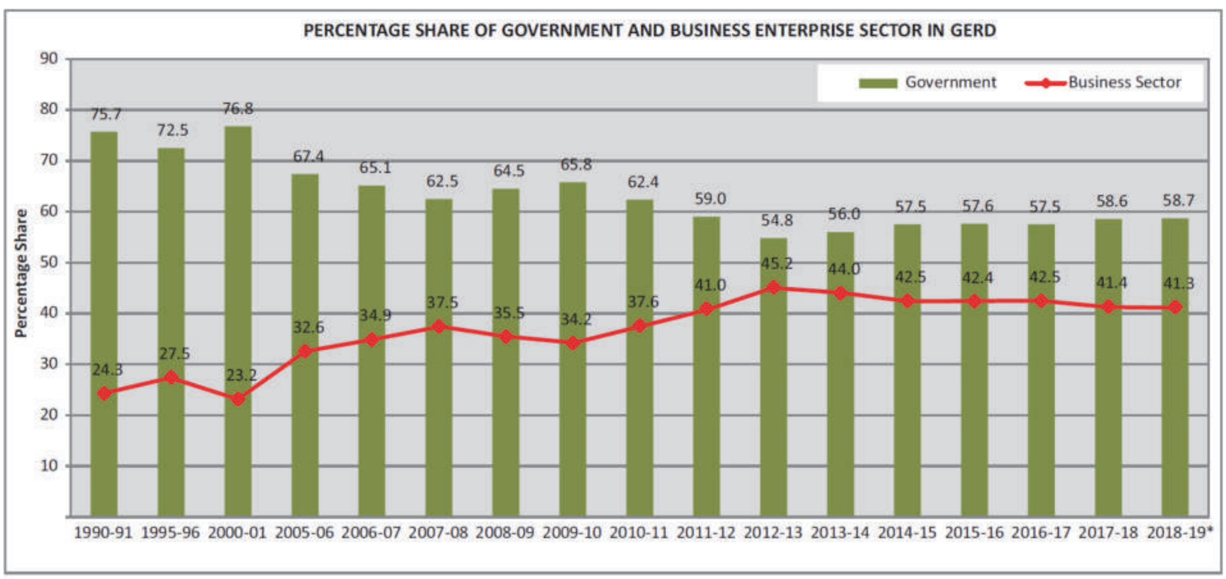
Low Research and Development Expenditure

The economic growth and social well-being of a nation depend on constant capital supply, research and development (R&D), human capital (HC), and technology (Smithers, 2017). These factors play a pragmatic role in decreasing poverty, raising employment opportunities, and improving living standards (Ciarli and Valente, 2016; Shan et al., 2018). Persistent technological growth not only leads to improved individual and organizational performance (Abbas et al., 2014; Abbas et al., 2014a) but also has a long-lasting impact on a country's economic growth (López et al., 2009) and social development. The emergence of disruptive and impactful technologies poses new challenges and simultaneously greater opportunities. At present, though India's Gross Expenditure on R&D (GERD) has been increasing consistently over the years, GERD as a percentage of GDP remained at 0.7% (See Figure 9). Compared to its other counterparts in the fastest-growing BRICS nations, India has one of the lowest GERD: GDP ratios with a declining research intensity since 2014. As per the Global Innovation Index 2020 report, in the year 2018, growth in R&D expenditure in India was just 5.5% whereas in China and the Republic of Korea's R&D expenditure was 8.6% and 8.3% respectively. But at the same time, India's scientific output in terms of publication on key topics such as agricultural production, health, sustainable energy, vaccination, maintaining genetic diversity, and climate-ready crops are either double, sometimes triple the global averages (Niazi, 2021).



* Estimated. Source: NSTMIS, Department of Science & Technology, Government of India

Figure 9: India's Gross R&D Expenditure and its Percentage with GDP



Source: NSTMIS, Department of Science & Technology, Government of India.

Figure 10: Contribution of Government and Private Sector including MNCs in total R&D Expenditure

Way Forward

Theoretically, it looks a healthy trend that after 2015, there is a steady decline in the share of R&D performed by the government sector and the contribution of the private sector including MNCs has increased to the extent of 42% (See Figure 10). It hints that R&D is increasingly being performed by the same sector that can convert research output into commercial products and processes. But considering India's low GERD, GDP ratio and need for R&D, sectors which are needed more R&D are largely reserved for state-owned bodies, namely: coal, minerals, defence manufacturing, airports and airspace management, power distribution, social infrastructure, space, and nuclear energy. Therefore, to achieve the goal of Aatma Nirbhar and marching towards a sustainable development pathway, i.e. economic development, social inclusion, and environmental sustainability, India has to give a greater emphasis on not only promoting traditional knowledge systems but also developing modern technologies indigenously by encouraging grassroots innovations with public sector R&D support. The COVID-19 pandemic provided a compelling opportunity for Research and Development (R&D) institutions, academia, and industry to work in unison for sharing of purpose, synergy, collaboration, and cooperation.

Reforming Governance System

India's progress towards achievement of the self-reliance and Sustainable Development Goals are subject to the type of federalism that exists in the country and its impacts on governance (Bhowmick, 2020). The Indian model of federalism is one of the most interesting typologies in the world characterized by paradoxes. Though the word 'Federalism' is absent in the Indian Constitution and it declared India as a "Union of States" and established a quasi-federal structure, where the Central government is more powerful than the states governments (Ghosh, 2020). Most modern political scientists advocate for a competitive economy, i.e. competitive federalism, which decentralizes financial powers to the states. Theoretically, it produces superior and efficient outcomes as states compete with one another to attract finances and investment. Increased competition among states will improve administrative efficiency and increase development initiatives, which will result in effective policy outcomes that will benefit the entire nation.

However, India's economic history is characterized by the focus on cooperation among the states – a necessary but not sufficient condition for boosting the economy (Bhowmick, 2020). During National Rural Health Mission (NRHM) it has been experienced that giving financial freedom to the states did not ensure desired development of the health system due to economic and social inequalities. Common Review Mission reports highlighted that due to poor capacity and capability at the state level, most of the resources remain unutilized in the many EAG (Empowered Action Group) states (Taneja and Taneja, 2016). In these kinds of circumstances, States with low economic development are not suitable to participate in competitive federalism effectively. For such states/districts, cooperative federalism is a more suitable option to ensure balanced and equitable economic and social growth.

Way Forward

Overall, India's federal system has shown significant progress and maturity towards competitive federalism during recent years in the implementation of various policies. Examples for the same include i) Formation of the GST Council, which gave equal weight to the states to form a national fiscal policy, ii) The high-powered committee of chief ministers to recommend reforms in the Indian agricultural markets. Considering India's unique challenges competition alone cannot produce the best outcomes; it is competition combined with collaboration that will bring about true change. Therefore, India needs a combination/balance of cooperative and competitive federalism to ensure self-reliant sustainable development. Understanding the importance of the same during the 6th Governing Council meeting of the NITI Aayog, Prime Minister stated

> "*The essence of the country's progress is that the Centre and the states work together and move in a definite direction. We have to make cooperative federalism more meaningful and try to take the competitive cooperative federalism down to the state and district level so that the competition for development continues and*

development remains a prime agenda."

(Prime Minister Office, 20 FEB 2021)

Developments in digital technologies during the last three decades and especially after COVID-19 have reformed, deepened, and transformed the governance in the world. Adequate governance for the countries operating in a volatile, uncertain, complex, and ambiguous world is not enough – good, responsive, and citizen-friendly governance is critical. To survive in the VUCA world (VUCA—a world which is volatile, uncertain, complex and ambiguous) – the new norm, without focusing on continually improving governance is high risk. Therefore, policymakers are not just required to fast-paced and dynamic in their decision-making, they are also supposed to navigate the disruption, regulatory change, challenges, and opportunities to ensure sustainable growth and meet the needs of multiple stakeholders based on evidence created through various data analytics tools.

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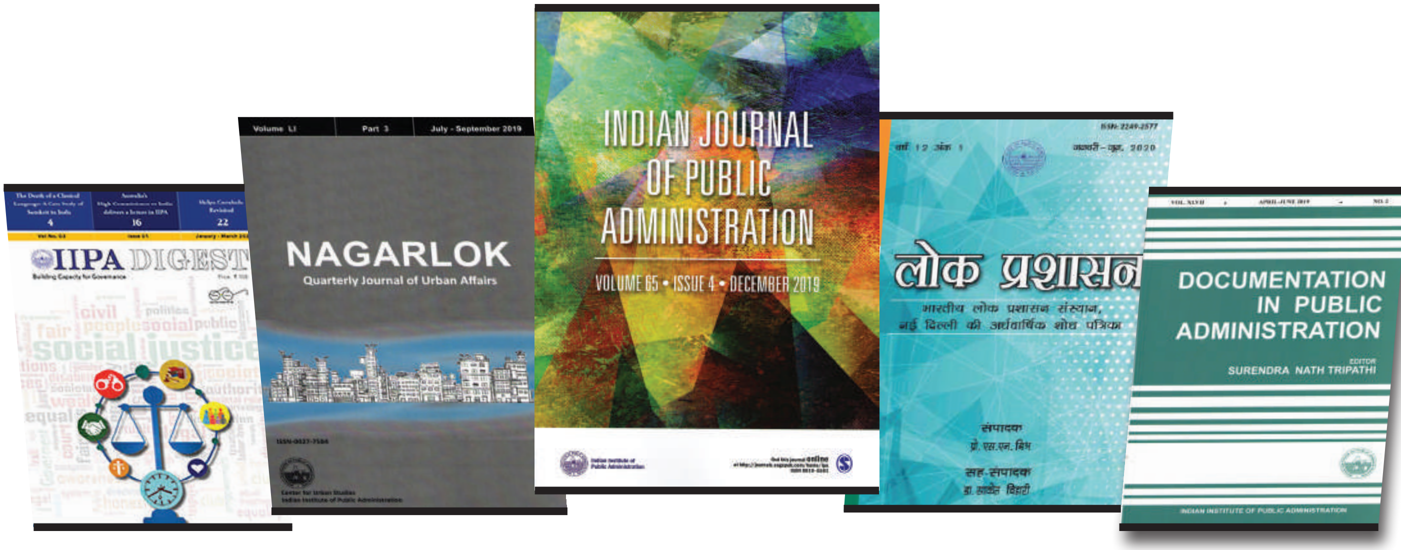

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