

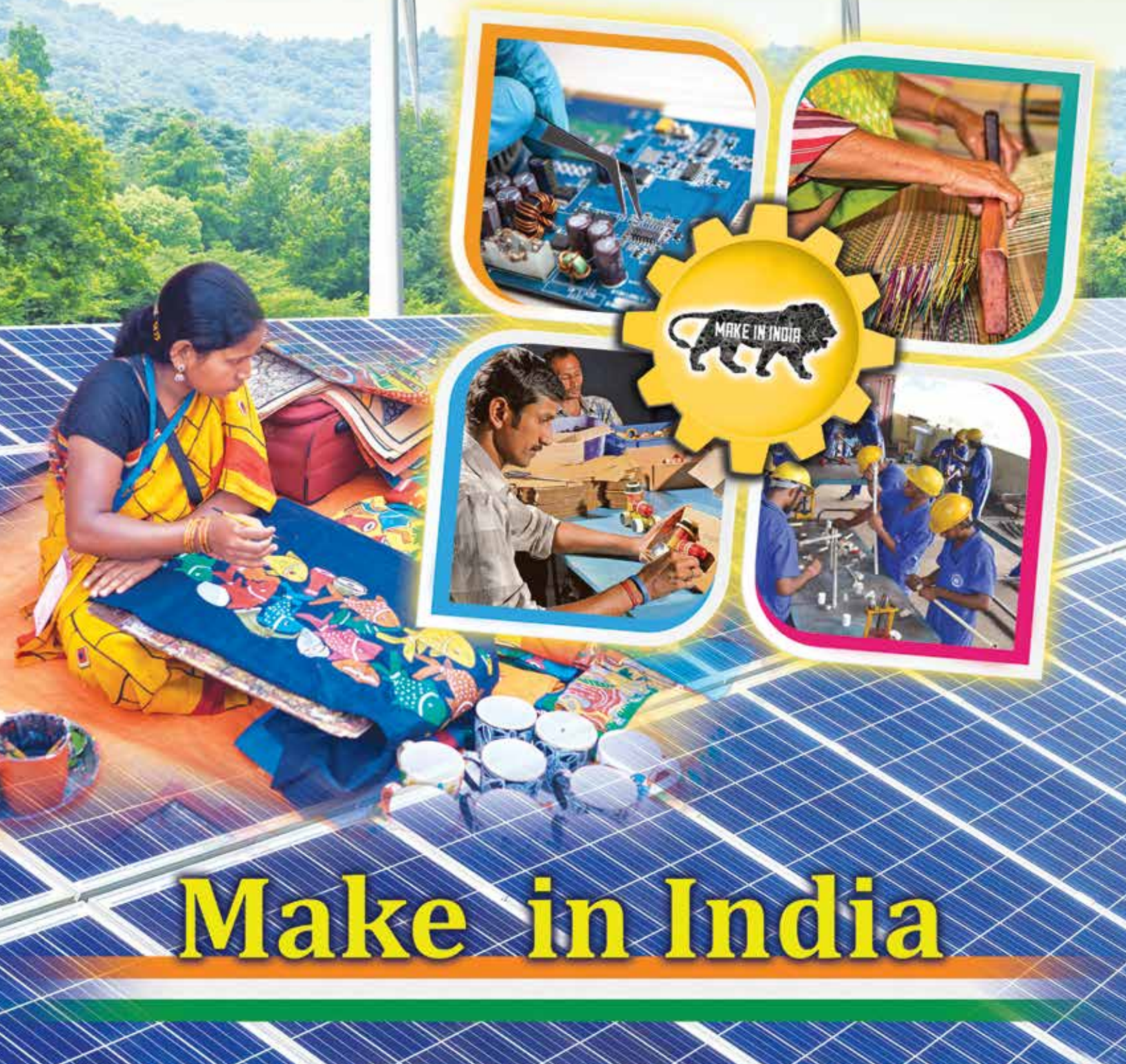
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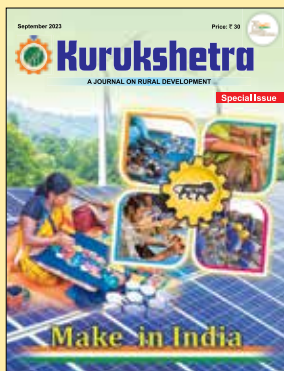
Kurukshetra

A JOURNAL ON RURAL DEVELOPMENT

Special Issue



Make in India



Kurukshetra

A Journal on Rural Development

Vol. 71 | No. 11 | Pages 72 | September 2023

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Subscription
1 Year : ₹ 230

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Editorial

In a country as diverse and vibrant as India, the potential for economic growth lies not just in its urban centers, but also in its rural heartlands. The 'Make in India' initiative, launched in 2014, has shown its potential to not only bolster the manufacturing sector but also to become a driving force for rural development. As the initiative gains momentum, it is becoming increasingly evident that its impacts extend far beyond urban areas, reaching deep into the rural fabric of the nation.

While the primary focus of the 'Make in India' was on attracting investment and fostering innovation in industries, its benefits for rural development have been noteworthy. One of the most significant ways this initiative has contributed to rural growth is by generating employment opportunities. As new manufacturing units are established in and around rural areas, they create job openings for local residents, thus reducing the migration of rural populations to cities in search of work.

The article Make in India: Catalysing Growth of Students and Youth mentions immense potential and determination of India's youth and discusses reforms in the education system that promotes experiential learning, critical thinking, and problem-solving skills to bridge the gap between theory and application. The author comprehends how the Government is trying to instil the students the skill set of an entrepreneur so that they can go on to become makers and 'Make in India' in the future.

The author of the article Make in India: Challenges, Opportunities and Outcomes explains four vital pillars of the 'Make in India' initiative, namely New Processes; New Infrastructure; New Sectors; New Mindset. The article also focuses on various socio-economic dimensions of the initiative and discusses how effective implementation of the initiative will have a positive impact on the overall socio-economic growth of India, especially in manufacturing growth and the creation and provision of employment opportunities both in rural and urban areas.

In this issue, read about the Production Linked Incentive Scheme (PLI) for electronics sector, as one of the biggest beneficiaries of this scheme in the articles India: Hub for Electronics Manufacturing and learn comprehensively about the scheme in article.

Production Linked Incentive Scheme for Atmanirbhar Bharat, which discusses phenomenal impact of the scheme on employment generation.

As we delve into the pages of this special issue, our readers will get an in-depth understanding of how Make in India has altered the narrative of the nation's manufacturing sector. At its core, 'Make in India' is a call for self-sufficiency, which has ignited innovations and paved the way for skill development in rural regions. We hope our readers will acquire knowledge and enjoy reading insightful articles in this issue of Kurukshetra.

Let us collectively work towards a 'Make in India' future that knows no bounds!!

Make in India

Catalysing Growth of Students and Youth

With the aim of bringing about a mindset shift in students at a young age, the Government of India, through the Atal Innovation Mission (AIM), established the Atal Tinkering Labs (ATL). It is through these labs that the Government is trying to instill the students the skill set of an entrepreneur so that they can go on to become makers and 'Make in India' in the future.



C

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*** Tanvi Misra

ountries begin their process of economic growth with a majority of people engaged in the production of staple foods. It is gradually, with the improvement of labour productivity through importation and industrial capital accumulation, that the number of workers switches to the manufacturing sector and then to the service sector. It is this pattern of structural transformation that has been followed in the course of national economic growth; however, the pace of these changes widely varies across Nations. Over

time, it has also been witnessed that in developing countries, urbanisation is taking place without much industrialisation, leading to challenges mainly in the employment sector.

With India's growth performance being fueled by the services sector, the growth rate of the manufacturing sector was lower than that of the overall GDP growth rate, resulting in the share of manufacturing in GDP stagnating at around 16%. Realising the macro economic importance of manufacturing (a large volume of employment opportunities were created

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outside the agricultural sector to provide an array of sustainable living opportunities for the expanding population) and the unconventional development path India was treading on, multiple initiatives were launched by policymakers. The National Manufacturing Policy was launched in 2011 followed by the 'Make in India' initiative to make the country not only 'Aatmanirbhar' but also job-rich.

The 'Make in India' initiative was launched in September 2014, by Prime Minister Narendra Modi, to make India future-ready, capable of facing the world, and make a mark amongst its counterparts. Through this initiative, the Government of India aimed to create and encourage companies to develop, manufacture, and assemble products made in India and also incentivise dedicated investments in the manufacturing space. Through this initiative, 27 major economic sectors for job creation and skill enhancement have been considered to increase the manufacturing sector's growth; create additional manufacturing jobs in the economy, and ensure that the manufacturing sector's contribution to GDP has increased.

The 'Make in India-Make for World' aims at promoting self-reliance and has been devised to transform India into a global design and manufacturing hub wherein it can be the first choice for any global manufacturer. The initiative developed against the backdrop of a crisis when the growth rate of the country was falling and its success was being questioned not only at a global level but also domestically. It was here that the need to make the world realise the potential of India was required, and Make in India germinated in this process. Make in India represents a complete overhaul, not only in the mindset of the Government but also in the processes and policies.

India - a land of 140+ crore individuals with 67%



of them being in the age bracket of 15-64 years proves that India has a relatively young population. It has been reported that India would remain the largest provider of human resources with about 24.3% of the incremental global workforce coming from India. However, for the country to realise the 'demographic gift', it is essential that the younger population receives access to quality education, and facilities required to make them future-ready.

The Challenges

India, with its diverse population and rapidly growing economy, presents a mix of opportunities and obstacles for its youth. While the system is improving through a range of initiatives, significant challenges still exist on the axes of the education system, infrastructure, business environment, and society and culture.

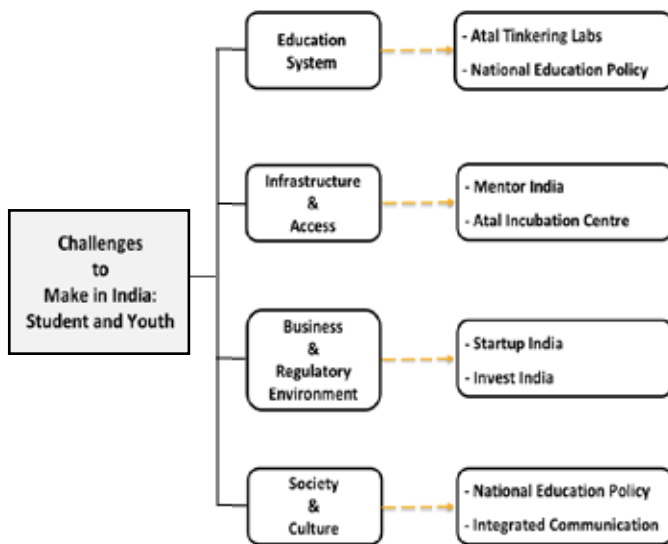
In the realm of education, the Indian system has faced criticism for its emphasis on rote learning and grades, rather than nurturing creativity and critical thinking. This has hindered the development of innovative thinking among students, stifling their potential to come up with novel solutions. Moreover, practical exposure remains limited, with a gap between theoretical knowledge and real-world applications. Many educational institutions lack access to advanced technology, practical training, and exposure to industries, restricting students' ability to apply their knowledge practically. Furthermore, India's investment in research and development falls short

compared to other nations, hampering the growth of innovative ideas and technologies that could drive progress.

In terms of infrastructure and access, inadequate facilities, particularly in rural areas, pose significant challenges for students and innovators who require reliable internet connectivity, electricity, and other basic amenities. Additionally, disparities in internet and technology access limit learning opportunities in certain regions.

Access to resources, such as laboratories, libraries, and mentorship, is also a struggle for many students and young innovators, particularly in rural areas where the cost and availability of equipment can be barriers to their progress.

In the regulatory and business environment, securing intellectual property rights and patents can be complex and time-consuming, deterring some innovators from protecting their ideas. Additionally, while entrepreneurship is growing in India, the ecosystem is still developing, making it challenging for young innovators to secure funding, find mentors, and navigate the business landscape.



Societal and cultural factors also play a significant role in hindering innovation. Students often face immense pressure from their families to pursue conventional career paths, discouraging risk-taking and exploration of unconventional fields. Moreover, the fear of failure and the stigma associated with it can deter young entrepreneurs from taking bold steps.

Additionally, gender disparities persist, with female students and innovators facing unique challenges due to biases and limited opportunities. Encouraging and supporting more women to participate in innovation is vital for India's progress as a whole.

Despite these challenges, India's youth possess immense potential and determination. Addressing these obstacles and nurturing a conducive environment for innovation and entrepreneurship can unlock the country's true innovative prowess and lead to significant progress in various fields.

India's Steps towards Nurturing Young Talents to Make in India

With the above challenges in context, there have been multiple efforts by the Government to solve these and provide a boost to the students to think about making, creating, tinkering, and solving the challenges in the country themselves.

Addressing the Challenge of Rote Learning

With the world undergoing rapid changes in the knowledge space and dramatic shifts in science and technology, it is important for the Nation to produce a skilled workforce. The rise of big data, machine learning, and artificial intelligence will take over many unskilled jobs; hence, it is important to nurture the workforce better in mathematics, data science, computer science, etc. in conjunction with multidisciplinary abilities across social sciences and humanities.

This led to the birth of the National Education Policy in 2020, which addresses the challenge of 'rote learning' faced by the Indian education system. This policy is aimed at not only recognising and identifying the unique skills and capabilities of each and every student but also promoting creativity and critical thinking, which are important to develop in students at a young age. It is through this policy that the curriculum and pedagogy will become more holistic, integrated, and enjoyable, which will then allow more youth to venture into the fields of research and development.

The introduction of reforms in the education system is promoting experiential learning, critical thinking, and problem-solving skills and encouraging project-

based learning, practical training, and collaborations with industries to bridge the gap between theory and application.

- **Instilling Behavioural Change at a Young Age**

With the aim of bringing about a mindset shift in students at a young age, the Government of India, through the Atal Innovation Mission (AIM), established the Atal Tinkering Labs (ATL). These 10,000 labs established across India, with 60% coverage in government schools and 40% in private schools, are essentially maker spaces where students from 6th to 12th grade can bring ideas to life.

The idea behind establishing these labs was to foster curiosity, creativity, and imagination amongst these young kids so that they could tinker using the do-it-yourself and get a chance to work with tools and equipment to understand the concepts of STEM (Science, Technology, Engineering and Math). These laboratories are equipped with DIY kits, scientific instruments, electronics, robotics, open-source microcontroller boards, sensors, 3D printers, and computers, which are important for any student to build their thinking capacity. It is through these labs that the Government is trying to instill the students the skill set of an entrepreneur so that they can go on to become makers and 'Make in India' in the future.

- **Developing Infrastructure for Innovation and Access to Resources**

For any young innovator to traverse the innovation cycle, they have to travel through the entire process of ideation, prototyping, product development, re-development (according to customer needs), and patenting, which requires hand-holding support and mentoring. Through the Atal Incubation Centres (AIC) programme at Atal Innovation Mission, the Government has provided support for the establishment of new incubators that focus on nurturing innovative start-ups and helping them grow into scalable and sustainable businesses. To provide support to young innovators on their journey, the 'Mentor India' initiative was launched, wherein the students at the ATLs and startups at AIC can request support from professionals and academicians who are well-equipped with innovation, marketing, product development, patenting, etc.

- **Ease of Doing Business and Protection of Intellectual Property Rights**

Investment in innovation and R&D offers large payoffs in terms of economic growth and competitiveness in a global economy. The "Start-up India" initiative was launched with the aim of fostering entrepreneurship and promoting innovation by creating an ecosystem that is conducive to the growth of start-ups. In order to simplify the process of enrollment and compliance, multiple initiatives under this initiative have been undertaken, which have resulted in a boost to the spirit of entrepreneurship. Since then, the number of startups in the country has increased from 452 in 2016 to 84,012 by November 2022, which is relatively higher than the rest of the world.

- **Addressing Local Needs by States**

States in India also play a crucial role in implementing initiatives to support students and young innovators. Each state has the flexibility to design and implement its own programmes based on local needs and opportunities. These state-level initiatives may include additional funding schemes, incubators, skill development programmes, and innovation challenges specific to their respective regions.

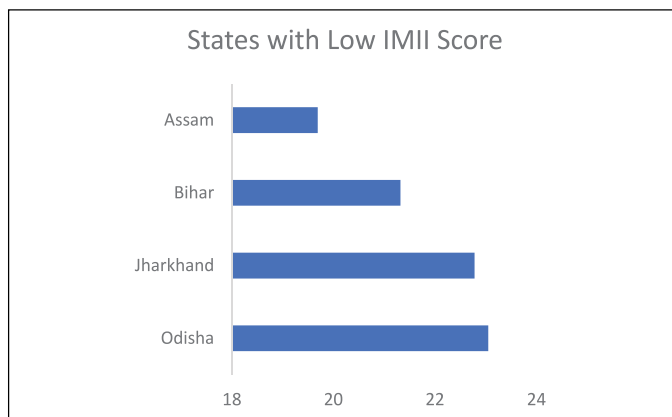
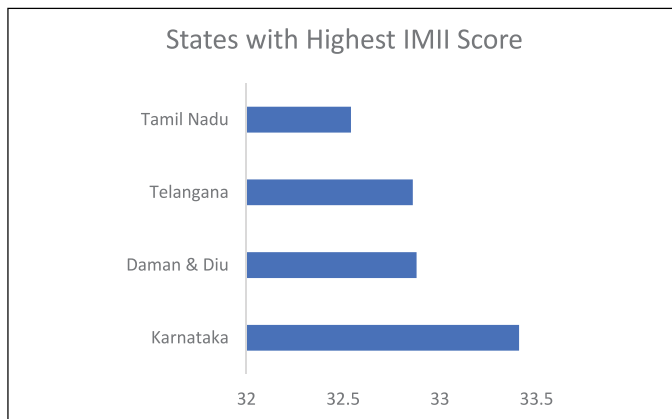
Various State Governments in India have also launched initiatives to support students and young innovators. For example, the Kerala Startup Mission, T-Hub in Telangana, and Gujarat Startup and Innovation Scheme have been successful in fostering entrepreneurship and innovation at the state level.



Ways to Measure India's Manufacturing Growth

The National Manufacturing Innovation Survey (NMIS) 2021-22 is a joint study by the Department of Science and Technology (DST) and the United Nations Industrial Development Organization (UNIDO) to evaluate the innovation performance of manufacturing firms in India. The NMIS 2021-22 study was conducted as a two-pronged survey that examined the innovation processes, outcomes, and barriers in manufacturing firms, and studied the innovation ecosystem that affects innovation outcomes in these firms. This study is a follow-up to DST's first National Innovation Survey held in 2011. The collaborative study by DST-UNIDO allowed a 360-degree approach to measuring manufacturing innovation outcomes, processes, and barriers at the firm level, mapping the contributing processes and interactions, and thereby assessing the performance of states, sectors, and firm sizes.

A survey on the degree of innovation, also known as the Indian Manufacturing Innovation Index (IMII), among manufacturing firms found that Karnataka, overall, is the most 'Innovative' State, followed by Telangana, and Tamil Nadu.



New Age of Make in India: Success Story

India is a leading contributor to tech innovations, and we have added one more feather to the cap. The students from five different states of India, all of whom have established Atal Tinkering Lab, have developed an AI-IoT platform designed to regularly monitor the groundwater and effectively communicate the information not just to the authorities but also to the community. The platform has hardware (a cellular-enabled, low-powered plug-and-play unit that checks for different water parameters and sends it to IBM Watson IoT Platform), and a dashboard, both connected via a backend on IBM Cloud. The team has won IBM 'Code for Challenge' and has been awarded USD 200k for deploying the system, having received more than 20,000 ideas from 180 different countries.

The motivation to build this system came from a personal space. One of team member's mother fell severely ill after unknowingly consuming contaminated water from their village's public groundwater source. The friends realised that not knowing water quality and the right purification methods was the main challenge. Saaf water does not aim to replace a full-fledged lab test but rather a system that will allow the communities to take proactive measures to improve it or seek a lab test only when required. This gives the freedom to scale and reach every needy locale around the world, including those that are geographically isolated. This makes Saaf Water versatile in operations, low on maintenance, and easier to deploy.

The team has already filed a patent and was provided mentoring by one of the Atal Incubation



Team Saaf Water have participants from 5 different schools across India, won IBM 'Code for Challenge' featuring 180 countries.



Nine years of ‘Make in India’ represent a transformative vision that has set India on a path of economic resurgence and self-reliance. As we move forward, it is crucial for all stakeholders, including the Government, industries, educational institutions, and citizens, to collaborate synergistically to build a resilient, sustainable, and inclusive manufacturing ecosystem.



Centres in Goa to better understand the ground realities of Startup functioning. We can proudly say that the young generation has taken the task into their own hands to develop solutions indigenously.

The above success story is not a one-off. The interventions done will create a gigantic number of Make in India start-ups as we march on to the ‘Amrit Kaal’

Not only the creation of ‘Make in India’ start-ups but also the students of today will turn into knowledge workers through imbibing 21st century technologies in tinkering labs, and honing creative thinking and problem-solving skills fostered through NEP 2020. These knowledge workers will pull in a lot of multinational

manufacturing companies, which will see enormous value in the talent and skill pool of the country. With each big industry being set-up, the cascading effect on the growth of ancillary units will further ‘Make in India’. The establishment of more than 2000 startups in manufacturing sector is a powerful testament to India’s growth story in self-reliance.

Nine years of ‘Make in India’ represent a transformative vision that has set India on a path of economic resurgence and self-reliance. As we move forward, it is crucial for all stakeholders, including the Government, industries, educational institutions, and citizens, to collaborate synergistically to build a resilient, sustainable, and inclusive manufacturing ecosystem. By harnessing the collective potential of its people, resources, and entrepreneurial spirit, India can truly emerge as a manufacturing powerhouse, driving economic growth, generating employment, and contributing significantly to the world economy. With unwavering determination and continuous efforts, ‘Make in India’ can pave the way for a brighter, prosperous, and self-sufficient India for generations to come. □





Challenges Opportunities and Outcomes

Make in India

The Government of India introduced several reform measures to ensure an enabling growth environment by creating possibilities for attracting both domestic as well as foreign investment, and fostering effective business partnerships with efficiency.

Dr. K. K. Tripathy

One of the game-changing economic initiatives of the Government of India, 'Make in India' was launched on 25 September 2014. This timely and appropriate international marketing slogan, aimed at encouraging companies and individuals across the globe to facilitate investment, foster innovation, build world-class infrastructure, and build a hub for manufacturing, design, and innovation in India. Unique 'vocal for local' interventions within the activities of this initiative envisaged promoting India's manufacturing domain to transform the nation into a global manufacturing centre.

The underlying policy principle of achieving a manufacturing-led transformation prompted the country to bring in several planned and structural interventions. The initiative demanded the identification and review of economic sectors with a global competitive advantage and the potential to lead the world in the manufacturing and distribution of products and services. It not only promoted labour- and capital-intensive industries with a different stance and safeguarded their sustainability but also tried to bring in timely and adequate Research and Development (R&D) into manufacturing firms and modern services.

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Why Make in India?

The initiative Make in India envisaged the following to:

lay focus on employment creation and skill upgrading in 27 sectors of the economy.

increase contribution of the manufacturing sector to overall GDP growth.

enhance tax revenues of the nation by positively enhancing business activity through the manufacturing revolution.

eliminate unnecessary laws, controls, and bureaucratic procedural hurdles.

ensure and adopt higher quality standards for manufacturing products with reduced impact on the environment.

attract FDI for capital financing and technological investment in the different economic schemes of the country.

identify and promote the growing services and industrial sectors in the Indian economy.

Scope and Sectoral Coverage

A total of 27 economic sectors were identified to give a big push during the entire life cycle of business activities within the respective sector. Out of these, 15 were related to manufacturing, and 12 were associated with service sectors. The focused manufacturing sectors include Aerospace and Defence, Automotive and Auto Components, Pharmaceuticals and Medical Devices, Bio-Technology, Capital Goods, Textile and Apparels, Chemicals and Petrochemicals, Electronics System

Design and Manufacturing (ESDM), Leather & Footwear, Food Processing, Gems and Jewellery, Shipping, Railways, Construction, New and Renewable Energy. The services sector included Information Technology & Information Technology enabled Services (IT & ITeS), Tourism and Hospitality Services, Medical Value Travel, Transport and Logistics Services, Accounting and Finance Services, Audio Visual Services, Legal Services, Communication Services, Construction and Related Engineering Services, Environmental Services, Financial Services, Education Services.

Activities under the 'Make in India' initiative are also undertaken by some Central Government Ministries, Department, and various State Governments. Ministries formulate action plans, programmes, schemes, and policies for the sectors being dealt by them while States have their own schemes for attracting investment. The initiative focuses on 27 sectors under the 'Make in India 2.0'. The Department of Promotion of Industry and Internal Trade (DPIIT) coordinates action plans for 15 manufacturing sectors while the Department of Commerce coordinates 12 service sector plans. Outreach activities are carried out through Ministries, State Government, and Indian Missions abroad for enhancing international cooperation and promoting domestic and foreign investment in the country.

Pillars of Make in India

Considering the importance of the manufacturing sector in India in the national development and based on the hopes to attract more capital, entrepreneurship, and technological investment in India, the 'Make in India' initiative is built on following four vital pillars:

- **New Processes:** The Government of India introduced several reform measures to ensure an enabling environment for growth by creating possibilities for attracting both domestic as well as foreign investment, and fostering effective business partnerships with efficiency. The reform measures are aligned with positive parameters of the World Bank's 'Ease of Doing Business (EoDB)' with a view to enhance India's ranking on business facilitation through process reforms. It is 'Make in India' that recognised EoDB as the single most important factor to promote entrepreneurship and expand enterprises with the capability to

withstand competition in the open market. The review of processes and procedures, along with schematic customisation has a positive impact on the manufacturing sectors growth with reduced adverse economic impact of post-Covid economic deceleration.

- **New Infrastructure:** Make in India intends to develop well-equipped industrial corridors with all necessary facilities for the expansion of industrial activities, build smart cities to provide citizen services with ease, and create world class infrastructure with state-of-the-art technology, and high-speed communication network amenities. While research, innovation, and technology transfer activities are supported through an integrated registration system, the infrastructure of the Intellectual Property Rights (IPR) registration system has been improved and made simpler. At the time when a big push was given to improve industrial infrastructure, necessary steps were taken to enhance the capacity of various sectors by providing training and education for creating respective sectoral skilled workforce, covered and promoted under the 'Make in India' initiative.
- **New Sectors:** Economic growth centres in a large economy like India needed to be identified. Keeping this in view, the 'Make in India' initiative identified 25 sectors to begin with, followed by two additional sectors. While investment gaps were removed in certain sectors, restrictions for expansion were either removed or relaxed for some other sectors, considering their growth potential and their share in national economic development.
- **New Mindset:** Efforts were made to review the Government's interaction with various core and dynamic entities of the economy. It was felt that Make in India requires a change in the mindset of all the stakeholders – be it the Government, industry partners, service providers or the community. Make in India brought about a paradigm shift in the way the Government interacts with various industries. Attempts were made to transform the Government's outlook towards the industrial growth by making it a partner in the economic development of the country along with the development of the corporate sector.

Carrying out Reforms

The 'Make in India' envisioned increasing manufacturing efficiency to stimulate industrial firms to locally produce so as to extensively increase the contribution of the manufacturing sector to the country's economic growth and to improve its share of total exports. Since 2014, the Government of India has, inter alia, planned and implemented several reforms so as to identify, review and address the complexities of business growth, simplify the existing taxation system, and remove price rigidities. Attempts were made towards attracting Foreign Direct Investments (FDI) and enhancing economic efficiency and the country's global competitiveness by fostering innovation, improving skill sets of human resources, ensuring modern infrastructure, liberalising services sector, and carrying out individual reform measures for guaranteeing EoDB in India. The overall objective was to improve the production efficiency of different industries, ranging from agricultural commodities to mining and manufacturing to services.

Urgent manufacturing revival has been the most important focal point for guaranteeing sustainable economic development that is based on several policy judgements, viz.

- Guarantee basic production inputs – power, minerals and water at competitive prices.
- Make modern transport, logistic, and communication infrastructure accessible.
- Ensure accessibility to domestic and international markets.
- Develop entrepreneurship and improve the capacity of entrepreneurs.
- Extend support for bringing in EoDB through access to venture capital, strong industrial delicensing and deregulating environment, etc.

Further, with a view to increase India's manufacturing capabilities and exportability, an outlay of Rs. 1.97 lakh crore was announced in the Union Budget 2021-22 for production linked incentive (PLI) schemes for 14 key sectors of manufacturing, starting from Fiscal Year 2021-22. The announcement of PLI Schemes is expected to have a significant impact on the creation of production, skills, employment, economic growth and exports in the next five years.



Attracting FDI into India

The Government has taken various steps to boost domestic and foreign investment in India. These, inter alia, include:

- (a) Introduction of Goods and Services Tax
- (b) Reduction in Corporate Tax
- (c) Innovation to improve EoDB
- (d) FDI policy reforms
- (e) Measures for reduction in compliance burden
- (f) Policy measures to boost domestic manufacturing through public procurement orders
- (g) Phased manufacturing programmes

Advantages of Make in India

The 'Make in India' initiative has various socio-economic dimensions. Effective implementation of the initiative will have a positive impact on the overall socio-economic growth of India, especially in manufacturing growth and the creation and provision of employment opportunities both in rural and urban areas. A massive increase in employment will enhance the purchasing power of the citizen, expand the consumer base for companies, and address the problem of poverty. Emphasis on improved education and training infrastructure to ensure a skilled workforce for each of the focused sectors will help reduce brain drain. The



Textiles Sector & Make in India

Employment and trade were promoted under a broad objective of Make in India programme in the textiles sector through implementation of various schemes for overall promotion and development of textiles sector at PAN India level. These were National Technical Textiles Mission (NTTM), Silk Samagra Scheme for integrating textiles park, National Handicraft Development Programme (NHDP), National Handloom Development Programme (NHDP), etc.

With a view to attract investment and position strongly in the global market, Indian Government of India approved setting up of PM Mega Integrated Textiles Region and Apparel (PM MITRA) parks in greenfield and brownfield sites with world class infrastructure, including plug and play facility.

Make in India initiative targets export-oriented growth. The export-oriented growth model of this initiative will positively impact India's balance of payments position and support in accumulating foreign exchange reserves. A positive balance of payments will address volatility in the global economy, especially in the post-Covid economic scenario. The 'Make in India' initiative's propensity to attract foreign investment will not only ensure an increased flow of foreign investment into India but will also ensure bringing in technical expertise and creative skills. The holistic developmental approach under the 'Make in India' initiative will help in achieving higher credit ratings for the country, and making India a global manufacturing hub so as to attract more and more investors to invest in India.

Challenges

There is a need to facilitate the land acquisition process, create an appropriate labour development ecosystem for efficient and effective enforcement of laws/rules outlining entry and exit guidelines with clarity, rationalise the taxation regime, and enable technology acquisition and dissemination. India has a vast micro,

small, and medium-sized business environment, with more than two crore MSMEs operating in the country. The complex taxation system needs to be reviewed and actions taken in terms of EoDB. Networking of capacity building institutions would be the need of the hour for registering rapid skill upgradation of available human resources to make the focused sectors remain competitive. Universities and other reputed research organisations need to enhance their innovation work, research and development towards creating a healthy business environment in India. The procedural and regulatory clearances need to be reviewed, and a business-friendly environment needs to be ensured for easier approval of projects along with a hassle-free clearance mechanism. The world class research and development infrastructure need to be created on a networking basis with reputed universities and research organisations with a guarantee to protect innovation and development in the country.

Fostering Balanced Regional Development

The 'Make in India' initiative has a special approach on development decentralisation. The 'One-District One-Product' (ODOP) initiative is an important manifestation of the 'Make in India' vision. The intention is to facilitate promotion and production of the indigenous products from each district of the country, and to provide a global platform to the farmers, artisans, and manufacturers of textiles, handloom, handicrafts, agricultural, and processed products. ODOP envisages fostering balanced regional development and aims to

select, brand, and promote at least One Product from each District of the country for enabling the holistic socioeconomic growth across all regions. The ODOP Initiative has identified over 1,000 products from 761 districts across the country. The success of this initiative depends on the effectiveness of the following activities:

- Need-based and regular capacity building initiatives in collaboration with related government/private training and education imparting bodies, viz. the National Institutes of Design/the National Institutes of Fashion Technology,
- On boarding onto e-commerce platforms, including Government e-Market (GeM).
- Identify market players and conduct physical/virtual buyer-sellers meets along with Indian embassies and missions abroad. Facilitating trade events in India and abroad.
- Promoting a brand image and propelling international marketing for local products.
- Products to be selected by States/UTs by taking into consideration the existing ecosystem on the ground.
- Channelising the potential and diverse identity in each District by setting up District Export Hubs (DEH)

The ODOP initiative, through the convergence of various schemes of the Government of India and States, provides hand holding support to the local economy to improve backward and forward linkages for the selected



#TaleOfThreads

चंदेरी Chanderi THE SHEER CHARM

The fabric's ethereal allure lies in its sheer elegance, woven from a single quality of yarn



products. This initiative will largely support the Make in India activities in rural areas, as rural people contribute to our economy through agriculture, handicrafts, fisheries, poultry, and dairy. The processes within the initiative would actively contribute to the economic growth of a rural region and the country as a whole.

Impact of Make in India

The initiative's prime objective has been to strengthen manufacturing sector and expand the scope of growth, employment, income, and contribution in the economy from manufacturing sector. This initiative will make India a global manufacturing hub. The thrust of the campaign was to reduce waiting period for the clearance of the manufacturing projects, creating required infrastructure, and arranging research and development in the sector.

The 'Make in India' initiative has had a positive impact on the economy. The following are some of the major achievements of the last 8 years:

- EoDB parameters have gone in favour of India during the last eight years. The industrial environment has become positive and progressive. The country's rank in the World Bank's EoDB ranking was 142 in 2014. As per the latest report, the World Bank has accorded India a rank 63 in 2022, indicating a rank improvement of 79 positions.
- Foreign investments in domestic production have witnessed a positive outlook. Various production incentives under Atmanirbhar Bharat incentivised foreign investors to bring in more investment into domestic sectors. Liberalisation of policy towards foreign investors, opening up sectors for FDI have resulted in a structural shift in gross FDI flows into India during the last 8 years. Gross FDI in India has increased from an average of 2.2 per cent of GDP during Financial Years 2005 and 2014 to 2.6 per cent in Financial Years 2015 and 2022. FDI inflows in India which stood at US \$ 45.15 billion in 2014-15 have increased continuously since then. The highest ever annual FDI inflow of 84.84 billion US \$ was recorded in the financial year 2022.
- Indian agriculture sector has been growing at an average annual growth rate of 4.6 per cent during 2014-15 and 2021-22. India has emerged as the net exporter of agri-products. In 2020-21, exports of agriculture and allied products from India grew

by 18% over 2019-20, and agricultural exports reached a high of US \$ 50.2 billion in 2021-22.

- As per the Economic Survey 2021-22, there was a trend of positive overall growth of Gross Value Addition (GVA) in manufacturing sector. The total employment in this sector has increased from 57 million in the year 2017-18 to 62.4 million in the year 2019-20, in spite of the disruptions caused by Covid-19.
- India witnessed a resilient performance of service trade, where the total services exports grew by 48.4 billion US \$ in 2021-22 over 2020-21 from 206.1 US \$ billion to 254.5 US \$ billion.

Concluding Remarks

The Make in India aims at sustainable economic growth. This ambitious initiative has the potential to make India a centre of the manufacturing sector in the world. This initiative turned post-Covid situations into an opportunity for growth via the implementation of Atmanirbhar packages, the introduction of PLI scheme in various economic Ministries, creating investment opportunities under the National Infrastructure Pipeline (NIP) and the National Monetization Pipeline (NMP), India Industrial Land Bank (IILB), Industrial Park Rating System (IPRS), soft launching of the National Single Window System (NSWS), etc.

This is an ambitious economic development initiative. It has envisaged the creation of world-class infrastructure across the country to improve the overall quality of life for all residents and has had a positive impact on the growth of focused sectors of the economy. With the aim of achieving sustainable growth with distributive justice, the initiative has attempted its best to make India a global economic hub. Several steps were taken to encourage investment by improving the business environment in India through feasible reform measures.

Being a long-term sectoral intervention, the 'Make in India' initiative has the potential of transforming India into a world manufacturing hub. While MSMEs, the services sector and startups, are going to play a critical role in the success of Make in India, there is a lot to do through this initiative to ensure balanced regional growth and address issues of poverty, unemployment, and disparities of income and wealth. □

Fostering Skills for Environmentally Conscious Sustainable Future



According to United Nation Industrial Development Organization, green skills are the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable and resource-efficient society. To achieve the target of net zero carbon emissions by 2070, developing green skills is a pre-requisite. Further the principles of circular economy need to be adopted, which will enable Indian industry foster sustainable industrial growth. Resource Efficiency and Circular Economy envisions a future with environmentally-sustainable and equitable economic growth.

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here is a correlation between environmental knowledge and environmental attitudes that has been widely recognised. Concerns for the environment in India have led to increasing calls to sensitise youth through environmental education and strengthen their skills, which focus on an environmentally conscious and sustainable future. Literature reveals that students learn more effectively by 'doing' than by 'listening' and this is a major strength of learning in the field where students are involved in environmental projects. In addition to the direct educational benefits, fieldwork has been reported to increase confidence and motivation. Environmental Science is a rapidly emerging area that requires a new vision of empowering youth about their nature and their role in conservation initiatives. This will help solve the environmental crisis through acquired green skills and targeted intervention for green jobs.

The International Labour Organisation (ILO) defines green jobs as decent jobs that contribute to preserving or restoring the environment, be they in traditional sectors such as manufacturing and construction or in new, emerging green sectors such as renewable energy and energy efficiency [<https://www.ilo.org>]. Green jobs help improve energy and raw materials efficiency; limit greenhouse gas emissions; minimise waste and pollution; protect and restore ecosystems; and support adaptation to the effects of climate change (ILO,



2016). According to the UN Industrial Development Organization (UNIDO), green skills are the knowledge, abilities, values, and attitudes needed to live in, develop, and support a sustainable and resource-efficient society.

Green skills contribute to securing a sustainable future and include jobs that protect ecosystems and biodiversity, minimise waste and pollution. The Ministry of Environment, Forest & Climate Change (MoEF&CC) is utilising the vast network and expertise of ENVIS Hubs for skill development in the environment and forest sectors to enable India's youth to get employment through the Green Skill Development Programme (GSDP). GSDP was launched in June 2017, and the programme endeavours to develop green skilled workers with technical knowledge and commitment to sustainable development, which will help in the attainment of the Nationally Determined Contributions [<http://www.gsdp-envis.gov.in/index.aspx>]. The first GSDP course was formulated to skill Biodiversity Conservationists and Para-taxonomists on a pilot basis in ten select districts of the country. The GSDP covers a diverse spectrum of beneficiaries, ranging from school and college dropouts, and other students in the environmental sector to budding entrepreneurs, working professionals, including those in industrial sectors, scientific, and technical institutions. The Ministry of Skill Development and Entrepreneurship (MSDE) is the nodal Ministry responsible for co-ordination of all Skill Development efforts across the country. The National Council for Vocational Education and Training (NCVET) was notified by the MSDE on 5 December 2018. The GSDP is aligned with the norms and guidelines issued by NCVET from time to time. All the courses in the GSDP are approved by the NCVET.



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GSDP facilitates placement in the autonomous bodies/other institutions of MoEF&CC like Biodiversity Management Committees for preparation of People's Biodiversity Registers, state Biodiversity Boards, Botanical Survey of India, Zoological Survey of India and their respective Regional Centres, Wildlife Crime Control Bureau and its Regional Offices, as well as in various National Parks, Plantations, Eco-Resorts, Wildlife Tourism sectors (as Green Guides), CPCB and its Regional Directorates. The list of courses includes water budgeting, propagation and management of bamboo, greenbelt development for industries, cleaner production assessment, Wildlife Management using Geospatial Techniques, Emission inventory, Forest Fire Management, etc. We need to mainstream such skills to develop responsible behaviour in society, leading to an improved environment. It shall imbibe the culture of green skills among the youth by promoting innovations and sustainable technologies.

Given the importance of the National Action Plan on Climate Change (NAPCC), which is a national strategy to adapt to climate change and enhance the ecological sustainability of India's development path. NAPCC has eight missions as a long-term and integrated approach to address the issue of climate change:

- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat



- National Water Mission
- National Mission for Sustaining the Himalayan Ecosystem
- National Mission for a Green India
- National Mission for Sustainable Agriculture,
- National Mission on Strategic Knowledge for Climate Change.

Subsequently, the states also prepare their respective State Action Plans on Climate Change that focus on adaptation interventions. The Long-Term Low-Carbon Development Strategy submitted by India under the United Nations Framework Convention on Climate Change (UNFCCC) focuses on the rational utilisation of national resources with due regard to energy security (www.moef.nic.in).

India at the 26th session of the Conference of the Parties (COP 26) to the UNFCCC held in Glasgow, presented 'Panchamrit' of India's climate action. These were: (1) India will get its non-fossil energy capacity to 500 gigawatt by 2030, (2) India will meet 50 per cent of its energy requirements from renewable energy by 2030, (3) India will reduce the total projected carbon emissions by one billion tonnes from now onwards till 2030, (4) By 2030, India will reduce the carbon intensity of its economy by less than 45 per cent and (5) By the year 2070, India will achieve the target of Net Zero carbon emissions. To achieve the target of net zero carbon emissions by 2070, developing green skills is a pre-requisite.

As part of the United Nations Decade of Action for the attainment of SDGs, India initiated several measures for promoting Resource Efficiency and Circular Economy, including for prevention and management of waste [<https://pib.gov.in/>]. Resource efficiency means to create more output as products/services using fewer inputs. Concepts of Extended Producer Responsibility

and Circular Economy are based on principles of reduce-reuse-recycle and are relevant for promoting sustainable consumption and production. NITI Aayog has constituted Committees for development of circular economy action plans for different categories of wastes. MoEFCC is the Nodal Ministry for Circular Economy Action Plan for Tyre and Rubber, and has notified 'Guidelines on the Extended Producer Responsibility for Plastic Packaging' under Plastic Waste Management Rules, 2016.

Further, MoEF&CC in the draft 'National Resource Efficiency Policy, 2019 envisions a future with environmentally-sustainable and equitable economic growth, resource security, healthy environment, and restored ecosystems. NREP, 2019 is guided by the principles of (i) reduction in primary resource consumption to 'sustainable' levels, in keeping with achieving the Sustainable Development Goals and staying within the planetary boundaries, (ii) creation of higher value with less material through resource efficient and circular approaches, (iii) waste minimization, (iv) material security, and (v) creation of employment opportunities and business models beneficial to the cause of environment protection and restoration. [https://moef.gov.in/wp-content/uploads/2019/07/Draft-National-Resourc.pdf]. Most importantly, it aims to foster a circular economy approach and move away from a linear economy. If adopted, these principles will enable Indian industry to reduce costs, increase productivity, and foster sustainable industrial growth. The Circular economy keeps resources in use for as long as possible, extracting the maximum value, and recovering and regenerating products and materials at the end of each service life, so as to limit the extraction of natural resources to the maximum possible extent.

Off-farm technologies like 'bio-briquetting', which is a sustainable technology, can be promoted to generate energy at a local scale (http://gbpihedenvi.nic.in). Biomass energy from pine needles can be generated by using the simple technology of biomass briquetting. Under the niche of G.B. Pant National Institute of Himalayan Environment, Almora, which is an autonomous body of MoEFCC, lower and marginalised groups of villagers are manufacturing Bio-briquettes and Bio-globules, practising resource utilisation, and furthermore generating livelihood.



Source: Mission LiFE-Lifestyle for Environment, <http://missionlife-moefcc.nic.in/>

The 'Make in India' campaign aims to transform India into a global design and manufacturing hub using indigenous knowledge and resources however, to maintain the balance between environment and development, it is essential that there is promotion of cleaner technologies. The Department of Science and Technology has made significant contributions to 'Make in India' initiative through various programmes. This has led to affordable technologies to help companies manufacture their products in India. DST has joined hands with the Ministry of Education to implement Impacting Research, Innovation and Technology projects, which address developmental needs such as healthcare, information, and communication technology, energy, sustainable habitat, water resources and river systems, and environment and climate [https://dst.gov.in].

In pursuant to the spirit of 'Digital India' initiation and capturing the essence of Minimum Government and Maximum Governance, PARIVESH (Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single window Hub) has been developed by the Ministry of Environment, Forest and Climate Change. It has automated entire process, starting with the submission of applications, minutes, as well as grant of environment/forest/wildlife clearances for developmental projects. Such initiatives and others like GSDP will augment 'Make in India' campaign in the ensuing years. □

India

Hub for Electronics Manufacturing

The PLI Scheme 2.0 for IT Hardware is targeting total production worth Rs. 3.35 lakh crore and additional investment of Rs. 2,430 crore in electronics manufacturing

BS Purkyastha

P rime Minister Narendra Modi's visit to the United States in June 2023 coincided with US-headquartered Micron's announcement to build a \$ 2.7-billion semiconductor assembly and testing plant in India. The plant will produce its first chip in six quarters, i.e., in December 2024, creating 5,000 direct and 15,000 indirect jobs. In the last two years or so, several companies, from Apple to Wistron to Foxconn, have firmed up plans to set up factories in India, as they broaden their supply chains across the globe. In July, news broke that US-based solar manufacturing company, First Solar, planned to invest billions of dollars in solar panel production in India.

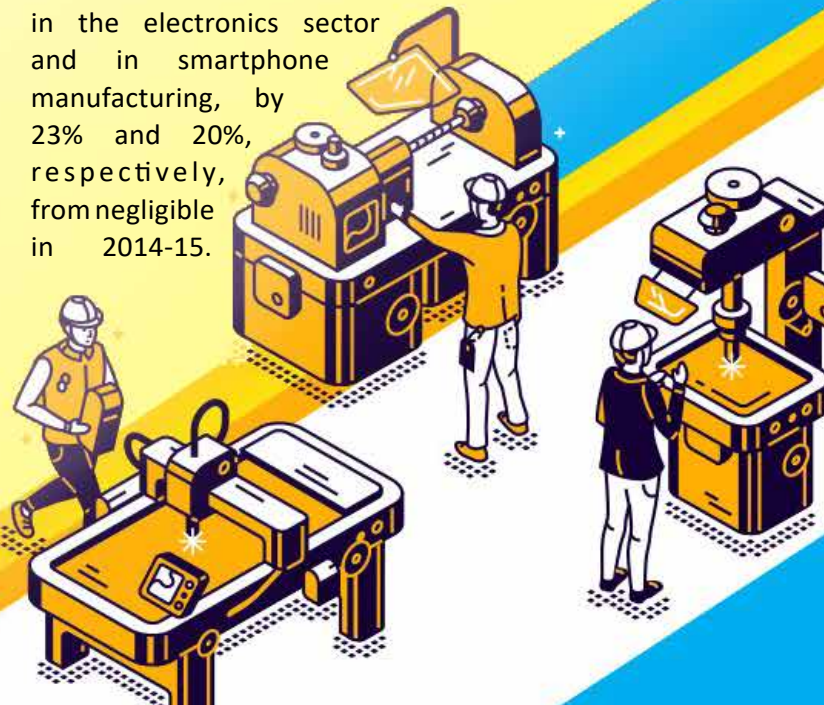
The Narendra Modi-led government has been pushing to boost manufacturing in India since 2014, not just to meet domestic demand but to cater to the international market. In the last few years, especially after the Covid pandemic and geo-political tensions surrounding China, the world has also been looking at a distributed supply chain network, so much so as to give rise to the term 'China Plus One'. In this context, the Production Linked Incentive (PLI) scheme of the Indian Government, the cornerstone of its 'Make in India' policy, is proving to be a game-changer. By giving subsidies to manufacturers setting up shop in India, the Government aims to boost exports, curb cheap imports, and generate jobs by creating global manufacturing powerhouses within the country.

The electronics sector has perhaps been one of the biggest beneficiaries of this scheme. As per the quick estimates for selected major commodities for

March 2023, electronic exports have become the sixth largest export commodity group. The target of the Government is to increase electronics manufacturing capacity to Rs. 24 lakh crore by 2025-26, which will also help create over 10 lakh jobs.

Early signs of success

Today, the telecom & allied industries are among the top employment generators in India. From just two mobile phone factories in 2014, India has now become the second largest mobile phone producer in the world. Exports of mobile phones crossed a major milestone of \$ 11 billion in 2022-23 (about Rs. 90,000 crore). PLI Scheme for Large-Scale Electronics Manufacturing (LSEM) along with existing Phased Manufacturing Program (PMP) has led to increased value addition in the electronics sector and in smartphone manufacturing, by 23% and 20%, respectively, from negligible in 2014-15.



The Government has taken various strategic steps and initiatives to broaden and deepen the electronics manufacturing and information technology sector in the country. We are already witnessing India emerging as a trusted player in the global value chain of electronics and it has set itself a target of \$ 300 billion for electronics manufacturing by 2025-26.

Of the \$ 101 billion total electronics production in FY 2022-23, smartphones constitute \$ 44 billion, including \$ 11.1 billion as exports. Import substitution of 60% has been achieved in the telecom sector, and India has become almost self-reliant in Antennae, GPON (Gigabit Passive Optical Network) & CPE (Customer Premises Equipment). The drone sector, which consists of only MSME startups, has seen a seven-fold jump in turnover due to the PLI Scheme.

While the value of exports of electronic goods have increased from Rs. 39,978 crore (\$ 5.96 billion) in 2016-17 to Rs. 1,09,797 crore in 2021-22 (\$ 14.6 billion), exhibiting a compounded annual growth rate (CAGR) of 22.39%, India's share in global electronics manufacturing has grown from 1.3% in 2012 to 3.75% in FY 21-22, as per industry estimates. During April 2022 to January 2023, electronic goods worth \$ 18.78 billion were exported.

As of March 2023, the PLI scheme for LSEM has attracted investment of Rs. 5,998 crore and led to total production worth Rs. 2,76,903 crore, including exports worth Rs. 1,28,886 crore. The scheme has also generated employment for 58,276 people.

The PLI scheme for LSEM has attracted global players such as Foxconn, Samsung, Pegatron, Rising Star, and Wistron, as well as leading domestic companies, such as Lava, Micromax, Optimus, United Telelinks, Neolyncs, and Padget Electronics. As of March 2023, PLI for IT hardware has attracted an investment of Rs. 195 crore and led to total production worth Rs. 5,715 crore. The scheme has also generated 1089 jobs.



Make in India Initiative: The Game-Changer

This momentous transformation in the electronics manufacturing sector did not happen overnight. The very first seedlings of this game-changing revolution in the Indian economy were planted with the launch of the Make in India initiative on 25 September 2014 with the objective of facilitating investment, fostering innovation, building best-in-class manufacturing infrastructure, making it easy to do business, and enhancing skill development. The initiative is further aimed at creating a conducive environment for investment, modern and efficient infrastructure, opening up new sectors for foreign investment, and forging a partnership between the Government and industry through a positive mindset.

Since its launch, the Make in India initiative has made significant achievements and currently focuses on 27 sectors under Make in India 2.0. The Department for Promotion of Industry and Internal Trade is coordinating action plans for manufacturing sectors, while the Department of Commerce is coordinating service sectors. Among the manufacturing sectors in this list are Electronics System Design and Manufacturing (ESDM), while in the services sector there is the Information Technology & Information Technology enabled Services (IT &ITeS). In this connection, the Government has taken various strategic steps and initiatives to broaden and deepen the electronics manufacturing and information

technology sector in the country. We are already witnessing India emerging as a trusted player in the global value chain of electronics and it has set itself a target of \$ 300 billion for electronics manufacturing by 2025-26.

In order to boost electronics manufacturing including that of semiconductors and position India as a global hub for ESDM and compete globally, several steps have been taken by the Government for electronics manufacturing in the country. The National Policy on Electronics 2019 provided the framework for encouraging and driving capabilities in the country for developing core components, including chipsets, and creating an enabling environment for the industry to compete globally. To attract and incentivise large investments in the electronics value chain and promote exports, the following schemes have been notified under the aegis of NPE 2019:

1. Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing (LSEM) was notified on 1 April 2020 to provide an incentive of 4-6 per cent to eligible companies on incremental sales (over base year) involved in mobile phone manufacturing and manufacturing of specified electronic components, including assembly, testing, marking, and packaging (ATMP) units.
2. Production Linked Incentive Scheme (PLI) for IT Hardware was notified on 3 March 2021 to provide an incentive of 4-2 per cent/1 per cent on net incremental sales (over base year) of goods manufactured in India and covered under the target segment, to eligible companies, for a period of four years. The target segment under PLI scheme includes (i) laptops (ii) tablets (iii) all-in-one PCs and (iv) servers.

With global manufacturing companies recognising the benefits of setting up factories in India to not only meet the pent-up demand in India but also as a hub for exports from India, more and more MNCs are evincing interest and trying to identify locations and local partners.

3. Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECES) was notified on 1 April 2020 to provide financial incentive of 25 per cent on capital expenditure for the identified list of electronic goods that comprise downstream value chain of electronic products, i.e., electronic components, semiconductor/display fabrication units, ATMP units, specialised sub-assemblies, and capital goods for manufacture of aforesaid goods.
4. Modified Electronics Manufacturing Clusters (EMC 2.0) Scheme was notified on 1 April 2020 to provide support for creation of world class infrastructure along with common facilities and amenities, including Ready Built Factory (RBF) sheds/Plug-and-Play facilities for attracting major global electronics manufacturers along with their supply chain to set up units in the country. The scheme provides financial assistance for setting up both EMC projects and Common Facility Centres (CFCs) across the country.
5. Programme for Development of Semiconductors and Display Manufacturing Ecosystem: To widen and deepen electronics manufacturing, a comprehensive programme with an outlay of Rs. 76,000 crore for the development of Semiconductors and Display manufacturing ecosystem has been approved.

Fiscal Incentives Available to Eligible Applicants:

1. Modified Scheme for setting up of Semiconductor Fabs: It provides fiscal support for setting up semiconductor wafer fabrication facilities in the country. Fiscal support of 50 per cent of the project cost is available for setting up of silicon-based semiconductor fabs across all technology nodes.
2. Modified Scheme for setting up of Display Fabs: It provides fiscal support of 50 per cent of the project cost for setting up TFT LCD/AMOLED-based display fabrication facilities.
3. Modified Scheme for setting up of Compound Semiconductors/Silicon Photonics/Sensors Fab/ Discrete Semiconductor Fabs and Semiconductor ATMP/OSAT facilities in India: It provides a fiscal support of 50 per cent of the capital expenditure to the eligible applicants for setting up of Compound Semiconductors/Silicon Photonics (SiPh)/Sensors

(including MEMS) Fab/ Discrete Semiconductor Fabs, and Semiconductor ATMP/ OSAT facilities in India.

4. **Design Linked Incentive Scheme:** It offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for ICs, Chipsets, SoCs, Systems & IP Cores, and semiconductor linked design. The scheme provides both 'Product Design Linked Incentive' and 'Deployment Linked Incentive'.

PLI Scheme 2.0 for IT Hardware

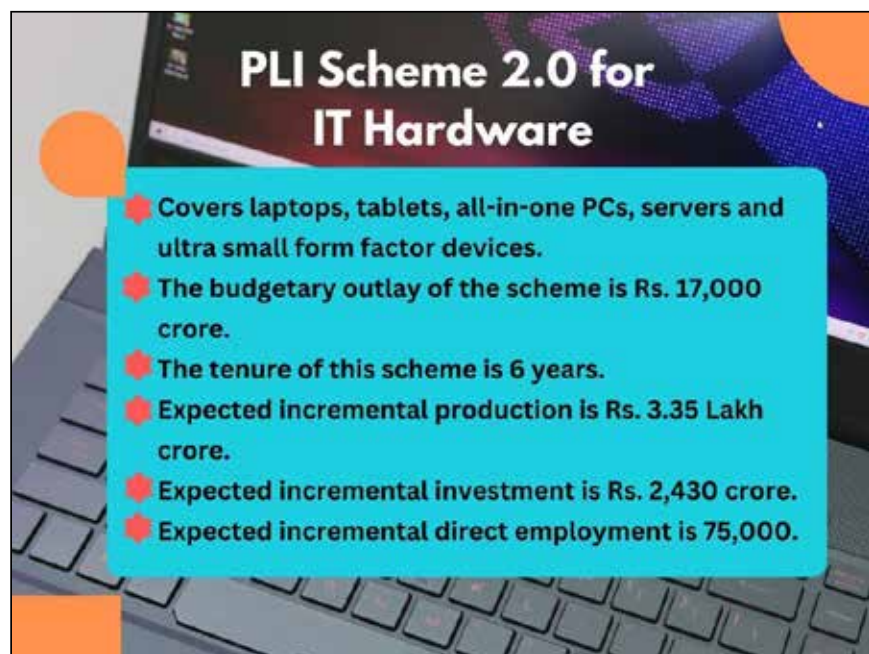
With global manufacturing companies recognising the benefits of setting up factories in India to not only meet the pent-up demand in India but also as a hub for exports from India, more and more MNCs are evincing interest and trying to identify locations and local partners. To make it more conducive, the Government, earlier this year, came up with the Production-Linked Incentive (PLI) Scheme 2.0 for IT Hardware for enhancing India's manufacturing capabilities

The PLI Scheme 2.0 for IT Hardware is expected to result in broadening and deepening of the manufacturing ecosystem by encouraging the localisation of components, sub-assemblies and allowing for a longer duration to develop the supply chain within the country. Additionally, the scheme provides increased flexibility and options for applicants, and is tied to incremental sales and investment thresholds to further incentivise growth. Furthermore, semiconductor design, IC manufacturing, and packaging are also included as incentivised components of the PLI Scheme 2.0 for IT Hardware.

The scheme is expected to lead to total production worth Rs. 3.35 lakh crore, bring an additional investment of Rs. 2,430 crore in electronics manufacturing and lead to generation of 75,000 additional direct jobs. The scheme will promote large scale manufacturing in laptops, tablets, all-in-one PCs, servers and Ultra Small Form Factor (USFF) devices and contribute significantly to achieve electronics manufacturing turnover of \$ 300 billion by 2025-26.

Digital India Mission

The Digital India mission is a programme to transform India into a digitally empowered society and knowledge economy. The umbrella scheme has been pivotal in generating employment across all domains. Electronics manufacturing is an important pillar of the Digital India mission. As part of this mission, MeitY has launched several notable schemes that are catalysing the growth of the country's electronics ecosystem. In addition, MeitY has approved two schemes for skill development in Electronics System Design and Manufacturing (ESDM) sector: Scheme for Financial Assistance to select States/UTs for Skill Development in



and enhancing exports with a budgetary outlay of Rs.17,000 crore. The window of applications under PLI Scheme 2.0 for IT Hardware opened on 1 June 2023. The scheme has three categories of applicants: global companies, hybrid (global/domestic) companies, and domestic companies. Approved applicants of existing PLI will be allowed to apply under PLI 2.0.

Electronics System Design and Manufacturing (ESDM) sector (Scheme-1) and Skill Development in ESDM for Digital India (Scheme-2) to facilitate the creation of an ecosystem for the development of the ESDM sector. Both schemes are being run concurrently; and, schemes are being implemented by training partners affiliated with key implementing agencies (ESSCI/ NIELIT/TSSC/HSSC).



Under both the schemes, as on 1 March 2023, a total of 4,35,165 candidates have been enrolled and 4,28,540 candidates have been trained, out of which 3,11,862 have been certified. Further, the C2S Programme has also been initiated by MeitY with an aim to generate 85,000 industry-ready workers specialised in the area of VLSI and Embedded System Design. This programme will help to advance in the ESDM space by way of inculcating the culture of Chip/ System-on-Chip (SoC)/ System Level Design at BTech, MTech & PhD level and will act as a catalyst for the growth of startups involved in semiconductor design, thereby promoting entrepreneurship in chip design area in the country.

Looking Ahead

The PLI schemes for LSEM and for IT hardware are helping make India a competitive destination for electronics manufacturing and providing a boost to Aatmanirbhar Bharat while creating more global champions in this sector. India now ranks 63rd in the world for manufacturing, up 23 places from a few years ago, according to the World Economic Forum's Global Competitiveness Index. The key sectors in India's manufacturing ecosystem include automobiles, pharmaceuticals, electronics, and textiles. With over 27.3 million workers, the manufacturing sector plays a major role in the Indian economy.

Still, there are several roadblocks on the path to becoming a global manufacturing powerhouse.

The biggest one is infrastructure, such as insufficient and poor quality roads and ports, which can hinder the movement of goods and increase the cost of manufacturing. Again, bureaucratic red tape and a complex taxation system can make it difficult for companies to do business in India. The scarcity of skilled labour is another major concern. While many a multinational expresses interest in setting up manufacturing facilities in India and several state-level meetings happen with announcements of investment plans, it is a long and meandering path to the actual inflow of foreign direct investment and commencement of operations. Both domestic partners as well as the Government need to go out of their way to make sure that the overall experience of investors in setting up a manufacturing base in India is smooth. It needs to be acknowledged that the government has been working on addressing the pain points of multiple legal hassles and approvals. For instance, the requirement of 38 approvals has now come down to 12 with the focus on ease of doing business. This is a welcome move, but more has to be done to speed up the process further.

Given the current global environment and the need for multinational brands to look beyond China for manufacturing hubs, India has a window of three to five years to seize this opportunity to attract investments and emerge as a credible global supply chain alternative. The current desire of Western economies to scout for manufacturing opportunities beyond China notwithstanding, we need to remember that our formidable neighbour's economy is about five times larger with a GDP of \$ 18.1 trillion as opposed to India's GDP of \$ 3.39 trillion. The Economic Survey 2022–23 stated that India's manufacturing sector accounts for about 16 per cent of the country's GDP, and the target is to take it to 25 per cent by 2025. The survey also underlined three primary assets to capitalise on this opportunity: The potential for significant domestic demand, improved measures by the Government to encourage manufacturing, and a distinct demographic edge. We will need to work on all three, concurrently and aggressively, to ensure that this opportunity is not lost. □

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Production Linked Incentive Scheme for Aatmanirbhar Bharat



As per DPIIT, the PLI scheme has led to the direct creation of more than 3.5 lakh jobs in the 14 sectors. So far, the Government has disbursed a PLI incentive of over Rs. 2900 Cr. to the manufacturers. It is pertinent to mention that unlike the MEIS scheme, where the beneficiary can also be a trader/exporter, under the PLI, only manufacturers are eligible to submit a proposal and claim incentive under the scheme. The PLI scheme therefore directly promotes Aatmanirbharta and domestic manufacturing.

*** Rashi Sharma**

**** Aman Sharma**

Aatmanirbhar Bharat has been the bedrock of the present Government's policy of bringing manufacturing back to the country and creating employment in the secondary sector. Although the emergence of China as the global manufacturing hub in the early 2000s reduced the cost of manufacturing and brought greater profit to multinational corporations worldwide, it also created an abnormal dependency on a single country, which was both geopolitically as well as economically risky. The bitter fruits of this overdependence on China were tasted by the world during the Covid-19 crisis when manufacturing came to a standstill in China for months together and led to an unprecedented shortfall of both manufactured & intermediate goods across the

world. Threatened with a near supply chain collapse and driven by the ongoing trade war between the USA and China, several MNCs in the developed countries, led by the USA, took a decision to diversify their manufacturing hubs and reduce their overdependence on China. In the latter half of 2020, as the US, European, and Taiwan-based companies started looking out for opportunities to gradually shift manufacturing out of China, the Government of India welcomed such companies to set up manufacturing units in India. Both the Union Government of India and the State Governments (Tamil Nadu, Andhra Pradesh, and Karnataka) welcomed several electronic product manufacturing giants with fast tracked clearances and land acquisitions.

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It was around this time that NITI Aayog came out with the Production linked Incentive (PLI) Scheme to provide financial incentives to companies for setting up manufacturing facilities in India for identified products. NITI Aayog identified 10 Sectors for providing incentives under the PLI scheme: Advanced Chemistry Cell (ACC) battery, Electronic/Technology Products, Automobiles & Auto Components, Pharmaceutical drugs, Telecom & Networking products, Textile products, Food products, High Efficiency Solar PV modules, white goods (ACs & LED) & Specialty Steel. The Union Cabinet on 11 November 2020 approved the PLI scheme for these 10 sectors, with a financial outlay of Rs. 1,45,980 Cr. The sector wise break-up of incentive that is to be released over a 5 Year period is as follows:

Priority No.	Sector	Implementing Ministry/ Department	Financial Outlay in Rs. Crore
1.	Advance Chemistry Cell (ACC) Battery	NITI Aayog and Department of Heavy Industries	18100
2.	Electronic/ Technology Products	Ministry of Electronics and Information Technology	5000
3.	Automobiles & Auto Components	Department of Heavy Industries	57042
4.	Pharmaceuticals Drugs	Department of Pharmaceuticals	15000
5.	Telecom & Networking Products	Department of Telecom	12195
6.	Textile Products	Ministry of Textiles	10683
7.	Food Products	Ministry of Food Processing Industries	10900
8.	High Efficiency Solar PV Modules	Ministry of New and Renewable Energy	4500
9.	White Goods (ACs & LED)	Department for Promotion of Industry and Internal Trade	6238
10.	Specialty Steel	Ministry of Steel	6322
Total			145980

The above incentive was in addition to the PLI schemes which had already been notified .

1.	Mobile Manufacturing & specified	Rs. 40951 Cr.
2.	Critical key starting materials /Drug	Rs. 6940 Cr.
3.	Manufacturing & Medical Device	Rs. 3420 Cr..
		Rs. 51311 Cr.

Manufacturing of Drones and Drone component was also added subsequently to these 13 sectors, and an outlay of Rs. 120 Cr. was earmarked for this emerging sector, with a view to promote MSMEs and Startups.

With this, the total commitment of Gol towards PLI scheme for 14 Sectors stood at Rs. 197411 Cr.

The incentive under the PLI scheme is to be utilised for attracting investments in specific products in each of the 14 Sectors. These are the products for which there was a substantial import dependency, domestic manufacturing capacity was limited, and there was a lot of potential for the country to become an export hub for these products, whose global demand was also robust. The Government therefore tried to achieve four specific end results, viz.

1. Reduce import dependency for manufactured products/goods identified under the PLI Scheme.
2. Enhance the export of these products.
3. Attract FDI by setting up manufacturing capacities for these products in India.
4. Bring in cutting-edge technology into the country in these sectors and products.

The maximum investment under the PLI scheme has so far been in the Pharma sector, mainly in the manufacture of APIs and drug intermediaries. As a result of this scheme, the manufacturing of 35 APIs has commenced in India. These 35 APIs are among the 53 APIs for which India has 90% import dependence.

PLI scheme as a method of indirectly incentivising exports was also necessitated by the fact that the Merchandise Export Incentive Scheme (MEIS) of Department of Commerce had been challenged by the USA in the WTO for being non-compliant with WTO rules, and India, having lost the case as well as appeal in the WTO dispute panel, was required to discontinue MEIS, Export Oriented Units Scheme, SEZ, EPCG & DFIS schemes (MEIS was withdrawn w.e.f. 1 January 2021)

Under the MEIS scheme, an average incentive of around 2% of the export value was provided to exporters. Whether this incentive actually promoted domestic manufacturing has always been disputed. However, the doubts in the minds of naysayers about the efficacy of the PLI Scheme have been laid to rest on account of the fact that PLI scheme so far has attracted an investment of over Rs. 62500 Cr and led to exports worth Rs. 2,60,000 Cr. As per DPIIT, the PLI scheme has led to the direct creation of more than 3.5 lakh jobs in the 14 sectors. So far, the Government has disbursed a PLI incentive of over Rs. 2900 Cr to the manufacturers. It is pertinent to mention that unlike the MEIS scheme, where the beneficiary can also be a trader/exporter, under the PLI, only manufacturers are eligible to submit a proposal and claim incentive under the scheme. The PLI scheme therefore directly promotes Aatmanirbharta and domestic manufacturing.

After approval by the Government, the sectoral ministries were required to work out the details of their PLI Schemes and get them approved by the Cabinet. Accordingly, each Ministry notified their PLI scheme, within the overall outlay that was specified in the Cabinet approval of November 2020. After notification of the scheme by individual Ministries, the scheme was opened for receiving specific proposals from the industry. The selection of partners under this scheme was based on their commitment to invest the maximum amount in setting up greenfield or brownfield manufacturing facilities in India, scale rapidly to provide the maximum returns in terms of incremental production, employment generation, and exports. The eligible products identified by the Ministries were such that they would invariably involve bringing state-of-the-art technology to the country. For example, in specialty Steel, Cold Rolled Grain Oriented (CRGO) Electrical steel was identified as one of the products under the PLI scheme notified by M/o Steel. CRGO is used in transformer cores and in the absence of the



required technology at Indian steel mills, this product was primarily imported. The limited manufacturing of CRGO in India was also not end-to-end and involved import of intermediate Cold Rolled Grain Oriented coils with minimal value addition in India.

The PLI scheme notified by M/o Steel as on 24 July 2021, earmarked an incentive of Rs. 1293 Cr (out of Rs. 6322 Cr. total outlay) for promotion of domestic manufacturing of Electrical steel, viz. CRGO & CRNO (used in electrical motors). CRGO was placed in the highest C slab with an incentive of 11-15% in view of the importance of this steel grade to the domestic Power sector as well as Charging infrastructure for Electric Vehicles. It is estimated that on account of this incentive under the PLI scheme, the domestic manufacturing of electrical steel is expected to rise from the baseline of 5.9 lakh tonnes per annum in 2019-20 to 1.4 million tonnes in 2026-27, with a CAGR of 13.3%. In order to be eligible to participate in the PLI scheme, the applicant had to commit a minimum investment of Rs. 5000 Cr. in setting up CRGO manufacturing plant of minimum 2 lakh tons per annum capacity, while achieving a minimum 40% YoY incremental production rate. The incentive payable to the selected applicants is to be calculated on the basis of incremental sales in the current year (A), weighted average sales price in the current year (B) & weighted average sale price in base year (2019-20)(C) with the formula $(A/B) \times (B \text{ or } C, \text{ whichever is lower}) \times (\text{PLI rate}) / 100$.

For CRGO, JSW Steel Ltd., which is an Indian Steel company, has been selected by the Ministry of Steel and has set up a 50:50 JV with JFE Japan. Incidentally, JSW already has a tie-up with JFE since 2012 for manufacturing Cold Rolled Non grain Oriented (CRNO) electrical steel in India. This JV between JSW and JFE shall initially set up a 2 lakh ton capacity CRGO plant at Vijaynagaram in Bellary district of Karnataka with an investment of over Rs. 8000 Cr. Given the long gestation time required to set up a steel mill, it is estimated that the plant shall commence manufacturing in 2026-27. This CRGO manufacturing facility at Vijaynagaram shall be the first end-to-end CRGO manufacturing facility in India; it would source HR coils from JSW Vijaynagaram steel mill and then do the further downstream processing to produce the final product. This shall be a watershed moment for India because, so far, no foreign steel manufacturer has agreed to transfer the complete CRGO manufacturing technology to a JV part owned by an Indian Steel producer. This has been made possible only because of the PLI scheme.

The maximum investment under the PLI scheme has so far been in the Pharma sector, mainly in the manufacture of APIs and drug intermediaries. As a result of this scheme, the manufacturing of 35 APIs has commenced in India. These 35 APIs are among the 53 APIs for which India has 90% import dependence.

When it comes to the most visible impact of the PLI scheme, it is difficult to miss the country's achievements in mobile phone manufacturing as well as export. India is set to cross Rs 1.2 lakh crore in mobile phone exports in 2023-24, in comparison to Rs 90,000 crore in 2022-23. A major share of this export surge is driven by Apple, which is now considering shifting around 18% of its global iPhone production to India by 2025; up from the current 7%. In 2022-23, India's electronics imports stood at \$ 77 billion, which is next only to its petroleum imports, which stood at \$ 158 Billion. The PLI scheme for electronics is expected to reduce this import dependency substantially.

In the telecom sector, the PLI scheme has resulted in import substitution to the extent of over 60% and the country has become Aatmanirbhar in Antennae, GPON (Gigabit Passive Optical Network), and CPE (Customer Premises Equipment). The success of domestic manufacturing in mobile devices and telecom equipment has therefore been phenomenal, and what makes this achievement special is the short span of just 3 years in which domestic manufacturing facilities have been set up & commenced production.

The Way Forward

So far, the stakeholder Ministries have approved a total of 733 applications in the 14 sectors, with an expected investment of Rs. 3.65 lakh Cr. Incentive claims of over Rs. 3,420 crore have so far been received under the PLI scheme for eight sectors – large-scale electronics manufacturing, electronics and technology products, bulk drugs, medical devices, pharmaceuticals, telecom and networking products, food items, and drones, of which over Rs. 2,800 crore have already been disbursed. The highest disbursement of Rs. 1,649 crore was made in large-scale electronics manufacturing, followed by pharmaceuticals at Rs. 652 crore, and food products at Rs. 486 crore. There was an increase of 76 per cent in FDI in the manufacturing sector in 2021-22 in comparison to 2020-21.

Sectors that are not picking up well include high-efficiency solar PV modules, advanced chemistry cell (ACC) batteries and Man-Made Fibre (MMF) textile products. The reasons for slow response in these sectors range from the longer gestation period required for setting up manufacturing in these sectors, unattractive incentive structure in the PLI scheme, the shorter window being made available by the Ministries while calling for proposals in these sectors, to the reluctance of MNCs to bring in cutting-edge technology in these sectors to India. Meanwhile, the Government is considering adding a few more sectors to the PLI scheme, namely toys, leather and footwear, and components for new-age bicycles, all of which have seen growing imports in the last few years. Although the non-tariff barriers have helped reduce import of cheap Chinese toys into India, there is still a serious shortage of state-of-the-art toy designing & manufacturing facilities in India. The inclusion of these sectors under the PLI scheme shall go a long way in setting up a manufacturing base in India for both domestic consumption as well as export.

To conclude, the PLI scheme has been a game changer for promoting Aatmanirbharta, and a lot has been achieved in the last three years. The impact of the scheme on employment generation has also been phenomenal. As manufacturing commences in sectors such as specialty steel, where the gestation period required for setting up manufacturing facilities is long, the impact on downstream industries shall be phenomenal and would help boost both direct and indirect employment as well as exports. □

Cultural Heritage

Tradition to Innovation

By empowering artisans, integrating modern techniques, and creating virtual museums, 'Make in India' ensures the continuity of India's cultural legacy in the face of globalisation and technological advancements. Balancing modernisation with cultural authenticity is a challenge, but with commitment and support, 'Make in India' has the potential to leave a lasting legacy of enriched cultural preservation and promotion.

Hemanth Menon

The 'Make in India' initiative, launched by the Indian government, aims to boost domestic manufacturing, attract foreign investments, and create job opportunities. Simultaneously, India boasts of a rich cultural heritage spanning centuries, encompassing diverse arts, crafts, and traditions. Preserving and promoting this heritage is vital to maintaining the nation's identity and fostering national pride. 'Make in India' supports this endeavour by facilitating the transition from tradition to innovation. By encouraging modernisation and technological advancements in preserving cultural practices, the

initiative safeguards and revitalises India's cultural heritage, ensuring its continuity while embracing progress.

India's cultural heritage is a tapestry of unparalleled diversity, shaped by a history spanning thousands of years and influenced by various civilisations, religions, and regions. It encompasses a myriad of art forms, including classical and folk dances, music, traditional festivals, architecture, literature, and craftsmanship. This rich heritage has profoundly impacted India's unique identity and contributes to the nation's reputation as a land of ancient wisdom, artistic brilliance, and spiritual wealth.

Cultural heritage plays a pivotal role in shaping India's global perception. It acts as a powerful soft power tool, drawing tourists, scholars, and enthusiasts from around the world. The country's



cultural exports, like yoga, music, dance, and traditional medicines, have garnered international acclaim, fostering goodwill and enhancing diplomatic ties. However, the onerous task of preserving and promoting cultural traditions throws up several challenges in the modern era. Globalisation, urbanisation, and changing lifestyles lead to the erosion of traditional practices and languages. Economic pressures sometimes prioritise commercial viability over safeguarding cultural authenticity. Furthermore, technological advancements might inadvertently marginalise traditional art forms and crafts, endangering the livelihoods of artisans. Addressing these challenges is crucial to maintaining India's vibrant heritage and passing it on to future generations, thereby enriching the world's cultural tapestry with its timeless beauty and wisdom.

With its launch in September 2014 by the Indian Government, the 'Make in India' campaign swiftly gained momentum and garnered immense attention as a transformative economic initiative. By promoting domestic manufacturing and attracting foreign direct investment (FDI), it aimed to elevate India's position as a global manufacturing and investment hub. Beyond the traditional focus on manufacturing and infrastructure, the campaign also targeted various other sectors and industries, such as information technology, tourism, renewable energy, biotechnology, and electronics. The 'Make in India' initiative provides a golden opportunity to coalesce tradition and innovation, thus safeguarding and revitalising India's cultural heritage. By encouraging investments in sectors like arts and crafts, handlooms, and traditional medicine, the campaign aligns economic development with the preservation of cultural practices. Through incentives, skill development, and market accessibility, 'Make in India' empowers artistes to incorporate modern techniques into the preservation of their timeless traditions.

The Make in India campaign has undertaken several crucial initiatives to empower and uplift traditional artisans and craftsmen in India, recognising their significant roles in preserving the country's rich cultural heritage. One such initiative is skill development through

the Government's launching of various programmes like the Pradhan Mantri Kaushal Vikas Yojana (PMKVY). These programmes train artisans to utilise modern techniques, design, marketing, and e-commerce, and equip them with the expertise required for sustenance in contemporary markets.

Financial support, crucial for the empowerment of artisans, has been addressed through schemes like the Prime Minister's Employment Generation Programme (PMEGP), where loans are provided to assist artisans in starting new ventures and expanding existing ones. Such aid ensures the acquisition of requisite tools and equipment by artisans, ensuring the growth and sustainability of their businesses through market accessibility, which brings expanding audiences. Trade fairs and online platforms like e-Haats provide artisans with digital marketplaces for exhibitions cum sale of their creations to customers. Additionally, the Government's establishment of 150 rural handicraft clusters across India enables the nurturing of artisans for training in skill, marketing, and financial resources, thereby facilitating their growth. Partnerships with prominent companies like Fabindia and Good Earth are a strategic move for promoting traditional handicrafts and enabling exposure to global clientele.

Revitalising Traditional Art Forms

The 'Make in India' campaign is a cultural renaissance for its art, crafts, and traditions and breathes new life into them, thereby ensuring the relevance of human values enshrined in the nation's rich heritage. This campaign fosters a creative ecosystem that ensures, for artisans, an expansion of the horizons of their craft through the blend of modern tools with uncompromised authenticity. Artisan workshops and design camps ensure the assemblage of master craftsmen and designers, resulting in an exchange of ideas and a fusion of traditional techniques with contemporary aesthetics. Support for research on traditional art forms guarantees the retention of the quintessential soul of our heritage while embracing technological advancement.



One successful example is the revival of traditional handloom textiles. In 2015, the Indian Government not only dedicated 7 August for the celebration of National Handloom Day (thereby honouring the creative contribution of Weavers across India) but also envisioned the sequence of 5F - Farm-to-Fiber, Fiber-to-Fabric, Fabric-to-Fashion and Fashion-to-Foreign (thereby promoting the entire value chain of the textile sector). In the same year, the Government's sanction of Rs. 6,006 crore for supporting the handloom sector was a shot in the arm for the enhancement of productivity and competitiveness in the handloom industry. The Government's policy allowing 100 per cent Foreign Direct Investment (FDI) in Indian textiles under the automatic route was a move to strengthen India's position on the global stage.

The resurgence of traditional pottery encourages artisans to experiment with innovative glazes and shapes while remaining rooted in the ancient craft. This was a strategic move with attractive appeal for modern consumers to appreciate tradition and individual talent. Nationwide celebrations of cultural festivals not only showcase traditional Indian art to global audiences, but also create an amicable bonding among artisans, enthusiasts, and customers. Contemporary interpretations of traditional art forms and the fusion of traditional Indian textiles with modern fashion have earned markets nationally and globally. The revisitation of Indian music and dance forms with innovation by global artistes has created modern productions, this being the outcome of a unique integration of cutting-edge technologies, stage craft, and storytelling, thus captivating diverse audiences.

Leveraging Technology for Cultural Heritage - The Potential and Future

Technology's provision of historical artefacts, artworks, and ancient texts through the creation of digital replicas, high-resolution images, and 3D scanning and printing to preserve the fragility of artefacts without any damage to the original has greatly enhanced the



conservation of our heritage. The benefits of technology are visible in the permanent storage of all artefacts in databases.

Digitisation plays a pivotal role in the establishment of virtual museums and online exhibitions. By preserving artefacts virtually, cultural institutions can create immersive experiences for visitors. Virtual museums offer lifelike exploration, allowing users to view 3D models and access detailed information about each exhibit. This innovation breaks physical barriers, enabling global audiences to experience India's cultural heritage without the need to travel to the country. The interactive nature of online exhibitions and virtual museums fosters engaging learning experiences. Multimedia elements, such as videos, audio guides, and interactive features, enhance the understanding and appreciation of cultural artefacts. Additionally, virtual museums serve as backups for physical artefacts, providing an additional layer of protection in the event of natural disasters, theft, or damage. E-commerce platforms have revolutionised the way traditional artisans and craftspeople sell their products. These platforms offer artisans access to a global marketplace, transcending geographical limitations, and expanding their customer base significantly. By eliminating intermediaries, artisans can directly engage with consumers, ensuring fair prices for their products and better financial inclusion.

E-commerce, a major revolution transcends geographical borders to help artists survive and also thrive, and cancels the need for intermediaries.



E-commerce platforms enrich artisan lives by providing training, support, and marketing strategies to foster entrepreneurship.

Cultural Tourism and Experiential Learning

Tourism is the third-largest foreign exchange earner for the country. The initiative popularises niche tourism products like cruises, adventure, medical, wellness, sports, eco-tourism, cinema, rural and religious tourism, MICE (meetings, incentives, conferencing, and exhibitions) and cultural tourism as experiential learning globally. The initiative has helped to highlight India's rich cultural heritage and make it more accessible to tourists from all over the world.

One of the ways in which the Make in India initiative has promoted cultural tourism is through the development of new tourism products and experiences. For example, the government has created a number of "Incredible India" circuits that focus on specific aspects of Indian culture, such as yoga, music, and dance. These circuits offer tourists first hand exposure and accessibility to learn about and experience Indian culture in a more immersive way. The Tourism Ministry has undertaken the 'Namaste India' Campaign to encourage international visitors to travel to India.

The Make in India initiative has also helped promote cultural tourism by providing financial assistance to tourism businesses. For example, the Government has provided grants to businesses that are developing new tourism products or experiences that showcase Indian

culture. This is a shot in the arm for the visibility of India's treasure trove, namely its heritage. This financial assistance has helped make it more affordable for businesses to offer these experiences to tourists.

Several other initiatives offer tourists' immersive experiences in all aspects of our cultural heritage. Some of these initiatives include:

- The Swadesh Darshan scheme, was launched by the Indian Tourism Ministry in 2015. It aims to develop theme-based tourism circuits that showcase India's rich cultural heritage.
- The Incredible India! campaign, launched by the Ministry of Tourism in 2002 aims to promote India as a tourist destination and highlight the country's rich cultural heritage.
- The Indian Council for Cultural Relations (ICCR), is a government organisation that promotes Indian culture abroad. The ICCR organises a number of cultural events and programmes that offer tourists the opportunity to learn about and experience Indian culture.

Economic Impact of Cultural Tourism on Local Communities and Heritage Preservation

Cultural tourism enhances economic security for local communities and heritage preservation. The demand and supply requirements for artefacts by tourists benefit small businesses, the regional economy, and cottage industries. 'Heritage Walks' offer tourists exploration of historical sites and monuments, making the experiences truly authentic and enlightening. These immersive experiences not only enrich tourists' understanding of Indian culture but also foster cross-cultural exchange and appreciation. Additionally, initiatives like 'Home Stays' provide tourists with opportunities to live with local families, help them gain insights into traditional lifestyles and domestic culinary practices. Furthermore, the economic benefits of cultural tourism encourage communities to invest in heritage preservation. Preservation efforts ensure the sustainability of cultural practices and historical sites, contributing to the long-term conservation of India's cultural heritage.

Public-private partnerships (PPPs) are becoming increasingly important in the promotion and preservation of India's cultural heritage. PPPs can



increase in tourist footfall. The promotion of art and culture as integral parts of tourism experiences not only drives visitor numbers but also creates a positive image of India as a culturally diverse and vibrant nation.

Through cultural tourism, cultural diplomacy gets strengthened through cultural exchanges, festivals, and art exhibitions, and India is successful in showcasing its artistic heritage to global audiences, fostering a deeper appreciation for its cultural contributions. By engaging in cultural diplomacy, India forms meaningful connections with other nations, bridging gaps, and creating avenues for artistic collaboration. Cultural diplomacy also opens doors for Indian artists to showcase their talent

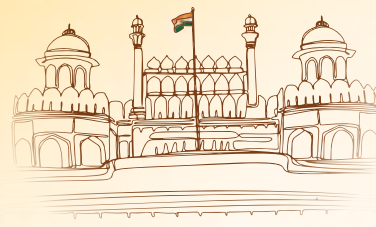
bring together the resources and expertise of the government, the private sector, and non-governmental organisations (NGOs) to achieve common goals. The Make in India initiative has provided a new impetus for PPPs in the cultural heritage sector. The initiative has highlighted the importance of cultural heritage as a driver of economic growth and job creation. It has also created a more favourable environment for PPPs by providing financial aid and other support to public-private partnerships. There are a number of successful projects that have emerged through PPPs in the cultural heritage sector. One such project is the restoration of Osmania Women's College, which is a partnership between the Telangana Government and the World Monuments Fund.

Tourism plays a crucial role in promoting Indian art and culture on the global stage by providing a platform for showcasing the country's rich artistic traditions. As a major component of soft power, cultural tourism enhances India's international image and fosters cross-cultural understanding. 'Make in India' has effectively leveraged tourism initiatives to showcase Indian artistic traditions to the world. Cultural tourism experience programmes, heritage walks, and immersive activities offer tourists opportunities to engage with Indian arts and crafts firsthand. These initiatives enable visitors to witness the intricacies of traditional art forms, and handicraft demonstrations. The incorporation of culture tourism into the 'Make in India' has resulted in a sizeable

on international platforms, enabling them to reach wider audiences and gain recognition. This exposure not only promotes individual artists but also elevates the stature of Indian art and culture on the global stage.

Balancing tradition and innovation in cultural heritage preservation may pose a challenge under 'Make in India.' While embracing technological advancements and modern practices can enhance preservation efforts, there is a risk of diluting traditional authenticity. It requires alert curation, which is the need of the hour to strike a balance between modernisation and safeguarding cultural integrity. Continuous support and commitment are crucial to safeguarding India's cultural heritage under 'Make in India.' Adequate funding, policy frameworks, and active involvement of cultural institutions and local communities are never more urgent than now, and hence it is critical to ensure sustainable preservation and promotion of cultural practices under this grand initiative.

The 'Make in India' has the potential to have a significant long-term impact on preserving and promoting India's cultural identity. By integrating cultural elements into tourism, fostering artisanal growth through e-commerce, and promoting cultural diplomacy, it elevates the global visibility of India's rich heritage, creating a permanent legacy for future generations. □



Prime Minister Narender Nation from the Ra

Following are the key



➤ The trinity of demography, democracy and diversity has the potential to make every dream of India come true. It is a period of great pride that today our population under the age of 30 is the highest in the world. In the youth below 30 years of age, my country has millions of arms, millions of brains, millions of dreams, millions of determination, with which my brothers and sisters, my family members can achieve the desired results.

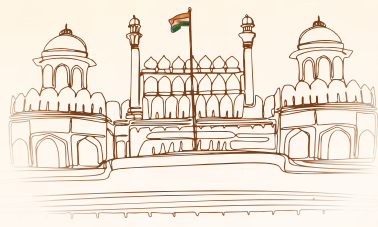
➤ Today, India's exports are increasing rapidly and based on different parameters, the experts of the world are saying that now India is not going to stop.

➤ Our crores of fishermen brothers and sisters, their welfare is also in our heart and that is why we have created a separate Ministry for Fisheries, Animal Husbandry and Dairy, so that the people of the society who have been left behind get desired support.

➤ Cooperative movement is a big part of the economy of the society, to strengthen it, to modernise it and to strengthen one of the biggest units of democracy in every corner of the country, we have created a separate Cooperative Ministry. We have adopted the path of prosperity through cooperation.

➤ Today, the country is feeling safe. Today, there has been a drastic reduction in terrorist attacks in the country. There has been a big change in the naxal affected areas also, an environment of big change has been created.





Modi Addressed Participants of Red Fort



Highlights from his speech

- I have to take forward the fight against corruption. Number of chargesheets being filed in court are much more than before and even getting bails has become difficult, we are moving forward with such a firm system, because we are honestly fighting against corruption.
- All of us have a duty, every citizen has a duty and this Amritkaal is Kartavyakaal. We cannot back down from our duty, we have to make the India which was the dream of revered Bapu, we have to make the India which was the dream of our freedom fighters, we have to make the India which belonged to our martyrs, who gave their lives for the motherland.
- For the coming 25 years, we should follow only one mantra, this should be the pinnacle of our national character- the message of unity. India's unity gives us strength, be it north, be it south, be it east, be it west, be it village, be it city, be it man, be it woman; we want to have our country as a developed India in 2047 then we have to live the mantra of Ek Bharat Shreshtha Bharat, we have to characterize.
- To move forward in the country, the potential of an additional power is going to take India forward and that is women-led development. I have taken forward the topics of women-led development in G-20, the whole G-20 group is accepting its importance.
- This Amrit Kaal is a time of duty for all of us. This Amrit Kaal is the time for all of us to do something for Maa Bharti. The resolution of 140 crore countrymen has to be converted into achievement and when the tricolor is hoisted in 2047, then the world will be praising a developed India. With this belief, with this determination, I wish all of you many, many best wishes. Many many congratulations.

Source: PIB and MyGov



Make in India's Super Star Sectors and Water Management

The Make in India initiative's six super star sectors - Automotive, Electronics System Design and Manufacturing, Renewable Energy, Roads and Highways, Pharmaceuticals, and Food Processing-are expected to boost India's economic growth. Water, the primary component of all development needs, has a substantial role in the growth of these sectors as well. Effective management and increased productivity of water are crucial to achieving the goals of Make in India and making them sustainable.



W

Arunlal K.

ater, the most essential and indispensable component in any industrial process, is a vital factor that influences the decisions of investors and industrialists. The Make in India initiative, launched in September 2014 with the objective of promoting India as the most preferred global manufacturing destination, has a huge reliance on the effective use of water. There are six “super star sectors” identified as boosting the Make in India initiative: Automotive, Electronics System Design and Manufacturing, Renewable Energy, Roads and Highways, Pharmaceuticals, and Food Processing. These sectors are expected to attract multi-billion Foreign Direct Investments (FDI), expand at a faster pace, and reinforce growth in other connected segments. The water requirements of the new manufacturing units

being incepted under Make in India must be met from what is left after meeting agriculture and domestic demands. According to the estimates by the United Nations Food and Agriculture Organization (UNFAO) and World Bank, the GDP per cubic meter of fresh water withdrawal in India is quite low, to the tune of USD 4.0, while it is USD 674 in Singapore, USD 172 in Australia, USD 275 in Israel, and USD 25 in China. This scenario makes it important for industries to optimise water use and get the most out of each unit of water consumed.

Automotive

The Automotive Mission Plan (AMP) 2026 envisions the automotive industry as the engine of Make in India and projects a four-fold growth from the existing USD 74 billion to USD 300 billion. The sector will create about

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65 million jobs and contribute over 12% to the country's GDP. Many global car makers have already set up their manufacturing units in India. But on the other hand, this growth is going to create an additional demand for water resources. According to estimates by the automobile industry, producing a car uses 39000 gallons of water. As the automotive industry grows, there is a demand to produce more paint, which is another trigger for an increase in water consumption. In addition, the painting process needs a significant volume of water since most of those are water-based products, and another major share goes to the regular cleaning of equipment. Thus, it becomes imperative for industries to choose locations with sufficient and sustainable water availability. Sometimes it can even lead to conflicts among existing users of the water source. However, it is heartening to observe that major automotive manufacturers have been adopting sustainable water management practices and waterless solutions in their production and supply chains. For example, Hyundai's 7,50,000 unit-per-annum plant in Sriperumbudur, Chennai, practises rainwater harvesting and maintains a zero discharge policy with 100% recycling. Toyota Kirloskar Motor (TKM), in its facility in Bidadi, Bangalore, has no intake of freshwater for industrial purposes. Indian major Tata Motors has adopted a strategy to continuously improve its water use efficiency through process improvements, leakage elimination, and recycling waste water for re-use in its operations. Further, the car manufacturers introduced waterless car cleaning operations. In 2008, the US Energy Department published a Technology Roadmap for Energy Reduction in Automotive Manufacturing for the elimination or reduction of energy, water, and chemical requirements in paint pre-treatment. The above examples and practices are replicable and scalable as the automotive industry grows through Make in India initiatives.

Electronics System Design and Manufacturing

As the world becomes more and more technology-driven and the country embraces the Digital India initiative, electronics device manufacturing plays a pivotal role in all sectors. It is anticipated that India will become the global hub for electronics system design and manufacturing in the near future. The Government's National Policy on Electronics 2019 (NPE 2019) recognises electronics hardware manufacturing as one of the important pillars of Make in India and proposes to achieve a turnover of USD 400 billion by

2025. The Electronics manufacturing industry needs ultra-pure water at various stages of its processes and applications, such as the manufacture of thin-film devices, semiconductors, memory devices, vacuum devices, electrical devices, washing semiconductor components in manufacturing, cleaning, and other operations. The fact is that the generation of one unit of ultra-pure water requires multiple units of raw water, depending on the required quality. Standards of water quality vary based on different parameters, including the size of the manufacturing equipment and the stipulated quality of the product. Industry experts estimate that it takes approximately 2200 gallons of water, including 1500 gallons of ultra-pure water, to create one integrated circuit on a wafer, and one computer can contain a multitude of those little wafers, or chips. This too points to the tight coupling between the availability of pure water and the success of the 'Make in India' initiative. Electronics industry has the potential to innovate to create ultra-pure water with minimum wastage, which is not only useful for the industry but for the generation of pure water for drinking purposes as well.

Renewable Energy

India is striving to achieve 50% of cumulative electric power installed from renewables by 2030. This includes power generation from solar, wind, hydropower, and green hydrogen. The sector allows Foreign Direct Investment (FDI), which stimulates the growth of manufacturing industries that make



components for power generation. Major global players will be investing in the sector. Renewable energy generation is also linked to water availability, both directly and indirectly. In solar energy, apart from the water required to manufacture its components, a significant volume is used for cleaning and maintenance, which is essential to ensuring the sustainability of solar plants. 1 to 5 million gallons of water is used to clean a 100 MW capacity solar plant, industry reports suggest. However, there are innovations coming up to reduce water usage. One such example is the Massachusetts Institute of Technology's electrostatic repulsion method using a remotely operated electrode.

Hydrogen energy is directly linked to water, as its decomposition produces the required hydrogen. When the electricity used for hydrogen generation is sourced from renewable resources, that is, without emitting carbon dioxide, it is called green hydrogen. The Hon'ble Prime Minister has launched the National Hydrogen Mission on India's 75th Independence Day in 2021. The Mission aims to make India a green hydrogen hub, which will help in meeting the target of producing 5 million tonne of green hydrogen by 2030, and the related development of renewable energy capacity.

The 'Make in India' initiative has huge potential for investment in the hydropower sector. Since March 2019, the Government of India has been recognising Large Hydro Power Projects (LHPPs), including Pumped Storage Projects (PSPs) with a capacity of more than 25 MW as part of renewable energy. There is a wide scope for setting up mini and micro generators in canals and small streams that can contribute to the power pool with minimum investments. An increase in the penetration of small hydro will also boost the associated industries that are manufacturing small turbines and other required components. There is also a wide scope for innovation and improvement to help the industry produce more power with minimum head and water-flow.



Roads and Highways

A robust road and highway network is essential for a stable economy, and its capacity needs to keep pace with economic growth. India has the second largest road network in the world, with about 63.32 lakh km. Investments in this sector were made only by the Government in the past. However, private participation is being encouraged with the amendment of the National Highways Act 1956, and the Ministry of Road Transport and Highways has laid down comprehensive guidelines for this. There are several incentives announced by the Government for private sector participation and foreign direct investment, such as the Government bearing the cost of feasibility studies, shifting of utilities, environmental clearance, etc.; a subsidy up to 40% of the project cost to make projects viable; duty-free import of high capacity and modern road construction equipment, the declaration of the road sector as an industry, and easier external commercial borrowing norms.

Roads and highways are the infrastructures that interact directly with water courses. So, it is important that the road and highway network be planned and implemented with due consideration for water conservation. The 'Make in India' initiative can go a long way in this direction by bringing in the strength of technology, such as the use of satellite images for integrated planning while fixing the alignment. In the past, certain routes were avoided due to the toughness of the geography. But now we have powerful tools and equipment that can drive through difficult terrain with





minimal disturbance to nature and the environment. There is also scope for collaboration with water conservation efforts. One such example is the use of soil and silt extracted from the ponds in highway construction in that region, serving the dual purpose of ensuring the availability of resources for construction and environmental conservation.

Pharmaceuticals

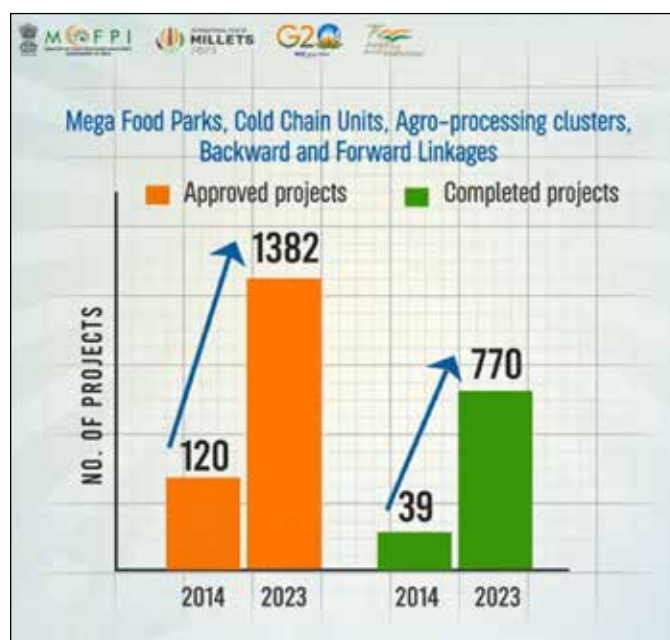
India's pharmaceutical industry is the third largest in the world in terms of volume, with a network of 3000 drug companies and 10,500 manufacturing units. India manufactures about 60,000 different generic brands across 60 therapeutic categories and accounts for 20% of the global supply of generics. Its importance and reliance have increased globally due to the success in dealing with the Covid-19 pandemic and the support extended to many other nations. The World's first intranasal COVID-19 vaccine, iNNCOVACC, marks the glory of research and development in our pharmaceutical industry. Estimates suggest that India's pharmaceutical industry is expected to grow to USD 130 billion by 2030. Further, our export of medical devices is expected to reach USD 10 billion by 2025. The Government has launched Production Linked Incentive (PLI) schemes for medical device with financial incentives worth USD 400 million to boost domestic production. Recognising the huge potential to contribute to the objectives of public health by making quality products available, the National Medical Devices Policy was launched in May 2023 with a vision to place the Indian medical devices sector on an accelerated growth path with a patient-centric approach to meet the evolving healthcare needs of patients by building an innovative and globally competitive industry in India. It is also hoped that India will emerge as the global leader in the manufacturing and innovation of medical devices by achieving a 10-12% share of the expanding global market over the next 25 years.



The availability of pure water of high quality is inevitable for pharmaceutical industry in almost all stages of manufacturing cycle. According to a study published by the World Wide Fund (WWF), 80% of the top 30 global pharmaceutical companies list water as one of their top sustainability focus areas, and 83% of the companies regularly undertake water risk assessments. However, only 30% of the top 30 global pharmaceutical companies publicly mention undertaking water activities within the Research and Development stage of the value chain, either to reduce impacts of manufacturing or product use by patients. This needs to be improved since water is a local resource and its deficit has long-standing social impacts.

Food Processing

The food processing industry helps reduce the gap between agriculture and other industry sectors. This is one of the prominent means of enhancing farmers' income through value addition and market linkage. It



also plays a vital role in public health by reducing the nutritional gap through fortified food. Under 'Make in India', the Ministry of Food Processing is assisting in establishing integrated cold chain projects and Mega Food Parks. While the cold chain project helps farmers preserve perishable products, each food park creates 5,000 jobs and benefits 25,000 farmers. The Government's PLI scheme for the food processing industry has an outlay of INR 10900 crore, which will be implemented over a six-year period from 2021-22 to 2026-27. It is expected that the implementation of the scheme would facilitate the expansion of processing capacity to generate processed food output of INR 33,494 crore and create employment for nearly 2.5 lakh people by the year 2026-27. Another drive from the Government is the Ministry of Food Processing Industry (MoFPI)'s Pradhan Mantri Formalisation of Micro food processing Enterprises (PMFME) scheme, with an outlay of INR 10,000 crore. This aims to enhance the competitiveness of existing individual microenterprises in the unorganised segment of the food processing industry and promote the formalisation of the sector. Quite obviously, water is an integral component in the operation of the food processing industry. According to UNFAO's report, out of the 90% of water consumed in agriculture, 70% is for food production, and 20% is for food processing. This indicates the scope of process improvement in the sector to bring down the water intensity.

Way Forward

An enabling environment to start and run the business is crucial to the success of 'Make in India'. As part of enhancing the ease of doing business, the Government has simplified the regulatory mechanisms so that businesses are not facing unnecessary hassles. However, a cautious approach is to be followed while easing the water and environment related norms. Make in India can deal with this by setting a paradigm shift through the circular use of water and a water-neutral

approach. While the circular use encourages reuse and recycling of fresh water drawn, the water-neutral approach advises optimisation of process to bring down the water requirement as low as possible. As India regains its fame as an innovation hub, industries will invent water-neutral solutions that could be replicated across sectors. NITI Aayog, the policy think-tank of the Government of India, has recently published a document with directional inputs on promoting and standardising water-neutral practices among Indian industries. The document suggests that the inception of new industries should be such that it does not increase the withdrawal of water within a hydrological unit or a watershed. This would only be possible through innovative processes and collective efforts across sectors. We must also be cautious that the faster growth of innovation and manufacturing does not inculcate the habit of discarding products before their lifecycle for want of new ones, and hampers the productivity of resources, including water. The idea of 'producing more with less' should be the unwavering guiding principle behind the success of 'Make in India'. □



Changing Paradigm of Foreign Direct Investment

In the last few years, the industry under Make in India, has not only emerged as a magnet to attract FDI to India and make India a global manufacturing hub but the contribution of these industries to India's GDP as well as employment creation has also increased over time. This has also contributed to making India a resilient economy in the post-pandemic world.



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Dr. Debabrata Samanta

he industrial sector plays an immensely crucial role in the economic development of a country. Industrial development not only generates jobs, particularly skilled ones, and fosters revenue to fuel economic growth but also plays a pivotal role in transitioning additional labour from agriculture to industry. This, in turn, not only transforms the economy with a higher income and standard of living but also transforms the economy from a traditional to a more advanced form. However, one of the crucial challenges that developing countries face in terms of industrial development is the lack of capital. Industrialisation requires significant investment

in infrastructure, technology, and human capital, and having all these requires substantial financial resources. Developing countries face the problem of capital formation due to not-so-stable financial markets and low domestic savings rates. In this regard, foreign direct investment appeared as a solution. The current form of economic growth is argued to be based primarily on the model developed by Robert Solow in 1956 (Solow, 1956). Solow argues about the concept of exogenous technological progress as a driver of economic growth. He also argued that, technological advancement, which is external to the economic system, plays a crucial role in long-term economic growth. In emerging economies,

Foreign Direct Investment (FDI) has assumed a critical role in capital formation and knowledge transfer. Foreign Direct Investment, or FDI, refers to the investment made by foreign companies or individuals in a host country to establish or expand their business operations. This type of investment brings many benefits to the industrial sector. It has been a significant growth booster by providing external resources, new technologies, capacity building, and employment possibilities. The literature indicates that FDI also promotes economic growth by easing access to foreign markets and providing capital, foreign exchange, and technology.

FDI has become a prominent feature of globalisation, particularly in emerging economies. The influx of foreign capital and expertise has been expected to stimulate economic growth and enhance industrial capacity in host countries. A recent study (Baiaashvili & Gattini, 2020) found an inverted U-shaped relationship between countries' income levels and the size of FDI's impact on growth. This implies that as we move from low- to middle-income countries, the effect gets larger. On the other hand, it diminishes again when transitioning to high-income countries. The decade of the 1990s marked a significant period in the process of globalisation. Globally, the FDI inflow from 1990 to 2000 has increased more than five times (United Nations Conference on Trade & Development, 2023). It is argued that as sustained economic expansion is an outcome of technological transfer and spillover effects, FDI plays a paramount role in long-run growth. As the relationship between FDI and economic growth is increasingly endogenous, a study of 84 countries found that, since the mid-1980s, FDI has promoted economic growth directly, and the effect is greater with developed human capital. (Li & Liu, 2005). Theoretically, FDI stimulates the host country's manufacturing sector's growth by transferring technology and restructuring the industrial sector. It is found that foreign direct investment in the manufacturing sector has transformed developing countries like Hong Kong, Singapore, South Korea, and Taiwan into developed countries (Azolibe, 2021). FDI can have a significant impact on the manufacturing industry in different ways. First, by bringing new capital and technology to the industry, this boosts productivity and efficiency, and helps domestic manufacturers produce high-quality goods at lower costs. Secondly, by creating employment opportunities through the setting up of new factories or expansion of existing ones, this

causes an increase in income level and enhancement in quality of life. Apart from these, FDI can foster innovation and knowledge transfer, as when foreign investors enter the manufacturing industry, they bring advanced technology. Recent research (Azolibe, 2021) found that both inward and outward FDI influence the manufacturing sector's growth positively.

In 2014, the Government of India launched 'Make in India' initiative with the ambition of transforming the country into a global manufacturing hub. The present article is an attempt to explore the implication of FDI in the growth of a country's manufacturing sector, and what role FDI plays in the 'Make in India' initiative.

FDI: The Conceptual Background

FDI refers to long-term participation by one country in another country. It usually involves participation in management, joint ventures, and the transfer of technology and expertise. The International Monetary Fund defines FDI as "The acquisition of at least ten per cent of the ordinary shares or voting power in a public or private enterprise by non-resident investors. Direct investment involves a lasting interest in the management of an enterprise and includes reinvestment of profits".

From the perspective of the investor, there are two major types of FDI: horizontal FDI and vertical FDI. Horizontal FDI is undertaken when the company wants to expand horizontally to produce the same or comparable goods in the host country as in the home country. Product differentiation is a central aspect of horizontal FDI's success. There are two main motives for a company to engage in horizontal FDI. The first one is that it is more profitable for the multinational company to be at a foreign location, and the second motive is that the company can save a lot on low-cost inputs, such as labour. In addition, horizontal FDI is often undertaken to make substantial use of monopolistic or oligopolistic advantages, especially if there are fewer restrictions in the host country. Vertical FDI is undertaken when an organisation seeks to exploit raw materials or wants to be closer to consumers by acquiring distribution outlets. The idea is to make the production process more cost-efficient by reallocating some stages to low-cost locations. It is easier for multinational companies to market their products by establishing networks in the host country. It is also argued that vertical FDI is conducted to benefit from the factor price differences between countries. FDI can take the form of greenfield

investment, mergers and acquisitions (M&A), and joint ventures. Greenfield investment is the process whereby the investing company establishes new production and distribution facilities in a foreign country. This form creates new employment opportunities and high-value-added output. The Joint Venture is the third form of FDI and can be seen as a partnership, either with a company in the host country, a government institution, or another foreign company. Joint ventures are often formed to share the risk and expertise. Usually, one partner provides the technical skills and access to financial means, while the other partner offers its local knowledge concerning the market as well as laws and regulations (Moosa, 2002).

FDI in India

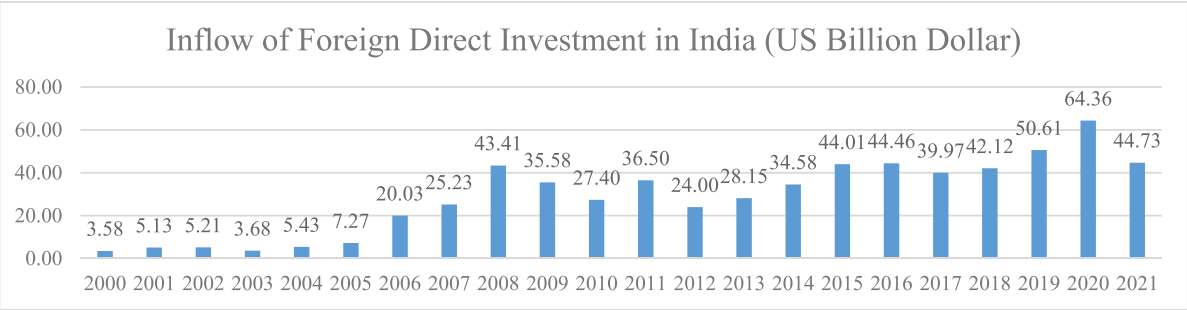
FDI enters India through many routes. One of the main routes through which FDI enters India is the automatic route, through which foreign investors can invest in most sectors without requiring prior government approval. This route provides ease of doing business and attracts investors from different parts of the world. The other route is the government route, where sectors that are considered sensitive or require special approval are regulated by the government. This

route ensures that investments in these sectors align with the country’s strategic interests. The third route is mergers and acquisitions. FDI can also come in through mergers and acquisitions, where foreign companies acquire existing Indian companies. Through this route, foreign investors can enter the market quickly and leverage existing resources and market presence.

There has been a steady growth in the influx of FDI into India, especially after 2005. Whereas in the year 2000 it was only 3.5 billion US dollars and was 0.7% of GDP, this has touched more than 60 billion US dollars in 2020, which consisted of more than 2.4% of India’s GDP. The National Investment Promotion and Facilitation Agency reported that in the year 2022-23, a total of 70.97 billion US dollar FDI equity inflow took place in India. The top five countries in terms of FDI investments in 2022-23 are Mauritius (26%), Singapore (23%), the USA (9%), the Netherlands (7%), and Japan (6%).

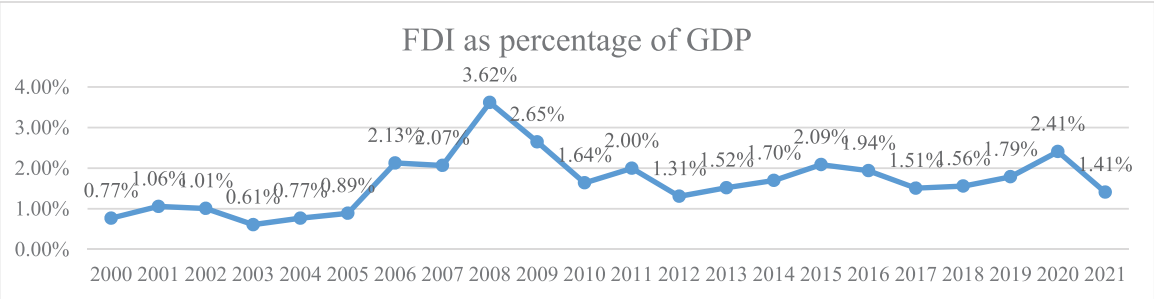
Graph 1 and 2 show the Inflow of FDI in India in absolute form and as a percentage of GDP since 2000. It is evident that though there is a steady increase in the inflow of foreign direct investment in India, the change in FDI in terms of its proportion of GDP is negligible.

Chart 1: Inflow of Foreign Direct Investment in India



Source: World Bank

Chart 2: FDI as a percentage of GDP



Source: World Bank

FDI: Change in Policy Paradigm

In recent years, the Government of India has implemented several changes to the Foreign Direct Investment (FDI) policy to promote investment, ease business operations, and enhance economic growth. Here are some significant changes in the FDI policy in India.

Single-Brand Retail Trading (SBRT)

- 100% FDI under the automatic route: In January 2018, the government allowed 100% FDI in single-brand retail trading, permitting foreign retailers to own 100% of their Indian subsidiaries without government approval.
- Relaxation of local sourcing norms: The local sourcing requirement was relaxed for entities undertaking SBRT. For the first five years, entities can offset the local sourcing requirement against their incremental sourcing from India.

Construction Sector

- In November 2019, the Government revised the definition of “real estate business” to include the development of townships, housing, built-up infrastructure, and construction development projects.
- Relaxation of minimum capitalisation norms: The minimum capitalisation requirement for FDI in the construction development sector was reduced from USD 10 million to USD 5 million within six months of the commencement of the project.

Digital Media

- 26% FDI allowed: In September 2019, the Government allowed 26% FDI under the Government approval route for digital media entities engaged in uploading/streaming news and current affairs content.

Contract Manufacturing

- Contract manufacturing under SBRT: In August 2019, contract manufacturing was included in the definition of SBRT, allowing manufacturers to undertake contract manufacturing for entities engaged in SBRT.

Coal Mining and Contract Manufacturing

- 100% FDI in coal mining under the automatic route:

In August 2019, 100% FDI was permitted under the automatic route for coal mining and associated infrastructure activities.

- Contract manufacturing under SBRT: Contract manufacturing was included in the definition of SBRT, allowing manufacturers to undertake contract manufacturing for entities engaged in SBRT.

Civil Aviation

- 100% FDI in scheduled airlines: In March 2016, the Government allowed 100% FDI in scheduled airlines under the automatic route.

Defence Sector

- Increase in FDI limit: In February 2021, the FDI limit in the defence sector through the automatic route was increased from 49% to 74%.
- Offset guidelines relaxed: Offset guidelines, requiring foreign defence companies to invest a portion of the contract value in India, were relaxed to encourage more significant investments and improve ease of doing business.

Insurance Sector

- Increase in FDI limit: In February 2021, the FDI limit in the insurance sector was increased from 49% to 74% under the automatic route.

E-Commerce

- Tightening of rules for online marketplaces: In December 2018, the Government introduced new FDI norms for e-commerce companies, including restrictions on exclusive deals, control over inventory, and equity participation in vendors.
- Clarity on marketplace vs. inventory-based models: The Government clarified the distinction between marketplace and inventory-based models to ensure compliance with FDI regulations.

These changes reflect the Government's commitment to liberalising the FDI regime, attracting investment, promoting ease of doing business, and fostering economic growth in India.

Make in India and Implication

‘Make in India’ is a transformative initiative with the potential to reshape India's manufacturing landscape



promoting export-oriented manufacturing with an aim to increase India's share in global exports. The implementation of Make in India would have an impact on Economic Growth, Job creation, FDI inflows, Skill and Infrastructure Development, and Global Competitiveness.

The Impact of FDI on India's Manufacturing Sector and Make in India

The industry holds a prominent position in the Indian economy accounting for 31% of GDP, on average, during FY12 and FY21, and employing over 12.1 crore people. Out of this, the manufacturing sector contributes 17.3% of the total gross value added in GDP (Economic Survey, 2022-23). Though the pandemic and the Russia-Ukraine conflict have demonstrated the risk of supply chain shocks to the global economic order, the Government's Make-in-India initiative has facilitated investment, fostered innovation, and built world-class infrastructure while addressing the gaps in domestic manufacturing capabilities. It is reported that the annual FDI equity inflows in the manufacturing sector have been steadily increasing over the last few years as the pandemic-driven expansionary policies of advanced economies led to a surge in global liquidity. With the rise in global uncertainty in the wake of the Russia-Ukraine conflict, the FDI equity inflow in manufacturing in the first half of the financial year 2023 fell below its corresponding level in the first half of the financial year 2022. The monetary tightening at the global level has further restricted FDI equity inflows. A rebound in FDI inflows is, however, expected as the Indian economy sustains its high growth while monetary tightening the world over eventually eases with the weakening of inflationary pressures (Economic Survey, 2022-23).

The Make in India campaign sought to attract FDI in various sectors, boost domestic manufacturing, create employment, and enhance the country's export capabilities. Make in India focuses on promoting manufacturing and production within the country to reduce dependency on imports and develop India as a global manufacturing hub, by attracting investments, boosting employment, and enhancing the overall competitiveness of the Indian economy. FDI has played a significant role in achieving these goals by providing the necessary capital, technology, and expertise to

and drive economic growth. In 2014, the Government of India has launched the 'Make in India' initiative, with the ambition of transforming the country into a global manufacturing hub. The programme is designed to encourage both domestic and foreign companies to invest in India, boosting industrial growth, creating jobs, and fostering innovation. It is argued that Make in India is an international marketing strategy, conceptualised by the Government of India to attract investments from businesses around the world, and in the process, strengthen India's manufacturing sector, and accelerate Economic Development. This campaign, 'Make in India' is aimed at transforming India economically, facilitating ease of doing business in the country, and making the process more transparent, responsible, and accountable. The major motive behind this initiative is to focus on the heavy industries and public enterprises while generating employment, empowering the secondary and tertiary sectors, and utilising the human resources present in India (Rao & Kuchibhotla, 2016). The initiative focuses on 25 sectors, including automobiles, textiles, electronics, pharmaceuticals, defence, and renewable energy, among others. This seeks to capitalise on India's demographic dividend and competitive advantages to enhance its position in the global manufacturing landscape.

The basic objectives of Make in India are to (1) Attract FDI and make India a more attractive destination for multinational corporations seeking to establish a manufacturing base. (2) Promote domestic industries and move forward to India's self-reliance, and strengthen its industrial ecosystem. (3) Boost employment opportunities, (4) Foster Innovation and Technology and promote knowledge sharing and the development of cutting-edge technologies within India, (5) Enhance Export Competitiveness by

set up modern and efficient manufacturing units. As a result, there has been a noticeable increase in the manufacturing sector of India's economy. Though, due to the predominant service sector, there has been a fluctuation in the contribution of the manufacturing sector to India's GDP, as per the data on manufacturing value added from the World Bank (World Bank, 2022), for more than a decade, the manufacturing sector has continuously grown. India's manufacturing output has continuously increased from 381.51 billion US dollars in 2019 to 443.91 billion US dollars in 2021, and the contribution of the manufacturing sector to India's GDP during this time increased from 13.47% to 13.9% (Macrotrends, 2022). It is reported that FDI in India has followed a positive trend since the launch of Make in India. For the very first time, India crossed the 60 billion US dollar mark in the financial year 2017–18. It is argued that the increase in inflow is due to investment-friendly policies and the opening of FDI allowances in various sectors. It is also reported that the Automobile industry in India witnessed a growth of 25.54% from 2017-18 to 2018-19. FDI equity inflows increased substantially to 2.09 billion US dollars during 2017-18. One of the successful sectors is the automobile sector. It is reported that the Indian automobile industry, valued at 118 billion US dollars, was the global leader in manufacturing tractors and two-wheeler and three-wheeler vehicles. In addition, in fiscal year 2019, India was one of the leading producers of passenger cars in the Asia Pacific region, while in fiscal year 2017, the automobile sector in India saw a turnover of over 67 billion US dollars. The automobile sector also attracts a huge amount of FDI. In fiscal year 2021, the total FDI equity inflow to the automobile sector in India amounted to approximately 60 billion US dollars. The Indian automobile sector contributes around 7% of total GDP and employs approximately 19 million people (Statista, 2023). As one of the world's largest producers of Textiles and Apparel, India presently ranks behind China as the world's second-largest manufacturer of textiles and garments. The Production Linked Incentive (PLI) Scheme for Textiles has been reported to boost the industry. The textile sector has attracted FDI of 1522.23 million US dollars from 2017 to 2022. The textile and apparel industry represents over 4% of India's total GDP and more than 14% of the country's export earnings annually, making it India's largest manufacturing sector (HSBC, 2023). Automobile and textiles are two of the very important industries considered under the

Make in India campaign which have expanded and are able to attract a high amount of FDI, making India a resilient economy in the post-pandemic world. In its recent report, the World Bank recognised that with 1.2 billion people and the world's third-largest economy in purchasing power parity terms, India's recent growth has been a significant achievement.

Conclusion

FDI has become a prominent feature of globalisation, particularly in emerging economies. FDI plays a significant role in emerging economies to bridge the gap between providing capital and technological support for industrial development, which plays a critical role as a driver of economic growth. The Government of India initiated 'Make in India' in 2014 to develop India as a global manufacturing hub. To attract foreign investment, there have been changes made to the FDI policy in India. In the last few years, the industries under 'Make in India' has not only emerged as a magnet to attract FDI to India and make India a global manufacturing hub, but the contribution of these industries to India's GDP as well as employment creation has also increased over time. This has also contributed to making India a resilient economy in the post-pandemic world. □

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Food Processing

Advancing Make in India



The Indian food processing industry provides ample opportunities for not only domestic but also foreign entities to come and establish industries here for the simple reason that this market offers them plenty of raw materials at reasonable prices, a fairly large consumer base in each segment, and favourable government policies.

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Bhuwan Bhaskar

he success of Make in India requires policy support, facilitation, and adaptation. The intensity and efforts needed to bring the plan to fruition depend on the gap in the available and needed resources for bringing the development of any particular industry to its zenith. To understand the hypothesis, one may take the example of Make in India in the defence sector, where India has traditionally had almost total dependence on foreign countries for its defence needs. But when the same vision dawns in a sector like food processing, it offers one of the most compatible business propositions for the industry and for the Central and State Governments. Food processing has been a centuries-old household industry across India. There is hardly any household in rural India that doesn't process agricultural produce in

some way. Making pickles, papads, chutneys, etc. are the simplest forms of food processing; they are done at small levels. But this bright picture of food processing in India has another dimension too.

The Food and Agriculture Organization (FAO) roughly estimates food waste at around 40% of the total annual production in India. The stated reasons are an inefficient supply chain and a fragmented food system. To strengthen the supply chain and rectify the food system, India needs mammoth investment and a number of policy interventions. Still, there are some anomalies that can't be cured to the fullest. The most prominent of them is price volatility, as agricultural products are invariably cyclical in nature. So, the foolproof solution to food wastage, along with

taming price volatility and securing food security, is supplementing the supply chain strengthening with creating a strong food processing industry with deep penetration in the hinterlands. With reference to the hypothesis discussed at the beginning of this article, it could easily be inferred how easily it may happen with some policy focus and political willpower.

Food processing is a process through which agricultural produce is turned into food, or one form of

food is turned into another. This includes many forms of processing foods, from grinding grain to make raw flour to home cooking to complex industrial methods used to make convenience foods.

Agriculture in India is not only a livelihood but also a way of life. Therefore, primary food processing is just a natural next step to agriculture and one of the most feasible progressions into the 'Make in India' movement. To take this process further, secondary and tertiary food processing also need to be added as next steps. Here, the need for industrialisation as well as investment, both domestic and FDI (foreign direct investment), comes up. Food processing is an area that has the potential to take 'Make in India' to a new height. The government of India also recognises the potential of this emerging sector and has launched some far-fetched schemes to promote Make in India in food processing. Some of the major schemes are:

Pradhan Mantri Kisan Sampada Yojana (PMKSY):

It aims to develop a modern food processing infrastructure. PMKSY has been envisaged as a comprehensive package that will result in the creation of modern infrastructure with efficient supply chain management from farm gate to retail outlet. Under this scheme, 41 Mega Food Parks, 376 Cold Chain projects, 79 Agro-Processing Clusters, 489 proposals under the Creation/Expansion of Food Processing and Preservation Capacities (CEFPPC), 61 Backward and Forward Linkages Projects, 52 Operation Green projects, and 183 Food Testing laboratory projects have been approved across the country.

With an objective to stimulate the country's food processing sector, the Central Government launched SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) with an allocation of Rs 6,000 crore. The scheme was renamed PMKSY in August 2017. The funds were to be used for the creation of modern infrastructure and efficient supply chain management from the farm gate to the retail outlet in the period 2016–20. Later, the 'Pradhan Mantri Kisan Sampada Yojana (PMKSY)' was extended till March 2026 with an allocation of Rs 4,600 crore. It is supposed to help deliver greater returns to the farmers' income, creating huge employment opportunities, particularly in rural regions, reducing agricultural waste, raising processing levels, and enhancing the export of processed foods.



THE FOLLOWING SCHEMES HAVE TO BE IMPLEMENTED UNDER THE **PM KISAN SAMPADA YOJANA**

- Mega Food Parks
- Integrated Cold Chain and Value Addition Infrastructure
- Creation or Expansion of Food Processing or Preservation Capacities (Unit Scheme)
- Infrastructure for Agro-processing Clusters
- Creation of Backward and Forward Linkages
- Food Safety and Quality Assurance Infrastructure
- Human Resources and Institutions



Pradhan Mantri Formalisation of the Micro Food Processing Enterprises Scheme (PMFME): This centrally sponsored scheme was launched on 29 June 2020, under the Aatma Nirbhar Bharat Abhiyaan. The goal of the scheme is to improve the existing microenterprises in the unorganised segment of the food processing industry and formalise the sector. This scheme is currently being implemented in 35 states and union territories. It also includes US \$ 487.61 (Rs. 40,000) in financial assistance for working capital and the purchase of small tools for each member of the Self Help Group (SHG) involved in food processing operations. Over

1 lakh SHG members have been identified, and a total of US \$ 24.74 million (Rs. 203 crore) has been granted.

Production Linked Incentive Scheme for Food Processing Industry (PLISFPI): It aims to boost domestic manufacturing, increase exports, while supporting food manufacturing entities with stipulated Sales and willing to make investment for expansion of processing capacity and branding abroad to incentivise the emergence of strong Indian brands. PLISFPI, a central sector scheme, has been allocated a financial outlay of US \$ 1.32 billion (Rs. 10,900 crore) for the period of 2021–22 to 2026–27. It aims to assist in the emergence of global food manufacturing champions commensurate with India's natural resource endowment and to encourage Indian brands of food products in foreign markets. By 2026–2027, the scheme's implementation would enable an increase in processing capacity, resulting in a processed food output of US \$ 4.07 billion (Rs. 33,494 crore) and the creation of roughly 2.5 lakh jobs. The products covered in this scheme include ready-to-eat and ready-to-cook (RTE and RTC), marine products, fruits and vegetables, honey, desi ghee, mozzarella cheese, organic eggs, and poultry meat. The component for millet-based products was added to the scheme in 2022–23 with an outlay of Rs. 800 crore.





The sector already has a mark on the overall development of the Indian economy, with an 18.8% share of GVA (gross value added) in agriculture and allied sectors of the total economy. It generates 12.32% of the total employment while contributing 10.4% to India's exports. The total FDI received in the food processing sector from April 2000 until December 2022 was \$ 11.79 bn, while the FDI equity inflow during April 2021–March 2022 was \$ 709.72 mn. According to an estimate published on the official website of the National Investment Promotion and Facilitation Agency, the Indian Food Processing market is growing at a compound annual growth rate of 15.2% and is estimated to reach \$ 535 billion by 2025. Tier-II and Tier-III cities could mirror the trend visible in metropolitan areas, by consuming more processed food in the coming years.

It is obvious that the food processing industry is leading the way by linking Indian farmers to consumers in domestic and international markets. To promote the industry and attract domestic as well as global entrepreneurs, the Union Cabinet gave its approval to introduce the Production Linked Incentive (PLI) Scheme in Food Products with an outlay of Rs. 10,900 crore for Enhancing India's Manufacturing Capabilities and Enhancing Exports—Aatmanirbhar Bharat. Under the PLI Scheme for the Food Processing Industry, a total of 182 applications have been approved under different categories, including 30 applications (8 large entities and 22 SMEs) under the PLI Scheme for millet-based products. The implementation of the PLI scheme is likely to facilitate the expansion of food processing capacity by nearly INR 30,000 crore and create additional direct and indirect employment opportunities for about 2.5 lakh people by the years 2026–27. As per the data being reported by the PLIS beneficiaries, investments of about Rs. 4,900 crore have already been made under the scheme.

The Indian food processing industry provides ample opportunities for not only domestic but also foreign entities to come and establish industries here for the simple reason that this market offers them plenty of raw materials at reasonable prices, a fairly large consumer base in each segment, and favourable government policies. The retail segment contributes 70% of the total sales in the Indian food and grocery market, which is the world's sixth largest. The Indian food processing industry accounts for 32% of the country's total food market, is one of the largest industries in India, and is ranked fifth in terms of production, consumption, exports, and expected growth. The Indian gourmet food market is currently valued at US \$ 1.3 billion and is growing at a Compound Annual Growth Rate (CAGR) of 20 per cent.

Taking into account the different segments of the processed food market, dairy and vegetables provide us with a unique perspective on indigenous production potential. In dairy production, India enjoys the first spot globally. But when it comes to exports, it ranks 46th. Similarly, India is the second-largest veggie producer but 15th in exports. The production of cereals, fruits, and nuts in India too stands at number two in the world, but in exports, the country's rank is 5th and 25th, respectively. Overall, exports of the processed food category are increasing far faster than the unprocessed food category; secondary and higher processed foods are growing at a 5-6% CAGR, while unprocessed and primary foods are growing at a 1-3% CAGR. This is





interesting data that clearly shows India as an emerging production hub for processed food.

The Government of India has taken many steps to facilitate FDI in food processing. In the 2016 budget, 100% FDI was allowed in trading food products, including through e-commerce, in respect of food products manufactured or produced in India. Later, 100% FDI was permitted under the automatic route in the Food and Processing industry. Due to continuous efforts made by the government in this direction, the cumulative FDI equity inflow in the Food Processing industry reached USD 11.97 billion during the period April 2000 to March 2023.

The Ministry of Food Processing Industries (MoFPI) has launched a Centrally Sponsored scheme, the PM Formalisation of Micro Food Processing Enterprises Scheme (PMFME), to set up or upgrade 2 lakh micro food processing enterprises by providing financial, technical, and business support through credit-linked subsidies over a five-year period from 2020-21 to 2024-25. To fulfill its goal, this scheme will require an investment of Rs 10,000 crore. Along with this programme, the Central Government's One District, One Product (ODOP) initiative is in full swing in 713 districts across 35 states and UTs as part of the PMFME initiative. A total of 12 brands have been launched to promote various ODOPs under this scheme's branding and marketing vertical.

So far, 27,003 loans have been approved under the PMFME Scheme's credit-linked subsidy component. Food Processing has also been designated as a Special Focus Sector by the government in the National Manufacturing Policy. To capitalise on the unique organic character of agriculture in the North East states, one Mission Organic Value Chain Development in the North East Region (MOVCDNER) has been launched, under which farmers receive a subsidy of Rs. 31000/ha for three years under PKVY and Rs. 32500/ha for three years under MOVCDNER for various organic inputs, including organic fertilisers. Around 1150 agri startups have received financial assistance of Rs. 70.30 crore under the Innovation and Agri Entrepreneurship Development programme to stimulate innovation and start-ups in the agro sector.

There are powerful growth factors ensuring that the success story of food processing in driving the 'Make in India' campaign continues. Operation Greens approved 46 new projects during fiscal year 2022. In response to the Indian government's request to designate 2023 as the International Year of Millets, the FAO and the United Nations have designated the current calendar year as the International Year of Millets. A number of projects have been created as part of the Government of India's efforts to capitalise on the potential. A thriving food processing business might propel millets' marketing to new heights. Green shoots may already be seen all throughout. For example, per person, at-home consumption of millets has climbed to 14 kg from 3 kg, representing a nearly 30% increase in sales. Sugar's unit value increased by 15% in 2022, resulting in an increase in overall exports, and this favourable trend is likely to continue in 2023. Andrew Yule & Co. Ltd. (AYCL), the Government of India's sole public-sector firm in the tea industry, reached its highest-ever growth trajectory in 2022, with tea exports increasing by 431% over the previous year's exports. Because most rice types are high in GI and most Indians consume rice, popularising low-GI rice varieties will help to lessen or even reverse India's rising diabetes rate. Within the next five years, India hopes to quadruple its marine product exports to Rs. 1 lakh crore from Rs. 50,000 crore. The Government intends to build 10,000 new FPOs, which could act as a huge accelerator for farm-gate food processing and ultimately give 'Make in India' a big boost in food processing. □

Leveraging Vocal for Local

Amidst crisis at three different levels - health, economic and climate-change related, 'vocal for local' has emerged as a new course of development. A holistic and robust 'vocal for local' narrative could play a decisive role not only in strengthening rural India but also could feed into India's journey towards the third largest economy in the world.



Partha Pratim Sahu

Of late, the 'vocal for local' has become a focus of attention for policymakers, and India's policymaking is increasingly geared towards resuscitating economic growth and job creation through this strategy. Policies such as 'Make in India', 'Start up India', 'Skill India', 'ease of doing business', labour reforms, and so on are being initiated and adopted to boost the local or domestic economy. In addition to such efforts by the Central Government, individual states are also offering incentives and promotional measures towards a conducive investment climate to strengthen local economies. But there are many barriers to this goal, including a conventional

set of constraints relating to skills, technology and innovation, finance, infrastructure, marketing, export, and so on. The Covid-19 pandemic and the subsequent intense and prolonged lockdown have accentuated the livelihood crisis in rural areas, which was already reeling with agrarian distress, declining female participation rates, rising youth and educated unemployment, and the disappearance of livelihood avenues. During this pandemic, we also saw millions of migrants walking back to their villages. However, these adversaries have reiterated the role and importance of family and the local economy. The rural households learned to design and adopt a variety of coping strategies in response

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to the pandemic. Local entrepreneurs, especially the women-led, household-based, and SHG-based enterprises emerged as a safety net for the family. In such testing times, 'vocal for local' could be a key driver for a self-reliant India. It is time to build the local economy through the tools of micro and small enterprise and making Indian villages and small town thrive with entrepreneurial possibilities so that people can earn their livelihoods closure to their families and their communities.

The Rationale of Vocal for Local

The concept of 'Vocal for Local' saw a resurgence during a speech provided by our Hon'ble Prime Minister on 12 May 2020, which emphasised 'Think Local Go Global', self-sufficiency, and looking into our own neighbourhoods to create local goods with locally available resources. Of late, in the wake of pandemic-led socio-economic crises, the term 'vocal for local' as an emerging development paradigm and a practice has gained currency in India's development planning and policy. The five pillars of the Self-reliant India Movement were economy, infrastructure, governing system, vibrant demography, and supply chain. An attempt has been made by various stakeholders, including central and state governments, NGO, and the corporate sector, to formulate different policies and schemes envisaging 'vocal for local' to address issues of rural transformation, inclusion, and steady recovery. The larger goals are to promote the development of rural areas in tune with Gandhi's vision of being self-sufficient and self-reliant, based on local resources and using decentralized, eco-friendly technologies so that the basic needs of food, clothing, shelter, sanitation, health care, energy, livelihood, transportation, and education are locally met, and the goals of faster and more inclusive growth are realised.

India's emphasis on growth through exports is being bolstered by a focus on domestic demand and a reduction in its reliance on imports from other economies. India is also exploring ways to tap the potential of its huge domestic market, but it will not completely close itself off from the outside world. Therefore, a strategic balance needs to be maintained between self-reliance and opening up. India's vocal for local strategy will reposition the production systems to focus more on demand at home than abroad. This strategy will flourish if both supply and demand, i.e.,



household income and consumption expenditure, get boosted. Because the recovery in consumption has lagged behind production amid job losses and economic uncertainties brought about by the pandemic and subsequent lockdown.

The 'Vocal for Local' strategy is not just about made in India but also about the promotion of local brands, manufacturing, and supply chains and making local products competitive vis-a-vis global brands. The basic ideas of this is to promote and support small firms with limited resources and markets. It was also envisaged that 'Vocal for Local' would sensitise Indians to building an appetite for consuming local products and goods. It can open plenty of opportunities for small industries, handicrafts, traditional artisans, SHG-based enterprises, and so on, which mainly operate on local resource availability combined with entrepreneurial skills and limited market coverage. Entrepreneurial initiatives such as dairy firms, food processing units, hotels and restaurants, bakeries, jewellery manufacturing units, packaging industries, horticulture, etc. can emerge from local resources where people do not require high skill, promotion, or pricing strategies. Such enterprises can expand and scale up by looking into the needs and demands of the local market and also the availability of local resources, i.e., physical, human, and natural. Small firms need to design products that are best suited for the local market. Effective use of local resources will help them fix a competitive price. Small firms also need to design their marketing and product distribution to attract customers to buy their products.

The strategy was also promoted to preserve several indigenous crafts and practices passed down across generations of artisan communities. Crafts and artisans are one of the critical components of the rural non-farm economy. However, the vast majority of artisans operate at subsistence level and in informal work settings. Under Atmanirbhar Bharat, with its focus on vocal for local and products to be made in India and their promotion, there are schemes and programmes by multiple central

Government ministries. The Ministry of Textiles has launched an initiative to set up an e-commerce platform for artisans. The Ministry has tied up with India Post to leverage 4,00,000 Common Service Centres (CSCs), which have been primarily set up to offer government e-services in areas with limited availability of internet and computers, to enable artisans to go online with their products and become competitive.

Framework to leverage 'Vocal for Local'

The 'Vocal for Local' strategy could be an important ingredient of rural development policy to create healthy, environmentally resilient, and economically robust places. A comprehensive profiling or mapping of local resources and demand and supply at the village level should be the starting point of this strategy. The local economy needs to be strengthened by:

- efficient planning practices with strong coordination among various line departments working in the rural areas;
- skill and economic development planning covering the issues and opportunities for strengthening the local economy;
- aligning local plan with national and sub-national development strategy;
- local institutions, such as panchayats in coordination with other stakeholders creating a system of visiting local businesses periodically to discuss their needs, challenges, and opportunities and also helping both aspiring and existing enterprises to get benefits from schemes and programmes.

Local institutions can also help these enterprises to participate in chamber of commerce and other local business organisations' events to build connections with the business community for marketing and networking supports. Local institutions may also design contracting procedures, including incentives or requirements to buy local products and services. A local vendor programme can also be thought of to encourage and help local firms getting government contracts.

The Gram Panchayat Development Plan (GPDP) can play a direct role in identifying sectors, sub-sectors, and activities by their respective business potential and devise a mechanism to prioritise resource allocation, and helping those entrepreneurs and rural artisans who

suffered varying degree of losses during the pandemic times. Special Gram Sabhas may be conducted to flag up and discuss issues of local entrepreneurs and artisans. The panchayat secretariat can play a role of 'hyper local platform' or a 'point of contact' by connecting these entrepreneurs with various government schemes and programmes, and also help them to get access to support measures available on IT-enabled portals or websites. Thus, the Gram Panchayat Development Plan (GPDP) could be truly an effective tool to mainstream entrepreneurship and livelihood challenges in the rural development strategies and overall economic policies. Thus the Panchayati raj institutions, being the last mile institutions can play a significant role, with support from various stakeholders, such as SRLMs, NGOs, CSR affiliates, and create an ecosystem for strengthening this strategy.

A robust convergence framework is required to accelerate 'Vocal for Local'. For seeding and supporting local entrepreneurs, efforts need to be made so that these entrepreneurs get benefited from programmes of multiple ministries and departments such as MUDRA, PMFME, SFURTI, Van Dhan Vikas Kendra, One District One Product (ODOP), Cluster Development Programme (CDP), Common Facility Centres (CFCs), One Stop Facility Centre (OSFC), Producers Companies (PCs) and Farmer Producers Organizations (FPOs). In addition, a special package for traditional artisans and craftsmen under the PM Vishwa Karma Kaushal Samman was announced in the budget 2023-24 to integrate rural artisans with





the MSME value chain and enable them to improve quality, scale, and reach of their products. Hunar Haat, the Minority Affairs Ministry's flagship initiative to encourage master artisans, is playing a phenomenal role in making 'Vocal for Local' campaign a mass movement. The Prime Minister in various episodes of Maan Ki Baat has shared stories of local entrepreneurs, which has also created a big impact on 'vocal for local'.

A wide network of extension machineries needs to be created to provide regular and continuous mentoring, handholding, and counselling. Local entrepreneurs need mentoring and handholding not only on business and technical skill but also to deal with various psychosocial problems. Mentoring and handholding services may include digitisation and formalisation, availing of government loans, subsidies, or other benefits, ensuring compliance with local, regional, and national regulation, aiding partnerships with digital marketing platforms and digital payment platforms, etc. We have a large cadre of Community Resource Persons (CRPs) such as Kisan Sakhi / Krishi Sakhi, Pasu Sakhi (Livestock CRP), Doctor Didi, NTFP CRP, Matsya Sakhi (Fisheries CRP), Udyog Sakhi (Value Chain CRP), CRP-Enterprise Promotion (CRP-EP), Bank mitras, e-CRPs, Setu Didi (a change agent-bridging the gap between the services, service providers, and the beneficiaries and whose key responsibilities are making the benefits

of government schemes and entitlements reach their intended beneficiaries), Tablet Didi, Patrakar didi, and so on, implementing rural development schemes and programmes. The success of the CRP-led mentorship model lies on the methodology and curriculum adopted for imparting training to these CRPs. There is a need to improve the training and capacity development of these CRPs with a regular interval to appraise them about changes in the policies and programmes, and also impart them new skills to facilitate them to implement both on-farm and non-farm livelihood programmes more effectively.

Local entrepreneurs are also to be aggressively sensitised about IT-enabled portals, e-commerce platforms, and other digital tools. Adequate funding along with training and capacity development of rural entrepreneurs to navigate smoothly to a digital ecosystem is required. Such digital services may also be provided in Common Service Centres, or Me Seva Centres, or in Panchayat offices. Panchayats should collaborate with other stakeholders, such as officials of SRLMs, MSME-Development Institutes, District Industries Centres (DICs), MSE Facilitation Councils (MSEFCs) operating in rural landscape to leverage on these digitisation efforts. It is also important to enhance the access to information and support for these enterprises, and provide all support measures on a single platform.

In order to become self-reliant, it is essential to concentrate on local business opportunities using local resources, for which providing skill orientation is the need of the hour to improve the quality of the products. The hesitation to buy local products among consumers and the preference for branded and quality products are changing very fast. Vocal for local does not mean not buying products that are manufactured in other countries or stopping imports but rather giving sufficient importance to the local markets and protecting our local economy in such a way that we can be self-sufficient. 'Vocal for Local' is an important component of 'Make in India' strategy, which is designed to facilitate investment, foster innovation, build best-in-class infrastructure, and make India a hub for manufacturing, design, and innovation. 'Make in India' also recognises 'ease of doing business' as the single most important factor in promoting entrepreneurship.



To conclude, the ‘Vocal for Local’ initiative has the potential to promote self-reliance, boost economic growth, create job opportunities, reduce dependence on imports, and provide a much-needed boost to small, micro, and SHG-based enterprises in the country. However, to leverage this strategy, we have to focus on:

- a) A robust mix of quality, innovation, and pricing;
- b) Preserve and promote local skills and products;
- c) Generation of employment through localised manufacturing;
- d) Establish reliable and independent sources of local raw materials;
- e) Think local be global; and
- f) Usage of resources in a rational and integrated way.

Big Cabinet Decisions 16th August 2023

Promised & Delivered
PM VISHWAKARMA
SCHEME

₹1 lakh loan
will be given
under the
scheme

18 traditional
trades covered

To provide Skill
upgradation, Toolkit
incentive, **Marketing**
support

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Boosting Innovation Transforming Manufacturing

In the contemporary landscape, technology serves as a foundation for revolutionary changes spanning across various sectors; acknowledging the potency of innovation, it has become imperative to force initiatives that promote innovative practices and facilitate domestic production of goods. India occupies a prominent position as one of the world's largest market. There is a significant responsibility in propelling its sectors towards heightened production of goods and services within its borders. This strategic approach not only contributes to self-sufficiency but also entails developing and enhancing robust capacities and capabilities within the country.

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he 'Make in India' initiative introduced by the Government of India in 2014 is a visionary programme that seeks to transform India into a prominent manufacturing hub. This ambitious endeavour is multifaceted, with the primary objectives being the promotion of domestic manufacturing, the attraction of foreign investments, the encouragement of innovation, and the generation of opportunities.

One of the critical components of the initiative is the emphasis on easing the process of doing business in India, for which the Government has taken various measures to streamline regulations, simplify licensing procedures, and create a more investor-friendly environment. This has helped boost the confidence of both domestic and foreign businesses, encouraging them to set up manufacturing facilities in the country.

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As such, 'Make in India' is a transformative initiative launched by the Government of India. The programme focuses on promoting domestic manufacturing across various industries by encouraging local and foreign investments, encouraging innovation, and streamlining regulatory processes. 'Make in India' creates a conducive environment for businesses to establish and expand their manufacturing operations within the country. The initiative plays a crucial role in advancing India's economic development and self-reliance, ultimately contributing to the nation's progress on the global stage.

Furthermore, the programme focuses on fostering innovation and entrepreneurship. Special initiatives and incentives have been introduced to promote research and development activities across various sectors. By encouraging innovation, the government aims to enhance the competitiveness of Indian industries in the global market.

The initiative has shown some remarkable achievements over the years. It has attracted significant foreign direct investment (FDI) in the manufacturing sector, leading to the establishment of new industries and the expansion of existing ones. Additionally, several international companies have chosen India as a preferred destination for manufacturing, contributing to the country's economic growth and industrial development.

Make in India: Innovators Dream Come True!

The programme has been a dream come true for innovators for several compelling reasons. It places a high value on innovation as a driving force behind economic growth and competitiveness. The programme strives to foster an environment that nurtures innovation and offers unwavering support to entrepreneurs across

The manufacturing sector holds substantial importance in the Indian economy. India has become an appealing destination for foreign investments, particularly in manufacturing. Diverse industries like mobile phones, luxury goods, and automobiles, among others, have already established or are considering setting up manufacturing facilities in the country.



diverse sectors. Moreover, with India being one of the world's largest and rapidly expanding consumer markets, innovators can tap into this vast opportunity and reach millions of potential customers.

For innovators seeking to establish manufacturing facilities or research and development centres in India, the government's provisions of financial incentives, tax benefits, and subsidies have proven to be a significant advantage. The generous support further enhances their prospects in the country.

A key feature of the initiative is its encouragement of technology transfer and collaboration between Indian companies and global firms. This opens doors for innovators to access cutting-edge technologies and expand their capabilities, driving growth and progress in the process. As a result of the efforts of the programme,

Indian products and innovation have gained heightened recognition on the global stage, positioning India as a stronger contender in the international market.

Overall, the Make in India programme has created an enabling ecosystem for innovators and entrepreneurs to turn their aspirations of contributing to India's growth and development into reality. By focusing on innovation, streamlining business processes, providing market access, offering financial incentives, and fostering collaboration, the programme has paved the way for new ventures and propelled India's manufacturing landscape to unprecedented heights.

Manufacturing

The manufacturing sector is becoming a vital cornerstone in the country's economic expansion owing to the impressive performance of critical industries such as automotive, engineering, chemicals, pharmaceuticals, and consumer durables. Prior to the pandemic, the Indian manufacturing industry contributed around 16-17% to India's GDP, and it is anticipated to be one of the most rapidly growing sectors in the future.

The manufacturing sector holds substantial importance in the Indian economy, contributing 17% of the nation's GDP and providing employment to over 27.3 million workers. Recognising its significance, the Indian government has been actively introducing various programmes and policies aimed at boosting manufacturing growth. Their objective is to achieve a target of 25% of the economy's output from the manufacturing sector by 2025.

India has become an appealing destination for foreign investments, particularly in manufacturing. Diverse industries like mobile phones, luxury goods, and automobiles, among others, have already established or are considering setting up manufacturing facilities

in the country. The potential of India's manufacturing sector is significant, with projections indicating it could reach a remarkable one trillion dollar by 2025.

The introduction of Goods and Services Tax (GST) has further enhanced India's attractiveness, creating a unified market with a GDP of \$ 2.5 trillion and a massive population of 1.32 billion people, which is a major attraction for investors.

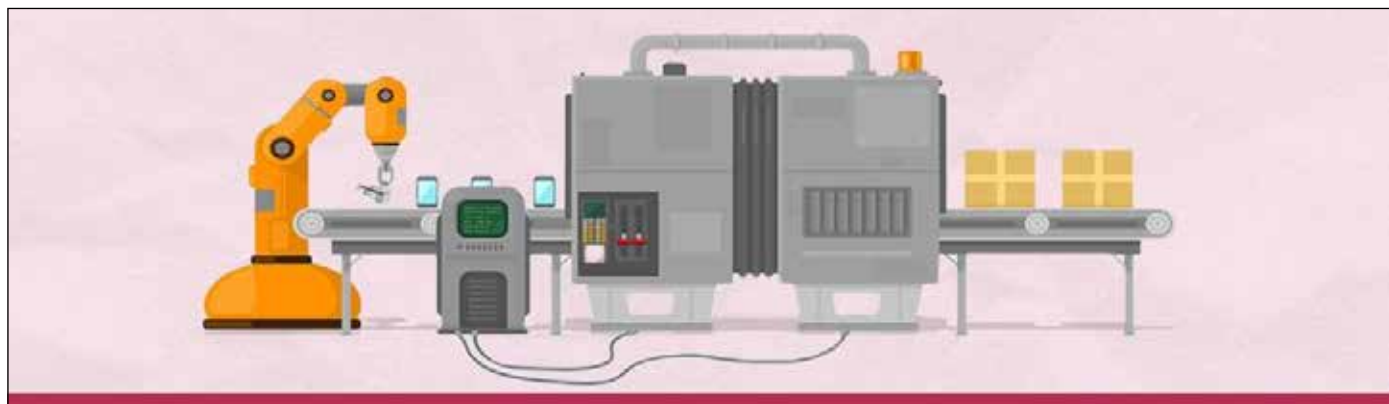
According to the Indian cellular and electronics association (ICEA), the country can expand its cumulative manufacturing capabilities for laptops and tablets to an impressive \$ 100 billion by 2025, primarily through strategic policy interventions. These factors combined make India a compelling and promising hub for investment in the manufacturing sector.

In 2022, the Indian tech industry experiences a remarkable surge, leading to an impressive total revenue of \$ 227 billion. The nation proudly boasts a staggering 108 unicorns, signifying the strength and growth of its startup ecosystem as a testament to its commitment to fostering entrepreneurship.

Additionally, the Indian startup ecosystem reached new heights, witnessing a record-breaking 240 mergers and acquisition deals before September, amounting to a staggering \$ 148 billion. This impressive performance underscores the vibrant and dynamic nature of a country's entrepreneurial landscape, making India a prominent player in the global startup and tech arena.

India assumes the chair for global partnership on AI

Today, India has taken on the prestigious role of chair of the Global Partnership on Artificial Intelligence (GPAI), an esteemed international initiative dedicated to promoting responsible and human-centric



development and utilisation of artificial intelligence. This significant achievement comes shortly after India assumed the presidency of the G20, a prominent forum comprising the world's major economies held in Bali, Indonesia. India's leadership in both the GPAI and G20 demonstrates the country's growing influence in shaping global policies related to AI and fostering collaboration among nations to ensure AI's ethical and inclusive development for the betterment of humanity.

The global partnership on artificial intelligence comprises 25 countries, including prominent nations such as, the US, the UK, the EU, Australia, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, the Republic of Korea, and Singapore. India became a part of this esteemed group in 2020, joining as one of the founding members.

GPAI represents a pioneering initiative aimed at providing a deeper understanding of the challenges and opportunities associated with artificial intelligence. The alliance operates in close cooperation with various partners and international organisations, leveraging the expertise of industry leaders, civil society representatives, government officials, and academic scholars. Their collective efforts are dedicated to promoting the responsible advancement of AI while ensuring it remains grounded in principles such as innovation and economic growth.

Sectors Pushing Make in India Programme

Automotive Sector

The automotive sector has been a pivotal force in driving the success of the Government's 'Make in India' initiative. Renowned global car manufacturers, such as Renault, Suzuki, Honda, and Volkswagen have already established their manufacturing bases in the country, with more big names like Tesla planning to do so in the near future.

To propel further growth, the industry has set an ambitious target of becoming a \$ 300 billion industry within the next five years, four times its current value of \$ 74 billion. This expansion plan aims to create up to 65 million job opportunities, contributing significantly to employment generation in the country. Meeting these ambitious objectives will enhance the sector's manufacturing competitiveness and contribute to a cleaner and greener future, aligning with India's

commitment to sustainability and environmental conservation.

Through these strategic initiatives and aligned objectives, India aspires to emerge as a global leader in the automotive industry, forging a robust and sustainable growth trajectory while paving the way for a cleaner and greener tomorrow.

Renewable Energy

India has indeed recognised the transformative potential of renewable energy, with a particular focus on solar energy. The rise of the renewable energy industry in India has been nothing short of remarkable. The country has made significant strides in embracing renewable energy sources as a key component of its energy mix, aiming to reduce carbon emissions, combat climate change, and enhance energy security.

Solar energy, in particular, has played a central role in this transformation. India's vast geographical expanse and favourable climatic conditions make it an ideal location for solar power generation. The government has introduced various policies, incentives, and subsidies to promote solar energy adoption and attract investments in the sector.

As a result, India has witnessed substantial growth in its solar energy capacity over the years. The country has become one of the world's leading solar energy producers, contributing significantly to the global effort to transition towards cleaner and more sustainable energy sources.

Electronics Hardware Manufacturing

Electronics hardware manufacturing is vital to India's flagship initiatives, 'Make in India' and 'Digital India'. These programmes aim to strengthen domestic manufacturing capabilities and propel India into a digitally empowered society and knowledge economy.

As a critical pillar of these initiatives, the electronics hardware manufacturing sector contributes significantly to India's economic growth and technological advancement. The country aims to achieve greater self-sufficiency, generate employment opportunities, and attract foreign investments by encouraging local production.

This strategic focus on electronics system design and manufacturing reinforces India's position as a

preferred destination for electronics production and enhances its standing in the global electronics market. Embracing this sector's potential, India is well on its way to becoming a technologically advanced and digitally empowered nation.

The policy initiative taken for promotion of the sector expects to reach a turnover of \$ 400 billion and create employment for 28 million people as well as to increase exports from \$ 8 billion to \$ 80 billion.

Food Processing

Food processing is a burgeoning sector in India, emerging as a critical component in the nation's progress by bridging the realms of agriculture and industry. This sector embodies the synergy of two vital pillars of development. Operating within the framework of the Make in India initiative, the Ministry of Food Processing is actively engaged in supporting 135 integrated cold chain projects alongside the successful operationalisation of 7 Mega Food Parks.

Each of these food parks holds the potential to generate 5,000 employment opportunities while imparting benefits to around 25,000 farmers. This process exemplifies the sector's remarkable role in job creation and farmer empowerment.

In essence, food processing is on a trajectory to become a sunrise sector in India, strategically weaving together agriculture and industry to propel the country's development trajectory forward. It is a prime example of how economic growth, job creation, and agricultural advancement can harmoniously converge to shape a more prosperous future.

AI & Robotics

AI and Robotics are paramount sunrise sectors on a global scale. This technological duo is orchestrating a revolution across diverse industries, gaining substantial traction over the past few years. The Government of India has displayed a determined commitment to advancing this sector through a multitude of strategic initiatives.

In March, a momentous stride was taken with the inauguration of India's inaugural artificial intelligence and robotics park in Bengaluru. This visionary endeavour is backed by a seed capital of Rs 230 crore. The ARTPARK and AI Foundry notably unveiled a \$ 100 million venture fund. This fund is designed to propel innovation in the

fields of AI and robotics originating in India.

This orchestrated effort underlines the Government's proactive stance towards nurturing the growth of these transformative technologies. By cultivating a supportive ecosystem, India aims to harness the potential of AI and robotics, fostering innovation, economic progress, and global competitiveness. This initiative positions India at the forefront of the AI and robotics revolution, contributing significantly to the nation's technological advancement and global impact.

Launch of ONDC

The Open Network for Digital Commerce (ONDC) is aligned with the Make in India initiative, synergising efforts to boost domestic manufacturing. ONDC serves as a catalyst for enhancing India's self-reliance within the digital commerce sector.

ONDC's role within the framework of Make in India is pivotal, aiming to establish a collaborative and all-encompassing digital commerce ecosystem. By advocating for local innovation and production, ONDC empowers Indian enterprises and entrepreneurs, ultimately contributing to overall economic advancement.

The harmonisation of ONDC and Make in India positions India strategically to harness its digital potential, stimulate economic progress, and fortify its position in global digital commerce. This amalgamation underscores India's dedication to self-sufficiency, innovation, and forward momentum in digital commerce.

Conclusion

In conclusion, initiatives like 'Make in India' underscore India's resolute dedication to nurturing economic progress, fostering innovation, and achieving self-reliance. By strategically encouraging domestic manufacturing, attracting investments, and facilitating business expansion, India positions itself for heightened global prominence across diverse sectors. The amalgamation of technology, innovation, and localised production propels India towards a future characterised by increased capabilities, economic well-being, and self-sufficiency. These initiatives pave the way for India to emerge as a significant global player, spearheading innovation, job generation, and sustainable advancement. □

Renewable Energy Making India Self-Sufficient

Sustainable development is possible through the use of sustainable energy and by ensuring access to affordable, reliable, sustainable, and modern energy for citizens. Strong government support and an increasingly favourable economic situation have pushed India to be one of the top leaders in the world's most attractive renewable energy markets. The Government has designed policies, programmes, and a liberal environment to attract foreign investments and ramp up the country's presence in the renewable energy market at a rapid rate.



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he words voiced by the Prime Minister Narendra Modi last year in August 2022, while addressing a programme in Gandhi Nagar (Gujarat), are still echoing in my ears, "India wants to be Aatmanirbhar in energy sector in the Amrit Kaal of the next 25 years".

India is the fastest-growing economy globally and has overtaken the UK to become the 5th largest economy in the world. The country imports more than 80% of its crude oil for energy requirements from outside sources and is the 4th largest emitter of CO₂. India has a target to cut carbon emissions by 1 billion ton by 2030 and achieve net-zero emission status by 2070. As India needs

to work on the carbon-intensive sector, it is taking steps in the same direction by using new technology and working on it to achieve net zero emissions, and also the goal of integrating 500 GW of non-fossil fuel-based capacity by 2030.

If we cast a glance at the current scenario, India stands 4th globally in Renewable Energy Installed Capacity (including Large Hydro), 4th in Wind Power capacity, and 4th in Solar Power capacity (as per the REN21 Renewables 2022 Global Status Report). The country has set an enhanced target at the COP26 of 500 GW of non-fossil fuel-based energy by 2030. In this context, Renewable energy sources play a vital role in

securing sustainable energy with lower emissions. The primary objectives for deploying renewable energy in India are to advance economic development, improve energy security, improve access to energy, and mitigate climate change. Sustainable development is possible through the use of sustainable energy and by ensuring access to affordable, reliable, sustainable, and modern energy for citizens. Strong government support and an increasingly favourable economic situation have pushed India to be one of the top leaders in the world's most attractive renewable energy markets. The Government has designed policies, programmes, and a liberal environment to attract foreign investments and ramp up the country's presence in the renewable energy market at a rapid rate. It is anticipated that the renewable energy sector can create a large number of domestic jobs over the following years.

Why Renewable Energy

01

Sustainable: Energy generated from renewable sources is cleaner, greener, and more sustainable.

02

Employment opportunities: The inclusion of newer technology simply means more employment opportunities for the working population of the country.

03

Market assurance: From an economic point of view, renewable sources provide the market and revenue assurance that no other resources can provide.

04

Power supply: Providing 24*7 power supply to 100% of the households and sustainable forms of transport, are some of the goals that can only be achieved through sustainable power that comes from renewables.

After understanding the significance of Renewable Energy, let us now delve deep into the Initiatives taken by the Central Government to promote it: The flagship National Solar Mission, launched in 2010, aimed at installing 100 GW of solar power by 2022, which was later increased to 450 GW by 2030. The Centre has also launched a wind energy programme with the target of achieving a capacity of 60 GW by 2022. These ambitious targets have been instrumental in promoting renewable energy adoption in the country. India's renewable energy sector has also attracted significant foreign investment, with companies from around the world investing in solar and wind power projects in the country. According to the Ministry of Commerce and Industry, foreign direct investment (FDI) in India's renewable energy sector stood at \$ 251 million in the third quarter of the financial year (FY) 2023, with the top investing countries being Singapore, Mauritius, the Netherlands, and Japan. The decreasing cost of solar and wind power has been a significant driving force behind India's renewable energy growth. According to a report by the Institute for Energy Economics and Financial Analysis (IEEFA), the cost of solar power in India has fallen by 84% since 2010, making it cheaper than coal-based power in most parts of the country. Similarly, the cost of wind power has fallen by 49% in the past decade, making it one of the most cost-effective sources of energy in India.

India's success in renewable energy can also be attributed to the rapid technological advancements in the sector. The country is a pioneer in floating solar technology, with the world's largest floating solar power plant located in Kerala. The plant has a capacity of 500 kilowatts and is expected to generate 7.5 lakh units of electricity per year. India is also home to the world's largest solar park, the Pavagada Solar Park in Karnataka, which has a capacity of 2 GW. The park has attracted significant investment, with companies such as Softbank, Canadian Solar, and Adani Green Energy investing in the project.

The Production Linked Incentive Scheme (PLI) is another feather in the cap of the Government with respect to enhancing the importance of the manufacturing sector. The scheme proposes a financial incentive to boost domestic manufacturing and attract large investments in the electronics value chain,



including electronic components and semiconductor packaging. Further, the Pradhan Mantri-Kisan Urja Suraksha evam Utthaan Mahabhiyan, launched in 2019, aims to provide financial and water security to farmers through harnessing solar energy capacities of 30,800 MW (Revised in 2020) by 2023.

Solarisation of water pumps is a step in providing distributed power at the doorstep of the consumers. The Ministry of New and Renewable Energy on its website also hosts Akshay Urja Portal and India Renewable Idea Exchange (IRIX) Portal, which promotes the exchange of ideas among energy conscious Indians and the Global community.

Other important steps taken by Government are as under:

- Permitting Foreign Direct Investment up to 100 per cent under the automatic route.
- Waiver of inter-state transmission charges on transmission of electricity generated from solar and wind sources of energy, for projects commissioned up to 30 June 2025.
- Setting up of Ultra Mega Renewable Energy Parks to provide land and transmission to renewable energy developers on a plug and play basis.
- Laying of new transmission lines and creating new sub-station capacity under the Green Energy Corridor Scheme for evacuation of renewable power.
- Standard Bidding Guidelines for tariff based competitive bidding process for procurement of Power from Grid Connected Solar PV and Wind Projects.

- Announcement of National Green Hydrogen Mission.
- ESO targets as a percentage of total consumption of electricity has been laid down for the year up to 2029-30.
- 'Must-run' status to solar and wind power as per clause 5.2(u) of Central Electricity Regulatory Commission Regulations, 2010.

If we look at our Government's key focus for the next five years, India has the twin challenge of providing more as well as cleaner energy to the masses.

Obviously, it should focus on getting into the manufacturing of the solar panels under the AtmaNirbhar Bharat initiative, as the demand is to create jobs as well as supply decentralised energy to all households in India. Also, there is a need to develop the entire supply chain of all the components outside of the manufacturing sector. Methanol and Biomass: Looking for other alternatives, such as methanol-based economy and biomass.

Bio-CNG vehicles with 20% blending in petrol is also a target the Government has been chasing. The Conversion of energy from **Biomass** is a considerable option, as it will clean the cities as well as reduce our energy dependence. In fact, the fuels produced from biomass have a high calorific value and are cleaner than traditional biomass.

Hydrogen based FCV: Hydrogen in technology is likely to change the landscape of renewables, shifting towards Hydrogen Based Fuel Cells Vehicles (FCV) is another area of focus.

Grid Integration: It is the practice of developing

efficient ways to deliver variable renewable energy (RE) to the grid. Identifying the demands that are in tune with the characteristics of the renewables, focussing on the characteristics of the renewables mainly solar and wind, and considering their variability as a strength rather than a weakness.

According to the latest report from the International Energy Agency (IEA), India's installed renewable energy capacity will reach 174 GW in 2023, accounting for about 37% of the country's total energy supply. The report indicates that India has exceeded its target of installing 175 GW of renewable energy capacity by 2022, with a projected capacity of 280 GW by 2025. While describing India's achievements on this front as 'unprecedented', a recent report called 'Low-cost finance for energy transition,' released by the International Renewable Energy Agency (IRENA), recognised and praised India's outstanding progress in expanding its renewable energy capacity.

However, all the grass in the pasture is not green. The country's power distribution companies, known as DISCOMs, have struggled to integrate renewable energy into the grid due to a lack of grid infrastructure and limited storage capacity. This has led to the curtailment of renewable energy output, where power generated by wind and solar projects is wasted due to a lack of demand or transmission infrastructure.

Other Challenges with Renewable Energy are: Integration with the Main Grid: Integrating renewables with the main grid is an area India needs to work on. To accelerate the uptake of renewables, storage and battery solutions are needed in large quantities. Cost factor: Renewable resources are slightly more expensive than their conventional counterparts.

24*7 Power Supply: A sustainable, round-the-clock power supply, along with the storage system, is a big challenge ahead. Agricultural Sector: Much power is consumed in the agricultural sector. The challenge is to provide sufficient power and energy to every household and to the agricultural sector as well.

The million-dollar question now is: how to realise India's dream of energy independence? A study titled 'India's Energy Vision 2030', published in 2022, underscored the need for a dramatic transformation

across the entire energy value chain to realise this vision. India will need to increase its pace of shifting to clean energy to meet this gap. The country needs to collaborate with private and government players and devise the required policies. This can be implemented by maximising new technologies, particularly green hydrogen. Renewable energy output can be scaled up by introducing reforms to improve investors' confidence, removing entry barriers such as difficulty in land acquisition, boosting domestic manufacturing of photovoltaic cells and wind-equipments, and incentivising the adoption of roof-top solar. The debt incurred by power distribution companies (DISCOMS) is a problematic aspect of the supply chain in terms of its finances. The DISCOMS are characterised by negative net worth and huge debt amounting to crores. Electricity theft and technical losses can be reduced by shifting towards high-voltage direct current transmission lines for long-distance transmission, imposing stricter penalties for transmission network developers upon default and expediting the development of inter-state transmission lines. Another way to achieve this is by establishing a smart grid, the Smart grids can increase grid reliability, reduce transmission, and distribution losses, optimise demand side management, support renewable integration, improve self-healing capacity, and ensure optimal grid usage.

India's renewable energy success has also had a positive impact on the country's environment. The reduction in coal-based power generation has led to a significant decrease in greenhouse gas emissions, improving the country's air quality and mitigating the effects of climate change. India's leadership in the renewable energy market has not gone unnoticed, with the country attracting international recognition and accolades. The International Renewable Energy Agency (IRENA) awarded India the Innovator of the Year Award 2022 for its efforts in promoting renewable energy adoption. India's success has also inspired other countries to follow suit. The country's experience has been shared with other developing nations through international forums, including the International Solar Alliance and the UN Climate Change Conference.

Keeping in view the achievements in the field, it becomes highly imperative to address the challenges facing us. With this view, the Government has launched

a number of initiatives aimed at improving grid infrastructure and storage capacity. The Green Energy Corridor project, launched in 2013, aims to improve the transmission infrastructure for renewable energy and increase the capacity of grid-connected renewable energy. Also has been launched National Energy Storage Mission with a target of installing 40 GW of storage capacity by 2025. The Government is also promoting the use of innovative technologies such as demand response, where power consumption is adjusted based on grid requirements. This can help address the issue of renewable energy curtailment and increase the efficiency of the grid.

Thus, India has emerged as a leader in the global renewable energy market, thanks to a combination of government policies and initiatives, technological advancements, and foreign investments. With a renewable energy capacity of 174 GW installed and growing, India has exceeded its targets and is on track to achieve even greater success in the coming years. With a view to accelerating the progress, the following steps need to be taken:

Identification of areas: Renewable resources, especially wind, cannot be set up everywhere, they require specific location. Identification of these specific locations, integration of these with the main grid and distribution of powers; a combination of these three is what will take India forward.



Exploration: More storage solutions need to be explored.

Agriculture Subsidy: Agricultural subsidies should be rectified in order to ensure that only the required amount of energy is consumed.

Hydrogen fuel cell-based vehicles and Electric vehicles: These are the most suitable options when it comes to shifting towards renewable sources of energy, that's where we need to work upon.

To infer, if India has to achieve energy security for sustained growth and development and safeguard our interests from global geo-political events that could influence the price and availability of oil, we would need an Energy Revolution, something similar to the Green Revolution. The present Government has committed to a change towards renewable, but it would need an equivalent commitment from the State and the Local Governments. In short, a shift towards renewables has to become a mass movement; however, unlike the Green revolution, which was limited to a few states of Punjab, Haryana, and Western Uttar Pradesh, the Energy revolution has to become a Pan-India mass movement. An added benefit of moving towards renewables would be the positive impact on climate change and the achievement of long-term sustainable growth targets for the global economy. The world cannot meet its climate targets without India's support and contribution. India must therefore be ready to seize this leadership opportunity. With this objective, NITI Aayog is coming up with Energy Vision 2035 to achieve India's clean energy goals. A Diverse energy mix is what India needs to focus on. No doubt, solar and wind have a lot of potential; hydrogen would be a game changer in Indian energy transition space. A collaborate effort towards ensuring greater integration, developing infrastructure and ensuring a conducive fiscal and regulatory landscape will be instrumental in attracting investments across the Energy sector. We sincerely need to emulate the words of The President of Eurosolar and General Chairman of the World Council for Renewable Energy, Hermann Scheer "Our dependence on fossil fuels amounts to global pyromania, and the only fire extinguisher we have at our disposal is, renewable energy." □

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