REDEFINING RURAL LANDSCAPES: STARTUPS PAVING THE WAY FOR INCLUSIVE DEVELOPMENT

Startup ecosystem of India has witnessed remarkable growth in the recent years, with a surge in innovative ventures addressing diverse challenges. India is the **3rd largest startup ecosystem** in the world, with more than 1 lakh registered startups (DPIIT - Startup India). Traditionally cantered in urban hubs, the startup culture is now permeating the hinterlands, ushering in a new era of innovation and economic transformation. This phenomenon reflects a broader trend of decentralisation and inclusivity, where startups are leveraging technology to bridge the rural-urban divide.

The startup ecosystem, especially in rural areas, has seen unprecedented growth with a big Government push since 2014, when the government launched schemes like **Startup India, Atal Innovation Mission (AIM), Meity Startup Hub (MSH), BIRAC, and DST-supported schemes**, among others. Many schemes were curated, especially to encourage rural entrepreneurship. Some of these schemes are listed below:

1. Atal Community Innovation Centres (under Atal Innovation Mission) - AIM's ACIC initiative was launched in 2020, with the objective of creating community innovation centres for rural entrepreneurs. The initiative encourages grassroots innovation and directly supports community-based entrepreneurs by establishing enabling infrastructure in Academic Institutions and NGOs. AIM has established 14 ACICS across the country that have cumulatively supported more than 200 community-based startups.

2. Start-up Village Entrepreneurship Programme (SVEP)- Ministry of Rural Development is implementing SVEP as a sub-scheme under the *DAY-NRLM* with the objective of helping the rural poor to set-up enterprises at the village level in non-agricultural sectors. A total of 1,97,168 enterprises across 23 States/UTs have been supported so far.

3. Skill India Mission - Under this mission, Ministry of Skill Development and Entrepreneurship (MSDE) has been delivering skills through various schemes viz. the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and the National Apprenticeship Promotion Scheme (NAPS), among others, majorly to rural youths across the country. Third party evaluations of these schemes have shown that 70.5% of PMKVY 2.0 beneficiaries (2016-20) received placement in their desired skill sector.

4. ASPIRE- The scheme implemented by Ministry of MSME aims to provide training and incubation support to prospective entrepreneurs in agro-rural sector through Livelihood Business Incubators (LBIs). As of FY 2022, 61 LBIs have become functional in the country. A total of 54,801 people has been trained in LBIs across the country, out of which 15169 trainees became self-employed and 8928 trainees got employed in other entities.

Startups in Rural India

Internet is vital for startup growth. India's low data rates (USD 0.17 for 1 GB) benefit over 50% users - 40 crore rural residents. By 2025, among 90 crore active internet users, 56% will be from rural areas. Riding on the digitisation wave, India has seen growth in startups catering to rural needs. Digitizing rural areas aids agri-solutions, financial inclusion, and e-governance supported by Bharat Net, CSCs, Digital India, PMGdisha, and private telecom. With a customer base of 100 crore, rural India presents a massive opportunity for startups, especially in sectors like agritech, food processing, edtech, skill development, e-commerce, health-tech, renewable energy, handicrafts, and traditional arts, and fintech.

Challenges for Rural Startups

1. Connectivity with Suppliers in Urban Areas: Rural startups encounter connectivity challenges with urban suppliers and partners due to limited infrastructure like transport and communication networks. This gap causes delays and complexities, impacting operational efficiency.

2. Access to Financing: Rural startups face hurdles securing affordable financing due to remote locations. Banks cite high risk and lack of collateral, compounded by limited rural banking services, hindering capital access for growth and innovation.

3. Lack of Support System and Ecosystem in Rural India for Startups: Despite government initiatives, rural startups lack vital support structures like mentorship, networks, and incubators, hindering their growth. The absence of experienced mentors and incubators nearby complicates guidance, resource access, and scaling for rural entrepreneurs.

4. Difficulty in Finding Early Adopters in Rural Areas: Identifying and convincing early adopters is a critical phase for any startup. In rural areas, the challenge is amplified due to limited communication channels, lower income, and lower digital penetration. The traditional methods of brand communication such as word-of-mouth, community engagement, and local events become crucial.

5. Limited Funding Mechanism in Rural Areas: Rural startups face funding challenges due to urban-centric investment. Major cities like Bangalore, Delhi, Mumbai receive 92% funding, leaving rural areas underserved, hindering growth, and forcing talent migration.

Conclusion

Rural startups face migration to urban innovation hubs, but building a robust innovation ecosystem in rural areas is crucial. This sustains early-stage challenges and supports startup growth, aligning with Viksit Bharat's vision for sustainable enterprises and job creation. Fostering rural startup growth is vital for achieving India's USD 10 Trillion goal by 2030.

REFORM, PERFORM & TRANSFORM THROUGH AGRI-STARTUPS

India's startups innovate, introducing new ideas and evolving into sustainable enterprises, contributing to the global startup landscape. With 90 unicorns, India ranks among the top three unicorn hubs globally, a testament to its thriving entrepreneurial ecosystem fostered by initiatives like 'Startup India'.

- In Indian agriculture, startups emerge as hope for farmers, driven by a new wave of entrepreneurs aiming to transform the sector with technological advancements.
- With the goal of increasing farmers' income, the Government of India consistently seeks avenues to enhance agricultural production, food processing, and marketing by integrating cutting-edge technologies and innovations. This initiative presents substantial prospects for food and agricultural startups in the nation.
- As of December 2022, 1055 startups were chosen by Knowledge Partners (KPs) and Agribusiness Incubators (ABIs) in India.
- The Department of Agriculture and Farmers Welfare (DA&FW) has released Rs. 6317.91 lakh as grants-in-aid in instalments to the relevant KPs and R-ABIs until December 2022, up from Rs. 3790.11 lakh in January 2022 (MoA&FW, GOI, 2022).

Potentialities of Agri-Startups

- Indian economy relies on agriculture, engaging 55% population and contributing 18% GDP. Recent years saw startups transform the sector, drawing young entrepreneurs for secure and profitable ventures in agriculture, a critical and enduring economic cornerstone.
- A surge of budding entrepreneurs and emerging startups in the country is leading the charge in agricultural sectoral growth. Their mission is to leverage technology and instigate positive reforms.
- Agricultural practices have evolved with technology like hybrid seeds, AI, satellite monitoring, big data, and mobile apps, boosting productivity and farm incomes at every stage of farming.

Government's Proactive Policies to Empower Startups

Make in India: Launched in September 2014, and it aims to position India as a global design and manufacturing hub. Through modern and user-friendly approaches, it has led a substantial overhaul, attracting investments, promoting innovation, developing skills, safeguarding intellectual property, and establishing advanced manufacturing infrastructure.

Startup India: January 2016's 'Startup India Action Plan' introduced 19 points, driving policies to foster innovation, startup growth, and jobs. It spurred new companies with innovative ideas, emphasizing simplification, funding, incentives, industry-academia ties, and sustainable development.

Atal Innovation Mission (AIM): The Atal Innovation Mission (AIM), launched in 2016, underscores India's commitment to innovation and entrepreneurship. AIM's core comprises two components: SETU for self-employment promotion and fostering talent, and Innovation Promotion aimed at generating innovative ideas. It allocates Rs. 10 crores over 5 years to each Atal Incubation Centre, encompassing capital and operational costs.

NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC): NewGen IEDC has a mission to 'promote knowledge based and technology-driven startups by harnessing young minds and their innovation potential in an academic environment'. This programme is launched by the National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science & Technology (DST), GOI in 2017. It supports up to 20 new projects annually within educational institutions by providing one-time financial aid, capped at Rs. 25 lakhs.

Innovation & Agri-Entrepreneurship Programme: In 2018-19, RKVY-RAFTAAR launched "Innovation and Agri-Entrepreneurship Development," supporting startups in agriculture.

- Financial aid and incubation aim to boost farmers' income via opportunities and youth employment with guidance from Knowledge Partners and Agribusiness Incubators.
- Approximately 3500 entrepreneurs have been taught under the agri-entrepreneurship initiative from 2019-20 to 2022-23 (as of 31 December 2022).
- 1102 startups in agriculture and allied sectors have received financial assistance because of these skilled entrepreneurs. An amount of Rs. 66.83 crore is released in instalments for startup finance to the relevant KPs and RABIS (MoA&FW, 2023).
- Indian agri-tech startups focus on e-commerce, offering farm-fresh produce. They use modern tech to boost yields and efficiency, covering various aspects from inputs to outputs. Startups innovate for sustainable solutions, aiding farmers' challenges.
- Agri-tech includes biogas, cold storage, weather tools, and more. It is reshaping Indian agriculture. Internet, smartphones, startups, and Govt. efforts drive tech adoption in farming, promising change.
- In November 2021, DPIIT recognized 58,650 startups. Among these, 7,241 focus on agriculture - there are 2,594 in food and beverage, 1,485 are agri-tech, 474 organics, 1,774 in food processing, and others (NAAS, 2022).

The Startup India initiative aims to foster innovation and entrepreneurial opportunities. The DPIIT has conducted States' Start-up Ranking Exercises since 2018. **Karnataka and Maharashtra** together contribute around 50% of the country's agri-tech startups, with Bengaluru, Mumbai, and Delhi & NCR serving as significant tech-hub locations. Similarly, these regions dominate the agri-tech sector, with Haryana, Tamil Nadu, and Gujarat following suit. Gujarat, despite a 7% share in agri-tech startups, excels as **the 'best-performing state'** in the overall Indian startup ecosystem. Gujarat and Karnataka were highlighted as the top-performing states in supporting startup ecosystems.

Ecosystem Supporting Agri-tech Startups: Incubators/Accelerators

Enablers such as Incubators and Accelerators play a crucial role as key partners within the broader startup ecosystem, supporting and expediting the successful development of businesses. In the agri-tech startup ecosystem, partnerships between accelerators, incubators, and mentors, backed by robust policies and schemes, are crucial for startup growth. This synergy intends to offer extensive technical aid and reduce startup incubation periods. Besides bridging knowledge, digital, and financial divides among farmers, agri-tech startups confront hurdles involving personnel, procedures, and technology.

Few important accelerators and incubators supporting the agri-tech sector in India are indicated below:

- **a-IDEA:** It is an agricultural Technology Business Incubator (TBI) by ICAR-NAARM, established in 2014, funded by the Indian Government's Department of Science and Technology. a-IDEA supports agri-preneurs with capacity building, mentorship, networking, and advisory aid to foster scalable agri-business ventures
- **AGRI UDAAN:** It is India's first Food & Agribusiness accelerator, launched by NAARM, a-IDEA, and CIIE-IIM(A) in 2015, has made a significant impact. Focus areas include sustainable inputs, precision/smart agriculture, innovative food technology, and supply chain technology. Notable incubates include Gen Agri-tech, Delmos Research, Agricx, Intello Labs, Smoodies, Jivabhumi, and others. It has mentored 100+ startups, accelerated 38 startups, and raised 117 crore investment (a-IDEA, 2023).
- **Centre for Innovation, Incubation and Entrepreneurship (CIIE):** CIIE, stemming from IIM Ahmedabad, fuels innovation-led entrepreneurship in India. It activates startup ecosystems across various Indian regions, aiming to support early-stage entrepreneurs through partnerships, mentorship, funding, and collaborations. Notably, CIIE teams up with a-IDEA, NAARM's business incubator in Hyderabad, to launch a food and agribusiness accelerator.
- **International Crops Research Institute for the Semi-Arid Tropics (ICRISAT):** It partnered with the DST to establish an agribusiness incubator (ABI) with the support of DST's National Science and Technology Entrepreneurship Development Board. ABI fosters technology development and commercialisation through public-private partnerships. ICRISAT'S Innovation Hub (iHub) serves as a collaborative platform for agricultural tech entrepreneurs, scientists, and experts to generate cutting-edge ideas across the agriculture value chain.
- **Agri-Tech Startup Accelerator:** The CIE at IIIT, Hyderabad and the National Institute of Agricultural Extension Management (MANAGE) have introduced an accelerator programme tailored for agri-tech startups following a memorandum of understanding. The objective of this initiative is to recognise, assist, and enable early-stage enterprises leveraging cutting- edge technologies and innovations to tackle specific challenges within the realm of Indian agriculture.

The 2023 Union Budget prioritized agri-startups via increased allocations for rural infrastructure and agriculture. Integrating rural markets with e-Nam and broadening MSP coverage will benefit farmers, aiding agri-startups in improving produce prices and strengthening the food processing supply chain.

The surge in agri-startups commenced in 2015-16 with the creation of ABIs nationwide. India hosts 100+ agri-focused incubators, mostly linked with ICAR institutes and agricultural universities, backed by Startup India, Atal Innovation Mission, NSTEDB, RKVY-RAFTAAR, and ICAR. The DST's NIDHI scheme has 36 agri-based incubation centres, including seven TBIs situated at ICAR-IARI, ICAR-NDRI, ICAR-NAARM, ICAR-IIHR, TNAU, and ICRISAT. Additionally, there are 45 NIDHI PRAYAS centres, one at NAARM under NARES. ICAR has 50 ABIs across research institutes with a Rs. 10 crore annual budget (Rs. 20 lakhs per ABI). Furthermore, 29 ABIS are established at state agricultural universities under RKVY-RAFTAAR, receiving grants from Rs. 2-3 crore each, collectively supporting 750+ agriculture-based startups, farmer-entrepreneurs, and FPOs (NAAS, 2022).

Agri-Startups Transforming Supply Chain and Market Linkage

- Agri-startups operate across various agricultural value chain phases, from output markets to logistics, financial solutions, and quality maintenance. They revolutionize supply chains, addressing India's supply-driven agriculture challenges, exemplified by companies like Sabziwala, Merakisan, and Dehaat.
- Farmers access inputs, weather forecasts, crop rates, and AI-based sowing advisories via phone apps. Advancements include mobile-controlled motors, sophisticated irrigation, GPS tractors, and sorting tech for processing and storage. Additionally, wireless sensors connected to smart phones monitor crops, and there are moisture content measurement methods for the grains.
- Distribution, packaging, and handling strategies involve leveraging web and mobile applications for direct sales of farm products, employing price forecasting models to mitigate inflation, implementing dynamic product pricing, establishing online marketplaces for grains, and utilising data for effective tracking.

Conclusion

The Startup India program by the Indian Government aims to centralize startups, backed by supportive policies at central and state levels. Agri-startups leverage technology in market connections, notably in Big Data Analytics, Supply Chain/Market-linked Models, FaaS (Farm as a Service), and IoT solutions. Enhancing institutional frameworks is crucial to ensure market access, growth capital, digital infrastructure, mentorship, and investor support for agri-startups' success.

REDEFINING FOOD PROCESSING SECTORS THROUGH STARTUPS

Food processing connects farming to industries, which is vital for agrarian nations like India. It minimizes wastage, adds value, diversifies agriculture, and boosts employment and income for farmers, linking primary and secondary sectors. Different diets and food needs cause demand shifts, changing how food gets made and sold. Startups create new foods and make supply chains better.

Importance of Food Processing Sector

Food processing matters a lot in India's economy. It grew from Rs. 1.30 lakh crore to Rs. 2.37 lakh crore from 2012-13 to 2020-21. It is a fast-growing sectore which is growing at 10.3%, compared to manufacturing sector growth of 5.1%. People's changing food habits impact this sector greatly.

Startups: Sunrise and Inclusive Growth

- A study by NABARD in 2022, founded how much perishable food gets lost after harvest. Stopping these losses is crucial for food security. Food processing startups need help with research, tech, and better supply chains.
- At 'World Food India 2023,' held in New Delhi on 3rd Nov 2023, the PM called food processing a 'sunrise' sector, highlighting startups' potential in it for growth.
- The role of women in food processing industrial startups has always been important. Out of more than 3.13 crore registered micro, small, and medium enterprises in the country, as many as 19 lakhs are in the food processing sector, of which 33% are owned by women entrepreneurs.
- In the food processing sector, 11.18% of 20.32 lakh registered workers and 25% of 51.11 lakh in unincorporated enterprises are women. Major factories are in Andhra Pradesh, Tamil Nadu, and Telangana, constituting 36%.
- Various states produce specific food products like coconut in Andaman & Nicobar Islands and spices in Andhra Pradesh, and bakery products of Chandigarh approved under One District One Product.
- Since its launch in 2020, Self-Reliant Fund for MSMEs has provided equity support to growth- oriented MSMEs, including startups. On an average, the Fund has provided Rs. 13 crore equity support to the

beneficiary enterprises. Out of the 373 MSMEs, which have benefitted from equity infusion under SRI Fund in the past two years, 15 are from the food processing sector.

Meeting Challenges Through Focused Attention

- The major challenges faced by a startup are the **4 'A's**, viz. *Availability, Accessibility, Affordability, and Awareness* regarding the three essentials of any business, viz. finance, technology, and markets.
- These challenges among startups in the food processing sector can be further nuanced as product development and innovation; a strengthened supply chain; linking production and processing; addressing issues related to seasonality; quality and safety standards; and reducing post-harvest wastage.
- The Ministry of Food Processing Industries, formed in 2001, focused more in the food sector. Budgets show growth: from Rs. 1,147 crores in 2021-22 to Rs. 3,288 crores estimated for 2023-24.
- India is tackling food processing issues, especially for startups, with **'Make in India'**. **Mega food parks** using a cluster approach show promise, benefitting from economies of scale.
- Schemes like **Pradhan Mantri Kisan Sampada Yojana**, **Prime Minister Formalisation of Micro Processing Enterprises**, and **Production Linked Incentive** support this endeavour.
- Food processing startups thrive with strong ties to agriculture, fisheries, and more. Schemes like Production Linked Incentive and Agri-Infra Fund support this. Tech integration, boosted post-pandemic, demands investment, attracting significant FDI in the sector, totalling Rs. 50,000 crores in nine years (PIB-5 November 2023).

Promoting Startups

- The startup initiative of the Government has been multi-pronged. It includes a **Rs. 10,000 crore Fund of Funds**, which aims at making capital available for startups at the early stage, seed stage, and growth stage.
- There is a separate **Credit Guarantee Scheme** for loans taken by startups. Central Ministries and Departments have been advised to relax the conditions of prior turnover and experience when procuring from startups.
- Besides, startups are eligible for **fast-tracked patent application examination and disposal**. The **Startup India Online Hub** connects all stakeholders on the same platform, viz., startups, investors, funds, mentors, academic institutions, incubators, corporations, Government bodies, etc.
- For startups, **100% profit deductions** is allowed for three of ten years. Due to the pandemic, incorporation period is extended to March 31, 2024. Continuity of 51% shareholding is needed to offset losses, but this is relaxed to seven years if all shareholders retain their shares. Budget 2023-24 aims to extend this to 10 years.
- The Budget also announced the establishment of an **Agriculture Accelerator Fund** to encourage agri-startups, especially those by young entrepreneurs in rural areas. The objective of the fund would be to bring innovative and affordable solutions for challenges faced by farmers and to bring in modern technologies to transform agricultural practices, increase productivity, and enhance profitability.
- The Budget proclaimed to promote research by startups by bringing in a **National Data Governance Policy** to enable access to anonymised data.

Linking Startups to Global Markets

- The Central and State Governments promote export-oriented enterprises.
- The Central Government's Agricultural and Processed Food Products Export Development Authority (**APEDA**) which was set up under the APEDA Act, 1985, is mandated, inter alia, to aid in the registration of exporters of scheduled products, provide financial assistance to them, fix standards and specifications for the scheduled products, carry out inspection, improve packaging and marketing of scheduled products, etc.

- Consequently, between 2014 and 2023, the share of processed foods in India's exports has risen from 13% to 23%, with APEDA having linked importers with exporting startups.
- There is tremendous potential in the food processing sector to collaborate with other countries, as is evident from the recent high-level meetings held with countries like Brazil, wherein discussions were held to facilitate greater exchange of goods and ideas. This is also an affirmative step towards ensuring world food security.

Concluding Remarks

Technological advances, changes in consumer demographics, and tastes and preferences have been pivotal in shaping the journey of startups in the food processing sector. Startups in the food processing ecosystem are found at various stages of the value chain and together have the potential and dynamism to complete the value chain and lead to transformational changes in the economy. The support required by them at different stages is obviously different.

STARTUPS TOWARDS RURAL WATER SECURITY

According to World Bank data, India's rural population is 0.91 billion, 64% of the total. Ensuring water and sanitation for them's tough, but missions like **Swachh Bharat and Jal Jeevan** help, needing consistent water supply for sustained progress. Urbanization and industries strain water resources, affecting rural areas first. Affordable water management and sanitation solutions are crucial. Startups can help with their unique strengths in this challenge.

The Indian startups ecosystem has grown tremendously in the last decade and is in the top five alongside the United States, China, the United Kingdom, and Israel. Their agility to meet changing needs and flexibility for customisation to suit local conditions are boons in addressing unique issues. Water and sanitation issues have diverse solutions due to geography, culture, and climate. SDG's aim is clean water and sanitation for all. Startups, about 1500 in WASH, aid inclusivity, especially from rural areas.

Elements of Rural Water Security

- Water security needs improvements in *demand management, treatment, groundwater, and governance*. Startups can transform these areas. Starting with measurement, startups create affordable meters with sensors and use shared dashboards for effective interventions.
- Installing water-saving devices aids demand management. Ensuring safe drinking water meets health standards poses challenges, especially in rural areas. Government departments support startups creating testing kits and treatment methods. IoT facilitates data sharing for swift action.
- Overexploitation of groundwater is a concern in rural areas. Reliable borewells are used for drinking and agriculture, but sustainable use lacks accurate data. Startups offer tools like handheld devices and GIS dashboards to address this, emphasizing better water governance.
- For example, the same water source in a village may cater to the requirements of agriculture and domestic needs. Startups have been successful in such situations with tools to save agriculture water and facilitate the scheduling of water supply based on real-time data, which is otherwise cumbersome with manual calculations.

Startup India's Innovation Challenges

Startup India, the Indian government's initiative, collaborates with departments to boost WASH startups. DPIIT and National Jal Jeevan Mission held an **Innovation Challenge** for portable water testing devices, aiming for affordable, household-level testing. Shortlisted startups received cash grants of Rs. 2 lakhs, seed grants up to Rs. 25 lakhs, and incubation support.

Further, the **Swachh Bharat Grand Challenge** was introduced in the fields of waste management, water management, air quality management, and sanitation. Two startups in each sector have been awarded cash grants. The winners of the challenge have brought in many interesting solutions to address the pertinent issues in the WASH sector. Some of them are:

- Intelligent Public Toilets (IP Toilets) with self- cleaning facilities, floor hygiene concept, and a IoT-enabled control board for monitoring usage.
- Created an anaerobic granulated sludge of more than 650 numbers of various bacteria that is used to treat waste water that can directly be used for irrigation purposes.
- E-Waste Exchange to enable people to dispose of their electronic waste while complying with government regulations.
- Odourless, waterless, and chemical-free urinal systems that provides a unique air-lock system that does not allow urine to meet air or oxygen.
- Organic hydrogel, made from biodegradable waste, which could retain moisture, nourish the soil, and even boost crop growth naturally.

In another successful attempt to foster water saving, the **Grand Water Saving Challenge** was run in association with Hindustan Unilever Ltd. (HUL), Invest India, Startup India, and AGNIi (AGNII Accelerating Growth of New India's Innovations is the national technology commercialisation programme). The challenge aimed to improve public toilet flush systems for efficient water use and cleanliness. Winners got Rs. 5 Lakh and a chance to pilot their invention at HUL's Suvidha centre in Mumbai.

AIM-ICDK Water Innovation Challenge

NITI Aayog's AIM and Innovation Centre Denmark (ICDK) has introduced an open innovation challenge in water sector to identify and nurture innovative startup ideas. This is as part of the Indo-Danish Bilateral Green Strategic Partnership. Winners gain global exposure, cash awards, and incubation support, fostering skill development and water solution innovation.

National Startup Awards for Rural Drinking Water

- The **National Startup Awards (NSA)** honour startups and ecosystem contributors. Drinking Water was featured in 2021 and 2022, seeking innovative solutions. Winners get Rs. 5 lakhs, a chance to pitch to authorities and corporates for pilots.
- **WEGOT aqua**, a category winner, offers an IoT-based solution for real-time water management in buildings. It tracks usage, generates usage-based bills, and detects leaks promptly through mobile and web interfaces, allowing remote leak closure to prevent water wastage.

Examples of Startups in WASH Sector

There are many startups which are successful in solving India's water management crisis and sanitation challenges. A few examples are discussed here.

Boon (formerly known as Swajal)

- This startup provides affordable, safe drinking water via solar-powered ATMs. Their systems use IoT for easy monitoring and operate on solar energy for purification and vending, ensuring reliability and affordability.
- They have installed over 400 water ATMs in railway stations, schools, hospitals, urban slums, rural areas, and bus stations.
- The startup has currently impacted over 20 lakh people across more than 140 Indian villages by democratising access to clean drinking water. Encouraging reusable containers significantly cuts single-use plastics and reduces the carbon footprint.

WaterLab India - Bhujal App and IoT

The Bhujal app simplifies water depth measurement in borewells, providing quick readings without accessing the borewell. It aids farmers in planning water usage, avoiding early borewell dry-outs, conserving electricity, and gaining government recognition. The app supports multiple languages, aiding easy farmer access.

Genrobotics and the Bandicoot

Genrobotics Innovations, founded in 2018, introduced Bandicoot, the world's first robotic scavenger, aiming to eradicate manual scavenging. The robot offers clear visuals inside manholes, ensuring safe working conditions and is operational across 19 States and 3 Union Territories. The company also conducts training and awareness programs for sanitation workers, improving their work environment and safety.

Kheyti

Kheyti, a startup, aids small farmers by offering the Greenhouse-in-a-Box, which mitigates climate risks and boosts yields. This cost-effective solution requires 90% less water than traditional methods, enhances incomes, and promotes sustainable agriculture.

Way Forward

The Government of India and State Governments are keen in providing supportive environment for the Indian startup ecosystem to become the first in the world. It has the power of technology and the novelty of ideas clubbed with the strength of youth. However, the startup ventures must be well connected with the rural population and the government agencies to deliver its full potential. The digital divide, which may pose hurdle to the most deserving categories in accessing the startup tools, must also be bridged.

STARTUPS AS THE ENGINE OF GROWTH FOR NORTH-EAST INDIA

India's large population, once seen as a challenge, is now its asset. The dividends will manifest if the young, talented populace is empowered and nurtured effectively. India's demand for entrepreneurs is twofold: seizing new prospects and generating wealth and jobs. Over the next decade, 110-130 million Indians will hunt for jobs, including 80-100 million first-time job seekers. With disguised unemployment among rural workers, the call for entrepreneurs and startups intensifies.

- In the past decade, entrepreneurship development in the country has found a new pace through the startup movement. Innovative solutions to business and innovative business have both gained momentum in the hands of the country's youth, where technology has played the lead role.
- Policy reform gave the much- needed push to this through multiple initiatives that seek to create a country of job creators instead of job seekers.
- The past decade witnessed India's ascent as the third-largest startup ecosystem, boasting 1.12 lakh startups across 763 districts. Over 110 unicorns, valued at $350 billion, underline this growth. Surprisingly, 49% of these startups hail from Tier 2 & 3 cities, dispelling the historical notion that small towns hinder business due to improved infrastructure, connectivity, and government support.
    - This trend spawned innovation in Surat, Jodhpur, Ranchi, Bhopal, etc., fostering a budding ecosystem with new co-working spaces, incubators, and accelerators.
- Today, innovation in India is not just limited to certain sectors as startups are solving problems in 56 industrial sectors, with 13% of them in IT services, 9% from health and life sciences, 7% from education, and 5% from food and beverages.

Startups in North-East India

- North-East India's entrepreneurial landscape is emerging, albeit at a different pace than national hubs. Despite challenges, improved infrastructure, industry incentives, and dedicated policies are fostering growth.

- Assam and Manipur lead in nurturing startup ecosystems, reflecting the region's accelerated progress toward economic advancement.
- Northeast India seeks entrepreneurs willing to embrace risk, seize opportunities, and overcome the fear of failure. The region's youth, once focused on job-seeking, now exhibit a paradigm shift in mindset, innovating solutions for local issues, demonstrating unique society-centric approaches to challenges despite fewer tech innovators in the area.
- Startups in North-East are found primarily in the following sectors: Agriculture and allied, Handloom and Textiles, Tourism, IT & ITES, Retail and Logistics, Health and Wellness, Edutech, Waste management and Renewables, and Media and Entertainment.
- Most of the startups are in the agriculture & allied sector, followed by ITES, handloom & textiles, retail & logistics, and education. There is a small percentage of startups in waste management, renewable, media, and entertainment.
- It is evident that most startups face two major concerns: access to funding and mentorship support.
- Each state features provisions within its startup policy, offering grant funds for startups in the idea and proof-of-concept stages. Entities like Numaligarh Refinery Ltd. (NRL) and the North Eastern Council (NEC) also extend support through dedicated funds like the **NRL Startup Ideation Fund and the North-East Venture Fund (NEVF),** managed by North-Eastern Development Finance Corporation Limited (NEDFI).
- Yet, a small percentage of startups have access to venture capital (VC) funding. There is a higher demand for seed grants or funds, aligning with the startups' nature in the region. Several prominent private VC firms have invested in startups across various sectors in the North East.
- The sectors witnessing significant investments include affordable healthcare, eco-friendly products, food processing, food and beverages, food tech, AI-based solutions, healthcare, IT, biotech, service aggregators, animal husbandry, wellness, design, logistics, and edutech.
- In NER, owing to the still evolving and growing ecosystem, the challenges faced by the startups are much bigger compared to the startups in more mature ecosystems of the metros. Some of the common challenges are listed below:
    - Access to funds
    - Access to new markets
    - Lack of skilled manpower
    - Continued mentorship support
    - Access to professional support services like regulatory compliances, liasoning, patent filing, etc.
- The startup ecosystem should be viewed as a continuum that supports and incentivises all stages of the life cycle of a startup. This includes intermediaries that support:
    a) Innovation and commercialisation in higher education and in small business
    b) Aspiring entrepreneurs via a pre-incubation preparatory phase to build a strong pipeline of emerging entrepreneurs
    c) Idea and early-stage startups so that more of them can survive and go to the market
    d) Growth startups and small businesses so that they can continue to innovate and build regionally, nationally, globally competitive, and scalable business models
- Startups in the NER are at early stages, with many in the ideation to launch phase, limiting scalability. The majority fall into the 'me-too' category, hindering innovation. Mentorship gaps further challenge the region's startup ecosystem.

- There is a need for mentors to provide general motivation, general guidance, inputs on realignment of business plans, network support, and specific services like marketing, statutory compliance, brand building, packaging, etc.
- Technical mentoring is also essential in areas like design thinking, design methodology, product development, human-computer interaction, ergonomics, packaging design, and rapid prototyping. Startups in the region contribute to employment, yet employment generation remains limited. Innovative tech-driven startups and patents from the region are notably scarce in comparison.

The Possible Way Ahead

In the North-East, startups encounter common hurdles in sustaining and growing. Empowering them through design thinking, creative training, collaborative problem-solving, funding avenues, documentation, and community building is crucial.

a) Build a wide pipeline of innovative, entrepreneurially skilled young people with inspiration, ideas, application, and confidence to startup with the right opportunity;
b) Evolve outcome oriented sustainable incubation modes that support competitive businesses that may not be venture-funded. This will be the key to health of local economies;
c) Build leaders of incubators and accelerators, expert mentors, consultants, lawyers, accountants and other technical experts and vendors; and
d) Integrate information, infrastructure, funding, and other efforts across the stakeholder groups that include government agencies, private incubators, and funding institutions.

These steps will assist startups in navigating the ecosystem and finding suitable growth paths. Organizing academic programs for startups is essential; many founders from tech backgrounds lack knowledge in consumer behaviour, marketing, finance, and organizational development. Startups and entrepreneurs must seize India's 'Aatmanirbhar' vision, focusing on creating superior products, dominating domestic markets, and competing globally. India's flourishing economy and expansive markets create fertile ground for startups spanning tech, healthcare, renewables, and beyond. With ample room for growth and investment, startups thrive amid India's tech advances, young workforce, and sustainability commitments, aligning with global SDGs.

DRONE REVOLUTION CHANGING THE FACE OF RURAL INDIA

A decade ago, the idea of drones revolutionizing agriculture in ten years was inconceivable. Yet, today, it's a reality, especially in countries like India, known for traditional farming. Drones are in the spotlight for their potential to transform Indian agriculture, creating jobs, especially for youth and women—a feat once thought impossible. India's government actively promotes drones, leading to innovations in cost, manageability, and versatility. This drone revolution could reshape the rural economy, profoundly improving many lives.

Numerous countries are embracing drone tech to transform farming and rural economies. In Africa, drones aid small-scale farmers in **Mozambique** and agribusiness in **Morocco. Japan** employs drones for rice farming, even creating insect-sized ones to pollinate flowers. **Spain** leads in European drone use for crop monitoring and precision farming. China, Indonesia, Malaysia, Singapore, Australia, and India also explore drones' potential in agriculture and beyond, with some implementing specific laws.

A Bright Outlook

- Drones in agriculture forecast a $7 billion boost to the global economy, promising growth. In the US, 84% of farmers use drones frequently, mainly for crop monitoring (73%) and field analysis (43%). However, adoption rates in developing nations like India lag significantly.

- India is quickly embracing drone tech for agriculture. Cost-effective and promising, these unmanned vehicles tackle farming challenges. Prime Minister Narendra Modi emphasized their significance, aiming for a "drone in every farm, a phone in every hand."
- The Ministry of Civil Aviation projects the industry to grow substantially, reaching Rs. 12,000-15,000 crores by 2026. By June 2023, India boasts 333 drone startups, marking a 34.4% surge from August 2021 to February 2022. This reflects a thriving drone industry diversifying application across sectors like agriculture and defence.

Initiatives to Promote the Drone Culture

India's promising prospects stem from the government's initiatives promoting the drone industry. Here are some of the schemes, initiatives, and incentives that the Government has introduced:

- **Production-Linked Incentive (PLI) Scheme:** The PLI scheme incentivizes drone and component manufacturers, aiming for substantial sector growth. Projections foresee 10,000+ direct jobs in three years and a surge in manufacturing turnover from Rs. 60 crore (2020-21) to Rs. 900+ crore (FY 2023-24). The broader drone services industry, covering operations, logistics, data processing, and traffic management, is set to surpass Rs. 30,000 crores in the same period.
- **Scheme for Women Self-Help Groups (SHGs):** Allocating Rs. 1,261 crores for 2024-25 to 2025-26, the scheme targets women's self-help groups in agriculture. Drones provided aim to aid in crop monitoring, yield estimation, and other farming tasks, empowering women and fostering industry growth and job creation.
- **Ban on Drone Imports:** The Indian Government's ban on drone and component imports aims to boost domestic manufacturing and fostering job creation in the sector.
- **Drone Shakti Scheme for Startups:** It targets startups within the drone industry, offering financial assistance for R&D, product development, and marketing. By providing crucial support to startups, the scheme aims to foster innovation, growth, and employment opportunities within the drone sector.
- **The Drone Rules, 2021:** The Indian Government introduced 'The Drone Rules, 2021' to regulate the industry, setting a comprehensive framework for operations. The Digital Sky Platform further streamlines the registration process for drones and operators online.
- **Certification scheme:** Indian government has launched a certification scheme for agricultural drones starting January 26, 2022. These drones can carry payloads except for chemicals used in spraying. Their application is allowed while following regulations.
- **Drones in Agricultural Research:** On November 16, 2020, the Indian Government authorized the International Crops Research Institute (ICRISAT) to employ drones for agricultural research. This strategic step aims to encourage innovation in cost-effective drone solutions for over 6.6 lakh Indian villages, aligning with agricultural technology adoption.
- **SMAM:** The Indian Government aids drone purchases via the Sub-Mission on Agricultural Mechanization (SMAM) for field demonstrations. Farmers receive subsidies ranging from 50 to 80%, with priority given to women farmers.

These initiatives collectively reflect the Indian Government's commitment to nurturing a robust and sustainable ecosystem for the drone industry, ensuring both regulatory compliance and economic advancement.

The Advent of Kisan Drones

- Kisan Drones, part of India's rural drone revolution, are revolutionizing agriculture. They aid farmers in crop assessment, crop health analysis and pesticide spraying, land record digitization etc , thus transforming farming practices for efficiency and safety. Traditional pesticide application methods are laborious, time-consuming, and risky due to wildlife threats, making drones a safer alternative.

- Efficient assessment enables early issue detection and timely action. Detailed crop health data enhances yields, guiding farmers to address specific areas, bolstering profits.
- In addition to this, Kisan Drones can also help in reducing costs by identifying areas of the farm that require attention, thereby reducing the need for manual labour and the use of pesticides and other chemicals.
- Initiatives like the NAMO Drone Didi scheme aim to train women in rural areas to become drone pilots, positioning them at the core of economic activity and contributing to rural prosperity.

Use Cases

Drones are multipurpose machines that can be used in various agricultural scenarios, ranging from crop sowing to crop monitoring. Here are some ways farmers can benefit from them:

- **Precision Agriculture:** Drones have transformed field and soil assessment, equipped with sensors gathering crucial data for precise soil analysis. They aid decision-making from crop selection to planting strategies, shaping precision farming practices.
- **Planting and Crop Sowing:** Drone technology revolutionizes sowing practices, countering labor challenges and the laborious nature of planting. With precise and efficient aerial sowing, costs reduce up to 85%, alleviating physical strain. Automated flights ensure uniform planting, boosting efficiency and sustainability in large-scale agriculture beyond economic gains.
- **Precision Spraying:** Drones, with their cutting-edge sensors and swift agility, transform agricultural spraying. They revolutionize precision by scanning fields in real time, targeting specific areas for precise application of pesticides and nutrients. This boosts efficiency, conserves resources, and speeds up spraying by up to fivefold compared to traditional methods.
- **Crop Monitoring:** Drone tech emerges as a key ally in agriculture, overcoming weather uncertainties. They offer real-time, high-res data for precise crop monitoring, empowering farmers with timely insights. This boosts efficiency, resilience, and productivity in modern farming systems.
- **Irrigation Management:** Drones revolutionize irrigation in agriculture. Outfitted with thermal cameras, they gauge soil moisture, guiding targeted water dispersal. Identifying moisture issues, they aid informed irrigation decisions, optimizing water use. This precision conserves resources and enhances crop vitality, a crucial step in sustainable farming.
- **Crop Health Assessment:** Drones elevate crop monitoring, swiftly identifying health concerns. Their early detection allows targeted interventions, safeguarding crops and reducing disease impact. Providing real-time field views, drones aid proactive measures, optimizing crop strategies. This proactive approach, driven by drone tech, enhances yields and sustains agriculture.

Pros and Cons

- In Indian agriculture, drones offer security, efficiency, and cost-effectiveness. Expert pilots reduce misuse risks. Their double-speed efficiency without delays ensures timely and effective farming practices.
- Agri-drones, employing ultra-low volume spraying, save water remarkably. Their low cost, easy maintenance, and precision make them viable for Indian farmers.
- Yet, connectivity issues in rural areas pose challenges, requiring additional expenses. Weather dependency also affects their efficiency, restricting operations during unfavourable conditions like rain or wind.
- The expertise needed for daily drone use can challenge regular farmers. Training becomes crucial, potentially creating dependence on experienced operators.
- Government support, incentives, and training programs are pivotal. Drones hold promise in transforming Indian agriculture and boosting the rural economy.

CHAMPIONING SOCIAL STARTUPS FOR RURAL DEVELOPMENT

India aims for a USD 5 trillion GDP by 2026-27 and USD 26 trillion by 2047-48. In achieving this, Startups play a pivotal role and is rightly termed the backbone of "new India". While India boasts a thriving startup ecosystem with 98,000 recognized startups and 100 unicorns, the focus remains predominantly on urban and peri-urban areas, including metros and Tier-I and Tier-II cities.

Rural-urban migration is driven by declining incomes in traditional livelihoods like farming, handlooms, and dairy. Despite government support through subsidies and services, challenges like low productivity, market access, and bargaining power persist, requiring additional private sector aid. Rural economy, constituting 46% of the total, holds vast potential for growth. Startups, through innovation, can address key challenges, uplifting rural livelihoods, incomes, and productivity, crucial for enhancing the national economy's rural segment.

India's Rural Startup Ecosystem is More than just Agri-startups

- Rural startups in India go beyond agriculture, addressing various ground-level challenges. Over 450 startups focus on agri-tech, offering solutions like smart agriculture, enhanced supply chains, and farm mechanization.
- Outside farming, startups in animal husbandry, food processing, textiles, and healthcare make ground-level impacts. Cleantech startups, focusing on renewable energy solutions, uplift rural communities' earnings while ensuring environmentally-friendly livelihood practices.

Key Value Chains That Startups Could Focus On In Rural India

Food Processing Activities At The Farm Level

- Cold storage, dryers, milling machines, and food processors aid farm produce processing. Cold storage and dryers, with extended shelf-life benefits, are widely promoted. Startups not only facilitate storage and value addition but also bridge market gaps for farmers.
- Raheja Solar Food Processing, based in Indore, manufactures solar dryers and operates a buyback program. They purchase dried products from farmers, ensure sales without farmers seeking buyers, and ensure timely payments.
- New Leaf Dynamics, producing biomass-powered cold storage, secures dry biomass for farmers, linking them with buyers via a mobile app.
- These innovations showcase how tech and digital solutions support farmers' livelihoods while mutually benefiting both startups and users.

Animal Husbandry

- The dairy industry faces challenges with cattle productivity and increased expenses amid growing demand. Startups innovate with technology like hydroponic fodder machines, diverse fodder crops, concentrates, and silage to address these issues.
- Bengaluru's Hydrogreens introduces a vertical fodder grower, solar-powered. Farmers grow green fodder at home with minimal water and soil. This innovation tackles fodder scarcity, enhancing milk quality, quantity, and farmer income.

Textiles and Handlooms

- In rural areas, textile tasks like yarning and weaving are laborious, especially for women, with low productivity. Startups mechanize these processes, reducing hardship and elevating incomes. A 'Powering Livelihoods' study found 70% income increase for female users of Resham Sutra's silk reeling machines.
- In Chhattisgarh, Jharkhand, and Odisha, women traditionally use 'thigh reeling' for silk yarns, a laborious and injury-prone method. Resham Sutra's solar-powered 'Unnati' machine reduces drudgery, boosts

productivity, and eliminates risks. Adopters see increased revenues and prolonged operations, with users achieving twice the earlier productivity levels.

Healthcare

- Rural healthcare still lags urban standards despite infrastructure upgrades. Startups in telemedicine, supply chains, and affordable diagnostics/vaccination gear are pivotal in bridging this gap, significantly impacting rural healthcare.
- Blackfrog Technologies' Emvólio, a portable biocarrier, advances last-mile vaccinations. CureBay and DigiQure extend beyond urban centers, offering telemedicine and online consultations to peri-urban and rural areas, ensuring accessible and reliable healthcare for all.

Service-related Digital Innovations

- Startups offer farmers digital solutions—market aggregation, e-commerce, payments, AI predictions, and expert advice—bolstering incomes and preventing technological lag.
- Bengaluru-based Rang De facilitates peer-to-peer lending, offering fast, affordable finance to underserved communities. This platform enables social investing, allowing support for farmers, artisans, and rural entrepreneurs lacking mainstream banking access.
- For instance, a Telangana farmer seeking a farm pond loan at 8% interest pays 6% to investors and 2% to Rang De. Credit ratings, including bureau scores and impact partner assessments, aid investor decisions.

India's Rural Startups Remain Resilient, But Certain Challenges Could Impede Progress

Challenge with Scaling up

Startups often rely on innovators for operations, lacking senior management due to budget constraints. This absence of entrepreneurial leadership hinders growth, affecting collaborations and securing investments, despite product/service mastery.

Lack of Ecosystem Support

Governments, investors, and institutions aim to support rural startups but face limited appetite for risk. Early-stage rural businesses lack track records, seen as high-risk. Collaboration among stakeholders is crucial for their success.

Absence of Go-to-Market Strategy

Rural startups prioritize immediate finances over defining market strategies. This oversight leads to challenges in identifying consumer segments, pricing, design, and distribution. Without a clear strategy, products may not meet rural consumers' true needs.

Difficulty in Catering to Scattered Demand and Providing after-sales service

Limited resources hinder startups' on-ground presence, particularly for offline sales reliant businesses. Serving geographically dispersed demands poses challenges, especially navigating remote areas like Jharkhand, Chhattisgarh, or Odisha. After-sales service for renewable technology is also hindered by technicians' unfamiliarity, impacting credibility and long-term demand.

Other External Factors

Social startups in rural India face competition from low-cost alternatives due to spending concerns among rural consumers. Additionally, natural disasters, pandemics like COVID-19, and market fluctuations such as import/export levies and trade bans greatly impact their success.

A Few Recommendations to Foster the Rural Startup Ecosystem in India

- **Social startups should prioritise gathering and analysing evidence to unlock support:** Rural startups lack ecosystem support due to limited proven success. Social startups must build data capacity, gathering sales

and user insights to create impactful case studies. This data aids private and government support while refining products and market strategies.

- **Social startups should strive to leverage existing government schemes:** Various Central Government schemes—Atal Innovation Mission, Startup India with its Seed Fund Scheme, and ASPIRE—have bolstered rural Indian startups, offering seed capital, incubation, and growth strategy backing. Schemes like PMMY, AIF, PMFME further accelerate their growth beyond initial support.
- **Prioritise a positive overall product experience for rural consumers:** Trust and word-of-mouth are pivotal in Indian rural markets. A poor user experience can greatly impact brand trust. To thrive, companies must ensure top-notch user experiences, including timely installation, training, and swift issue resolutions post-purchase. Startups lacking on-ground presence can collaborate with local service providers for effective after-sales support.
- **Social startups should have an explicit focus on gender mainstreaming:** Gender-inclusive strategies benefit businesses, yet few social startups adopt them, especially early-stage enterprises prioritizing survival. Engaging rural women through tailored products and improved financing can boost their participation in the economy, fostering inclusive growth.

Conclusion

Rural India startup ecosystem can pave the way for Aatmanirbhar Gaon (Self-Reliant Villages)

In the past decade, numerous enterprises have emerged, addressing rural India's needs in agritech, dairy, textiles, e-commerce, logistics, healthcare, travel, and hospitality. These ventures are crucial for bridging the rural-urban gap, fostering job creation, entrepreneurship, and enhancing digital and physical infrastructure, ultimately driving rural economic growth towards self-sufficiency.

SUPPORTING WOMEN-LED STARTUPS

The Startup India initiative, initiated in 2016, aimed to foster an innovation-driven startup environment. There is an emphasis on supporting women entrepreneurs, evident in the surge of female-led startups—80,000 in 2022 from 6,000 in 2017, a 1233% rise. VC funding for these startups increased to 20% from 11% in 2017. Approximately 47% of DPIIT-recognized startups have at least one female director. Among the 105 new unicorns in 2022, 17% were led by women. Studies highlight female-led companies outperforming male-led ones by 63% in ROI, showcasing women's remarkable capabilities in business management. WISER reports indicate that women-led startups account for 18% of all Indian startups in the past five years.

Startup India focuses on fostering women entrepreneurship for balanced national growth. Initiatives, schemes, networks, partnerships, and specific measures aim to strengthen and promote women-led startups alongside accessible schemes for all startups.

i. To promote flow of both equity and debt to women- led startups, 10% of the fund in the Fund of Funds for Startups Scheme operated by SIDBI is reserved for women-led startups.
ii. Virtual Incubation Programme for Women Entrepreneurs was conducted to support 20 women-led tech startups with pro-bono acceleration support for three months.
iii. A webpage dedicated to women entrepreneurs has been designed on the Startup India portal. The page includes various policy measures for women entrepreneurs by both Central and State Governments.
iv. The department hosts workshops for women entrepreneurs, covering diverse topics and featuring successful entrepreneurs' journeys. Women at different startup stages are encouraged to attend, fostering growth and empowerment.

v. WING supports 7,500 women entrepreneurs annually. DPIIT's program conducted WING workshops in Guwahati and Kohima in Jan 2020, engaging 114 participants. The participants were given mentoring sessions in the following areas:
   a) Venture Ideation and Business Model Validation
   b) Governance: Legal/ Compliance
   c) Marketing/Branding: Creating differential
   d) Finance and Financial Decisions
   e) Mastering Customer Acquisition Strategy and Scaling-up

The Government raises awareness about schemes aiding micro, small, and medium entrepreneurs, including women, through diverse programs, print, and social media platforms.

Access to Funds: The Biggest Challenge

Women-owned MSMEs encounter hurdles securing credit due to collateral limitations, credibility proof, and biases. Home-based and informal, they lack market exposure and marketing skills. Challenges encompass mobility, time constraints, safety issues, and digital skill gaps due to limited literacy and tech access, leading to subsistence-focused rather than growth-driven enterprises.

Government Funding Schemes with special emphasis on Women- led startups

Mudra Yojana for Women/ Mahila Udhyami Yojana

The Mudra Yojana for Women supports manufacturing businesses with loans up to Rs. 10 lakh, collateral-free, via the Department of Financial Services. Eligible ventures range from artisans, weavers, and craftswomen to phone repairs, spas, and more, excluding corporate, farming, or agriculture-based endeavours. Repayment spans 3 to 5 years, aiding startups, expansions, or modernizations. Eligibility ranges from 18 to 65 years. As on 25 November 2022, more than Rs. 37.76 crore loans for an amount of Rs. 20.43 lakh crore have been sanctioned since the launch of the Pradhan Mantri Mudra Yojana (PMMY), of which over 70% of the loans have been sanctioned to women entrepreneurs.

Stand-Up India (SUI) scheme

Stand-Up India, by SIDBI, offers loans from Rs. 10 lakhs to Rs. 1 crore for greenfield enterprises, requiring at least one SC/ST and one-woman borrower per bank branch. The project can be in manufacturing, services, agri-allied, or trading, with SC/ST or women holding at least 51% stake in non-individual enterprises. These loans are exclusively for first ventures in respective sectors. Since the inception of the Stand-Up India scheme, Rs. 35,886 crores have been sanctioned to 1.58 lakh accounts (as on 25 November 2022), of which 81% of the beneficiaries are women.

Special Schemes for Rural/Disadvantaged Women

The Skill Upgradation and Mahila Coir Yojana (MCY), led by the Ministry of MSME, focuses on training women artisans in coir spinning. Candidates receive a monthly stipend of Rs. 3000 during the two-month training. Trained artisans are encouraged to start coir units through the PMEGP scheme. MCY also offers a subsidy of up to 75% of the cost for motorised Ratts, capped at Rs. 7,500 and Rs. 3,200 for traditional and Electronic Ratts, respectively.

Mahila Samridhi Yojana

- The NSFDC's Mahila Samriddhi Yojana offers microfinance with interest rebates to scheduled caste women. Eligible candidates, meeting income criteria, can access up to Rs. 1,40,000. Additionally, the Self Employment Lending Scheme-Credit Line 1 provides training in women-friendly craft activities to groups of around 20 women.

- The National Minorities Development and Finance Corporation trains and forms Self-Help Groups (SHGs). Post-training, SHG members receive microcredit with an interest rate of 7% p.a., limited to Rs. 1 lakh per member. The training, spanning six months with expenses covered up to Rs. 1,500 per month per trainee, also includes a stipend of Rs. 1,000 per month per trainee, covered by NMDFC as a grant.

Women Enterprise Development (WED) Scheme

- DONER's Women Enterprise Development (WED) Scheme supports skilled women entrepreneurs aged 18-50 in various income-generating activities. They can receive financial aid up to Rs. 100 lakhs for new ventures or improving existing businesses.
- The Ministry of MSME fosters women's entrepreneurship through schemes like the PMEGP, aiding in setting up non-farm micro-enterprises. Special categories, including women, receive higher subsidies, promoting self-employment among marginalized groups.
- The CGTMSE, established by the Ministry of MSME and SIDBI, now provides 85% credit guarantee coverage for women entrepreneurs. Moreover, it offers a 10% reduction in the Annual Guarantee Fee for them.

Trade Related Entrepreneurship Assistance and Development (TREAD)

The Ministry of MSME offers NGOs grants up to 30% of project costs to promote entrepreneurship among women. The remaining 70% is covered by agency loans. Grants support training, marketing, and capacity-building initiatives aiding women entrepreneurs. Selected institutions and NGOs can access grants up to Rs. 1 lakh per program, requiring a 25% contribution from the institution.

Mentoring Women Entrepreneurs

- NITI Aayog's Women Entrepreneurship Platform (WEP) aggregates resources and partnerships, offering workshops, campaigns, and the Women Transforming India awards. It highlights successful women entrepreneurs across various sectors annually.
- The Ministry of Minority Affairs implements programs like the Nai Roshni Scheme, aiming to empower minority women and their neighbours from diverse communities.
- This initiative offers training modules covering leadership, education, health, financial literacy, digital skills, legal rights, and social advocacy. It collaborates with NGOs, civil societies, and government institutions across India.

Special Schemes of Public Sector Banks

Public sector banks like SBI (Stree Shakti), PNB (PNB Mahila, Udyami), Central Bank of India (Cent Kalyani), and Dena Bank (Dena Shakti) offer concessional financing for women-led startups and micro-enterprises' establishment, expansion, modernization, technology upgrades, and working capital needs in manufacturing and services.

The Way Forward

- The NSS 73nd Round report notes 19.5% unincorporated non-agricultural proprietary enterprises are owned by women, employing 22-27 million. NITI Aayog reports women's economic contribution at 17% of GDP, with rural ventures mostly in agriculture, handloom, and handicrafts.
- Rural women entrepreneurs often lack media visibility compared to their urban counterparts.
- The Government should ensure female entrepreneurs have equal access to all entrepreneurship support schemes and introduce more schemes aiding digital entrepreneurship.
- Non-financial support like technology upgrades, quality assessment, IPR, marketing, and incubation facilities should be equally available, especially for women.
- Empowering women-owned enterprises to create employment can drive societal shifts and inspire future women founders.