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STARTUPS REDEFINING RURAL INDIA

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Redefining Rural Landscapes Startups: Paving the Way for Inclusive Development

India's startup scene is booming, especially in rural-focused sectors like agritech, edtech, and renewable energy. With over 1 lakh registered startups, the country ranks third globally. This trend reflects a shift towards inclusivity and decentralization, leveraging technology to bridge rural-urban divides.

Rise of Rural Startups: Government Initiatives and Impact

- **Surge in Rural Startups:**
  - Startups catering to rural needs, spanning agritech, e-commerce, healthcare, and education, are witnessing significant growth.
  - These ventures not only address local challenges but also generate employment opportunities, fostering sustainable development.
- **Government Initiatives Fuelling Growth:**
  - Since 2014, government initiatives like Startup India, Atal Innovation Mission (AIM), MeitY Startup Hub (MSH), BIRAC, and DST-supported schemes have propelled the startup ecosystem.
  - These schemes are curated to encourage rural entrepreneurship, promoting innovation and economic transformation in rural areas.
- **Supporting Rural Entrepreneurs:**
  - **Atal Community Innovation Centres (ACICs):** Established in 2020 under AIM, these centres support community-based entrepreneurs by providing infrastructure and fostering grassroots innovation.
  - **Startup Village Entrepreneurship Programme (SVEP):** Implemented by the Ministry of Rural Development, this scheme assists rural individuals in setting up enterprises in non-agricultural sectors.
- **Empowering Rural Youth:**
  - **Skill India Mission:** Operated by the Ministry of Skill Development and Entrepreneurship (MSDE), this initiative provides skill training to rural youths through schemes like Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and National Apprenticeship Promotion Scheme (NAPS).
- **Promoting Agro-Rural Entrepreneurship:**
  - **ASPIRE Scheme:** By the Ministry of MSME, this scheme offers training and incubation support to prospective entrepreneurs in the agro-rural sector through Livelihood Business Incubators (LBIs).

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Rural Startup Landscape

- **Rural Population Overview:**
  - Over 100 crore Indians reside in rural areas, representing approximately 65% of the population.
  - Rural self-employment, especially in agriculture, defines the rural way of life.
- **Startup Challenges and Solutions:** Startups must understand rural values to build trust and address local needs while creating job opportunities.
- **Role of Digitisation:**
  - Affordable data rates and increasing internet penetration are vital for rural startup growth.
  - By 2025, India is expected to have 90 crore internet users, with a significant portion from rural areas.
- **Opportunities in Rural Digitisation:** Each addition to the digital ecosystem presents opportunities in agriculture, financial inclusion, and e-commerce.
- **Government Initiatives and Private Sector Role:** Government schemes like BharatNet and private sector contributions drive rural digitisation efforts.

- **Growth Potential for Rural Startups:** The growing digital landscape has spurred startups catering to rural needs, with promising sectors including agritech, edtech, and fintech.

Variety in Rural Startups

- **Urban Entrepreneurs Targeting Rural Needs:**
  - Urban-originated startups addressing rural challenges.
  - Use urban resources and tech exposure for rural innovations.
  - Examples: Online farmer platforms, telemedicine, digital education.
- **Rural Entrepreneurs Solving Rural Issues:**
  - Rural-founded startups with local insights and solutions.
  - Embrace local culture and sustainable practices.
  - Focus on agri-tech, craft preservation, community projects.
- **Self-Help Groups (SHGs):**
  - Community-driven rural entrepreneurship.
  - Pooling resources for income-generating activities.
  - Activities: Handicrafts, agriculture, micro-enterprises.
- **Micro, Small, and Medium Enterprises (MSMEs) in Rural Areas:**
  - Diverse local enterprises fostering rural economies.
  - Key contributors to employment and local development.
  - Emphasis on preserving local craftsmanship and indigenous products.

Challenges Faced by Rural Startups

- **Connectivity Issues with Urban Suppliers:**
  - Difficulty in establishing smooth connections with urban suppliers and partners.
  - Limited infrastructure hampers transportation and communication, causing delays and increased costs.
- **Limited Access to Financing:**
  - Rural startups struggle to secure reliable and affordable financing.
  - Financial institutions are hesitant due to perceived risks and lack of traditional collateral.
- **Lack of Support Ecosystem in Rural Areas:**
  - Despite government schemes, rural startups lack essential support systems.
  - Absence of mentorship, networking opportunities, and incubation centres hinder their growth.
- **Challenges in Finding Early Adopters:**
  - Identifying and convincing early adopters is difficult in rural areas.
  - Limited communication channels and digital penetration amplify the challenge.
- **Scarcity of Funding Mechanisms:**
  - Rural startups face a lack of local funding mechanisms.
  - Funding concentration in urban centres creates a geographical imbalance, limiting rural startups' growth potential.

Key Startup Sectors in Rural Areas

Agritech	Utilizes technology for precision farming and optimizing resource use.
	Platforms like Fasal and BigHaat provide valuable information to farmers using AI and data analytics.
	SaaS-based startups such as Ninjacart and DeHaat connect farmers directly with buyers, reducing intermediary dependence.
Food Processing	Adds value to raw agricultural produce, reducing post-harvest losses.
	Enhances product quality and shelf life, expanding market reach.
	Startups like Intello Labs and Millet Magic focus on processing and promoting millets.
E-commerce	Provides rural businesses access to a wider customer base.
	Platforms like Meesho facilitate the sale of SHG products, boosting sales and

	income.
EdTech & Skill Development	Bridges the rural-urban education divide by offering education in local languages through digital platforms.
	Startups like Learning Delight and Sudiksha Knowledge Solutions focus on providing digital education solutions.
Health-tech	Offers remote consultations and health education programs to overcome healthcare infrastructure challenges in rural areas.
	Startups like Medyseva and Gramin Health Care provide healthcare services and awareness programs.
Renewable Energy	Provides renewable energy solutions for farmers and rural households.
	Startups like AgriVijay offer a range of products including solar, biogas, and wind energy solutions.
Handicrafts and Traditional Arts:	Preserves and promotes traditional crafts and arts, fostering cultural exchange and economic growth.
	Startups like Pratilipi and Shapkiuni provide training for rural artisans, expanding their customer base and income.
Fintech	Enables digital banking and financial services for rural populations.
	Startups like Aye Finance and Khatabook offer online banking services and digital payment solutions, ensuring banking access in rural areas.

While migration of startups to innovation hubs is inevitable, establishing an enabling ecosystem in rural areas is vital. This ecosystem sustains startups, overcoming challenges and facilitating their evolution into sustainable enterprises. These enterprises create jobs and align with the vision of Viksit Bharat. Thus, fostering a supportive environment for rural startups is crucial for achieving the USD 10 Trillion milestone by 2030.

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Reform, Perform and Transform through Agri-startups

Startups play a crucial role in fostering innovation, serving as dynamic entities focused on exploring viable and scalable models. During the startup phase, novel concepts are introduced, evolving into economically sustainable enterprises. India has established itself among the top five countries globally in terms of the number of startups, with a significant push from initiatives like 'Startup India.' The country experienced the creation of 46 unicorns in 2021, ranking third globally with a total of 90 unicorns.

In the agricultural sector, startups are emerging as transformative forces, addressing challenges faced by farmers. Entrepreneurs and startups are leveraging technology to enhance agricultural production, food processing, and marketing, aligning with the government's goal of increasing farmers' income. The establishment of a startup ecosystem in agriculture and related sectors has seen substantial growth, with 1,055 startups selected by Knowledge Partners and Agribusiness Incubators by December 2022. The Department of Agriculture and Farmers Welfare has provided grants-in-aid, reaching Rs. 6,317.91 lakh by December 2022, reflecting the government's commitment to fostering innovation in agriculture.

Potential of Agricultural Startups

- **Agriculture's Economic Significance:** Agriculture constitutes a fundamental aspect of India's economy, with over half of the population directly dependent on it, contributing significantly to the GDP.
- **Rise of Agricultural Startups:** Recent years have witnessed a transformative shift in agriculture with the emergence of startups. Young entrepreneurs are leaving traditional roles to venture into agriculture, recognizing its potential as a secure and profitable business avenue.
- **Technological Innovation:** Agricultural startups are leveraging technology to drive positive reforms in the sector. Technologies such as hybrid seeds, precision farming, artificial intelligence, satellite monitoring, and big data analytics are being applied to enhance productivity and increase farm incomes.
- **Government Support:** The Government of India has actively fostered a conducive environment for startups. Initiatives aimed at nurturing the startup ecosystem have positioned India as a nation fostering innovation and job creation. Policies and interventions are in place to empower startups and facilitate their successful operations.

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Government Initiatives Empowering Startups

- **Make in India:** Launched in September 2014, this initiative aims to position India as a global manufacturing hub. It focuses on attracting investments, promoting innovation, developing skills, protecting intellectual property, and building advanced manufacturing infrastructure.
- **Startup India:** Introduced in January 2016, the 'Startup India Action Plan' includes a 19-point agenda aimed at creating a conducive ecosystem for startups. It simplifies regulations, provides funding support, offers incentives, and promotes industry-academia partnerships and incubation for sustainable economic development.
- **Atal Innovation Mission (AIM):** Initiated in 2016, AIM fosters innovation and entrepreneurship by catalyzing the development of innovation hubs, addressing grand challenges, nurturing startups, and promoting self-employment in technology-driven sectors. It provides financial support to Atal Incubation Centres for five years.
- **NewGen Innovation and Entrepreneurship Development Centre (NewGen IEDC):** Launched in 2017, this programme supports knowledge-based and technology-driven startups within educational institutions. It provides financial aid to new projects annually.
- **Innovation & Agri-Entrepreneurship Programme:** Established in 2018-19 under RKVY-RAFTAAR, this programme promotes innovation and agri-entrepreneurship by providing financial support and cultivating the incubation ecosystem. It encourages startups in agriculture to increase farmers' income and job opportunities for youth.

Impact on Agri-Tech Startups

- **Marketplace Segment:** Agri-tech startups in India operate in the marketplace segment, facilitating the sale of fresh and organic produce directly from farmers through e-commerce platforms.
- **Technological Advancements:** Agri-tech encompasses the application of contemporary technologies to enhance crop yields, operational efficiency, and revenue in agriculture. Startups introduce innovative solutions such as biogas plants, solar-powered cold storage, weather prediction tools, and vertical farming methods.
- **Internet and Smartphone Penetration:** The increasing use of the internet and widespread smartphone penetration, coupled with government initiatives in rural areas, are driving the adoption of technology in farming, paving the way for the growth of agri-tech startups.

Agri-Startup Trends

- **Diverse Focus:** Agri-startups cover agri-tech, dairy farming, food processing, etc., at different developmental stages.
- **Rise of Agri-Tech:** Startups tackle challenges like marketing linkage and supply chain inefficiencies, enhancing farmers' incomes.
- **Government Recognition:** DPIIT acknowledges over 7,000 agri-startups, including agri-tech ventures addressing various agricultural aspects.
- **Regional Growth:** Startups like Daybest Research in Chhattisgarh innovate solutions like KRISHAKTI, benefiting farmers and creating jobs.

Key Agri-Tech Incubators and Accelerators

- **a-IDEA:** Founded in 2014, a-IDEA is an agriculture-focused Technology Business Incubator (TBI) of ICAR-NAARM, Hyderabad. It offers mentorship and support to agri-preneurs for developing scalable ventures.
- **AGRI UDAAN:** India's first Food & Agribusiness accelerator, launched in 2015 by NAARM, a-IDEA, and CIIE-IIM(A). It focuses on sustainable inputs, precision agriculture, food technology, and supply chain innovations.
- **Centre for Innovation, Incubation and Entrepreneurship (CUE):** Originating from IIM Ahmedabad, CUE fosters entrepreneurship through partnerships, mentorship, and funding. It collaborates with a-IDEA to launch a food and agribusiness accelerator.
- **ICRISAT Agribusiness Incubator (ABI):** Established in partnership with DST, ABI at ICRISAT fosters technology development and commercialization in agriculture through public-private partnerships.
- **Agri-Tech Startup Accelerator:** Collaboratively launched by CIE at HIT, Hyderabad, and MANAGE, this accelerator program supports early-stage agri-tech startups leveraging innovative solutions for Indian agriculture.

Agri-Startups Revolutionizing Supply Chain and Market Linkage

Agri-startups play crucial roles across various stages of the agricultural value chain, offering innovative solutions to address supply chain and market linkage challenges in India's agriculture sector. These startups are categorized based on their functions, including:

- **Connecting to Output Markets:** Startups like Sabziwala, MeraKisan, and Dehaat aggregate horticulture products, facilitating direct connections between farmers and markets.
- **Facilitating Input Supply:** Farmers can conveniently procure agricultural inputs through mobile apps, access weather forecasts, and receive AI-based sowing advisories for improved agricultural practices.
- **Mechanization and Irrigation:** Innovations include GSM mobile-controlled motors, sophisticated irrigation systems like drip and sprinklers, GPS-powered auto-steering tractors, and crop counting machines.
- **Financial Solutions:** Startups provide financial solutions such as credit and insurance, enabling farmers to manage pests, nutrition, and make informed decisions on crop selling rates.

- **Quality Maintenance and Traceability:** Machine-based imaging technology for sorting, wireless sensors for crop monitoring, and moisture content measurement methods ensure quality maintenance.
- **Post-Harvest Processes:** Distribution, packaging, and handling strategies involve web and mobile applications for direct sales, price forecasting models, dynamic product pricing, and online marketplaces for grains.

The Startup India initiative by the Indian Government aims to streamline and support startups on a unified platform. Both central and state governments have introduced policies to aid the establishment and operation of agri-startups. These startups, particularly in sectors like Big Data Analytics, Supply Chain/Market-linked Models, FaaS (Farm as a Service), and IoT Enabled solutions, are integrating technology for market connections. Effective institutional mechanisms are crucial for smooth implementation alongside existing schemes. Sustainability requires provisions like market access, capital, digital infrastructure, mentorship, and investor networks. Establishing a comprehensive network of relevant institutions is vital for transforming agri-startup ideas into profitable ventures.

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Redefining Food Processing Sectors through Startups

During the inaugural event of 'World Food India 2023' in New Delhi on November 3, 2023, the Prime Minister of India hailed the food processing sector as a 'Sunrise' sector and emphasized the significant role played by startups in its remarkable growth. Startups within the food processing ecosystem are positioned across various stages of the value chain, collectively possessing the potential to revolutionize the economy. It aids in reducing agricultural wastage, adding value to produce, and creating employment opportunities. Additionally, socio-economic changes like urbanization have led to shifts in food consumption patterns, prompting startups to innovate and diversify supply chains to meet evolving demands.

Importance of FPIs

- The food processing sector is a vital component of the Indian economy, contributing significantly to economic output and overall growth.
- From 2012-13 to 2020-21, the Gross Value Added (GVA) by the food processing industries at constant prices grew from Rs. 1.30 lakh crore to Rs. 2.37 lakh crore.
- It is one of the fastest-growing sectors in the country, with a growth rate of 10.3% during 2015-16 to 2020-21, surpassing the overall manufacturing sector's growth rate of 5.1%.
- Consumer dynamism is highly evident within this sector, reflecting its importance and potential for further expansion.

Startups: Sunrise and Growth Sectors

- The Union Budget 2023-24 highlighted India's status as the third-largest startup ecosystem globally.
- The food processing sector was recognized as a 'sunrise' sector by the Hon'ble Prime Minister during the inaugural event of 'World Food India 2023' on November 3, 2023.
- Startups play a crucial role in the food processing sector's growth story, leveraging their entrepreneurial potential to contribute significantly.
- A study by NABARD Consultancy Service Pvt. Ltd. in 2022 estimated the percentage of harvest and post-harvest loss of perishable food items, emphasizing the need to address these losses for food security.
- Women entrepreneurs are making significant contributions to the food processing sector, with 33% of food processing enterprises being owned by women. Additionally, women constitute 11.18% of total registered employment and 25% of employees in unincorporated non-agricultural enterprises in this sector.
- Southern states like Andhra Pradesh, Tamil Nadu, and Telangana have a notable concentration of food processing factories, comprising 36% of all registered factories in the country.
- Various food processing products are approved under the One District One Product initiative, promoting local specialties and enhancing economic opportunities across different regions.

Challenges and Interventions

- **Challenges Faced by Startups in Food Processing**
  - **Startups encounter the 4 'A's challenges:** Availability, Accessibility, Affordability, and Awareness, particularly concerning finance, technology, and markets.
  - Specific challenges in the food processing sector include product development, supply chain strengthening, linking production with processing, addressing seasonality issues, maintaining quality and safety standards, and reducing post-harvest wastage.
- **Government Intervention and Budget Allocation**
  - The establishment of a separate Ministry of Food Processing Industries in 2001 underscored the government's focused attention on this sector.
  - Budget allocations have seen significant increases, with the Ministry's expenditure rising from Rs. 1,147 crore in 2021-22 to a Budget Estimate of Rs. 3,288 crore for 2023-24.
- **Government Initiatives to Address Sector Challenges**
  - Initiatives like 'Make in India' prioritize the food processing sector, with an emphasis on cluster-based approaches like mega food parks to leverage economies of scale.

  - Schemes such as Pradhan Mantri Kisan Sampada Yojana and Prime Minister Formalisation of Micro Processing Enterprises aim to support the sector's growth.
- **Strengthening Backward Linkages and Technology Adoption**
  - Strong backward linkages with agriculture, fisheries, dairying, and animal husbandry are crucial for startup success in food processing.
  - Increasing technology adoption, especially in response to the COVID-19 pandemic, highlights the sector's growing investment needs, attracting significant foreign direct investment (FDI) totaling Rs. 50,000 crore over the last nine years.

According to DPIIT, startups are entities operating for up to ten years from their date of incorporation or registration, with turnover not exceeding Rs. 100 crore, as outlined in notification no. GSR 127(E) dated 19 February 2019.

Government Support for Startups

- The Government of India's startup initiative includes a Rs. 10,000 crore Fund of Funds to provide capital at the early, seed, and growth stages, as per official records.
- Additionally, a Credit Guarantee Scheme for startup loans has been established, aiming to mitigate financial risks for startups venturing into the market.
- Central Ministries and Departments have been directed to ease procurement conditions for startups, facilitating their participation in government projects and contracts.
- Fast-tracked patent application examination and disposal are available for startups, ensuring their intellectual property rights are protected and expedited.
- The Startup India Online Hub serves as a digital platform connecting startups with investors, mentors, academic institutions, and other stakeholders, enhancing collaboration and networking opportunities.
- Startups enjoy a 100% deduction on profits for three out of ten consecutive years, incentivizing innovation and growth within the startup ecosystem.
- To mitigate the adverse impact of the pandemic, the incorporation period for eligible startups has been extended until 31 March 2024, providing additional time for startups to establish their operations and stabilize.
- Continuity of at least 51% shareholding is required for setting off carried forward losses, with relaxation for eligible startups, now proposed to extend to ten years from incorporation, according to official announcements.
- The establishment of an Agriculture Accelerator Fund aims to encourage agri-startups, with a focus on supporting young entrepreneurs in rural areas to innovate and modernize agricultural practices, as per government reports.
- Further, the promotion of research by startups is facilitated through a National Data Governance Policy, enabling access to anonymized data to fuel innovation and data-driven decision-making processes.

Governments at both the central and state levels are actively fostering export-oriented enterprises, recognizing their potential to bolster economic growth. The Agricultural and Processed Food Products Export Development Authority (APEDA), mandated by the APEDA Act of 1985, plays a pivotal role in supporting exporters of scheduled products. APEDA facilitates exporter registration, offers financial assistance, establishes standards and specifications, conducts inspections, and enhances packaging and marketing efforts. Notably, between 2014 and 2023, the share of processed foods in India's exports surged from 13% to 23%, a testament to APEDA's success in connecting importers with emerging startups in the sector. Furthermore, recent engagements with nations like Brazil signal India's commitment to fostering greater international collaboration, aiming to facilitate the exchange of goods and ideas while contributing to global food security.

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Startups towards Rural Water Security

Rural water security is imperative for economic growth. India's vast rural population, constituting 64% of the total, faces water access challenges. Initiatives like Swachh Bharat Mission - Grameen and Jal Jeevan Mission have made strides, but sustainable solutions are needed. Enter startups: With approximately 1,500 startups in the WASH sector, over half hail from rural areas, offering tailored innovations. These startups, aligned with Sustainable Development Goals (SDGs), tackle diverse water and sanitation issues with agility and customization. Their localized solutions address the unique challenges posed by geography, demography, and climatic conditions. Leveraging technology and flexibility, startups play a pivotal role in bridging the rural-urban water divide, contributing to broader socio-economic development and ensuring access to clean water and sanitation facilities for all.

Elements of Rural Water Security Addressed by Startups:

- **Water Demand Management:**
  - Startups offer cost-effective metering solutions, reducing monitoring expenses.
  - Common dashboards provided by startups enable efficient identification of intervention areas, leading to optimized water usage.
  - Installation of water-saving devices by startups contributes to effective demand management, conserving water resources.
  - Over 1,500 startups operate in the Water, Sanitation, and Hygiene (WASH) sector, offering innovative solutions for water demand management.
- **Water Treatment and Quality:**
  - Startups develop affordable water quality testing kits, ensuring access to safe drinking water in rural areas.
  - Innovative treatment mechanisms introduced by startups address water quality concerns, enhancing public health.
  - IoT-enabled data sharing facilitates prompt action based on water quality test results.
  - Startups pioneer affordable water treatment mechanisms, contributing to a significant increase in safe water access.
- **Groundwater Management:**
  - Handheld devices and GIS-based dashboards developed by startups monitor groundwater levels, aiding in sustainable usage.
  - Startups promote efficient groundwater management practices, mitigating overexploitation and ensuring long-term resource availability.
  - Solutions provided by startups help address excessive water consumption associated with subsidized electricity.
  - Startups introduce groundwater monitoring tools, contributing to enhanced sustainability in rural water management.
- **Water Governance:**
  - Tools developed by startups streamline resource allocation and management, improving governance efficiency.
  - Conflict resolution mechanisms introduced by startups optimize water usage, addressing competing demands.
  - Real-time data facilitated by startups aid in scheduling water supply, enhancing governance effectiveness.
  - Innovative technologies enable real-time data sharing for informed decision-making in water resource management.

Startup India's Innovation Challenges

- **Portable Water Testing Devices Challenge:**
  - DPIIT and National Jal Jeevan Mission launched an innovation challenge targeting the development of portable water testing devices.
  - Objective: Develop affordable, modular, and easy-to-use devices for testing drinking water quality at the household level.

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  - Selected startups received support in the form of cash grants amounting to Rs. 2 lakhs each and seed grants of up to Rs. 25 lakhs, along with incubation assistance.
- **Swachh Bharat Grand Challenge:**
  - Introduced across various sectors including waste management, water management, air quality, and sanitation under the Swachh Bharat Mission.
  - Cash grants awarded to two startups in each sector for presenting innovative solutions.
  - **Notable solutions:**
    - Intelligent Public Toilets (IP Toilets) equipped with self-cleaning mechanisms, floor hygiene features, and IoT-enabled monitoring systems.
    - Development of anaerobic granulated sludge for efficient wastewater treatment suitable for irrigation purposes.
    - Establishment of an E-Waste Exchange platform to facilitate compliant disposal of electronic waste.
    - Implementation of odourless, waterless urinal systems incorporating air-lock technology to maintain hygiene.
    - Creation of organic hydrogel from biodegradable waste for soil moisture retention and enhanced crop growth.
- **Grand Water Saving Challenge:**
  - Collaboration between Startup India, Hindustan Unilever Ltd. (HUL), Invest India, and AGNIi.
  - Aimed to address water conservation in public toilets through innovative flush systems.
  - Winners received a cash prize of Rs. 5 lakhs along with the opportunity to pilot their solutions at Suvidha centres, urban water, hygiene, and sanitation community centres developed by HUL.

National Startup Awards (NSA)

- The National Startup Awards (NSA) recognize exceptional startups and ecosystem enablers.
- The Drinking Water category was featured in both the 2021 and 2022 editions.
- Winners receive a cash prize of Rs. 5 lakhs and opportunities for pilot projects.
- WEGoT aqua, a winner, provides an IoT-based water management solution.
- Their system monitors usage, detects leaks, and enables remote control to prevent wastage.

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Startups in WASH Sector

- **Boon (formerly Swajal):**
  - Provides solar-powered water ATMs for clean drinking water.
  - Installed over 400 water ATMs in various locations, impacting over 20 lakh people.
  - Encourages reusable containers to reduce single-use plastic and carbon footprint.
- **Vassar Labs:**
  - Offers smart water management solutions using IoT, AI, and ML.
  - Provides real-time data for informed decision-making in water resource management.
  - Serves government agencies and state governments with comprehensive water management solutions.
- **WaterLab India - Bhujal App and IoT:**
  - Developed the Bhujal app for measuring borewell water levels quickly and accurately.
  - Assists rural farmers in water planning and conservation efforts.
  - Supports multiple languages for ease of use among farmers.
- **Genrobotics and the Bandicoot:**
  - Innovated the Bandicoot, a robotic scavenger, to eliminate manual scavenging in manholes.
  - Provides detailed visuals and precise movement within manholes for worker safety.
  - Used across 19 states and 3 union territories, improving sanitation and worker conditions.
- **Kheyti:**
  - Offers the Greenhouse-in-a-Box solution to small farmers, reducing climate risks and increasing yields.
  - Requires 90% less water and yields seven times higher than outdoor farming.

- Contributes to sustainable agriculture practices and rural water security by conserving water and reducing pesticide use.

The Indian government, along with state governments, is committed to creating a supportive environment for the country's startup ecosystem to lead globally. With the fusion of technology, innovative ideas, and the energy of youth, startups have immense potential. However, to realize their full impact, it's crucial for these ventures to establish strong connections with rural communities and government agencies. Bridging the digital gap is essential to ensure that all segments of society, especially the most deserving, can access the resources and tools offered by startups.

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Startups as an Engine of Growth for North East India

Startups are poised to play a pivotal role in propelling India to become the world's third-largest economy. Over the past decade, India has witnessed a remarkable transformation in its startup landscape, now ranking third globally with over 112,000 startups recognized by the DPIIT across 763 districts. Notably, 49% of these startups originate from Tier 1 and Tier 2 cities. While North-East India's entrepreneurial ecosystem has also evolved, it lags behind other startup hubs in the country. Each state in the region has formulated its own startup policies, indicating a growing ecosystem. This article sheds light on the variety of startups in the region, the challenges they encounter, and the necessary steps to provide structured support for their growth.

India's vast population, once seen as a burden, has emerged as a significant asset. However, to fully benefit from this demographic dividend, it's imperative to empower and nurture the country's predominantly young population, which offers abundant human capital. The need for entrepreneurs and startups in India is twofold: to seize new opportunities and to generate wealth and employment. With millions of Indians seeking employment in the coming decade, there's a pressing demand for entrepreneurial ventures to address this need.

Entrepreneurship Development in India: A Decade of Transformation

- **Youth-Driven Innovation:** The past decade witnessed a surge in entrepreneurship development, primarily led by the country's youth. Technological advancements played a pivotal role in fostering innovative business solutions.
- **Policy Support:** Government initiatives aimed at fostering entrepreneurship have provided a significant impetus to the startup movement. These policies aimed to shift the focus from job-seeking to job creation.
- **India's Startup Landscape:** India has emerged as the third-largest startup ecosystem globally, with over 112,000 startups recognized by DPIIT across 763 districts. Notably, more than 110 unicorns contribute to a total valuation of around $350 billion.
- **Rise of Tier 2 and 3 Cities:** Traditionally considered challenging for business, small towns have seen a transformation. Improved internet connectivity, infrastructure, and supportive policies have made them conducive to startup growth.
- **Diverse Innovation:** Startups in India are addressing challenges across 56 industrial sectors. While IT services dominate (13%), significant contributions come from health and life sciences (9%), education (7%), and food and beverages (5%).
- **Emergence of Startup Hubs:** Beyond Delhi, Bangalore, and Mumbai, cities like Hyderabad, Pune, and Chennai are witnessing a surge in startup activity. This decentralization has led to the emergence of more scalable opportunities in Tier 2 and 3 cities.
- **Boost from the Pandemic:** The pandemic spurred innovation, with youth returning to their hometowns and driving startup growth in Tier 2 and 3 towns. Increased digital penetration and government initiatives further facilitated this trend, with cities like Surat, Jodhpur, Ranchi, and Bhopal witnessing a rise in innovative ideas.
- **Infrastructure Support:** The evolution of new co-working spaces, incubators, and accelerators has provided essential infrastructure support for the burgeoning startup ecosystem in Tier 2 and 3 cities.

Entrepreneurship in North-East India

- **Evolution of Entrepreneurial Ecosystem:**
  - Despite facing challenges, North-East India has witnessed the emergence of its entrepreneurial ecosystem, albeit at a slower pace compared to other regions.
  - Government interventions, improved infrastructure, and state-specific startup policies have contributed to accelerated growth.
- **Shift in Mindset:**
  - The region has seen a shift from a job-seeking mindset to one that embraces entrepreneurship, particularly among the youth.

  - Innovative solutions tailored to local challenges highlight the region's unique approach to entrepreneurship.
- **Dominant Startup Sectors:**
  - Startups in North-East India primarily focus on sectors such as agriculture, handloom, textiles, tourism, IT & ITES, retail, logistics, health, wellness, edutech, waste management, and renewables.
  - Agriculture & allied sectors lead in terms of startup presence, followed by ITES, handloom & textiles, retail & logistics, and education.
- **Support Ecosystem:**
  - The region boasts around thirty incubators, with a significant portion hosted in academic institutions.
  - State governments offer grant funds for startups at various stages, supported by initiatives like the Numaligarh Refinery Ltd. (NRL) startup Ideation Fund and the North-East Venture Fund (NEVF).
- **Funding Challenges:**
  - Access to funding remains a significant challenge for startups in North-East India, with VC funding accessible to only a small percentage of ventures.
  - Seed grants or funds are identified as a more suitable funding model for startups in the region.
- **Venture Capital Investments:**
  - Private VC firms have shown interest in NER-based startups, investing in sectors like healthcare, eco-friendly products, food processing, and technology.
  - Food processing, food & beverages, and food tech startups have attracted the highest share of VC investments.
- **Common Challenges:**
  - Startups in North-East India face challenges such as limited access to funds, new markets, skilled manpower, and continued mentorship support.
  - Professional support services, regulatory compliance, and access to new markets remain areas of concern.
- **Growth and Scalability:**
  - While the number of startups has grown substantially, scalability remains a challenge, with a significant portion categorized as 'me-too' startups.
  - Mentorship is identified as a crucial aspect, requiring guidance in business realignment, marketing, statutory compliance, and technical expertise.
- **Employment Generation and Innovation:**
  - Startups in the region have the potential to generate employment; however, innovative ideas leveraging technology are limited.
  - Few startups explore patenting, indicating a need for fostering innovation and protecting intellectual property rights.

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Steps to be taken

In the North-East, startups often encounter similar hurdles hindering their sustainability and growth. To empower them, a holistic approach integrating design thinking, capacity building, and collaborative problem-solving is essential. Here's what's needed:

- **Empowering Entrepreneurial Skills:** Foster a diverse pool of entrepreneurial talent with the inspiration, confidence, and skills to seize opportunities and launch ventures.
- **Outcome-Oriented Incubation:** Develop sustainable incubation models focused on supporting competitive businesses that may not rely solely on venture funding, ensuring the vitality of local economies.
- **Building a Support Ecosystem:** Cultivate a network of leaders, mentors, consultants, legal and financial experts, and vendors to provide startups with essential guidance and resources.
- **Integration Across Stakeholders:** Coordinate efforts and resources across government agencies, private incubators, and funding institutions to streamline support for startups at various stages of development.

Additionally, there's a need for tailored academic programs and courses to equip startup founders, typically from technical backgrounds, with essential knowledge in consumer behavior, marketing, finance, and organizational development.

Entrepreneurs must capitalize on the Government of India's 'Aatmanirbharta' initiative, aimed at enhancing the competitiveness of Indian companies and enabling them to excel in domestic and global markets. This ethos resonates across sectors, empowering startups to become global champions by leveraging innovation and entrepreneurship.

India's economic growth, technological advancements, and youthful workforce create a conducive environment for startups to thrive across diverse sectors. This presents abundant opportunities for expansion and investment, positioning startups to excel on the global stage.

Furthermore, India's commitment to sustainability aligns with evolving global priorities, offering startups focused on sustainability a platform to shape their business models and engage in international collaborations emphasizing responsible practices.

North-East India, positioned as the gateway to Southeast Asia through the Act East Policy, offers startups a unique platform for success amidst evolving global dynamics. Collaborative endeavors can drive innovation, growth, and sustainability, paving the way for a prosperous future.

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Drone Revolution: Changing the face of Rural India

India is actively promoting drone technology to tackle agricultural challenges. Government initiatives support the drone industry, foreseeing its potential in rural areas. Once considered futuristic, drones now offer cost-effective solutions and job opportunities, especially for youth and women.

The government's push for a nationwide drone culture fosters innovation in affordability, manageability, and versatility. This drone revolution has the power to modernize farming practices and transform rural economies.

Globally, countries like Africa, Japan, and Spain are utilizing drones to enhance agriculture. India, recognized for its potential in drone technology, is poised to leverage drones across various sectors. With increasing interest and government support, India is on the brink of a transformative drone revolution.

Potential of Drone Technology

- **Global Economic Impact of Drones in Agriculture:**
  - Drones are projected to contribute around $7 billion USD to the global economy within the agricultural sector.
  - This optimistic forecast signals significant promise for agricultural industries worldwide.
- **Variations in Adoption Rates Across Countries:**
  - In the United States, 84% of farmers utilize drones on a daily or weekly basis.
  - Usage includes crop monitoring (73%) and soil and field analysis (43%).
  - Adoption rates in developing nations like India are notably lower.
- **Rapid Growth in India:**
  - India is actively exploring and promoting drone technology in agriculture.
  - Prime Minister Narendra Modi emphasized the importance of drones in agriculture, aiming for widespread adoption.
  - Despite being in its early stages, numerous companies are working to make drone technology accessible to Indian farmers.
  - The Ministry of Civil Aviation projects significant growth, with the drone industry expected to reach a turnover of Rs. 12,000-15,000 crore by 2026.
- **Surge in Drone Startups:**
  - As of June 2023, there are 333 drone startups in India, indicating a significant increase from previous years.
  - Between August 2021 and February 2022, India saw a 34.4% surge in the number of drone or UAV startups.
  - This growth reflects the burgeoning drone industry in India, with startups exploring diverse applications in agriculture, defense, and other sectors.

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Government Schemes and Initiatives to Promote Drone Industry

- **Production-Linked Incentive (PLI) Scheme:**
  - Designed to stimulate growth in the drone manufacturing sector.
  - Offers incentives to manufacturers and aims to generate over 10,000 direct jobs in the next three years.
  - Projects substantial growth in annual sales turnover, reaching over Rs. 900 crore by FY 2023-24.
- **Scheme for Women Self-Help Groups (SHGs):**
  - Allocated Rs. 1,261 crore for 2024-25 to 2025-26.
  - Focuses on providing drones to women SHGs engaged in agriculture for crop monitoring and yield estimation.
  - Aims to empower women in agriculture and create employment opportunities.
- **Ban on Drone Imports:**
  - Imposed to bolster the domestic drone industry.
  - Expected to fuel the growth of local manufacturing and create job opportunities.
- **Drone Shakti Scheme for Startups:**

  - Provides financial assistance for research, development, and marketing to startups in the drone industry.
  - Aims to foster innovation, growth, and employment opportunities.
- **The Drone Rules, 2021:**
  - Establishes comprehensive regulatory framework for drone operations in India.
  - Includes the Digital Sky Platform for online registration of drones and operators, streamlining the regulatory process.
- **Certification Scheme for Agricultural Drones:**
  - Introduced from 26 January 2022.
  - Allows agricultural drones to carry payloads excluding chemicals or liquids for spraying activities, ensuring compliance with regulations.
- **Drones in Agricultural Research:**
  - Granted permission to the International Crops Research Institute (ICRISAT) for agricultural research activities using drones.
  - Aims to inspire innovation and technology adoption in agriculture.
- **Sub-Mission on Agricultural Mechanization (SMAM):**
  - Provides financial assistance for drone purchases under SMAM for demonstrations on farmers' fields.
  - Offers subsidies ranging from 50 to 80 percent for agricultural machinery purchases, with priority given to women farmers.

Impact of Kisan Drones in Agriculture:

- **Revolutionizing Farming Practices:**
  - Kisan Drones, part of the Indian Government's rural drone revolution, are poised to transform agriculture.
  - They introduce a new era, making farming more efficient and safer.
- **Enhancing Efficiency and Safety:**
  - Traditional methods like hand-held back-strapped pumps for spraying pesticides are laborious and risky.
  - Kisan Drones offer a safer alternative, eliminating risks from poisonous reptiles and wild animals in fields.
- **Multi-Purpose Applications:**
  - Promoted for crop assessment, land records digitization, and insecticide spraying.
  - Enable farmers to monitor crops effectively, identify issues early, and take prompt action.
- **Improving Crop Yields:**
  - Provide detailed data on crop health, helping farmers identify areas needing attention.
  - Enhance crop yields and increase profits by enabling timely interventions.
- **Cost Reduction:**
  - Identify areas needing attention, reducing manual labour and chemical usage.
  - Lower costs associated with farming operations, contributing to improved profitability.

Drones in Agriculture: Use Cases

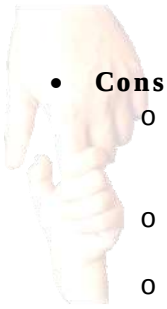
- **Precision Agriculture:**
  - Drones equipped with advanced sensors aid in soil analysis for informed decision-making.
  - From crop selection to planting patterns, drones support precision farming practices.
- **Planting and Crop Sowing:**
  - Drones revolutionize planting by executing precise and efficient sowing across vast agricultural areas.
  - Automated flight paths ensure optimal seed distribution, reducing costs and physical strain.
- **Precision Spraying:**
  - Drones enable targeted and efficient application of agricultural inputs like pesticides and nutrients.
  - Real-time scans allow for site-specific spraying, minimizing resource waste and optimizing coverage.

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- **Crop Monitoring:**
  - Drones provide real-time, high-resolution data for precise monitoring of crop development.
  - Enhance precision and efficiency, contributing to the resilience and productivity of farming systems.
- **Irrigation Management:**
  - Thermal sensing cameras on drones offer insights into soil moisture conditions for efficient water distribution.
  - Enable informed decisions about irrigation, conserving resources and improving crop health.
- **Crop Health Assessment:**
  - Drones detect potential health issues early, allowing for targeted interventions and disease prevention.
  - Provide real-time views of fields, facilitating proactive crop management and optimizing yields.

Pros and Cons of Agri-Drones in Indian Agriculture

- **Pros:**
  - **Enhanced Security:** Trained drone pilots operate the devices, minimizing the risk of misuse and ensuring secure operations.
  - **Efficiency:** Agri-drones work at double the speed of human labour without operational delays, contributing to timely and effective agricultural practices.
  - **Cost-Effectiveness:** The use of ultra-low volume (ULV) spraying technology leads to significant water savings compared to traditional methods, reducing costs.
  - **Accessibility:** Agri-drones feature low cost, easy maintenance, sturdy designs, detachable containers, and precise pesticide spraying capabilities, making them accessible and practical for Indian farmers.
- **Cons:**
  - **Connectivity Issues:** Connectivity issues in rural areas, where online coverage may be limited, pose a challenge and may require farmers to invest in internet connectivity, introducing additional recurring expenses.
  - **Weather Dependency:** Drones are highly reliant on favourable weather conditions, and flying them during rainy or windy weather can affect their operational efficiency.
  - **Knowledge and Skill Requirements:** Farmers may face hurdles in acquiring the necessary expertise for using drone technology daily, highlighting the need for training and education in this emerging technology.



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Despite these limitations, with strong government focus, regulatory backing, liberal incentives, and appropriate training programs, drones have the potential to revolutionize Indian agriculture and uplift the rural economy.

Championing Social Startups for Rural Development

Over the last decade, there has been a surge in commercial and social enterprises addressing rural India's concerns across various sectors like agritech, dairy, textiles, e-commerce, logistics, healthcare, travel, and hospitality. These ventures are vital for addressing rural challenges and narrowing the rural-urban gap.

India is poised to surpass a GDP of USD 5 trillion by 2026-27 and USD 26 trillion by 2047-48, with startups playing a key role in this growth. Despite having the third-largest startup ecosystem globally, many startups primarily target urban and peri-urban populations.

Rural-to-urban migration is fuelled by declining incomes from traditional livelihoods like farming and dairy due to low productivity, limited market access, and inadequate infrastructure. While government support has helped, private sector assistance is needed to address these challenges.

Rural areas contribute significantly to the economy, but there's untapped potential for growth. Startups can innovate to address rural challenges, unlocking the rural economy's full potential and boosting overall economic growth.

Indian Rural Startup Ecosystem

- **Diverse Solutions:** Startups in rural India extend beyond agriculture, focusing on various areas such as soil health analysis, solar energy utilization for yarn reeling, and more.
- **Agri-tech Sector:** Over 450 startups are actively involved in agri-tech, addressing challenges like smart agriculture, resilient supply chains, value addition at the farm level, and farm mechanization.
    - Farmers can benefit from innovations for soil health analysis, weather data access, marketplace services, and value addition solutions, enhancing productivity and incomes.
- **Non-Farm Sector:** Startups in animal husbandry, food processing, textiles, handlooms, and healthcare are making significant impacts in rural areas.
- **Cleantech Startups:** Several cleantech startups are facilitating the energy transition in rural communities, offering renewable energy-powered solutions and promoting sustainable livelihood practices.

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Focus Value chains for startups in Rural India

- **Value Addition and Food Processing at Farm Level:**
    - Startups focus on technologies like cold storage, dryers, milling machines, and food processors for value addition and processing of farm produce.
    - **Example**: Raheja Solar Food Processing and New Leaf Dynamics, offering solutions and market linkages for farmers.
- **Animal Husbandry:**
    - Startups address productivity and expense challenges in the dairy industry through innovations like hydroponic fodder-growing machinery and multi-cropping fodder crops.
    - **Example**: Hydrogreens offers vertical fodder growing units powered by solar energy, enhancing milk quality and quantity for farmers.
- **Textiles and Handlooms:**
    - Startups mechanize traditional textile activities, reducing drudgery and boosting incomes, while preserving traditional practices.
    - **Example**: Resham Sutra's solar-powered silk reeling machine improves productivity and eliminates risks for silk yarn reelers.
- **Healthcare:**
    - Startups in telemedicine, supply chain management, and low-cost diagnostics enhance healthcare accessibility in rural areas.
    - **Example**: Emvdlio by Blackfrog Technologies enables last-mile vaccination, while CureBay and DigiQure offer telemedicine services.
- **Service-related Digital Innovations:**
    - Startups provide digital solutions like market aggregation platforms, e-commerce, digital payments, and fintech solutions for farmers.

- **Example**: RangDe, a peer-to-peer lending platform, offers affordable financing for farmers and rural entrepreneurs, promoting social investing.

Challenges for Rural Startups

- **Challenge with Scaling up:**
  - Many rural startups are founded by innovators with limited resources, often lacking a senior team to oversee business operations.
  - Due to budget constraints, startups prioritize balancing their finances over defining their go-to-market strategy and business models.
  - Difficulty in identifying target consumer segments, product pricing, and sales channels adds to their challenges.
- **Difficulty in Catering to Scattered Demand and Providing After-sales Service:**
  - Limited on-the-ground presence and resources make it challenging for startups to meet geographically scattered demands, especially in remote areas.
  - Offering after-sales service for new technologies powered by renewables is difficult due to the lack of trained technicians familiar with the technology.
- **Lack of Entrepreneurial Leadership:**
  - Startups may lack entrepreneurial leadership, hindering business expansion, collaboration formation, and securing financing or investments.
- **Other External Factors:**
  - Competition from low-quality, low-cost goods and services in rural markets affects the success of startups.
  - Natural disasters, pandemics, and climate change impact operations, as seen during the Covid-19 pandemic.
  - Market factors like increased import/export levies and trade bans can significantly affect the startup ecosystem.
- **Lack of Ecosystem Support:**
  - Limited support from governments, financial institutions, and investors due to perceived high risk of rural startups hampers their growth and survival.
  - Collaboration and knowledge sharing among stakeholders are crucial to fostering the rural startup ecosystem.

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Recommendations to overcome the issues

- **Prioritize Data Collection and Analysis:**
  - Social startups should focus on gathering data from sales and user experiences to demonstrate their impact.
  - Synthesizing this data into case studies and impact figures can be beneficial for attracting support from private players and government departments.
  - Utilizing collected data to refine products and go-to-market strategies is essential for continuous improvement.
- **Leverage Government Schemes:**
  - Social startups should explore and leverage existing government schemes and initiatives like Atal Innovation Mission, Startup India, and ASPIRE for initial support.
  - Schemes such as Pradhan Mantri MUDRA Yojana (PMMY), Agriculture Infrastructure Fund (AIF), and Pradhan Mantri Formalisation of Micro Food Enterprises (PMFME) offer growth opportunities beyond initial support.
- **Ensure Positive Product Experience:**
  - Startups must prioritize providing a positive overall product experience for rural consumers to build trust and credibility in the market.
  - Timely product installation, user training, and efficient resolution of complaints during and after the warranty period are crucial for maintaining customer satisfaction.
  - Partnering with local service providers can help address challenges in offering after-sales support due to limited on-the-ground presence.
- **Focus on Gender Mainstreaming:**

- Social startups should explicitly focus on gender-inclusive strategies to attract more female customers and promote inclusive economic growth.
- Activities such as producing women-friendly products and facilitating end-user financing for women can enhance women's participation in rural entrepreneurship and the economy.

Over the past decade, there has been a notable increase in both commercial and social enterprises dedicated to addressing the concerns of rural India. These enterprises span various sectors including agritech, dairy, textiles, e-commerce, logistics, healthcare, travel, and hospitality. They play a crucial role in mitigating rural challenges and bridging the gap between rural and urban areas. The burgeoning rural startup ecosystem holds immense potential to create employment opportunities, foster rural entrepreneurship, and drive reforms across digital, fiscal, and physical infrastructure domains. By scaling small-scale businesses focused on improving traditional livelihood practices, we can pave the way for overall rural economic development and realize the vision of 'Atmanirbhar gaon'.

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Supporting Women-led Startups

Launched in 2016 by the Narendra Modi-led Government, the Startup India initiative aims to create an environment conducive to innovation and startup development in the country. Through sustained efforts, the initiative has significantly increased the number of recognized startups from 428 in 2016 to 98,119 in 2023, showcasing a remarkable Compound Annual Growth Rate (CAGR) of 142% during the period between 2016 and 2022. While major cities like Bengaluru and Delhi-NCR are known as startup hotspots, recognized startups now exist in every State and Union Territory (UT), spanning over 80% of the country's districts. These startups have collectively generated over 10.34 lakh direct jobs as of April 30, 2023, contributing to holistic economic growth.

In addition to fostering economic growth and supporting entrepreneurship, the Startup India initiative also prioritizes facilitating women entrepreneurs through various policies, initiatives, and the establishment of enabling networks. The impact of these efforts is evident in the rising presence of women-led startups. In 2022, the number of startups led by female founders surged to 80,000 from 6,000 in 2017, marking a remarkable 1233% increase. The proportion of venture capital (VC) funding allocated to women-led startups also rose to 20% in 2022, up from 11% in 2017. Approximately 47% of all DPIIT-recognized startups in India have at least one female director, and 17% of the 105 startups that achieved unicorn status in 2022 were led by women. According to a recent study, female-led companies have outperformed male-led ones by 63% in terms of return on investment over the past decade, highlighting women's exceptional capabilities in organizing, developing, and managing business ventures.

Empowering Women Entrepreneurs: Startup India Initiatives

With a keen focus on promoting women entrepreneurship, the initiative has implemented various measures to support and empower women-led startups across the country. Here are some key initiatives aimed at promoting women entrepreneurs under the Startup India framework:

- **Fund Allocation for Women-Led Startups:** As part of the Fund of Funds for Startups Scheme operated by SIDBI, 10% of the fund amounting to Rs. 1,000 crore is reserved specifically for women-led startups. This allocation aims to promote the flow of both equity and debt to women entrepreneurs.
- **Virtual Incubation Programme:** Startup India conducted a Virtual Incubation Programme for Women Entrepreneurs, providing pro-bono acceleration support to 20 women-led tech startups for a duration of three months. This initiative aimed to nurture and support the growth of women-led ventures in the tech sector.
- **Dedicated Webpage for Women Entrepreneurs:** A dedicated webpage has been created on the Startup India portal, offering comprehensive information on various policy measures and support initiatives for women entrepreneurs by both Central and State Governments. This webpage serves as a valuable resource for aspiring and existing women entrepreneurs.
- **Awareness and Capacity-Building Workshops:** The government organizes awareness and capacity-building workshops focused on women entrepreneurs, covering topics ranging from venture ideation to scaling up. These workshops provide valuable insights and mentorship opportunities to women at all stages of startup development.
- **WING Programme:** The Women Entrepreneurship in India (WING) programme aims to support 7,500 women entrepreneurs annually through capacity development initiatives. Workshops conducted under WING include mentorship sessions covering various aspects of entrepreneurship such as legal compliance, marketing, finance, and customer acquisition strategy.
- **Awareness Initiatives:** Through print media, social media platforms, and other channels, the Government conducts awareness programmes to educate women entrepreneurs about existing schemes supporting micro, small, and medium enterprises. These initiatives aim to increase awareness and participation of women in the startup ecosystem.

Funding Challenges for Women-Owned MSMEs

Women-led MSMEs encounter significant barriers in accessing funds. Challenges include a lack of collateral, limited ways to prove creditworthiness, and biases against lending to female entrepreneurs.

Many of these businesses operate informally from home, limiting market exposure and marketing capabilities. Female entrepreneurs also face mobility, logistical, and time constraints due to unpaid care work, along with digital skills gaps. As a result, most women-led MSMEs prioritize survival over growth.

Government Schemes for funding and empowering Women Entrepreneurs

- **Mudra Yojana for Women / Mahila Udhyami Yojana:**
  - Offers loans up to Rs. 10 lakh without collateral to women entrepreneurs in manufacturing, production, and other sectors.
  - Eligible businesses include artisans, weavers, craftswomen, and service providers like phone repairing, tailoring, and beauty parlours.
  - Loans can be used for setting up new ventures, expanding existing businesses, or modernizing operations.
  - Tenure for loan repayment ranges from 3 to 5 years, with an age limit of 18 to 65 years.
- **Stand-Up India (SUI) Scheme:**
  - Facilitates bank loans from Rs. 10 lakh to Rs. 1 crore to women and SC/ST entrepreneurs for greenfield enterprises.
  - At least one-woman borrower per bank branch is targeted, promoting entrepreneurship in manufacturing, services, and allied sectors.
  - Loans are available only for greenfield projects, with specific shareholding requirements for non-individual enterprises.
- **Special Schemes for Rural/Disadvantaged Women:**
  - Skill Upgradation and Mahila Coir Yojana (MCY) trains women artisans in coir spinning, providing stipends and subsidies for setting up units.
  - Mahila Samriddhi Yojana offers microfinance with interest rebates to rural women from backward classes.
  - Women beneficiaries covered under various schemes include those seeking term loans, micro-credit finance, and educational loans.
- **Mahila Samridhi Yojana:**
  - Provides financial assistance to women from scheduled castes for self-employment ventures.
  - Offers training in women-friendly craft activities and microcredit at subsidized interest rates.
  - Focuses on income generation through skill development and entrepreneurship among marginalized women.
- **Women Enterprise Development (WED) Scheme:**
  - Offers financial aid up to Rs. 100 lakh to skilled women entrepreneurs for viable income-generating activities.
  - Supports existing businesses for expansion, modernization, and diversification, promoting economic empowerment.
- **Mentoring Women Entrepreneurs:**
  - Women Entrepreneurship Platform (WEP), under NITI Aayog, aggregates resources and services for women entrepreneurs.
  - Provides learning opportunities, workshops, and showcases successful women-led ventures through initiatives like Women Transforming India awards.
- **Special Schemes of Public Sector Banks:**
  - Banks like State Bank of India, Punjab National Bank, Central Bank of India, and Dena Bank offer concessional financing options for women entrepreneurs.
  - Schemes like Stree Shakti, Mahila Udyami, Cent Kalyani, and Dena Shakti support micro-enterprises and working capital needs.

As per the NSS 73rd Round report, women own nearly 20% of non-agricultural proprietary enterprises, employing millions. Their economic contribution amounts to 17% of India's GDP. While urban women entrepreneurs often receive attention, their rural counterparts may be overlooked.

To ensure fairness, the government should enhance schemes to support female entrepreneurs across all initiatives, not just those specifically for women. More programs aiding digital entrepreneurship are also needed. Access to non-financial support like technology upgrades and marketing infrastructure must be improved. Empowering more women-owned businesses can drive economic growth and inspire future generations.

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