

1. SKILLING FOR FUTURE: DEMOGRAPHIC DIVIDEND FOR INDIA

Youth employment is being embedded into the 2030 development agenda under Sustainable Development Goals.

Introduction

- 55.8% of the Indian population is in the working age group of 20–59 years which will peak at 58.9% in 2041.
- However, as per a 2014 government report, only 2.3% of the workforce in India has any formal skill training as compared to 68% in the UK, 75% in Germany, 52% in the USA, 80% in Japan, and 96% in South Korea. This makes a larger section of our workforce unemployable.
- NSS 61st round results showed that among people of age 15–29 years, only about 2% have received formal vocational training and another 8% reported to have received non-formal vocational training.
- One of the reasons for this performance is near exclusive reliance upon a few training courses with long duration (2-3 years) covering around 100 skill categories. In China, e.g., there exist about 4000 short duration modular courses which provide skills closely tailored to employment requirements.

History of Skilling in India

- An elaborate system of vocational education existed in India where master craftsmen and artisans taught the skills to students who worked as an apprentice under them.
- An equal emphasis on vocational education was at the core of the teaching and learning at the world-renowned universities of *Takshashila* and *Nalanda*.
- Ancient Indian literary works such as Banbhata's *Kadambari* described a good education as knowledge of the 64 *Kalaas* or arts. This notion of “knowledge of many arts”, now known as “liberal arts” was integral to Indian education system.
- *Nai Talim* philosophy and Wardha model of development propounded by Gandhiji, challenged the distinction between ‘manual work’ and ‘intellectual work’, a distinct feature of modern education. Education through craft became the central pivot for Nai Talim form of education to develop a child as physically fit, intellectually sound and skilled human whose learned and lived experiences converged.
- Polytechnics, Industrial Training Institutes, and Nai Talim Training Institutes were opened across the country. [Craftsmen Training Scheme](#), initiated in 1950 has been shaping craftsmen to meet existing as well as future manpower needs. However these initiatives could not mainstream vocational education and skilling.

Challenges to Skill Development in India

- Multiple assessment and skill certification systems.
- Paucity of expert trainers, inability to attract practitioners from industry as faculty.
- Mismatch between demand and supply at sectoral and spatial levels.
- Limited mobility between school and higher education programmes and vocational education.
- Low coverage of apprenticeship programmes.
- Narrow and obsolete skill curricula.
- Declining women labour force participation rate.
- Predominant non-farm/unorganised sector employment with low productivity.
- Non-inclusion of entrepreneurship in formal education system.

- Lack of mentorship and inadequate access to finance for start-ups encouraging skilling.
- Inadequate impetus to innovation driven entrepreneurship.

Vocational education is viewed as a last resort for people who opted out a formal academic system. More than 20 Ministries/departments have schemes and programmes related to skilling and entrepreneurship development. Absence of a robust co-ordination and monitoring mechanism has not yet ensured appropriate convergence for their approval implementation.

Skilling in Independent India: In 2009, National Skill Development Policy was formulated to increase availability of skilled workforce. In 2015, National Policy for Skill Development and Entrepreneurship was formulated. A separate Ministry of Skill Development and Entrepreneurship (MSDE) was created to coordinate all the skill development efforts across the country.

Skill India Mission or National Skill Development Mission

It was launched on July 15, 2015, World Skills Day, by the GoI to train over 40 crore people in India in different skills by 2022. The mission aims to create *an end-to-end, outcome-focused implementation framework, which meets demands of the employers for a better skilled workforce with aspirations of Indian citizens for sustainable livelihoods.*

- First, the mission boosted National Skill Development Corporation (NSDC), which was set up as a non-profit public limited company on a Public-Private Partnership (PPP) model. The GoI through the MSDE holds 49% of the share capital of NSDC, the remaining being with the private sector. This model has brought private sector expertise and industry insights for developing a skilled workforce. NSDC acts as a catalyst in skill development by providing funding to enterprises, companies and organisations that provide skill training.
- Second, GoI prepared the National Policy on Skill Development and Entrepreneurship, 2015 which recommended the creation of Sector Skill Councils (SSCs). SSCs are professional standard-setting and capacity-building bodies comprising of representatives from public and private industries for various sectors such as the Agricultural Skill Council of India, Aerospace and Aviation Sector Skill Council, Automotive Skills Development Council, Tourism and Hospitality Skill Council, Hydrocarbon Sector Skill Council, etc. They are uniquely placed to design a curriculum relevant for the industry, offering internships, apprenticeships, and jobs to the candidates and set high quality parameters to ensure a robust skilling ecosystem in the country. SSCs have developed a placement portal linked to demand application and the 360°- interface of the portal connects candidates and training partners with recruitment firms and potential employers.
 - Their mandate includes the following:
 - ✓ Identification of skill development needs
 - ✓ Development of a sector skill development plan and maintaining skill inventory
 - ✓ Determining skills/competency standards and qualifications
 - ✓ Standardisation of affiliation, accreditation, examination and certification.
- Third, the National Skill Qualification Framework (NSQF) has been created which organises qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning. It is a quality assurance framework which creates an equivalence between skills learnt in vocational streams and the formal educational structure.

- Fourth, [Pradhan Mantri Kaushal Vikas Yojana \(PMKVY\) 1.0](#) was launched in 2015 and is being implemented by the Ministry of Skill Development and Entrepreneurship to encourage and promote skill development in the country by providing free Short-Term Training (STT) and incentivising this by providing monetary rewards to youth for skill certification.

Based on its success, PMKVY 2.0 was launched from 2016–2020. It expanded the scope of skill development initiatives by certifying the Recognition Of Prior Learning (RPL) which helped people getting certified and getting jobs. PMKVY was expanded through version 3.0 which focuses on AatmaNirbhar Bharat by offering skilling courses in industry and high-end skills. It also uses “vocal for local” strategy in skilling by leveraging the expertise of District Skill Committees for decentralised projection of demands of specific skills and planning to fulfil the skill gap.

- [Deen Dayal Upadhyaya Grameen Kaushalya Yojana \(DDU-GKY\)](#) is a placement linked skill development programme for wage employment for rural youth.
- [Biotech–Krishi Innovation Science Application Network \(Biotech–KISAN\)](#) programme was initiated by Department of Biotechnology (DBT) to provide scientific solutions to farmers in North-East region to link available innovative agricultural technologies to the farm with small and marginal farmers, especially women farmers of the region.

Other Schemes For Skill Development

- [National Rural Livelihood Mission – Ajeevika Skills](#): It is an initiative of Ministry of Rural Development (MoRD). Under this mission, the Ajeevika Skill Development Programme has been launched which aims to understand the professional aspirations and interests of youth and increase the daily income through skill training. Some of the key features of the scheme include – post-placement support, food and transport during training and assured placement.
- [Skill Acquisition and Knowledge Awareness for Livelihood Promotion \(SANKALP\)](#): This scheme is a World Bank loan assisted program of the MSDE where the focus is on three key result areas – Institutional Strengthening at Central, State and District level; Quality Assurance of skill development programmes; and Inclusion of marginalised population in skill development programmes. Under the scheme, “[Mahatma Gandhi National Fellowship \(MGNF\)](#)”, will be provided to a cadre of professionals at District level who know about governance and public policy in general and vocational education in particular. MGNF is a unique blend of academic and work based training managed at IIM campuses and the districts, respectively. The focus in the scheme is on developing skills for local needs which gives impetus to “vocal for local”. The scheme provides an opportunity to youth in the age group of 21–30 years with some level of academic/professional expertise to provide catalytic support to the district administration to improve the skill development program delivery.

National Education Policy (NEP), 2020 and Vocational Education

NEP – 2020 recognises that the primary reasons for small number of students receiving vocational education is the fact that vocational education is largely focused on grades 11–12 and dropouts in grade 8 and upwards. It aims to integrate vocational education with mainstream education in a phased manner by beginning with vocational education exposure at early age.

NEP – 2020 aims to expose 50% of the learners in school and higher education vocational education by 2025, and also aims to start coding classes for students starting at class 6 for future job readiness. NSDC, with the Ministry of Education has restructured the implementation model of skill development training in schools from 4 years (Class 9th – 12th) to 2-year model (Class 9th -10th; again entry 11th and exit at 12th).

Some of the key initiatives which will be instrumental in integrating vocational education are as follows:

- A [National Committee for the Integration Of Vocational Education \(NCIVE\)](#), consisting of experts in vocational education and representatives from across ministries, in collaboration with industry, has been recommended to oversee the integration and identification of domains based on skill gap analysis.
- Secondary schools will also collaborate with ITIs, polytechnics, local industry, etc. Skill labs will be set up and created in schools in hub-and-spoke model, which will allow other schools to use the facilities of such skilling institutions.
- “[Lok Vidya](#)”, i.e., important vocational education developed in India, will be accessible to students by integration into vocational education courses.
- Higher education institutions will also be allowed to conduct short-term certificate courses in various skills including soft skills, sought after in the industry.
- Every higher education institution and even schools will aim to have Artist(s)-in- Residence to expose students to art, creativity and the rich treasures of the region/country and also train the students in local crafts.

Glocal Models for Vocational Education

NITI Aayog through its three prominent programmes is working on two fronts: a) mainstreaming vocational education and b) skilling students in industry 4.0 to groom them as future job creators rather than job seekers. The programs are:

- [Sustainable Action for Transformation of Human Capital – Education \(SATH-E\)](#) : NITI Aayog has partnered with the States of Jharkhand, Odisha and Madhya Pradesh for systemic transformation in school education. One of the initiatives is to create Schools of Excellence which will be composite schools having high enrolment, best-in-class infrastructure, and providing holistic education with a special focus on job-ready skills.
- [Atal Innovation Mission \(AIM\)](#): Atal Tinkering Labs are being established under this programme which offer exposure and skills in Science, Technology, Engineering And Mathematics (STEM) disciplines such as robotics, 3-D printing, Internet of Things (IoT), etc. The school students are also groomed to design socio-technical solutions for problems around them which are often incubated as products.
- [Aspirational District Programme \(ADP\)](#): Launched by NITI Aayog in 112 districts, the broad contours of the programme are: Convergence (of central and state schemes), Collaboration (of Central, State level ‘Prabharī’ Officers and District Collectors), and competition among districts through monthly ranking – all driven by mass movement. With States as the main drivers, this programme focuses on the strength of each district.

German Dual Vocational Education Training (VET)

The German government identified the benefits of vocational education way back in 1969 by introducing the Vocational Training Act which introduced a national legal framework for the different traditional training paths in the skilled trades and industry and commerce.

In Germany, compulsory schooling starts at age 6. After four years of primary school, students typically get tracked into three different education pathways: *Gymnasium*, with a demanding academic programme culminating in the university entrance qualification; *Realschule* with a less demanding academic programme leading to a lower secondary diploma signifying solid academic skills; and *Hauptschule* with a program designed for those deemed to have limited academic ability or interest and culminating in a school-leaving certificate.

Realschule and *Hauptschule* graduates typically enrol in a vocational pathways at age 15/16. This kind of model helps the student in being job ready while the industry gets manpower which does not need to undergo training before taking full responsibility.

2. RURAL FARM-BASED COOPERATIVES : SKILL REQUIREMENTS FOR SUSTAINABLE LIVELIHOOD

Introduction

Cooperatives are people centred rather than capital centred organisations and hence, require timely and adequate skill upgradation and capacity development initiatives for facilitating community leadership, time management abilities, creativity and innovation business system, effective business management, etc.

Out of the total 8.5 lakh cooperatives in India, around 20% are credit cooperatives, and the remaining 80% are non-credit cooperatives involved in diverse activities viz. fishery, textile, handicrafts, dairy, processing, etc. The non-credit cooperatives particularly the producers cooperatives like fishery, dairy, processing, farming, service, livestock, multipurpose positives, etc. can also be considered as “rural farm-based cooperatives”. The community level cooperative Society known as Primary Agriculture Credit Society (PACS) is an all-farmer driven basic unit and smallest co-operative credit institutions in India. The objective of PACS is to overcome farmers from the clutches of moneylenders and middlemen.

Cooperation is a State subject. With the creation of a separate Ministry of Co-operation in the GoI, a renewed interest has been put on the revival of cooperative movement in India to realise the mission of “*Sahkar-se-Samridhi*”.

Skill-Sets

Community-owned and farmer member driven cooperative business units need to practice market oriented farming. They have to integrate six capitals for the business growth viz.

- i. Human capital where skills, knowledge, ability would help pursuing different livelihood struggles
- ii. Social capital where social resources, networks, membership of groups, relationship of trust encourage people to drive in the pursuit of livelihoods
- iii. Physical capital where basic infrastructure, production equipment enable people to follow livelihoods
- iv. Natural capital where land, water, biodiversity, environmental resources manage flow to drive livelihoods
- v. Financial capital where savings, supply of credit broadens livelihood options
- vi. Information capital where accessibility and affordability of information, weather, market intelligence and powers people to take appropriate and timely decisions.

The above and the required skill sets are depicted in the picture below:

Recommendations

- There is a need for SWOT analysis among cooperatives from a new perspective.
- There is a need to ensure collaboration and convergence to ensure that members of cooperative, farmers, women and youth are able to and have their employability skills and undertake income generating activities and cooperatives.
- There is a need for 4S – Standardisation of institutional and business practises, Scaling up of membership and business volume, Skilling of hard/technical and soft/process skills, and Sustenance of good governance and management practises.

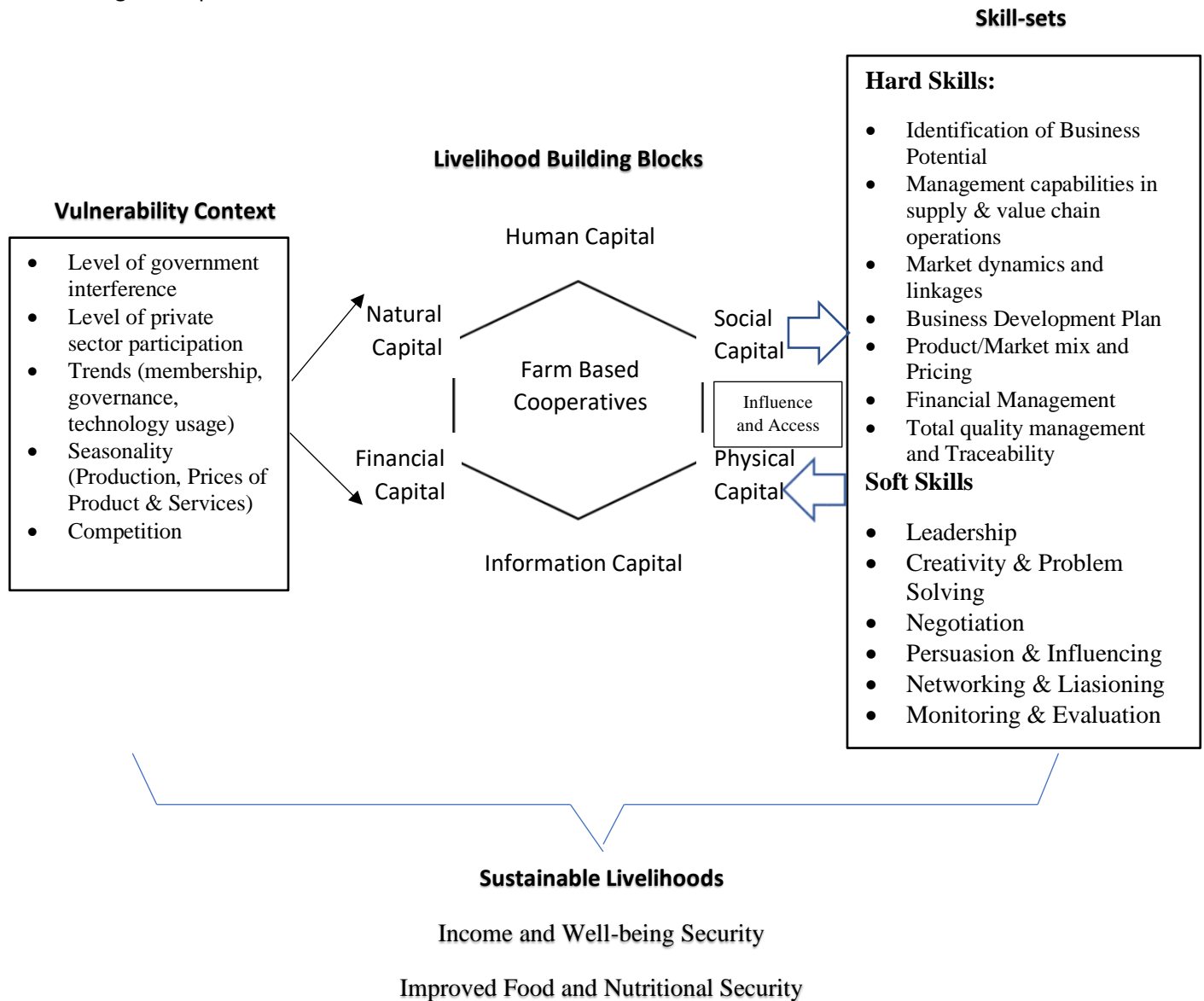


Fig: Sustainable Livelihood Framework for Farm-based Cooperatives

Overview

MSMEs account for:

- Nearly 1/3 of aggregate economy gross value added, and 6.11% of the manufacturing GDP.
- Approximately 1/3rd of manufacturing output in the country.
- 3/4th of all establishments in the country.

Contribution

- i. Generating Large Scale Employment: MSMEs generate the highest employment per capita investment, and check rural-urban migration. Around 20% of the MSMEs are based out of rural areas which is an exhibit to their contribution to sustainable development. According to the assessment of the Ministry of MSME, GoI, the sector generates around 100 million jobs across the country. MSME was also the largest job creator in the last four years.
- ii. Sustaining Economic Growth and Increasing Exports: MSME's account for 45% of overall exports from India. Non-traditional handcrafted and eco-friendly products with tremendous potential for export account for more than 95% of MSME exports. MSMEs also act as ancillary industries for large scale industries providing them with raw-material, vital components and backward linkages.
- iii. MSMEs are instruments of inclusive growth too.

Challenges faced by MSMEs

- Most of the MSMEs are unregistered, and predominantly comprise micro-enterprises, particularly confined to rural India, operating with obsolete technology, with limited access to institutional finance etc.
- MSME sector also needs to cover areas like access to technology, IPR related issues, designed wasteful usage of resources/manpower, energy inefficiency and associated high cost, low ICT usage, low market penetration, quality assurance/certification, and standardisation of products and proper marketing channels to penetrate new markets.
- The micro sector grows on its own like a hydra due to compulsion of generation of livelihood and income as in the case of traditional manufacturing industries or additional livelihood and income as in the case of sectors like handloom, handicrafts and sectors falling under Khadi and Village Industries Commission (KVIC).

Government Initiatives for MSMEs

- i. Access to Credit: *59 minute loan portal* for loan up to Rs. 1 crore with a provision for 2% interest subvention for all GST registered MSMEs on fresh on incremental loans has been launched.
- ii. Access to Market: Public Sector Companies now have to compulsorily procure 25% of the total purchase from MSMEs.
- iii. Technology Upgradation: 20 technology hubs with 100 spokes in the form of tool rooms will be set up throughout the country.
- iv. A number of initiatives for Ease Of Doing Business and Jan Dhan accounts/Provident fund and Insurance has been lodged in a mission mode to provide social security for MSME sector employees.

The policy initiatives are aimed at transforming the MSME sector ecosystem by influencing: (1) Birth (encouraging start-ups) (2) Operations and Growth (by simplifying laws and regulations and facilitating access to credit,

providing better technology and dynamic markets, apart from skilled labour and reliable infrastructure) (3) Orderly and easy exit.

The vision is to increase MSME's contribution to India's GDP to over 50%. Exports contribution aims to be increased to 75% and employment generation to 15 crore.

Clustering of MSMEs

Cluster is not only a means to improve competitiveness in a globalised world but also alleviation of poverty, generation of sustainable employment, fostering innovation, infusing technology, enabling better credit flow and sustenance of environmental issues more effectively. India has around 6000 clusters of MSMEs. With cluster interventions, the unorganised sector starts getting more structured. The ministry of MSMEs adopted the cluster approach as a key strategy for announcing a productivity and competitiveness as well as capacity building of small enterprises.

Lakhpati SHG Women

Launched by the MoRD, the initiative aims to enable rural SHG women to earn at least Rs.1 lakh per annum. The ministry has envisioned this livelihood support to 25 million rural SHG women in the next 2 years. In consultation with Bill and Melinda Gates Foundation (BMGF) and Transformation Rural India Foundation (TRIF), the importance of well-planned interventions to diversify livelihood activities at the household level ranging from agriculture and allied, livestock, Non-Timber Forest Products (NTFP) and other interventions through convergence have been emphasised. The importance of strengthening SHG, Village Organization (VO) and Cluster Level Federations (CLFs) to anchor this kind of interventions has been highlighted. The role of Civil Society Organisations, Krishi Vidya Kendras (KVKs) and other private marketplace is critical in it.

4. INNOVATIVE APPROACHES IN FARM-BASED LIVELIHOOD

Overview

There are four principal ways of acquiring livelihoods –

- i. Production-based livelihood: A large proportion of small and marginal farmers gain livelihood through production of small pieces of land.
- ii. Labour-based livelihood: The small and landless rural households sell their labour and demand for labour, wage rates and prices of food are critical factors for them.
- iii. The Exchange-or Market-based livelihood: Households with surplus food and non-food agricultural products sell these products in the market and the relative prices of their sale and purchase affect their livelihoods.
- iv. Transfer-based entitlements: Households without any income earning assets are dependent upon government's social security and food assistance programmes.

Innovative Approaches

- a) Participatory approach: Involving Panchayats in Decision Making - This approach can help in critical examination of the rural development scenario and identifying missing links in the planning process which the government officials can work on. Devolution of powers to village panchayats will bring out better participatory planning, management and monitoring.
- b) Diversification and Intensification: Restructuring Extension And Adaptive Research Delivery – Convergence with schemes and departments; social mobilisation; formation of Block Technology Team (BTT) and Farmer

Advisory Committees (FAC) at different levels of Panchayati Raj Institutions; commodity marketing by SHGs; Farmers Field School; upgrading production system in agriculture, horticulture, animal husbandry, dairy, food processing and fisheries; risk mitigation through weather insurance, Small And Marginal Farmers (SMF) drought safety net insurance, price risk management, warehouse receipt-based financing, etc. can help.

- c) [Holistic Approach](#) – Issues related from productivity, marketing to post-harvest, agro-processing, credit, rural infrastructure, research, etc should be addressed together.
- d) [Technology Development and Dissemination](#) – This includes setting up web portals for agronomic information, crop diagnostic services, market intelligence, weather service and market price information. The content can be provided through SMS/voice services.
- e) [Group Farming System Approach](#) – Farmers Self-Help Groups (FSHGs), Farmers interest groups (FIGs) and Farmers Associations work better than single individuals.
- f) [Enabling Environment for Privatisation and Commercialisation](#) – It should be encouraged through establishment of Project Development Facility (PDF) and privatisation of services which includes promotion of private nurseries, vets, farm polyclinics. Farm polyclinic should be established in every gram Panchayat or in a cluster of panchayats to address crop related problems.
- g) [Marketing Linkages](#) - FSHGs and entrepreneurs should be facilitated to take up input supply activities like seed production, private nursery raising and marketing linkages.
- h) [Concept of Bio-village](#) – In these villages, activities like biodynamic fertilisation, compost, vermin-culture, Cow Pat Pit (CPP), green manuring, bio-control agents, Integrated Pest Management (IPM), Integrated Plant Nutrient Management (IPNM), Integrated Crop Management (ICM), etc. can be promoted.
- i) [Concept of Seed Village](#) – This can be promoted to attain self-sufficiency in good quality planting material.
- j) [Concept of Farmers Field School](#) – It can facilitate convergence of all services related to agriculture and allied sectors for better output.
- k) [The Collective Marketing Model](#) – Collective marketing has empowered community-Based Organisations (CBOs), and primarily SHGs with the knowledge, confidence and processes to operate a non-exploitative channel for the marketing of products. It has been very successful in Odisha.
- l) [Enhancing Knowledge through Radio](#) – In partnership with the Development Support Centre in Gujarat, an innovative radio programme on agriculture has been developed to inform and empower small and marginal farmers, by addressing knowledge needs. The programme, is aired on All India Radio every Thursday covering the state of Gujarat. To be responsive and relevant, the programme is designed around the three cropping seasons – Monsoon, Winter and Summer. For each season, the focus is on seed selection, treatment and sowing, crop growth, harvesting and storage of different crops grown. Other related topics include soil testing and improvement, animal husbandry, rainfall insurance, weather information and pest management. The objective is to provide timely and relevant information in a simplified way. Careful attention is paid to the agro-climatic conditions of the state and the resulting diversity in nature of crops and related agricultural practises, including the diversity in local dialect. Special highlights of this programme include:
 - a. [“Discussion mode”](#): Efforts are made to identify problems representing different regions and provide possible solutions in a discussion mode which is more participatory and less prescriptive. A special section in each episode highlights innovative practices and ideas implemented by farmers themselves which motivates farmers to experiment and share their experiences.

- b. **“Phone-in”**: It provides an opportunity to the farmers to communicate and discuss in further detail, queries on farming practises. A panel of experts from agriculture universities, development organisations and individuals address these queries.
- c. **“Listeners Club”**: Listeners or **“Shrota Mandals”** are promoted to identify and collate problems and queries from a particular region and for generating ideas for developing the content of future episodes. **Shrota Mandals** also provide a platform to farmers to collectively discuss aspects related to farming, related problems and possible solutions.

5. EMANCIPATION OF RURAL WOMEN

In rural communities, agriculture and allied sector is the primary source of livelihood that includes 80% of all economically active women, out of which 33% constitute agricultural labour force and 48% are self-employed farmers. The ratio of women working in agriculture sector has increased over time and meet greater amount of contribution to GDP per capita.

Gender Mainstreaming in Agriculture: Skill Development and Capacity Building

- i. Govt has prioritised the agenda of **“Gender Mainstreaming in Agriculture”** to provide access to resources/schemes to rural women engaged in the sector. Special beneficiary oriented schemes are laid by Department of Agriculture and Farmers Welfare to mainstream participation of rural women. These special schemes provide for States and other implementing agencies to incur at least 30% expenditure on women farmers.
- ii. **Mahila Kisan Sashaktikaran Pariyojana (MKSP)** scheme was launched by the MoRD to impart skill development and capacity building programmes for rural women as a sub-component of Deendayal Antyodaya Yojana – National Rural Livelihoods Mission (DAY–NRLM) and implemented through State Rural Livelihoods Mission (SRLM) across India.
- iii. Under **DAY-NRLM** scheme, training on use of latest agriculture, allied techniques, agro-ecological best practises are imparted to women farmers through community resource persons and extension agencies. Specific women farmer training programmes on topics like household food security by kitchen gardening and nutrition gardening; design and development of low/minimum cost diet; designing and development for high nutrient diet; processing and cooking; gender mainstreaming through SHGs; storage loss minimisation techniques; rural crafts and women and child care are organised through extension bodies.
- iv. Under Sub-Mission on Agriculture Extension (SMAE), Support to State Extension Programmes for Extension Reforms (ATMA scheme) is being implemented. Skill training courses in agriculture and allied areas is also be conducted for women farmers/Krishi Sakhis through National Training Institutes, State Agricultural Management and Extension Training (SAMETIs), Krishi Vigyan Kendras (KVKs) and State Agricultural Universities (SAUs) across the country.
- v. Several farm women’s food security groups, undertaking micro/microlevel studies related to women in agriculture, delivery of gender sensitisation module on gender learning through training programmes at national/regional/state level, for women friendly handbook and compilation of best practises, etc. are undertaken by Ministry of Agriculture and Farmers Welfare.
- vi. Parallel research projects and introduction of new interventions for streamlining women engagement in farming sector, gender sensitive extension approaches, etc. are led by ICAR – Central Institute for Women in Agriculture, Bhubneshwar.

- vii. Farmers Producer Organisation (FPO) and Women SHGs are also playing a significant role in dissemination of these programs.
- viii. The Mahila Shakti Kendra (MSK) developed by Ministry of Women and Child Development has empowered rural women through community participation and raised awareness on girls education, maternal care and health, etc.
- ix. Biotech- KISAN : Mentioned in first article.

Social Empowerment

- i. Beti Bachao Beti Padhao scheme has helped eliminate gender discrimination and improved sex ratio at birth.
- ii. Sukanya Samriddhi Yojana
- iii. Various schemes for holistic empowerment of women viz. Beti Bachao Beti Padhao, Pradhan Mantri Matru Vandana Yojana, Scheme for Adolescent Girls, Prime Minister Mahila Shakti Kendra Scheme, National Creche Scheme, Rashtriya Mahila Kosh (RMK), Swadhar Greh, UJJWALA scheme, Schemes of One Stop Centre (OSC), Women Helpline (WH) and Gender Budgeting Scheme are implemented by Ministry of Women And Child Development across the country. They have been now integrated into an umbrella scheme known as “Mission Shakti”.
- iv. 33% reservation for participation in politics at local level is a key reform for women empowerment.

Financial Empowerment

- i. Pradhan Mantri-Jan Dhan Yojana (PMJDY)
- ii. Pradhan Mantri Mudra Yojana (PMMY), Stand-Up India scheme, Prime Minister’s Employment Generation Programme (PMEGP) run by Ministry of MSME are additional supporting steps.

6. INNOVATIONS IN START-UPS FOR SKILLING

- i. Rashtriya Krishi Vikas Yojana – Remunerative Approaches for Agriculture and Allied Sector Rejuvenation (RKVY – RAFTAAR):
 - a. This scheme was launched in 2017–18 by the Ministry of Agriculture and Farmers Welfare to give impetus to agriculture and allied sectors. It primarily supports incubation centres, Krishi Vigyan Kendras (KVKs) to promote innovation, agri-preneurship and agri-startups.
 - b. Incubation facilities and expertise already available with participating institutions (academic, technical, management and R&D) are utilised in a symbiotic manner.
 - c. At national level, National Institute of Agricultural Extension Management (MANAGE) strives to nourish agri-tech start-ups and agri-preneurs who contribute to the betterment of this sector. MANAGE – Centre for Innovation and Agripreneurship is a Centre of Excellence in Agribusiness Incubation and Knowledge Partner for strengthening, handholding and demonstrating best practices to the RKVY-RAFTAAR agribusiness incubators.
- ii. DigiSaksham: It is a free of cost digital skills programme, a joint initiative of Central Government with Microsoft’s India to support youth from rural and semi-urban areas. The job seekers can access the training through National Career Service (NCS) portal where three basic types of training viz. Digital Skills – Self-paced learning, VILT mode training (Virtual Instructor led)and ILT mode training (Instructor led) are provided. The

ILT training would be conducted at the Model Career Centres and National Career Service Centres for SCs/STs across the country. Training in areas like JavaScript, Data Visualisation, Advance Excel, HTML, programming, etc. are being provided. DigiSaksham will be implemented in the field by Aga Khan Rural Support Program India.

EXAMPLES OF AGRI-TECH STARTUPS

- i. Founded in 2016, Intello labs offers digital products which uses technologies like computer vision and deep learning to help farmers, retailers and exporters to assess the quality of the fruits and vegetables.
- ii. Founded in 2019, Bijak enables traders and wholesalers to discover new suppliers, maintain ledgers, make payments and access working capital through its app to scale their business.

Examples of Local Innovations in India

- i. Arunachalam Muruganatham from Coimbatore popularly known as “Padman”, invented low-cost sanitary pad making machines which ran all over the country. He’s internationally credited for his solution to the problem of hygiene among women in rural India and appreciated as a social entrepreneur.
- ii. The National Innovation Foundation has recognised inventions ranging from portable welding machines to tower irrigation systems in Jharkhand.
- iii. Sasisekar Krish’s ‘nanoPix’ based in the Hubli district of Karnataka, makes image and video processing products for agriculture and healthcare.
- iv. In Sirmaur district of Himachal Pradesh, roadside amenities – “She-haat” have been created which includes a shop, a restaurant, guestroom and a “Kaushal Vikas Kendra”, in a single complex, run by women self-help group. It provides a glimpse of the States’ culture, cuisine and tradition.
- v. The State government of Telangana has established “Telangana State Innovation Cell” which aims to promote grassroot innovation and has supported noteworthy rural origin businesses like Viswaja Reddys HiCode.

Accelerating Growth of New India’s Innovations (AGNII) Mission

Conducted in partnership with Common Service Centre, it showcased a series of digital technology innovations for rural India. Some of them are:

- i. “Dharashakti” is easy to use soil organic carbon detection and testing kit which can help the farmers in optimum use of fertilisers.
- ii. “Soil Saathi” is a lightweight chemical analyser with the ability to test 22 parameters in soil and water and advise fertiliser requirements based on crop and Agro climatic conditions.
- iii. “Tan90” is a portable cold storage unit to reduce post harvest losses in crops.
- iv. “Saptkrishi” is a low-cost technological solution that extends the shelf life of perishable horticultural produce.

- v. “Krishakti” with a blend of technology is a smart and intelligent precision spraying drone for crops and can drastically reduce the indiscriminate sprays of pesticides.
- vi. “THANOS” is also a drone based autonomous train platform that space and a car in a fraction of the time uniformly.
- vii. “Avatar Small Wind Turbine” are wind turbines and can be deployed as decentralised and distributed renewable energy solutions for urban and rural India.

TOYCATHON 2021

- Under the ‘AatmaNirbhar Bharat Abhiyan’ initiated by our Hon’ble Prime Minister, Shri. Narendra Modi, Toycathon-2021 is conceived to challenge India’s innovative minds to conceptualize novel Toy and Games based on Bharatiya civilization, history, culture, mythology and ethos.
- Toycathon 2021 is an inter-ministerial initiative organized by Ministry of Education’s Innovation Cell with support from All India Council for Technical Education, Ministry of Women and Child Development, Ministry of Commerce and Industry, Ministry of MSME, Ministry of Textiles and Ministry of Information and Broadcasting.
- Currently, India’s toy market stands at around 1.5 Billion USD, which primarily is dominated by imported toys. Moreover, majority of these toys do not represent Indian heritage, civilization and value systems.
- Toycathon 2021 is a unique opportunity for Students, Teachers, Start-ups and Toy experts/professionals in India to submit their innovative toys/games concepts and win large number of prizes worth Rs. 50 lakhs.

Production Linked Incentive (PLI) Scheme

To tackle the COVID-19 pandemic and boost manufacturing, the above scheme has been announced in 10 key sectors under the aegis of AatmaNirbhar Bharat:

- i. Advance Chemistry Cell (ACC) battery – It represents one of the largest economic opportunities with the shift in consumer electronics towards electric vehicles and renewable energy.
- ii. Electronics/technology products
- iii. Automobiles and auto components
- iv. Pharmaceutical drugs – India’s the third largest pharmaceutical industry in the world by volume and 14th largest in terms of value. It contributes 3.5% of the total drugs and medicines exported globally.
- v. Telecom and networking products
- vi. Textile products: MMF segment and Technical Textiles – Indian textile industry is one of the largest with 5% share in global exports. But India’s share in Man-Made Fibre (MMF) is low in contrast to the global consumption pattern.
- vii. Food products
- viii. High-efficiency Solar PV Modules – large imports of such panels pose risks in supply chain resilience and have strategic security challenges considering the electronic(hackable) nature of the value chain.
- ix. White goods (ACs and LEDs)

x. Specialty Steel

The scheme will be implemented by the concerned ministries.

Ganga Utsav

Ganga Utsav 2021 was celebrated on 1-3 Nov across India. The National Mission for Clean Ganga (NMCG) had been celebrating the day of declaration of river Ganga as 'National River' on 4th November of every year with an objective to promote stakeholder engagement and ensure public participation under aegis of Ganga Knowledge Centre. The utsav celebrates mystical and cultural river Ganga through storytelling, folklores, dialogues with eminent personalities, quizzes, etc. It saw important launches like 1st Chacha Chaudhary comics on Ganga rejuvenation, a song on rivers of India by IIT Madras, etc.

Ministry of Culture has launched three Unique Competitions to celebrate Azadi ka Amrit Mahotsav

- Competitions for *Deshbhakti Geet writing*, *Rangoli making* and *Lori writing* are being held nationwide from Tehsil/Taluka level to National level.
- The initiative was announced by the PM in Mann Ki Baat and comes under Azadi ka Amrit Mahotsav, which is a unique initiative to celebrate and commemorate India's 75 years of Independence.

Clean Green Village Week under MGNREGA

As part of Azadi ka Amrit Mahotsav, a 75 week-long celebration, States/UTS have conducted one week-long Clean Green Village activity under MGNREGA between 29th October and 4 November 2021. The focus was on identification and construction of soak pits, vermi-compost/NADEP pit and waste to wealth initiatives such as vermi-composting, use of waste materials, recycling of nonbiodegradable waste.