



NSDC CONNECT

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BUILDING INDIA'S
FOOD POWERHOUSE

SKILLS & LIVELIHOODS
IN THE AGRICULTURE
AND ALLIED SECTOR



SKILLS FOR POST-
HARVEST EFFECTIVENESS

HORTICULTURE
SECTOR IN INDIA

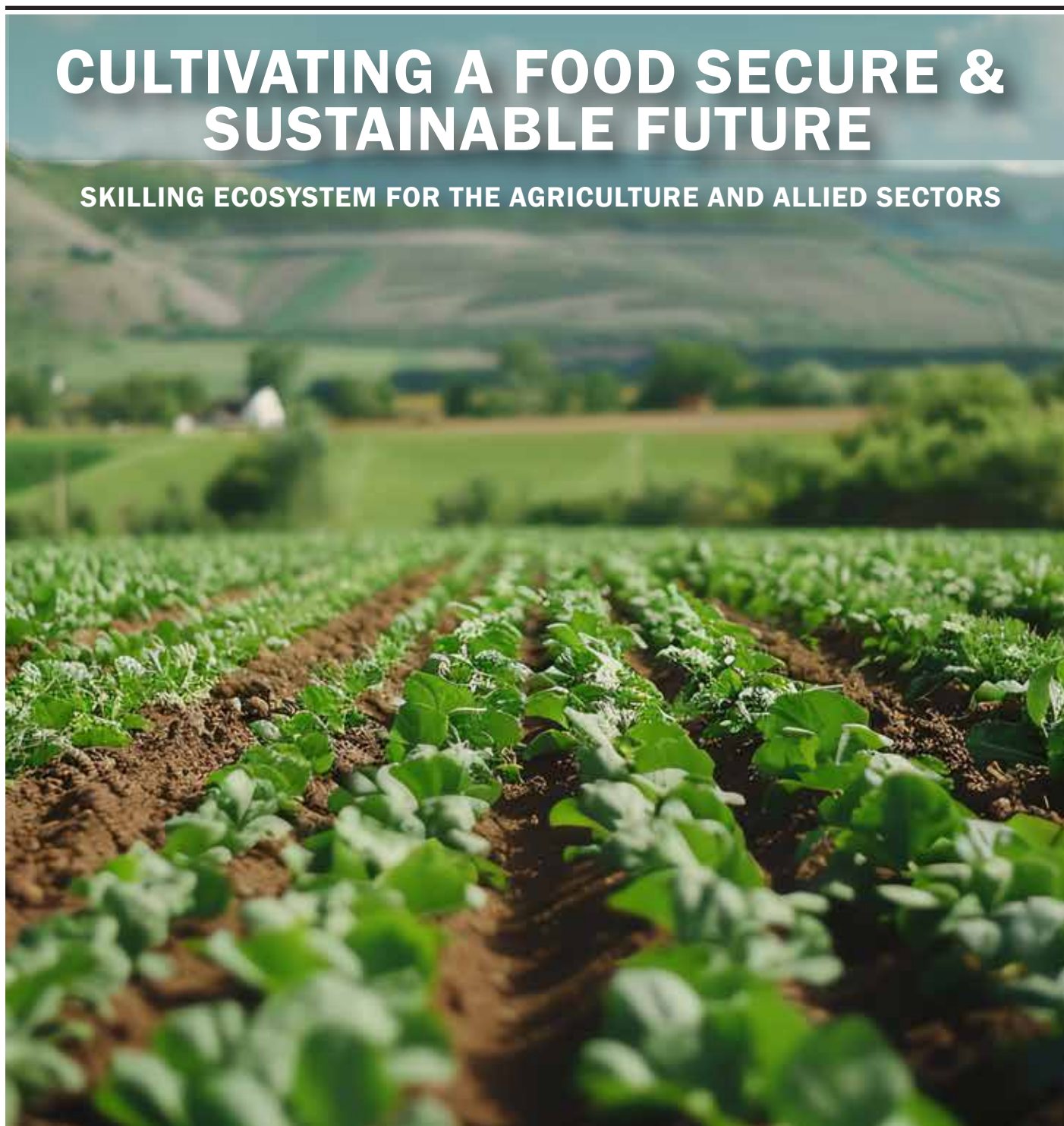


INDIA'S FLOURISHING
FOOD PROCESSING SECTOR

CURRENT SCENARIO
& PATHWAY TO FUTURE

CULTIVATING A FOOD SECURE & SUSTAINABLE FUTURE

SKILLING ECOSYSTEM FOR THE AGRICULTURE AND ALLIED SECTORS



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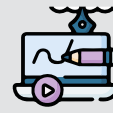
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Dear Readers,

Welcome to the eleventh edition of NSDC Connect!

As India gears up to celebrate its 78th Independence Day, we reflect on the journey towards a 'Skilled India' and its pivotal role in realizing the vision of a Viksit Bharat by 2047.

This month, we delve into the theme: Agriculture and Allied Sectors, the backbone of our nation, and its immense potential for growth and development. To anchor this issue, Dr. Satender Arya, CEO of ASCI (Agriculture Skill Council of India), has graciously contributed by offering his valuable insights in our spotlight article on the sector's transformation through skilling, financial support, and entrepreneurship. His perspective emphasises the opportunities for farmers, youth, and women. We thank Dr. Arya for sharing his expert views.

The recent Union Budget and World Youth Skills Day reinforce the government's commitment to skill development. NSDC remains dedicated to equipping our youth with the skills to excel globally. The articles on Union Budget and World Youth Day stresses on the importance of Skill India Mission and the allocation of substantial resources.

Through our Deep Dive section, we further explore the nuances of skill development in the agriculture and allied sector. Our first story captures the critical area of post-harvest loss in the horticulture sector. Hema Priyadarshini A and Arpit Asthana highlight government initiatives and NSDC's role through FICSI (Food Industry Capacity and Skill Initiative) in addressing this challenge.

The growing influence of women entrepreneurs is undeniable. The Annual Survey of Unincorporated Sector Enterprises (ASUSE) highlights their significant contributions. We delve into this trend and explore the support needed to empower women entrepreneurs.

For an in-depth understanding of the food processing industry, we interviewed Mr. Sunil Marwah, CEO of FICSI. His insights into the sector's potential and NSDC's role in skill development

are invaluable. On behalf of our team at NSDC, I would like to extend my gratitude to Mr. Sunil Marwah for sharing insights and opportunity which awaits in food processing industry.

To fully harness the potential of agriculture and allied sectors, we need a skilled workforce equipped with modern farming techniques, technology, and entrepreneurial abilities. This is crucial, not just for the sake of livelihoods, but also for the overall food security, and economic health of the country. It is also important to our environmental and social goals.

By investing in skill development, we can create a new generation of agri-preneurs driving innovation and employment. NSDC is committed to empowering the youth and fostering a skilled workforce to build a prosperous and sustainable India.

Let us work together to nurture India's Kushal future and move closer to the vision of inclusive and sustainable development for India.

Jai Hind!

Warm regards,



VED MANI TIWARI
CEO, NSDC

NSDC Connect embodies NSDC's values: Integrity, Innovation, Inclusion, and Impact. We aim to provide trustworthy, innovative, and inclusive content that aims to make a positive impact on education and skill development. Join us in reimagining a better future.

BUILDING INDIA'S FOOD POWERHOUSE: SKILLS AND LIVELIHOODS IN THE AGRICULTURE AND ALLIED SECTOR



India's agriculture sector is crucial to its economic and food security, contributing 18.3% to GDP, and employing half of the workforce. As the second-largest global agricultural producer, India significantly impacts both domestic and international markets. However, challenges like low productivity and fragmented land holdings persist. The sector's future hinges on advancing technology and improving workforce skills. This article explores the skills and livelihoods ecosystem for the agriculture sector with an emphasis on the role of The Agriculture Skill Council of India (ASCI) in addressing these needs. ASCI offers training and developing skills for modern agricultural practices, thus enhancing productivity and sustainability, and contributing to the larger vision of making agriculture a powerhouse sector in India.

Introduction

Agriculture plays a vital role in the Indian economy, contributing 18.3% to the gross domestic product (GDP) and providing employment to 45.8% of the total workforce in 2022-23 (Economic survey and PLFS). India ranks second after China, adding significantly to the global agriculture. It is also an important part of the domestic and external trade, positioning India as a significant Agri-exporter, with the sector contributing 12% to India's exports (Agri trade, MoAFW website). The sector also impacts non-farm segments such as consumer related products, retail, agro-processing, chemicals, and e-commerce, which are dependent on agricultural cash crops for raw material (tea, coffee, cotton, jute, sugarcane, oilseeds, fruits, and vegetables, etc.)

Indian Agriculture Sector Overview

All crops, livestock, fisheries, and forestry contribute to 53.68%, 34.02%, 7.55% and 7.65%, of the agriculture output value (NAS 2023-24), respectively. However, the workforce (PLFS survey 2022-23) deployed is much less in the high growth segments livestock (13% of Agri-workforce), fisheries (0.6%), and forestry (0.3%) sectors in comparison to crop production (30%). Further, agriculture and allied sectors play a key role in realization of the Sustainable Development Goals (SDG) of ending hunger, achieving food security, and improved nutrition and provision of livelihood. Hence, it is a key priority for India to meet the food need and demand of our growing population through increased per capita availability of agricultural produce over the years.

Figure 1: Agriculture Sector Snapshot

Largest producer of milk, spices, pulses, tea, cashew, and jute		Second largest producer of rice, wheat, sugarcane, groundnut, vegetables, fruit, and cotton		Largest & Livestock population (31% of global)
45 of 60 Soil Types	20 Agri-Climactic Regions	14 % of Species in India	10th largest Arable land	45.8% of workforce dependent on agriculture
Third largest fish producer with rich and diverse fisheries resources			India in the top ten rankings of the global Agri exporters	

Source: Agriculture Skill Council of India (ASCI)

The agriculture value chain ecosystem comprises the activities right from farm to fork, covering the supply of agricultural inputs, the production and conversion to products, and their distribution to final consumers. The agriculture is driven by rapid urbanization, change in diet patterns, wide-ranging consumer preferences, and expansion of markets, furthermore the ecosystem has been expanding to segments such as e-commerce and supermarkets. India has been transformed from food deficient to food sufficiency, but it still faces challenges of resource-intensive agriculture and low farm and worker productivity. The unorganized and fragmented nature coupled with challenges such as limited infrastructure, supply chain inefficiencies and low digital adoption holds back the sector from performing to its full potential. While the success of the first green revolution depended on inputs like seed, agricultural chemicals, and water, the next quantum jump is expected from technological interventions, and on the

minimization of inputs and maximization of output.

Agricultural Workforce Dynamics

India has a demographic advantage with 68% working age population and Dependency Ratio of 47% in 2023 (World Bank Group). However, the share of skilled (formal as well as informal) to total labour force as per the PLFS is 24.3%, in comparison to the advanced countries (>80%). With respect to agriculture, the skilled workforce is much lesser. Moreover, Indian agriculture engages too many people for its workforce (45.8% as per PLFS 2022-23) in relation to its contribution to the national economy. Due to the fragmentation of land and small landholdings, the farmers are becoming self-employed (82.8% of agri-workforce are self-employed vs overall workforce at 57.3%) and unable to provide employment to anyone else. The RBI India productivity report, 2022 says that the average labour productivity in agriculture in last decade is very less (₹ 71,400/year) compared to other sectors of the economy i.e. manufacturing (₹ 2,96,800/year) and services (₹ 3,05,700). Due to dismally low agricultural labour productivity, the people are disinterested to perform low-paying and hard farm work.



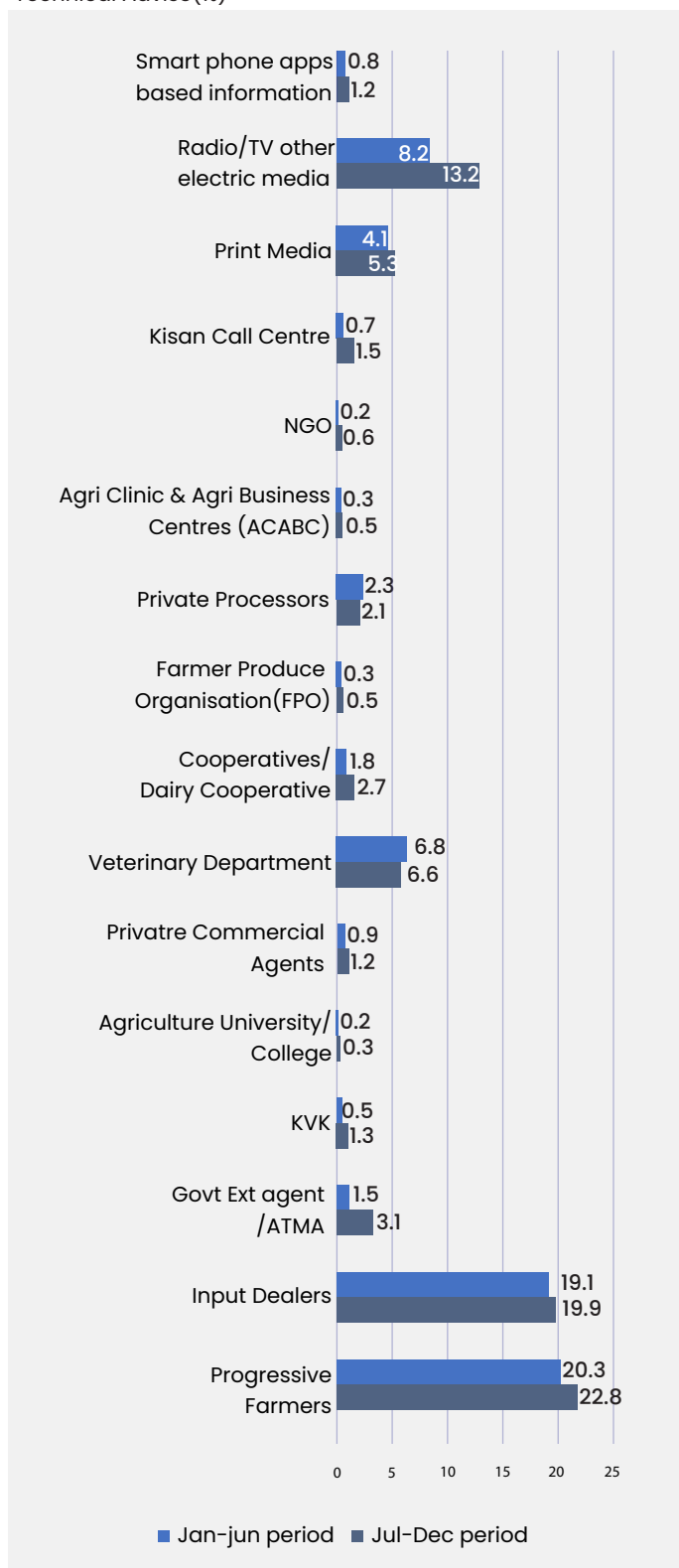
In fact, the country needs to shift a considerable proportion of present crop-based workforce to more remunerative and meaningful employment in emerging technology led, service oriented innovative agriculture initiatives and high growth allied sectors. As the majority of the agricultural workforce in India is neither educated nor skilled, it has impeded the rate of innovative technology absorption in agriculture and, subsequently, the growth rate. Therefore, India's ability to leverage demographic advantage is yet to reach to its full potential.

Skilling to Transform Agriculture

As we know, India's demographic dividend cannot be reaped without skilled workforce. With specific reference to agriculture, only 0.6 % of total workforce has received formal, vocational, and technical training (PLFS survey, 2022-23). In India there is a vast system of agricultural extension and in general, the farmers get technical advice from various sources such as progressive farmers, input dealers, and others (Figure 2). Less than 15% of the households approached government departments / extension agencies (NSS 77th round) for advice. Despite spectacular growth in the sector, less than 50% of the agricultural households are accessing technical advice at all India level during *Kharif and Rabi* seasons with regional

variations from various sources as given above (NSS 77th round).

Figure 2 Sources Wise Agricultural Households Accessing Technical Advise(%)



Source: Situation Assessment of Agricultural Households and Land and Holdings of Households in Rural India, 2019 (NSS 77th round)

An advanced agricultural and food system would certainly need people skilled in the application of technologies and practices. In such a scenario, the relevance of uneducated/ unskilled workers would vanish sooner than later and therefore, skilling is essential. Skilling themes illustrated in figure 3 would drive the

agriculture sector towards prosperity.

Apart from the themes, mentioned in figure 3, there is potential and diversification opportunities in wide variety of non-traditional horticultural crops, floriculture, landscaping and gardening, kitchen gardening, beekeeping, mushrooms, sericulture, agro-forestry, lac, Non-Timber Forest Produce (NTFP), and seaweed cultivation. Farming is turning from traditional production based sector to “Farming as a Service (FAAS)” approach wherein the services related to farming, from crop management to equipment leasing to marketing, are provided through technology-driven solutions. It combines the familiarity of traditional agriculture with the benefits of modern technology, making agriculture more efficient, sustainable, and profitable. At the same time, agroecology seeks to optimize the interactions between plants, animals, humans, and the environment while also addressing the need for socially equitable food systems from production to consumption and based on these, integrated farming, natural (zero budget) farming and organic farming are attracting policy makers as well as farmers. With the changing scenario, these activities are attracting the public and private investments specifically in the above areas significantly.



Figure 3: Actionable Skilling Themes

Segment	Existing Practices	Need for Skilling
Farm machinery and Equipment	Traditionally available equipment and tractorization	<ul style="list-style-type: none"> Mechanisation in sowing and planting, weeding and plant protection, harvesting, digitally enabled, micro-irrigation and decarbonization equipment
Inputs	High yielding varieties, fertilizers, and pesticides	<ul style="list-style-type: none"> Next generation seeds and planting material Quality certified seed production and planting material Bio-stimulants and protection agents Feed and fodder production and conservation Balanced feed, vaccines, and animal health products for improvement in livestock
Production	Production of crops and livestock acquired mostly by informal ways	<ul style="list-style-type: none"> Technology enabled farm management Natural resource efficiency & climate resilient agriculture Integrated farming & diversification to high growth sectors Digital technologies - integrate data to support on farm decision, use of AI, remote sensing, IoT, blockchain technologies, weather modelling, and precision agriculture Renewable energy technologies
Post-harvest management	Limited quality control aspects, packing & storage by farmer	<ul style="list-style-type: none"> Post-harvest management including cleaning, grading, sorting, packhouses/ripening/treatment, warehouses, cold chain across perishables to reduce wastage and maintain quality Traceability and food safety Digital interventions
Marketing of produce and processed produce	Agriculture Produce Market Committees (APMCs) and National Agriculture Market (eNAM) Direct marketing Aggregation and marketing by Cooperatives/FPOs Commodity markets for a few like fibres, spices, pulses, etc.	<ul style="list-style-type: none"> Aggregation, quality, logistics, storage, & marketing services Farmers collectives for aggregation-logistics & marketing Digital applications of Agri marketing Carbon & other emissions reduction measures in these activities Food produce certification and documentation for domestic & export marketing

Source: Analysis by Agriculture Skill Council of India (ASCI)

Farmers' Collectives

Farmers' collectives, be it a Cooperative or Farmer Producer Organisation (FPO), are making a difference by bringing together the small farmers and providing backward and forward linkages to member-farmers. The producer's share in consumers' price was found to be high in marketing of vegetables through modern and cooperative supply chain in comparison to traditional supply chain in the state of Karnataka (Veerendra, et al, 2020). The great grand story of cooperatives, AMUL, KMF, and others, are known across the world. The farmers of an FPO in Bengaluru Rural district and an FPO in Andhra Pradesh were less affected during COVID as the FPO took the initiative of supplying vegetables and fruits to apartment complexes in the city (The Hindu Business Line, 3rd Aug 2020).

The central and state governments supporting formation of FPOs and cooperatives with financial, technical and infrastructure incentives. With changing times and technology, the ASCI is continuously modifying and developing new QPs as per the relevance. It has developed QPs such as: Group Farming Practitioner, Essentials of Managing an FPO, Introduction to regulatory compliances for an FPO, Fundamentals of Business and Marketing Plan for an FPO Fundamentals of Accounting and Financial Management Practices for FPO. The ASCI's Centre of Excellence for Agriculture Skills has started taking up steps for skilling the FPO members and board members for effective management and business of FPOs.

Landscape to Support Agri-Skilling Ecosystem

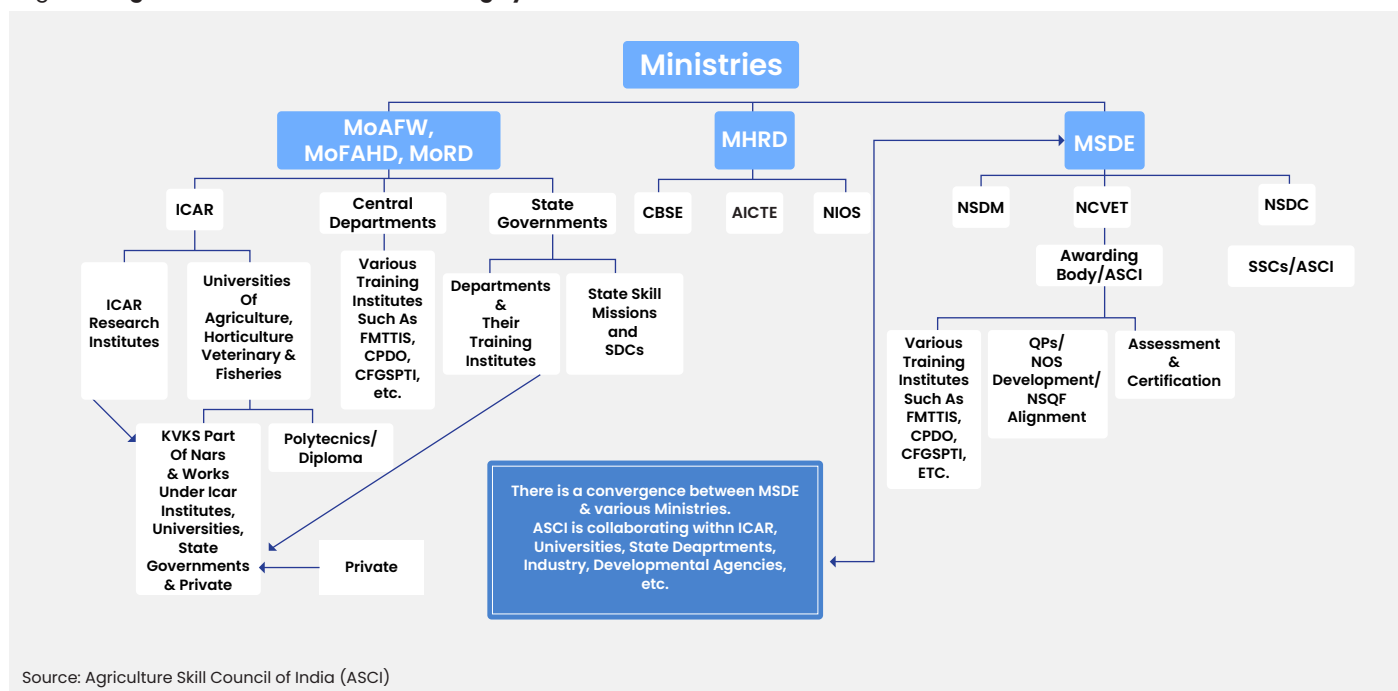
Traditionally, the stakeholders in creation of human resources through technical education and research comprises ICAR and its institutes, State Agriculture and Allied Sector Universities (SAUs), ITIs and private universities/colleges. These human resources serve to occupy management and highly technical jobs in the industry, faculty and research, state governments and so on. With respect to skilling programmes of the farmers, entrepreneurs, and perspective producers, various agencies i.e. researchers, universities, government departments, industry, and others (Figure 4), provide training programmes of a wide variety, i.e., demonstrations, exposure visits, awareness programmes, hands-on skilling, fairs and melas and so on.

However, the institutional framework of the skill ecosystem has undergone rapid changes in last decade and Government of India established the National Skill Development Corporation (NSDC) leading to National Skills Qualification Framework (NSQF) under the leadership of Ministry of Skills Development and Entrepreneurship (MSDE). The NSQF (Figure 4) provides a convergence of education and technical/vocational training components. Later as per the New Education Policy (NEP, 2020), Vocational Education and Training (VET) was made as an integral part of school and higher education to integrate the vocational and academic education, to ensure mobility, and make skill programmes aspirational. Apart from MSDE, the agriculture, dairy and fisheries, rural development and renewable energy ministries also have schemes for skilling such as PMKVY, RKVY, MIDH, NRLM, ARYA and STRY of ICAR, PM Kusum, etc.

The Agriculture Skill Council of India (ASCI), a sector skill council, is the nodal agency for designing and developing standards, course curriculum, content, assessment, and certification of skill programmes under the National Skills Qualification Framework (NSQF) for agricultural skills.



Figure 4: Agricultural Education and Skilling System



Source: Agriculture Skill Council of India (ASCI)

Role of Agriculture Skill Council of India: Landscape to support Agri-Skilling

As mentioned above, the Agriculture Skill Council of India (ASCI) is an NCVET recognised awarding body and facilitating NSQF aligned skilling in Agri and allied sectors. The academia, research organisations and industry are an important partner in this endeavour. It has 862 affiliated Training Centres and about 1,000 Certified Assessors.

Impact of skilling

The primary survey of 100 skilled farmers in ASCI-QPs/job roles indicates that the trainees were working as regular wage employees (36%), or casual labour (2%), and rest of the trainees are self-employed (54%). The trainees have expressed that the income level of self-employed has improved 50-60% after skilling. Overall, the benefits of skilling include higher earnings, learning new methods/ways which help in higher productivity and efficiency, better information. As per the responses from skilled trainees, they would need further training in pest and disease control, post-harvest technologies, and marketing of the produce. About 98% of the respondents were willing to suggest the skilling programme to others as they found the training to be useful.

Source: ASCI survey and analysis

The ASCI is working to build capacity in agriculture and allied sectors by bridging the skill gaps, upskilling the existing and skilling the prospective workforce to improve the livelihoods of farmers and farm workers, perspective producers/entrepreneurs and extension workers.

The ASCI has developed 186 Qualification Packs (QPs) and corresponding curricula since inception which includes production practices of various crops, repair and maintenance of farm machinery, livestock rearing and procurement related, fishery production related, and so on. In accordance with the development of the sector technologically, ASCI is rolling out new QPs for commodity markets, solar power, various farm machinery apart from tractors, and post-harvest management. Now the thrust is on digital and climate friendly economy. To match with the priorities, ASCI developed QPs for carbon farming, organic farming, digital agriculture, and FPOs in recent times.



Giving priority to critical skills in agriculture, Agricultural Skills Council of India rolled-out the project "Developing Critical Skill Courses for Agriculture Sector in India" under Indo-Australian collaboration in 2023-24. A team of highly skilled professionals from Australia have brought in some of the best practices of the Australian agriculture skilling ecosystem built in this project and developed a series of courses focussing on emerging and futuristic training needs for India's advancing agriculture sector. The courses rolled out are Digital Agriculture Extension Promoter, Carbon Farming Practitioner, Livestock Green Management Promoter, Organic Farm and Business Promoter and Integrated Farming Practitioner, and twenty critical NOS/ Micro-credentials around use of Renewable Energy/ GHG emission/ One Health.



The ASCI has trained more than a million candidates and organised, Rozgar melas, online job portal, and apprenticeship. Quite a sizeable number of PMKVY STT candidates are placed including international placements. The ASCI in collaboration with Ministry of Human Resources Development (MHRD) facilitated agricultural curriculum in 2,700 schools across twenty-seven states /UTs in 24 QPs under 'Samagra Shiksha' and 226 UGC colleges in alignment with NEP, 2020. The QPs on micro-Irrigation, Agriculture Machinery, Entrepreneurship in Livestock and Poultry, Elements of Horticulture, Soil & Water Testing, Organic Production, and Solar Pump gives the flavour of technology applications in agriculture and encourages students to choose the path in these areas.

The ASCI's Centre of Excellence for Agriculture Skills (Dairy, Farm mechanization and Horticulture) are providing skilling, advocacy, and advisory services and conducting research and seminars on the issues of day to day and futuristic skilling areas. It has worked with a few organisations such as Prakash Jayantilal Chauhan Foundation, Ambuja Cement Foundation, Lactalis, Heritage, Nestle, and others to skill in milk procurement, FPO management and business plans, gardening, and conversion of waste to products.

Success Stories

Shri. Mukesh Kumar, Ujwa a poor person with matriculation could not get reasonable job and searching for opportunities. That time he came to know about gardening course of ASCI conducted by KVK-Ujwa and joined the course where in the faculty supported and skilled him. After completion of skill training in 2018, he got opportunity to work as Mali (gardener) at Brahmaprakash Ayurvedic Charak Sansthan with ₹ 15,000/month salary. Within a short period of time, he was awarded with the "Best Mali" award.

Majority of the trainees of farm mechanization skill development training at SDC Bhopal were farmers' children and from rural areas. Out of twenty-five trainees, upon completion of skilling, around eight got placed in companies such as M&M, John Deere, Subros, and Tata farms, another six trainees in agricultural machinery dealers and other trainees are operating their own machinery on their own land and on rent.

Subash from Odisha and Manjula from Karaikal, Puduchchery, felt empowered and ready to take on new challenges upon skilling in Fresh water Aquaculture Farming and Ornamental fish farming, respectively under NFDB and ASCI programme in the current year. Both opined that the program provided a chance to learn about new practices which improved the efficiency in production cycles and marketing.

Opportunities

Over the years, agriculture has undergone significant changes since green revolution due to adoption of technologies, positive policies, and expansion of agribusiness opportunities. The agriculture, either traditional or high growth sectors such as livestock, horticulture, fisheries along with post-harvest management and technological interventions have created a demand for skilled labour and opportunities. A few of the opportunities (list not exhaustive) to enhance productivity, profitability and sustainability of agricultural systems are:

- Agri-workforce transition towards skilling
- Tech enabled farm management, good agricultural practices and reduction of waste coupled with circular economy
- Tackling climate change and climate resilient agriculture
- Energy transition towards renewable energy
- Inclusive growth
- Encouraging adaptation of upcoming technologies from time to time

Overall, the skill sets should contribute to the future prosperity. The opportunities lie in the areas of farm mechanisation

(operation, repairs and maintenance services, commissioning of new equipment, drones, and advanced micro-irrigation systems) to improve productivity, lessen drudgery, timely operations and efficiency at production and post-production level. To reduce the wastage and maintain the quality to get fair price and better markets, post-harvest management practices are need of the hour.

Further, to enhance the marketing opportunities to fetch better price, it is important to focus on aggregating the produce with primary processing and value addition, market data analysis and marketing methods. The promotion of farmers collectives including FPOs further aid in the backward linkages and aggregation of produce which leads to 'Farming as a Service Approach'.

In any economy, women's participation aids in the growth of economy further and faster. Majority of the rural women in India engaged in agricultural work, that too in traditional roles such as manual planting/sowing, weeding, watering, and plucking with lower wages than men. With skilling, women get better opportunities and better wages besides reducing drudgery.

In recent years, due to climate change farmers are facing risks and losing the farm income and wherein the Climate resilient and natural resource management-based farming helps them to tackle the risks associated. Renewable energy applications further aid in reduction of GHG emissions. The digital and smart agriculture gaining importance with focus on traceability, weather modelling and precision agriculture. With increased focus on skilling, financial support, incubation and entrepreneurship facilities, agriculture emerge as promising sector for farmers, perspective entrepreneurs, youth, and women.

References

1. Home | Department of Agriculture & Farmers Welfare | MoA & FW | Government of India, India (agriwelfare.gov.in)
2. Economic survey, 2022-23
3. PLFS surveys of various years
4. National Accounts Statistics-NAS 2023-24
5. Reserve bank of India-RBI India productivity report, 2022
6. Human development report (HDR) report
7. ASCI website
8. Situation Assessment of Agricultural Households and Land and Holdings of Households in Rural India, 2019 (NSS 77thround)
9. Veerendra Kumar M. Narasalagi and Shivashankar K, 2020, ANALYSIS of PRODUCER'S SHARE in CONSUMER'S RUPEE in MARKETING of SELECTED VEGETABLE THROUGH DIFFERENT SUPPLY CHAINS. International Journal of Innovative Research & Studies Volume 8, Issue II, FEB/2018 ISSN NO: 2319-9725
10. The Hindu Business Line, 3rd Aug 2020

Table of Abbreviations

S. No	Abbreviation	Full form
1	ICAR	Indian Council of Agricultural Research
2	ASCI	Agriculture Skill Council of India
3	APMC	Agriculture Produce market committee
4	CoE	Centre of Excellence
5	eNAM	electronic National Agriculture Market
6	FAAS	Farming as a Service
7	FPO	Farmers Producers Organization
8	GDP	Gross Domestic Product
9	GoI	Government of India
10	GVA	Gross Value Added (GVA)
11	Ha	Hectare
12	HDR	Human Development Report
13	KVK	Krishi Vigyan Kendra
14	Kw/ha	Kilowatt per hectare
15	MIDH	Mission for Integrated Development of Horticulture
16	MoAFW	Ministry of Agriculture and Farmers Welfare
17	MSDE	Ministry of skill Development and Entrepreneurship
18	NABARD	National Bank for Agriculture and Rural Development
19	NAS	National Accounts Statistics
20	NEP	New Education Policy
21	NSDC	National Skill Development Corporation
22	NSQF	National Skill Qualification Framework
23	NRLM	National Rural Livelihood Mission
24	NTFP	Non-Timber Forest Produce
25	PPP	Public Private Partnership
26	PLFS	Periodic Labour Force Survey
27	PMKVY	Prime Ministers Kaushal Vikas Yojana
28	PM KUSUM	Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhayan
29	QP	Qualification pack
30	RBI	Reserve Bank of India
31	RKVY	Rastriya Krishi Vikas Yojana
32	SAU	State Agricultural Universities
33	UGC	University grants commission
34	VET	Vocational education and training



Dr. Satender Arya

CEO, ASCI

Dr. Satender Arya leads the Agriculture Skill Council of India with a strategic vision for the Skill India Mission. With 34 years of experience, a professional background in International Trade and Rural Management (IIFT and IRMA), and experience in skill development and supply chain management, he emphasizes tailored and ethical skilling for the workforce. Under his leadership ASCI has maintained continuous top performance over the years.

SKILLS FOR POST-HARVEST EFFECTIVENESS: HORTICULTURE SECTOR IN INDIA



Background

India is the second largest producer of cereals, fruits, and vegetables in the world. We may have reached self-sufficiency in producing food grains, but providing food security for our people remains a major concern. It is an astounding fact that we lose over ₹1,500 billion annually because of poor post-harvest management in the horticulture sector.ⁱ In the last 8 years,ⁱⁱ crop production growth has shot up 23%, but the drop in losses is still less than 1%ⁱⁱⁱ.

What is Post-Harvest Loss?

According to the Food and Agriculture Organisation (FAO), food loss refers to the decrease in edible food mass at the production, post-harvest and processing stages of the food chain and food waste refers to the discard of edible foods at the retail and consumer levels. FAO further defines “post-harvest losses” as a measurable quantitative and qualitative loss in a given product which occurs during any of the various phases of the post-harvest system. The various stages include handling, storage, transportation, and marketing.

Factors of Post-Harvest Losses in Horticulture in India

This is a complex scenario where the problems are plenty and diverse depending upon the geography, climatic condition, access to infrastructure, knowledge, skills, methods apart from pests, pathogens, and natural disasters. For better clarity, we can

divide the contributing factors into two categories: I) Infrastructure, Technology & Methods II) Human Resource based. India has been heavily investing and actively working in terms of establishing Infrastructure and Technology. This article will focus on how to leverage on this growth by focusing on building superior skills among our human resources, for efficient prevention of post-harvest loss.

Skilling Needs for Post Harvest Losses under India’s Flagship Schemes

Based on the latest estimation, by 2024, the food processing sector is expected to employ 9 million people in India, the ASSOCHAM-Grant Thornton joint study on Food Processing Sector in India^{iv} noted. Some of the important initiatives taken up by the Government of India includes One District One Product (ODOP), Pradhan Mantri Kisan SAMPADA Yojana (PMKSY), and Operation Greens which is resulting in jobs creation. However, for this to fructify, availability of a skilled workforce is of essence for our country’s vision to find practical translation on ground.

Micro-Unit Operations

The Ministry of Food Processing Industries (MoFPI) has introduced Pradhan Mantri Formalisation of Micro Food Processing Enterprise Scheme (PM-FME), a government supported programme with a total outlay of ₹100 billion during the period of 2020- 2025, as part of the *Atmanirbhar Bharat*

Abhiyan mission targeting 2,00,000 FPOs/ SHGs/Cooperatives and is expected to generate 900,000 skilled and semi-skilled jobs.

The Ministry has authorized the One District One Product (ODOP) status for 137 distinct products in 710 districts throughout the 35 states and UTs (Union Territories) under the programme. This programme intends to assist tiny micro-units working in the food manufacturing sector that work closely with farmers including dry chilies, package spices, making pickles and *papad*.

- a. **Job Generation:** In recognition of their importance, these micro-units are eligible for a 35% subsidy on their project costs, up to a maximum of ₹1 million a programme of Production-Linked Incentives (PLI) for the food processing industry. This would help create 250,000 jobs by 2026-27, enhance exports, and allow for the growth of food processing capacity to generate processed food worth ₹3.35 billion.^v
- b. **Skilling Needs:** Creation of 250,000 jobs would directly translate to a workforce adept and aware of the latest technology in food production as well as ancillary services. As on 25th July 2024, there are 23 Qualification Packs (QPs) live on the National Qualification Register (NQR) under the food processing sector. These qualifications range from Multi Skill Technician – Fruits and Vegetables, Jam, Jelly, and Ketchup Processing Technician, Food Handler, Fruits and Vegetable Selection In-charge, Hygiene Coordinator, Processed Food Entrepreneur etc.

Closely looking at this need, the questions to focus on would be:

- i) What are some practical skill-upgrading needs amongst people working in
 - Horticulture Farms & FPOs
 - Project Implementing Agencies
 - Rural Micro-Units
- ii) How will the training translate into practical skills for
 - Updated Food Safety
 - Local Nutritional Security
 - Equitable Economic Profitability

While addressing the above issues, the most crucial factors to be considered here are the role of gender, language, perceptions of time, financial and digital literacy and conceptual understanding of safety, nutrition, and economy from the perspective of a rural farmer or an SHG member etc.

Establishment of Infrastructure

The PMKSY (Pradhan Mantri Kisan SAMPADA Yojana) is an umbrella programme that includes several active programmes that encourage business owners to build food processing facilities adjacent to agricultural areas. Integrated Cold Chain and Value Addition Infrastructure includes building infrastructure along the entire supply chain, including

precooling, weighing, sorting, grading, waxing facilities at the farm level, multi product/multi-temperature cold storage, packing facility, Individually Quick Frozen (IQF), blast freezing in the distribution hub, reefer vans, mobile etc.

In most states, the scheme offers grants equal to 35% of qualifying project costs, while in the states in North-East and Himalayan regions, grants equal to 50% of eligible project costs. Investors, business owners, farmers, farmer organizations, agriculture, and horticulture cooperatives stand to gain from the development of facilities under this programme.

- a. **Job Generation:** Under this umbrella scheme, the goal was to contribute towards achieving the projected skilled human resources requirement as envisaged by National Skill Development Corporation (NSDC) in the food processing sector i.e., 18 million persons by the year 2022 as per the human resource and skill requirements in the Food Processing Sector. In the case of cold storage, India has a capacity of more than 32 million MT (megatons) as against the need of 35 million MT.
- b. **Skilling Needs:** It is important to note that over 85%^{vi} of the Indian farmers are either small or marginal farmers. Renting cold chains or storage houses is an option. But, in reality, these rents do not come cheap. So, farmers would rather bear post-harvest losses than carry the burden of these costs. We could closely look at the human resource and skill building needs for some of the special initiative under this umbrella scheme:
- c. **Tailor-made models for 21st century skills:** Under the umbrella scheme, several mega food parks are to be created. A Mega Food Park has a minimum area of 50 acres and employs a hub-and-spoke clustering strategy. Government offers up to ₹ 500 million in financial assistance for every Mega Food Park project. Currently, the attrition rate of people engaged in these jobs are higher because of their discomfort in fitting into a corporate working model. To translate the vision of creating rural job opportunities around food parks into a reality and to have a local sustainable market,
 - Should we tailor-make the day operations model and skills to suit the rural culture? or
 - Provide the necessary 21st century skills to adapt to fit into a conventional system?
- d. **Blending Traditional Wisdom and Modern Technology:** Several traditional methods for storage and preservation of food have been used for thousands of years. These methods, which vary from place to place, mainly include cooling, drying, heating, boiling, salting, sugaring, smoking, jellifying, pickling and other traditional fermentation techniques.^{vii} The best methods are usually completely dependent on the nature of the crop and the local environment.
- i. **Half and a half training syllabi:** Should we tailor-make courses with room for components that are universally applicable (e.g. safety standards and laws) and offer skills that are relevant with the help of local partners (e.g. root

cellaring or fermentation methods)?

- ii. **Creating a repository of cost-effective time-tested methods:** Is there a need to create a repository of available local Indigenous Knowledge (IK) that people may already be aware of and further integrate it with available technologies. (e.g. Drying or sugaring with necessary solar dryers or sterilized cans) and other available traditional methods from around the world to experiment and observe local relevance?

For instance, under POSHAN Abhiyaan or the National Nutrition Mission (NNM) implemented by the Ministry of Women and Child Development, a book called 'Poshan Utsav' was released in 2024. Curated by Deendayal Research Institute (DRI), the book seeks to revive ancient nutrition traditions, facilitating knowledge exchange and intergenerational learning. It serves as a comprehensive repository for appreciation of the rich culinary heritage and nutritional diversity of India. This provides an opportunity which should be tapped to promote traditional wisdom of food preservation and skill courses should be curated to encourage candidates to take this up. In fact, the term POSHAN stands for the Prime Minister's Overarching Scheme for Holistic Nourishment.

- iii. **Making it affordable:** Such traditional storage methods are majorly used for preserving fruits in many parts of the world. It also has the advantage of low cost over other methods making it affordable and easily accessible for small and marginal farmers who may not be associated with any FPOs or other established institutions.
- iv. **Meeting nutritional security:** Pragmatically, traditional methods hold key answers to meet food and nutritional security in economically developing and under-developed countries. Primarily, they are low-cost and easily implementable at scale. The need of the hour is to blend modern science and tradition as per the socio-economic and climatic conditions on-ground. This approach would be both realistic and reasonable to combat post-harvest losses in the world where millions of people are still suffering from hunger, starvation, and malnutrition.

Case of C-Mart Stores: Identifying Skill requirements in the Value Chain

Chhattisgarh Mart or C Mart are established by the Government of Chhattisgarh as brick-and-mortar stores as well as having an e-commerce platform and a digital marketplace that promotes and sells locally made products. The platform aims to provide both physical and digital window to highlight and sell local products, such as handicrafts, handlooms, and other indigenous items, to a wider audience.

These C Marts set up by the Government of Chhattisgarh (present across all the districts of Chhattisgarh) are established as modern showrooms to:

1. Empower local artisans and small-scale industries
2. Preserve traditional crafts and skills
3. Promote regional products

4. Generate employment and income opportunities
5. Facilitate online sales and marketing



It also showcases and puts on sale - products prepared by local women, self-help groups, craftsmen, weavers, artisans, potters, traditional and cottage industries working under various departments.

The platform offers a wide range of products, including:

- Handicrafts (woodcarvings, metalwork, pottery, etc.)
- Handlooms (textiles, fabrics, etc.)
- Tribal products (jewellery, paintings, etc.)
- Local food products (organic, spices, etc.)

Favourable factors: Day to day operations of C Mart is usually given to Women Federations where the customers can directly support local artisans and contribute to the preservation of traditional crafts and skills. Schemes like these encourage local production by providing market linkages and will prove to be highly effective. However, this can only be achieved if the community (SHGs/ FPOs/ Cooperatives) are skilled in domain as well as the necessary soft skills alongside fair hands-on experience of handling retail, packaging, and marketing.

Price Fixing Schemes: In the budget 2018-19, the government announced the Operation Greens scheme to promote integrated value chain development for crops such as Tomato, Onion, and Potato (TOP). For this scheme, ₹5 billion was allotted by the GOI in its annual budget. It is implemented through the National Agricultural Cooperative Marketing Federation of India (NAFED). NAFED has set up a special-purpose vehicle called the National Agricultural Market (NAM). The NAM has been set up in 585 markets across the country.

Strategies Under Operation Greens Scheme: The strategies include establishing integrated value chains through farmer-producer organizations (FPOs), promoting logistics for reducing post-harvest losses, and encouraging processing and value addition. Price stabilization measures involve direct procurement from farmers and supply during lean periods.

Short Term- Price Stabilization Measures: To ensure price stability for Tomato Onion Potato (TOP) crops, NAFED served as the Nodal Agency responsible for implementing price stabilization measures. The Ministry of Food Processing Industry provides a 50% subsidy for transportation of TOP crops from production areas to storage facilities or hiring suitable

storage facilities for TOP crops.

Long Term- Integrated Value Chain Development Projects

The scheme focused on long-term development through integrated value chain initiatives like:

Capacity building of Farmer Producer Organizations (FPOs) and their consortiums.

- Enhancing the quality of production.
- Establishing post-harvest processing facilities.
- Improving Agri-logistics.
- Identifying and developing marketing/consumption points.
- Creating and managing an e-platform for effective demand and supply management.

The scope of OG – Long Term Interventions Scheme has been expanded from three crops Tomato, Onion, and Potato (TOP) to 22 perishable crops during the 15th Financial Commission Cycle (2021-26).

Scope for improvement: It is important to understand that the situation on ground is often dynamic and requires a dynamic management system to create any intended impact. It may require the establishment of a research network and think tank for horticulture innovations and local food systems transformation like KVK (Krishi Vigyan Kendra) under ICAR in the agriculture sector. Globally, we have the Horticulture Research Network, regionally led by the Feed the Future Innovation Lab for Horticulture.^{viii} Establishing our own network of think tanks are vital glue in interpreting any new arena and handling emerging markets. They can serve as convening hubs and safe spaces for policymakers and stakeholders from the horticulture sector, bureaucracy, business community and civil society to come together and provide continuous data-driven innovative solutions. In addition to apps like E-NAM created under Operations Green, farmers may be able to make use of other available technologies for climate, crop, or supply chain monitoring to prevent major post-harvest losses.

Case of Jashpur: Identifying skill requirements to prevent TOP crop post-harvest loss

Jashpur District lies in the north-eastern corner of the state of Chhattisgarh in India. The total area of vegetable production in Jashpur was recorded at 480,000 hectares in the year 2020-21 with the production of 6.8 million MT of vegetables with the productivity of 14.03 MT per ha^{ix}. In Jashpur, NABARD's Wadi project under Tribal Sub Plan (TSP) was implemented in seven (7) blocks, covering 161 villages. mango, cashew and pear plantations were created in over 12000 hectares. In addition to it, currently they are producing other fruits, vegetables and spices like litchi, jack fruit, guava, chilli, tomato, gourds, drumstick, ginger, turmeric etc.

It has been a common situation in Jashpur and other horticulture intensive districts in India to face huge post-harvest crop wastage because of the perishable nature of fruits and vegetables. In addition to that, farmer's labour-intensive investment costs have been growing higher, while the price

fluctuations drop as low as ₹ 0.50 per kg during seasons of surplus production. When the cost of transporting the crop back home is more than the offer price of wholesale buyers, the farmers end up throwing tonnes of ripe tomatoes on the National Highways and raw chillies into nearby rivers or streams.^x



Picture Credit: Ranganathan Krishnaswamy

Jashpur is primarily a tribal district with 65% Oraon tribal population. For generations, the population evolved on forest-based survival and livelihood. But, in the past few generations, because of converting forests into farmlands, broadcast paddy cultivation is the primary skill they happened to learn^{xi}. But the income generated via paddy alone had been far from enough to match their sustenance needs. The Wadi Project was also an initiative to convert these farmlands (in forest areas) into agro-forests as a means to diversify crop production using choices that suited the local generational skills of Oraon tribes instead of persuading them into alien livelihood choices like dairy production that suit the culture and tradition of communities like Yadavs.

Role of Mahatma Gandhi Rural Industrial Park (RIPA): In addition to having ambitious horticulture centric schemes like Narva, Garwa, Ghurwa and Bari schemes to increase production of vegetables and fruits based on local climatic condition, the Government of Chhattisgarh is setting up 300 Rural Industrial Park (RIPA) units in the state at a cost of ₹6 billion. Under ₹20 million granted for setting up each RIPA unit, ₹12 million goes for setting up the building and ₹4 million for procuring machinery and raw materials.

MoU with Skill Development Department and Tata Technologies: Additionally, the Government of Chhattisgarh has signed an MoU worth ₹11.88 billion with Tata Technologies for transforming 36 government ITIs into an Industry 4.0 Technology hub. Earlier, another MoU was signed between the state's Department of Technical Education, Skill Development Department and Tata Technologies to promote skill development and create agriculture/horticulture research and innovation centres.

Choosing skills related to food processing and preservation: Currently, there are 16 RIPAs in Jashpur (2 per block). In all the blocks, local SHGs and district hired TSAs (Technical Support Agencies) are engaged in processing items specific to those blocks. E.g. In Balachapar, herbal tea processing, and hand pounded rice production systems have been set up. Whereas in Gholen, tamarind processing, jackfruit processing, papad, achar and masala making systems have been made functional. Earlier,

a committee was formed including Industry experts, IT department, NRLM (National Rural Livelihood Mission), Agriculture, Horticulture Departments, and external scientific advisors to decide on what product to process and what machinery is to be procured for each of the RIPA units. The district had started its agroforest expansion with Mango, Pear, Cashew and Litchi cultivation favoured by the local climatic conditions. In the past few years, they have also expanded into cultivation of other profitable horticulture crops like Apples and Strawberries^{xiii} that can fetch about 8 times more income than what they used to earn via conventional paddy cultivation. Learning from past cycles of high-priced invitation to grow new crops followed by huge post-harvest loss from surplus production and sudden price dips - it is time for Jashpur to act wise in planning and managing the horticulture production scene by equipping these farmers with relevant skills, much in advance.



Factors to consider: For instance, when the tribal farmers of Jashpur were allocated Dairy farms under the IAP scheme in 2014, the project finding success was extremely challenging since the tribes found it hard to learn the art of tending to the cows, the traditional way. The Oraon tribes also believed that the milk rightfully belonged to the calves, and they were not culturally accustomed to consuming it. Often, the choice of preservation methods and skill training are based on market demand, technical feasibility and widely promoted ideas. So, even when we are looking at offering skills related to processing and preserving foods, it must be carefully chosen to suit the local culture of producers as well as the larger nutritional well-being among consumers.

Conclusion

It is clear that the Government of India has put in numerous schemes in place like PMKSY, Operations Greens, RIPA, SFURTI and others to meet the infrastructural, financial, and technological needs that can potentially combat post-harvest loss in the horticulture sector. With respect to skill-development in horticulture sector, we have other highly ambitious schemes like Aatmanirbhar Bharat, Skill India Mission and other state-specific initiatives and partnerships. A dedicated Sector Skills Council (SSC) - Food Industry Capacity and Skill Initiative (FICSI) has been incubated by NSDC for this purpose.

While India is witnessing a large-scale birth of fresh food processing spaces throughout the country, the following are some of the important aspects to prioritize:

1. Learning from past mistakes and employing time-tested methods: Some of the common disaster cycles in the horticulture expansion are
 - Surplus production leading to price drops resulting in post-harvest loss
 - Underuse of available infrastructure, benefits and schemes owing to unavailable skilled personnels
 - Large scale industrialization leading to health and environmental destruction

Re-appropriation of existing schemes, ideas, and innovations: The real question is how to integrate and make best use of all available resources, schemes, financial aids, and market demands with careful attention to ethics, nutritional security, health, hygiene, and environment safety standards while combating post-harvest loss and ensuring better profits for our horticulture farmers? How do we create a conscious team of holistically skilled professionals in this exponentially booming sector?

Ensuring accessibility and profitability for horticulture farmers: Are the established infrastructures and technological systems being put to effective use? What kind of market and financial skills are required for small and marginal farmers, solo/ nano entrepreneurs to afford using the existing systems? How can we be inclusive of proven low-cost traditional methods to co-exist alongside sophisticated advanced technologies? What kind of management and soft skills are required for the processing space management team to ensure friction-free accessibility?

Ensuring nutritional security and health safety: Though India has become self-sufficient in food production, meeting the food security needs of the citizens remains a big concern. The question here is how are we going to pledge our support to “Eat Right Movement” launched by FSSAI, where the top officials sat up as they flipped through the pages of the India State-level Disease Burden Trends report and recognized that one in four Indians dying from non-communicable diseases like diabetes or cancer is a direct consequence of excessive consumption of processed foods?

For India to become a Viksit Bharat in 2047, the food processing sector will be one of the largest employment generators in the country in addition to holding immense potential for increasing the country's export economy. There is an imminent need for establishing a dynamic horticulture R&D network across India. To prevent post-harvest loss and other large-scale aftermaths, skill development to be an imperative component in all policies thus formulated. We must skill, re-skill and upskill the workforce who hold reverence for human well-being as well as our planet in addition to learning fresh technological and management skills.



References

- i. [study_report_of_post_harvest_losses.pdf \(mofpi.gov.in\)](#)
- ii. https://agricoop.nic.in/sites/default/files/State_of_Indian_Agriculture%2C2015-16.pdf
- iii. [echap08.pdf \(indiabudget.gov.in\)](#)
- iv. https://www.grantthornton.in/globalassets/1.-member_firms/india/assets/pdfs/viksit_bharat_by_2047.pdf
- v. https://www.nilerd.ac.in/writereaddata/UploadFile/paper%202_Bridging%20the%20Skill%20Gap.pdf
- vi. <https://www.livemint.com/opinion/columns/an-end-to-end-cold-storage-system-is-what-india-needs-11678123165510.html>
- vii. https://www.researchgate.net/profile/Dr-Khan-11/publication/315100245_TRADITIONAL_WISDOM_IN_POST_HARVEST_MANAGEMENT_OF_FOOD_COMMODITIES/links/58ca477492851c4b5e6ed5b9/TRADITIONAL-WISDOM-IN-POST-HARVEST-MANAGEMENT-OF-FOOD-COMMODITIES.pdf
- viii. <https://horticulture.ucdavis.edu/partner/regionally-led-global-research-network-horticulture>
- ix. <https://www.thepharmajournal.com/archives/2022/vol11issue10S/PartA/S-11-8-332-928.pdf>
- x. <https://timesofindia.indiatimes.com/city/raipur/hit-by-poor-prices-agitated-farmers-dump-tomatoes-on-national-highway>
- xi. <https://ebooks.inflibnet.ac.in/antp05/chapter/land-alienation/>
- xii. <https://timesofindia.indiatimes.com/city/raipur/jashpur-gets-taste-of-strawberry-sweetness/articleshow/97615422.cms>



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WOMEN'S ENTREPRENEURSHIP LANDSCAPE: REFLECTIONS FROM THE ANNUAL SURVEY OF UNINCORPORATED SECTOR ENTERPRISES AND COOPERATION



Introduction

India has been progressively refining its policy initiatives to foster a more supportive business environment. The country now boasts the third-largest startup ecosystem globally, with increasing attention to accelerating women's participation in the entrepreneurship ecosystem. Currently, women own 20% of all enterprises in India, and a staggering 82% of these women-led enterprises are micro units, typically run as sole proprietorships within the informal sector¹. Government schemes such as Mudra Yojana for Women and Bharatiya Mahila Bank Business Loan provide vital support to these women. Annual Survey of Unincorporated Sector Enterprises (ASUSE) published in July 2024 by the Ministry of Statistics and Program Implementation (MoSPI) highlights the substantial role of women-owned businesses, emphasising their economic contributions and the ongoing need for targeted support and development. Comprehensive data on the unincorporated sector, including the informal sector, is crucial for effective planning and policy formulation, as noted by the System of National Accounts 2008 (SNA 2008). ASUSE offers valuable insights into this sector, marked by easy entry, family ownership, reliance on local resources, small-scale operations, and labour-intensive technology, helping to understand its significant impact on employment and GDP.

Several studies suggest that businesses with at least one female founder have a more inclusive work culture, employ 3 times more women than men, and generate 10% more cumulative

revenue². However, despite these promising figures, entrepreneurship among women in India has a long way to go. While most central schemes target both male and female beneficiaries, certain schemes such as Stand-Up India, the Central Sector Integrated Scheme on Agricultural Cooperation (CSISAC), the Prime Minister's Employment Generation Programme (PMEGP), and the Jan Shikshan Sansthan (JSS) scheme offer special provisions for women, including additional subsidies, quotas in the number of beneficiaries, and dedicated funds³.

Further, schemes like Mudra Yojana for Women, Bharatiya Mahila Bank Business Loan, Pradhan Mantri Rozgar Yojana, and the Udyogini Scheme specifically support women entrepreneurs by providing collateral-free loans, higher loan limits, and interest-free loans for special categories. For instance, Mudra Yojana for Women offers loans up to ₹1 million for manufacturing or production businesses, Pradhan Mantri Rozgar Yojana focuses on skill-based self-employment with loans up to ₹200,000 for business and ₹500,000 for service and industry⁴. These initiatives encourage women in various fields of business, from manufacturing to services, thereby fostering an environment where women-led businesses can thrive and expand.

The ASUSE report 2021-22⁵ and 2022-23⁶ highlights the critical role of the unincorporated non-agricultural sector in the Indian economy. This sector is essential for absorbing a substantial portion of the workforce, providing inclusive employment

opportunities, especially for those from rural areas or with limited formal education and significantly contributing to the country's Gross Domestic Product (GDP). From October 2022 to September 2023, this sector employs approximately 110 million workers, up from 9.8 million the previous year. Uttar Pradesh, Maharashtra and West Bengal account for over one-third of this workforce.

Notably, 54% of proprietary establishments in the manufacturing sector were led by female proprietors in 2022 and in 2023. Sectors such as retail trade, apparel manufacturing, and community services reported the highest number of establishments and employment nationwide.

ASUSE captures activities from street vending or shoe shining, which require minimal capital and skills, to more skilled and investment-intensive activities like, tailoring, car repair, and professional services. Many informal enterprises are operated by individuals as self-employed entrepreneurs or with the help of unpaid family members, while others employ paid workers. Beyond its employment impact, the unincorporated sector significantly contributes to the GDP, encompassing informal enterprises characterised by easy entry, family ownership, reliance on local resources, small-scale operations, and labour-intensive technology. These enterprises often operate from homes, small shops, or workshops, underscoring their diverse and decentralised nature in the Indian economy.

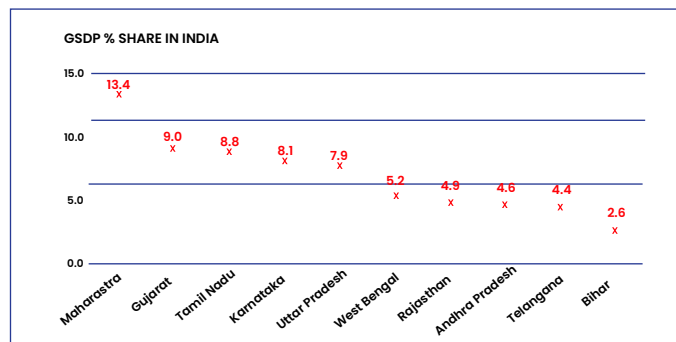
India's Micro, Small and Medium Enterprises (MSMEs) sector consists of 63 million enterprises, out of which, 20% owned by women, employing 22 to 27 million people. India ranks 57th out of 65 countries in the Mastercard Index of Women Entrepreneurs (MIWE, 2021)⁷. Accelerating women's entrepreneurship could potentially create more than 30 million women-owned enterprises, generating 150 to 170 million jobs. However, out of the 432 million working-age women in India, only 19% participate in formal, paid work⁸. The Global Entrepreneurship Monitor (GEM) reports that female entrepreneurs in India often cite job scarcity as a primary motivation for starting businesses, rather than the opportunity to grow a business and earn profits.

According to the sixth economic census⁹, 34.3% of all women-owned MSMEs are involved in agricultural activities, while 65.7% are engaged in non-agricultural activities. Within agriculture, most women-owned enterprises focus on livestock (92.2%), followed by forestry (4.5%), non-crop farming (1.9%), and fisheries (1.4%). In the non-agricultural sector, around 45% of establishments are involved in manufacturing, with other significant activities including trading (28.57%), other services (8.8%), education (4.1%), and food and accommodation services (4.2%). Additionally, approximately 22% of enterprises in the handicraft and handloom sector are owned by women¹⁰.

Key insights from the ASUSE report

The following graph shows the top five and bottom five states in terms of their size and contributions to India's GDP. Smaller states are excluded from this comparison to maintain a fair perspective against larger states.

Figure 1: Top five and bottom five states in terms of their size and contributions to India's GDP.



Source: Handbook of statistics on Indian states, Reserve Bank of India. Smaller states are excluded from this comparison to maintain a fair perspective against larger states.¹¹

Share of Female-Led Establishments by Major States

The proportion of female-led proprietary establishments varies considerably across states and over time. For the period 2022-2023, Telangana (43.32%), West Bengal (31.72%), Andhra Pradesh (27.84%), and Karnataka (31.42%) reported the highest shares of female-led establishments in major activity categories. Interestingly, the states of Telangana and Andhra Pradesh experienced a decline, while West Bengal and Karnataka demonstrated improvements, with female-headed establishments rising (Ref. Figure 2).

Figure 2: Share of female headed estimated proprietary establishments of top 10 GSDP states by broad activity category

FY	2021-22	2022-23
Telangana	44.26	43.32
West Bengal	31.72	32.74
Andhra Pradesh	31.29	27.84
Karnataka	29.93	31.42

Improvements in Underperforming States

Among the states lagging in female proprietorship, there have been no notable advancements in 2022-2023 compared to 2021-2022 except Bihar. While Uttarakhand, Assam, and Delhi saw only marginal increases in the proportion of female-headed establishments, Bihar registered significant increase of 5.61% (Ref. Figure 3)

Figure 3: Share of female-led estimated proprietary establishments of major states by broad activity category

FY	2021-22	2022-23
Bihar	8.99	14.6
Uttarakhand	10.57	10.93
Assam	11.12	12.63
Delhi	11.35	12.41

Figure 4: Share of female-led estimated proprietary establishments of major states by broad activity category

FY	2021-22	2022-23
Maharashtra	23.24	24.23
Gujarat	28.11	27.14
Tamil Nadu	29.09	27.66
Karnataka	29.93	31.42
Uttar Pradesh	14.53	16.95

Disparities in Female Entrepreneurship Among India's Leading GDP States

When we examine the share of female-led proprietary establishments in the top five states contributing to India's GDP, a striking contrast emerges. Despite their substantial contributions to the nation's economy, these states show varying degrees of women's entrepreneurship. Maharashtra, a significant contributor, has a relatively modest share of female-led proprietary establishments at 24.23%, while Gujarat and Tamil Nadu also require further efforts to promote female entrepreneurship. Uttar Pradesh shows a particularly low share at 16.95%, highlighting a significant gap in women's participation in the business sector. In contrast, mid-level GDP states such as Telangana, West Bengal and Andhra Pradesh excel in female proprietorship of enterprises (Ref. Figure 3 and 4).

This raises an intriguing opportunity to explore the factors in these states that are positively contributing to higher rates of female proprietorship of enterprises. The ASUSE survey offers valuable insights into various indicators and examining these could significantly aid in policy design and the strengthening of the skill ecosystem, ultimately enhancing women's participation in entrepreneurship.



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References

1. Decoding-Government-Support-to-Women-Entrepreneurs-in-India.pdf (niti.gov.in)
2. Women Entrepreneurs Shaping The Future Of India | IBEF
3. Women Entrepreneurship (startupindia.gov.in)
4. Women Entrepreneurship (startupindia.gov.in)
5. ASUSE_2021_22_Report_Final.pdf (mospi.gov.in)
6. ASUSE_2022_23_Report_Final.pdf (mospi.gov.in)
7. The Mastercard Index of Women Entrepreneurs
8. Labor force participation rate, female (% of female population ages 15+) (modeled ILO estimate) - India | Data (worldbank.org)
9. All India Report of Sixth Economic Census.pdf (msme.gov.in)
10. Decoding-Government-Support-to-Women-Entrepreneurs-in-India.pdf (niti.gov.in)
11. Reserve Bank of India - Handbook of Statistics on Indian States (rbi.org.in)

INDIA'S FLOURISHING FOOD PROCESSING SECTOR: CURRENT SCENARIO AND PATHWAY TO FUTURE



MR. SUNIL MARWAH
CEO, FICSI

Team Connect in Conversation with Mr. Sunil Marwah, CEO of the Sector Skill Council for Food Processing. With extensive experience in Leadership, Mr. Marwah drives FICSI's mission to enhance skills in India's food processing sector, promoting industry standards and workforce development through strategic initiatives and partnerships. Mr. Marwah is an alumnus of Delhi University and Leeds University, UK. He is the recipient of Commonwealth Scholarship. With more than 30 years industry experience he has worked in various capacities in some of the leading business organisations of India.

Ragini: Thank you for taking the time to speak with us, Mr. Marwah! Can you tell us a little bit about your personal leadership journey? What are some leadership lessons that you would like to share with our readers?

Mr. Sunil Marwah: I am an industry professional, and I have been around for more than 30 years. I graduated from Hindu college, Delhi University, and completed MBA from the Faculty of Management Studies, (FMS) Delhi University. Later I did an Executive MBA (on a UK Government's Commonwealth scholarship) in international business from Leeds University, UK. After that I worked in leading organisations like Ranbaxy group, Dabur group and was associated with NIIT Ltd in their IT education vertical. My expertise has been in projects, marketing, and business development. I have managed businesses related to training and this continues to be my passion.

I joined the Food Industry Capacity and Skill Initiative (FICSI) which is the Sector Skill Council for Food Processing in Oct 2018 it has been a fulfilling journey. There is much to be done in India, and we have an agenda to realise the dream of our Hon'ble Prime Minister of a Viksit Bharat. In my current role I am hoping to make some contribution in this direction.

In terms of leadership style, I believe in putting all team members into an adventure mode. There is no day without an adventure. Everything is possible so long as you want it. Leading from the front, opening doors, looking at opportunities, patiently finding solutions, and implementing efficiently. We must communicate continuously with industry leaders, government, and private funding organizations. So, the more we connect, the more we can share with them how we do our work and the outcomes we deliver, and only then, we can be successful in aligning them to our priorities.

Ragini: Tell us a little about the SSC (Sector Skills Council) you have been leading and its overall skills and livelihoods ecosystem. What are some unique aspects that set your sector apart from others?

Mr. Sunil Marwah: Many of us need to know more about food processing, and the importance of the sector in overall food

security. India has moved from an era of agricultural shortages to an era of surpluses and now we produce more than what we can consume. Food processing industry preserves the agricultural output for future use. If you are not processing the food, it will go to waste. It means all the water, inputs, time, labour in the production are wasted. In this sense, food processing is crucial for reducing the post-harvest losses, conserving resources, buffering food prices, and increasing farm incomes.

India ranks among top producers in the world of milk, fish, poultry, spices, fruits, and vegetables but we suffer from high post-harvest losses. Only about 20% of our production is converted into value added and packaged products. Hence there is urgent need for creating higher capability in this sector so that we can make our economy competitive.

The food processing industry employs nearly 8 million persons in both registered and unregistered units. With rising demand for packaged products, combined with the incentives of Central and State Governments being given to this sector, it is expected that in next 5 years it will employ additional 200,000 persons annually, a substantial proportion being women. The demand for skilled workforce will be high. Moreover, since food processing has generated interest from entrepreneurs including start-ups and we can expect even greater investments in production capacity, supply chain, regulation, retail, and distribution.

Ragini: Our theme for NSDC Connect this month is Skills & Livelihoods in the Agriculture and Allied Sector. Could you shed some light on the most in-demand skills and job roles in the Food Processing sector?

Mr. Sunil Marwah: The most in-demand skills and job roles in the Food Processing industry varies from subsector to subsector. If you look at the organized sector, there is demand for skilled persons in operations, supply, and cold chain management, regulatory and audits, quality-retail, and distribution. We also need more skilled people in the food testing where there is a big human resource and skill gap. Testing is crucial to the food

processing systems to maintain quality and safety. Many independent test houses are coming up in the districts and they also require skilled people.

Packaged food is getting more attention in most of our e-commerce sites as well as in the modern retail stores thereby creating demand for qualified Sales and marketing professionals at all levels.

There are other significant skill gaps that need addressing. Innovations in food presentation and taste are crucial, along with developing new packaging methods to enhance product appeal and ensure better nutrition. Compliance with food safety and hygiene standards is paramount.

In terms of growth sectors, workforce plays a pivotal role, particularly in grain milling, bakery operations, and fish and seafood processing.

So, these are some of the areas where the sector needs more skilled professionals to meet the requirements for the future. Short term skilling programs and regular upskilling of workforce can be a game changer for the small scale and nano units. In addition, there is demand for Food Technology and STEM (Science, Technology, Engineering, and Mathematics) graduates and ITI (Industrial Training Institute) diploma holders with industry relevant skills to support the sector's evolution and efficiency.

We also need to focus on developing sustainable business model. This requires active participation of financing institutions, and entrepreneurship support to encourage more adoption and awareness for this practice. Another crucial element is Standard and Protocol Development, Research and Development, Policy, Training, and Capacity Building. These capacity building activities must be integrated between food systems and health and life science.

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Ragini: What are some of the current priorities of the Food Processing SSC under your leadership?

Mr. Sunil Marwah: First of all, we align our plans with the

government's priorities, so national priorities are guiding light for us to run our operations. I will quickly tell you about one project which we are doing is regarding millets products processing. Our Hon'ble Prime Minister, on many occasions, has been speaking about the need to bring back Millets in our daily diets. Certain packaged goods companies have publicised the buzzword on this crop, but their millet-based products are quite costly. We hope to mass produce the millets and millet-based products on an economical scale, which can be affordable for everyone.

For the project in Millet product processing, we have been supported by the UNDP to put together an eco-system of master trainers and trainers required for skilling. At the micro level by involving SHGs and FPOs we are providing knowledge on modern production methods for processing millets so that we can create a true revolution.

Another project we are executing is related to Food fortification. We are all aware that anaemia is a major problem in this country. To address this, policy makers have been working on various fronts and one of them being fortified rice. The direction was laid out by our Hon'ble Prime Minister when he laid the objective that by 2024 all rice being sold under public distribution system had to be fortified.

FICSI is a member of Innovation Hub in Rice Fortification (IHRF) along with IIT Delhi, IIT Kharagpur, CSIR-CFTRI and NIFTEM. We have developed the qualification of Fortified Rice technician and got it approved by NCVET, developed training resources including participant handbook and eLearning. We are now in providing technical training to fortification units and improving their quality including compliance to FSSAI regulations.

Further, producing safe and nutritious food is a national priority as it affects the health of masses. We are partnering with FSSAI and taking their FoSTaC courses under RPL (Recognition of Prior Learning) program to food handlers at the nano level. Annually we have a target of training and certifying 50,000 food handlers.

Ragini: What are some key achievements and initiatives taken up by SSC Food Processing to encourage more innovation and skill development?

Mr. Sunil Marwah: To encourage innovation in food processing we have been, in our portfolio of job roles, covering emerging areas such as of plant-based proteins, packaging and food development, food analysis etc. To put new areas of knowledge in the skilling space we have MOUs (Memorandum of Understanding) with institutions of eminence like IIT Delhi, NIFTEM, CSIR-NIIST and NIT Rourkela.

We have a programme of live online sessions for upskilling

freshers who are looking to work in the food processing sector or even young professionals who are currently working in the industry. These sessions are conducted by industry experts.

Highlights

FICSI has 70 job roles approved by NCVET,

- Rice Fortification
- Plant-based proteins
- Millet processing
- Food analysis
- Food and packaging developer
- Internal Food audit

FICSI's Key Indicators:

- Trainees Certified: 325,000+
- Affiliated Training Centers: 600+
- Affiliated. B. Voc. Colleges: 200+
- NCVET approved Qualifications: 70

MoUs with Expert institutions

- FSSAI
- IIT-D
- NIT Rourkela
- NIFTEM-K
- CSIR- NIIST

We also have an e-Learning library hosted on a modern state-of-the-art LMS where students and young professionals can study anywhere and at their own pace. In the future the opportunities in this sector are going to be even bigger. We have limitations only in the mind and there are no other limitations.

Ragini: We are currently on the cusp of what is popularly known as the 4th Industrial Revolution. Tell us ways in which technological and industrial advancements have an impact on your sector?

Mr. Sunil Marwah: Fourth Industrial revolution through the digital transformation is happening in the food processing industry as well. But it is not that fast, and it is not uniform. It could be high at the MNC level but not in the small-scale sector, which forms a large party of the food processing economy.

As an organization we have signed an MoU with IIT Delhi. It is good to have a knowledge partner. We are relying on the expertise of IIT Delhi. They have put together a course on, the fundamentals of AI and ML and how it impacts the food processing industry and how it can be implemented. We are rolling it out by September 2024. We have done a couple of seminars and webinars, and we will train the professionals on the power of AI-ML.



Ragini: What advice would you like to give to our young readers that will help them stay future-proof and relevant in the wake of the 4th Industrial Revolution?

Mr. Sunil Marwah: The rapid changes due to digital transformation requires the students and young professionals to continuously upgrade their understanding of areas such as IOT, Data Analytics, Cloud Computing etc. They will need to apply these skills to improve key processes such as supply chain, predictive maintenance, customer engagement, product development etc. Such changes will impact the quality of product and service and will enhance customer satisfaction. I can see these skills integrating into the curriculum of food technologists.



SKILLING FOR VIKSIT BHARAT: UNION BUDGET 2024



Introduction

The Union Budget of India for the fiscal year 2024-25, presented by Finance Minister Nirmala Sitharaman on 23rd July 2024, marks a significant step toward fostering inclusive growth and development across various sectors of the economy. This budget comes at a time when India has emerged as the fastest-growing economy among G20 nations, with an estimated growth rate of 7.3% in 2023-24. India's real GDP grew by 8.2% in FY24, propelling it to the 5th largest GDP globally.

The budget is particularly noteworthy for its emphasis on skill development, employment generation, Micro Small and Medium Enterprises (MSME), and the middle class. These focus areas align seamlessly with Prime Minister Narendra Modi's vision of "Viksit Bharat" (Developed India), which aims to create a strong, inclusive economy full of job and entrepreneurial opportunities. "Viksit Bharat" envisions a prosperous, inclusive, and technologically advanced nation, elevating India's global standing through economic growth, social welfare, and infrastructure development. Additionally, India's fiscal deficit has been reduced to 5.6% of GDP in FY24 while keeping inflation low, stable, and moving towards the 4% target reflecting improved fiscal management and a commitment to sustainable development.

Skill Development & Employment

One of the cornerstones of the 2024 Union Budget is its robust commitment to skill development. The initiatives aim to bridge the skill gap and ensure that the workforce is equipped with the necessary skills to meet the demands of a rapidly evolving job market.

The budget also emphasizes the importance of upskilling and reskilling programs for the existing workforce, ensuring that they remain competitive in the face of technological advancements.

1. Prime Minister's Package of 5 Schemes for Employment and Skilling

The budget introduces a package of five schemes and initiatives with an outlay of ₹2,000 billion to facilitate employment, skilling, and other opportunities for 41 million youth over the next five years:

- **Scheme A - First Timers:** A one-month salary of up to ₹15,000 will be provided in three instalments to first-time employees registered with the Employees' Provident Fund Organisation (EPFO).
- **Scheme B - Job Creation in Manufacturing:** Incentives will be provided directly to both employees and employers, linked to their EPFO contributions for the first four years of employment.
- **Scheme C - Support to Employers:** Government reimbursement of up to ₹3,000 per month for two years towards the EPFO contribution of employers for each additional employee hired.
- **New Centrally Sponsored Scheme for Skilling:** Skilling 2 million youth over a five-year period and upgrading 1,000 industrial training institutes (ITI) in a hub-and-spoke arrangement.
- **New Scheme for Internship in Top Companies:**

Providing internship opportunities in 500 top companies to 10 million youth over five years.

2. Loan-Centric Schemes

- The Model Skill Loan Scheme will be revised to facilitate loans of up to ₹750,000, benefiting approximately 25,000 students every year. Financial support for loans of up to ₹1 million for higher education in domestic institutions will be provided to youth who have not been eligible for any benefits under existing government schemes and policies.
- To promote investment and foster employment, the budget has enhanced the limit of Mudra loans to ₹2 million from the current ₹1 million for entrepreneurs who have availed and successfully repaid previous loans under the 'Tarun' category. Additionally, the budget has abolished the angel tax for all classes of investors, boosting the entrepreneurial spirit and particularly benefiting the MSME ecosystem.



Women-Led Development

This year, women's empowerment emerges as a crucial aspect of the budget. Acknowledging the pivotal role women play in the economy, the government introduces targeted initiatives. An allocation of ₹25 billion is earmarked for women-centric skill development programs, spanning diverse fields such as technology, healthcare, and entrepreneurship. These programs aim to equip women with essential skills, fostering economic independence.

Additionally, the budget emphasizes financial inclusion, ensuring that women have access to credit and financial services.

- **Gender Budget Increase:** The Gender Budget for FY 2024-25 has increased by 38.6% compared to the previous year. A total of ₹3,090 billion has been allocated across various ministries and departments specifically for women and girls. The quantum of Gender Budget reported in Gender Budget Statement (GBS) 2024-25 is 38.6% more than budget estimates of 2023-24. The share of the Gender Budget in the total Union Budget has increased to 6.5% in 2024-25, up from 5% in the previous year. This represents a significant commitment to advancing gender equality and empowering women.
- **Allocation for Women's Initiatives:** The budget allocates funds for schemes benefiting women and girls, including initiatives related to hostels, crèches, and skill development. The goal is to enhance opportunities for women in education, employment, and entrepreneurship.

Tribal Development

The Ministry of Tribal Affairs has been allocated ₹130 billion, which is ₹5.39 billion more than the previous year's grant. This represents a massive 70% increase compared to the revised estimate for 2023-24.

The finance minister announced that, to improve the socio-economic condition of tribal communities, the government will launch the Pradhan Mantri Janjatiya Unnat Gram Abhiyan by adopting saturation coverage for tribal families in tribal-majority villages and aspirational districts, covering 63,000 villages and benefiting 50 million tribal people. These initiatives aim to improve the overall quality of life for tribal communities and ensure that they have access to essential services.

Other Noteworthy Initiatives

The government is committed to all-round, inclusive development, particularly for farmers, youth, the middle class, and the poor. Schemes such as PM Vishwakarma, PM SVANidhi, National Livelihood Missions, and Stand-Up India will be stepped up. The integration of the e-Shram portal with other portals will facilitate a one-stop solution for job aspirants, connecting them with potential employers and skill providers.

The middle-class benefits from an increase in the standard deduction for salaried individuals and pensioners from ₹50,000 to ₹75,000 in the new tax regime. The deduction on family pensions has been increased from ₹15,000 to ₹25,000. The capital gain exemption limit has been increased to ₹125,000 per year to benefit lower and middle-income classes. The custom duty on essential items like X-ray panels, mobile phones, and PCBA has been reduced to 15%, making these items cheaper.

Additionally, under the PM Awas Yojana Urban 2.0, the housing needs of 10 million urban poor and middle-class families will be addressed with an investment of ₹1 trillion. These measures are designed to provide financial relief and support to the middle class, enhancing their overall economic well-being.

Digital Infrastructure

The Union Minister for Finance has announced several measures to accelerate the adoption of technology toward the digitalization of the economy.

1. **Data and Statistics:** To improve data governance, collection, processing, and management, various sectoral databases, including those established under the Digital India mission, will be utilized with active use of technology tools.
2. **Electronics:** The finance minister also announced the removal of customs duty, subject to conditions, on oxygen-free copper for the manufacture of resistors and the exemption of certain parts for the manufacture of connectors to increase value addition in the domestic electronics industry.
3. **Telecommunication and Equipment:** To incentivize domestic manufacturing, the finance minister proposes to increase the customs duty from 10% to 15% on PCBA of specified telecom equipment.
4. **Digital Public Infrastructure (DPI) Applications:** In the services sector, the finance minister proposes the development of DPI applications at a population scale for productivity gains, business opportunities, and innovation by the private sector. These applications are planned in areas such as credit, e-commerce, education, health, law and justice, logistics, MSME, services delivery, and urban governance.

Conclusion

The Union Budget 2024-25 represents a significant commitment to fostering inclusive growth through targeted initiatives. Realizing the vision of a Viksit Bharat necessitates a coordinated approach among various ministries. Effective implementation of these programs, coupled with optimized resource utilization, hinges on seamless inter-ministerial collaboration. By working in unison, ministries can achieve the goal of Viksit Bharat, ensuring broad and equitable benefits for all citizens.

References

1. doc2024722351601.pdf (pib.gov.in)
2. Economic Survey: How India is embracing sustainable living amid global clamour – Firstpost
3. World GDP Rankings 2024 | Top 10 Countries Ranked By GDP - Forbes India
4. Press Release Ifma Page: Press Information Bureau (pib.gov.in)
5. Union Budget 2024-25: Promoting Women-Led Development with Increased Allocations(devdiscourse.com)
6. Press Release: Press Information Bureau (pib.gov.in)
7. Budget outlay of Ministry of Tribal Affairs increased by 73.6% - The Statesman
8. Development scheme for 63,000 tribal villages - Times of India (indiatimes.com)
9. Union Budget 2024: In govt outreach to tribals, a new scheme for development of 63,000 villages | India News - The Indian Express
10. Highlights of Union Budget: Press Information Bureau (pib.gov.in)
11. Summary of Union Budget: Press Information Bureau (pib.gov.in)
12. Union budget 2024-25 allocates over 550 crores to the IndiaAI mission
13. doc2024723352701.pdf (pib.gov.in)
14. PowerPoint Presentation (indiabudget.gov.in)
15. Budget 2024 infrastructure: Union Budget: These infra measures will give a roadmap for the infrastructure for the next five years - The Economic Times (indiatimes.com)



S Rahul

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Rahul is a skilled professional with a diverse background spanning business development, entrepreneurship, and content creation. Having honed his skills in corporate, startup, and freelance environments, he aims to bring his unique perspective to the skilling sector. His passion for social impact, sustainable development, and policy research helped him transition to this domain.

SKILLING FOR SUCCESS: NSDC'S COMMITMENT TO INDIA'S YOUNG WORKFORCE



Introduction

In its pursuit of becoming the global skill and innovation capital, India, a fast-growing economy, recognizes the critical role young people play. As the world celebrates **World Youth Skills Day** on July 15th, the National Skill Development Corporation (NSDC) is spearheading the national mission to equip young people with the skills needed for the future of work, securing their livelihoods, and contributing to a prosperous future for the nation.

India has a unique opportunity, among 1.4 billion Indians 880 million are in the working age group of 15 to 59 years, with the median age of the population at 28 years¹. Here NSDC has taken up a mission to skill and reskill/upskill 25 million individuals, skill and reskill/upskill 15 million from disadvantaged socio-economic groups and operationalise 50,000 skill centres by 2025². Skills are the foundation for a fulfilling life, as they empower individuals to navigate life's challenges, take control of the destinies and help us to write our own stories. NSDC believes in empowering and arming unemployed youth, school dropouts, underprivileged communities, and individuals seeking to enhance their employability through skill development programmes. NSDC plays a pivotal role by understanding the skill demand from industries and employers and aligning it with the skill development initiatives across the country. It empowers the Indian youth by establishing essential processes and structures such as monitoring mechanisms, assessment protocols, and

standardization procedures for job roles and the curricula.

The Ministry of Skill Development and Entrepreneurship launched the National Skill Development Mission (NSDM) in 2015. This ambitious initiative provides a comprehensive institutional framework to accelerate and scale up skill development efforts across the nation.

NSDC: A Catalyst for Growth and Development

NSDC acts as a national catalyst, working collaboratively with state governments to bridge the skill gap and equip young Indians with the tools they need to succeed and the focus on skilling aligns perfectly with "**Youth Skills for Peace and Development**", the theme for this World Youth Skills Day.

Here are a few ways NSDC empowers youth for a peaceful and prosperous India:

- **Skilling for Green Jobs and Sustainability**

As we embark on our mission to achieve energy independence by 2047 and net zero emissions by 2070, the importance of green skills has never been more apparent. We promote skill development programmes in sectors like renewable energy, green infrastructure, and sustainable agriculture, these roles are pivotal in our journey towards a greener economy. Defined as roles that prioritize sustainability and environmental stewardship, green jobs not only mitigate ecological harm but

also foster economic resilience and social equity. It is therefore crucial today that governments as well as the market players make serious, strong, and long-term investments in Green Skills. Armed with the skills for green transition, it is our youth that will propel us into a green and more equitable future and ensure our global competitiveness in the green economy.

- **Government Programmes**

As a nodal agency under the Ministry of Skill Development and Entrepreneurship (MSDE), NSDC takes care of the on-ground implementation of key government programmes such as Pradhan Mantri Kaushal Vikas Yojna (PMKVY), and Pradhan Mantri Vishwakarma Yojna (PMVY). Under the aegis of MSDE, NSDC also plays the custodian role for Skill India Digital Hub (SIDH), the flagship digital infrastructure for skill development in India.

- **NSDC International Ltd**

NSDC International was created in 2021 to bring a comprehensive approach for skill development for a global audience. It enables global careers by unlocking global opportunities, aggregating international demand, and cultivating a diverse pool of skilled professionals for international work.

- **Sector skill Councils (SSCs)**

Operated under NSDC, SSCs are designed to ensure the skill training ecosystem meets the demands of the various sectors by identifying skill gaps and industry standards through developing National Occupational Standards (NOS) and Qualification Packs (QP).

- **NSDC Academy**

Created in 2023 to serve students with in-demand skills, complementing their existing educations to unlock their full potential, it offers comprehensive suite of industry aligned courses to bridge the skill gap between the industry and the education sector.



A Nation Leading by Example:

Since 2008, NSDC has played a vital role in transforming India's skill development landscape. Our collaborative approach with state governments ensures that youth across the nation have access to quality training and opportunities. This focus on skilling empowers individuals, catapults families to lead a better life, and positions India as a global leader in youth development and a champion for a peaceful and sustainable future.

Embrace the Opportunity:

World Youth Skills Day is a call to action and NSDC urges all stakeholders to join forces:

- **Governments Institutions**

Continue partnering with NSDC to develop region-specific skill development plans that address local needs.

- **Industry Partners**

Actively participate in developing and delivering industry-relevant skill development programmes.

- **Educational Institutions**

Integrate skill development into the curriculum to equip students with the job-ready skills they need.

- **Young People**

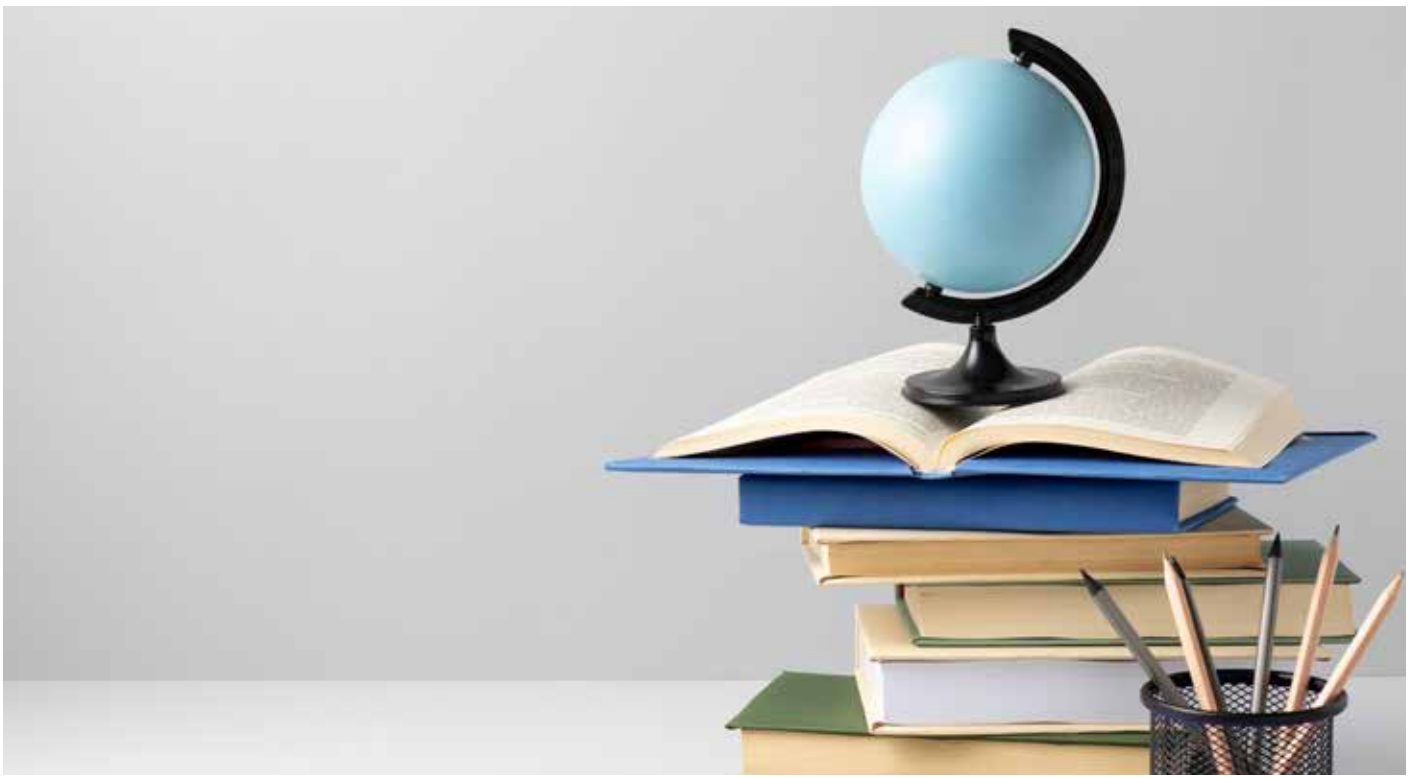
Take charge of your future and explore the vast skill development opportunities available through NSDC.

The challenge in the skill development domain is to identify the dynamic future skill requirements and nurture an ecosystem. Our young workforce has a significant role to play in the global innovation ecosystem and participate in the value chain through offshoring or remote working. The outsourcing model used by global companies, especially in the post-Covid environment, is likely to be a huge demand for the workforce to cater to the offices of the world. As the world evolves with advancements in Artificial Intelligence (AI) and automation, the skillsets needed for future success are constantly changing and NSDC recognizes this dynamic landscape.

We are actively collaborating with industry leaders to identify emerging skill requirements and develop training programmes that equip young people to thrive in an AI-powered future. By staying ahead of the curve and offering future-oriented skill development opportunities, NSDC empowers individuals to navigate the changing world of work with confidence and contribute meaningfully to India's continued growth and leadership on the global stage. Skilling India is a marathon; the trajectory of skill development will persist until we reach the Viksit Bharat goal of 2047.

References

1. MoP GoI. (2022). Transmission System for Integration of over 500 GW RE Capacity by 2030. (pp. 1-31). Central Electricity Authority, Ministry of Power, Government of India. Retrieved from https://cea.nic.in/wp-content/uploads/notification/2022/12/CEA_Tx_Plan_for_500GW_Non_fossil_capacity_by_2030.pdf
2. MoSPI. (2022). Youth in India. (pp. 27-79). Government of India. Retrieved from https://mospi.gov.in/sites/default/files/publication_reports/Youth_in_India_2022/Youth_in_India_2022.pdf



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Iwin is a communications professional with over 15 years of experience with semiconductor, technology, transportation, aviation, education, startup, and AI & IoT. By collaborating closely with leadership, she formulates brand messaging that resonates with target audiences, develops effective communication strategies, and builds strong media relationships, ultimately boosting corporate visibility and reputation. She holds MS Communications from Manipal Institute of Communication, Manipal.

NEWS BYTES



MSDE Commemorates 10th Anniversary of Skill India Mission

The Ministry of Skill Development and Entrepreneurship (MSDE) organised "Kaushal Samwaad" on World Youth Skills Day, 15th July 2024. The event also marks the commencement of the 10th year of the Skill India Mission. It was attended by **Shri Jayant Chaudhary, Minister of State (Independent Charge) for MSDE**, and Shri Atul Kumar Tiwari, Secretary, MSDE. During the Kaushal Samwaad, Shri Jayant Chaudhary praised the Ministry's ongoing efforts to enhance India's ecosystem of skilling, education, and entrepreneurship.

He emphasized the significant role of youth skills in peacebuilding and sustainable development, highlighting their importance in meeting the demand for skilled professionals across industries and addressing global challenges. Shri Jayant Chaudhary also interacted with professionals trained through various Skill India schemes and programs, as well as their trainers, during the event.



Revamped Model Skill Loan Scheme Launched by MSDE

On July 25, 2024, Shri Jayant Chaudhary, MoS for Skill Development & Entrepreneurship and Education, introduced the revised Model Skill Loan Scheme, offering collateral-free loans up to INR 7.5 lakhs for advanced courses. The updated scheme now includes NBFCs, Micro Finance Institutions, and Small Finance Banks as eligible lenders, broadening access to financial support for high-cost training. Shri Atul Kumar Tiwari, MSDE Secretary, highlighted its role in supporting diverse skill courses in sectors like IT, healthcare, drone technology, and digital marketing.



ILO and NSDC Collaborate for SkillsBridge Masterclass on Skill India Digital Hub (SIDH)

The Skill India Digital Hub's (SIDH) "SKILLS Bridge" Masterclass on 4th July 2024 saw remarkable international engagement. Organized by NSDC with ILO (International Labour Organization), World Bank, and UNESCO. It drew 3,672 registrants from 128 countries, emphasizing the significance of international collaboration in advancing AI-powered education. The session focused on the opportunities and challenges of digital transformation and the impact of digital evolution on Skills and Lifelong Learning (LLL) ecosystems. Additionally, through the case studies from India and other countries, participants gained insights into harnessing digital advancements for skilling, reskilling, and upskilling the workforce, as well as managing skills systems and integrating them with job matching services.

Tata Motors Launch Automotive Skill Labs For 4,000 Students

Tata Motors have joined hands with Navodaya Vidyalaya Samiti to establish 25 Automotive Skill Labs across India. These labs equip around 4,000 students annually, including a considerable number of girls, with practical automotive skills. In line with the National Education Policy (NEP), the program provides students with practical training, exposure to industry practices, and clear career pathways. The vocational courses outlined in the NEP 2020 are the focus of Tata Motors' Automotive Skill Labs, which aims to equip secondary and senior secondary students (studying in 9th to 12th standard) with essential subject knowledge, practical skills, and valuable industry experience, all within the school premises.

NAGALAND: Skill development for rural women through MSM launched

To enhance skill training opportunities for rural women, the Department of Employment, Skill Development and Entrepreneurship (ESDE) launched the "Mobile Skill Morung" (MSM) at the Village Council Hall in Sechii-Zubza, Nagaland. The event was graced by Salhoutuonuo Kruse, the Minister of Women Resource Development and Horticulture. The MSM is a mobile workshop and an extension of a training centre for women, equipped with essential training infrastructure. The primary goal of the program is to provide skill training to rural women who face challenges in accessing such programs due to familial responsibilities and geographical constraints.

GJEPC Proposes Advance Skill Training to Kashmir Artisans in Gems & Jewellery

The Gem & Jewellery Export Promotion Council (GJEPC), the apex body driving India's export-led growth in the gem and jewellery sector, supported by Ministry of Commerce and Industry recently engaged in strategic discussions with Kashmiri gem and jewellery trade members to enhance export opportunities. A key focus was on promoting the unique appeal of Kashmiri sapphires both within India and internationally. To support this, GJEPC proposed comprehensive training programs aimed at developing the skills of local artisans and students, thereby nurturing artisanship. Additionally, GJEPC encouraged Kashmiri jewellers to leverage the India Jewellery Exposition Centre (IJEX) platform in Dubai to expand their global market presence. Furthermore, Kashmiri jewellers were invited to participate in the India International Jewellery Show 2024 in Mumbai, providing them with a significant platform to showcase their products.

GIMS to offer training for international healthcare jobs

The Government Institute of Medical Sciences (GIMS) has partnered with NSDC, to offer skill-based training to students aspiring for career opportunities in global healthcare, the training programme will equip paramedical, and nursing staff selected by the NSDC with necessary skills to secure employment in countries such as Israel, Germany, the United States, and Japan.

Deputy Commissioner, Nicobar inaugurated Skill Development Program organized by prominent agricultural research organisations

On World Youth Skills Day, 15th July 2024 in Port Blair, Mrs. Jyoti Kumari, IAS, Deputy Commissioner of Nicobar, inaugurated a five-day skill development training program titled "Harvesting Diversity: Coconut-based Intercropping with Spices and Tuber Crops." Developed by the Indian Council of Agricultural Research (ICAR), Krishi Vigyan Kendra (KVK), and Central Island Agricultural Research Institute (CIARI), Nicobar. This initiative is part of a 100-day action plan. The program aims to enhance intensive agricultural farming techniques, focusing on intercropping spices and tuber crops within coconut plantations.

NSDC: HIGHLIGHTS

Hon'ble Union Minister of Coal and Mines Shri G. Kishan Reddy Visits MSDI Belgaria, Dhanbad

On July 25, 2024, Hon'ble Union Coal Minister Shri G. Kishan Reddy visited the Multi Skill Development Institute (MSDI) in Belgaria, Dhanbad. MSDI is a joint initiative of Bharat Coking Coal Limited (BCCL) & NSDC being implemented by Learnet Skills Ltd. The visit saw a large turnout from the Belgaria community eager to discuss their challenges post-displacement. During the visit, the minister engaged with fashion design trainees, encouraging them to leverage the MSDI training for economic independence. Coal Secretary Shri Amrit Lal Meena emphasized the minister's commitment to supporting local communities. Shri Reddy assured support for expanding skill development initiatives, aiming to enhance training capacities for broader community benefits. The event, hosted by Rupal Bhargav from BCCL, highlighted the impact of the Fashionpreneur Programme being currently run at the MSDI. Following the visit, Mr. Baibhav Aggarwal from NSDC engaged with trainees to motivate the students and gather feedback.



India-Israel Partnership: NSDC Sends 4,826 Skilled Workers to Boost Israel's Construction Sector

In response to a request from Israel's Population and Immigration Authority (PIBA) to recruit 10,000 Indian construction workers across four job roles, NSDC has successfully deployed 4,826 workers to Israel within three months. NSDC partnered with the states of Haryana, Uttar Pradesh, and Telangana to conduct three professional test drives between January and April, selecting 6,019 workers. An additional 700 candidates are expected to travel in August before new test drives are conducted. The first batch of departing candidates was felicitated in the presence of His Excellency Mr. Naor Gilon, Ambassador of Israel, Shri Atul Kumar Tiwari, Secretary of the Ministry of Skill Development & Entrepreneurship, and Shri Ved Mani Tiwari, CEO, NSDC; and Managing Director of NSDC International.

**NSDC Signs an MoU with Visvesvaraya Technological University (VTU) Revolutionizing Higher Education and Bridging Skill Gap.**

NSDC has collaborated with Visvesvaraya Technological University (VTU) which aims to bridge the gap between academia and industry, revolutionizing higher education and skill development in India. The partnership will establish Skill Hub centres in over 150 engineering colleges and set up Centres of Excellence in select institutions. It also aims to enrol 240 students per college in future skills programmes under the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), the flagship scheme of the Skill India Mission. This collaboration enhances the employability of India's youth while fostering a culture of innovation and excellence. It empowers them to lead in fields such as Artificial Intelligence (AI), Machine Learning, and Robotics, driving the future of technology and industry.



Thirty-Two Indian Nurses Successfully Transition to German Healthcare Jobs with B1 Language Certification

32 nurses were felicitated in the presence of Sh. Jayant Chaudhary, Hon'ble Minister for Skills Development and Entrepreneurship, and Dr. Philip Ackerman, German Ambassador to India. The candidates completed a rigorous two-month German language training program at NITTTR Chandigarh, conducted by native German trainers. All nurses achieved B1 level TELC certification. They have secured employment in German hospitals, earning between 2,300 to 2,700 euros monthly, along with free B2 training.



India and Japan Strengthen Ties: NSDC Hosts Dialogue with Osaka Delegation for Skill



On 19th July 2024, National Skill Development Corporation (NSDC) under the aegis of the Ministry of Skill Development and Entrepreneurship (MSDE) hosted a dialogue with the delegation from Japan headed by Mr. Yamaguchi Nobuhiko, Vice Governor of Osaka Prefectural Government, to discuss potential collaborations between Osaka Prefecture and India in the field of skill development. The meeting was attended by key dignitaries including Shri Atul Kumar Tiwari, Secretary, MSDE and Chairperson NCEVT; Ms. Sonal Mishra, Joint Secretary, MSDE; Shri Ved Mani Tiwari, CEO, NSDC and Managing Director, NSDC International; Shri Ajay Kumar Raina, Group General Counsel, NSDC and Director & COO, NSDC International. During the meeting, the Vice Governor emphasized on welcoming skilled people from India to Osaka for numerous opportunities in different sectors. The meeting ended up with a fruitful interaction between the sending organizations and the visiting delegation on the legislation, facilities, and infrastructural advantages in Osaka which were promptly addressed to by the Governor and the team.

Collaboration between NSDC & UniKaushal to Equip Young Indians with Essential Skills that Ensure Long-Term Success.

NSDC Academy and UniKaushal have joined forces to equip youth with crucial data science skills, combining academic rigor with hands-on training. The goal is to establish a resilient skill ecosystem that meets current industry demands while anticipating future trends. This initiative marks the beginning of transforming the lives of India's youth, one skill at a time. The alliance aims to strengthen the skill ecosystem to address current industry demands while anticipating future trends, aiming to bolster confidence and drive India's progress.



PM Vishwakarma: Training of Master Trainers and Trainers

A five-day residential training program, organised at the National Institute for Entrepreneurship & Small Business Development, Noida (NIESBUD) from July 6th to 10th 2024, conducted Training of Trainer for 51 Master trainers & Trainers from 6 states including Uttar Pradesh, Madhya Pradesh, Jammu and Kashmir, Bihar, Rajasthan, and Haryana. This batch of master trainers and trainers was specially catering to trades of Mason, Boat Maker, Cobbler, Locksmith, Hammer and Tool-kit maker and Washerman to scale up Basic Skilling for Vishwakarmas. Sessions were delivered by identified faculty from NIESBUD along with guest lectures. All participants are now Certified Trainers and Master Trainers on Skill India Digital Hub (SIDH).





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