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India’s got talent

Time to systematically tailor it for booming, demographics-driven global opportunities

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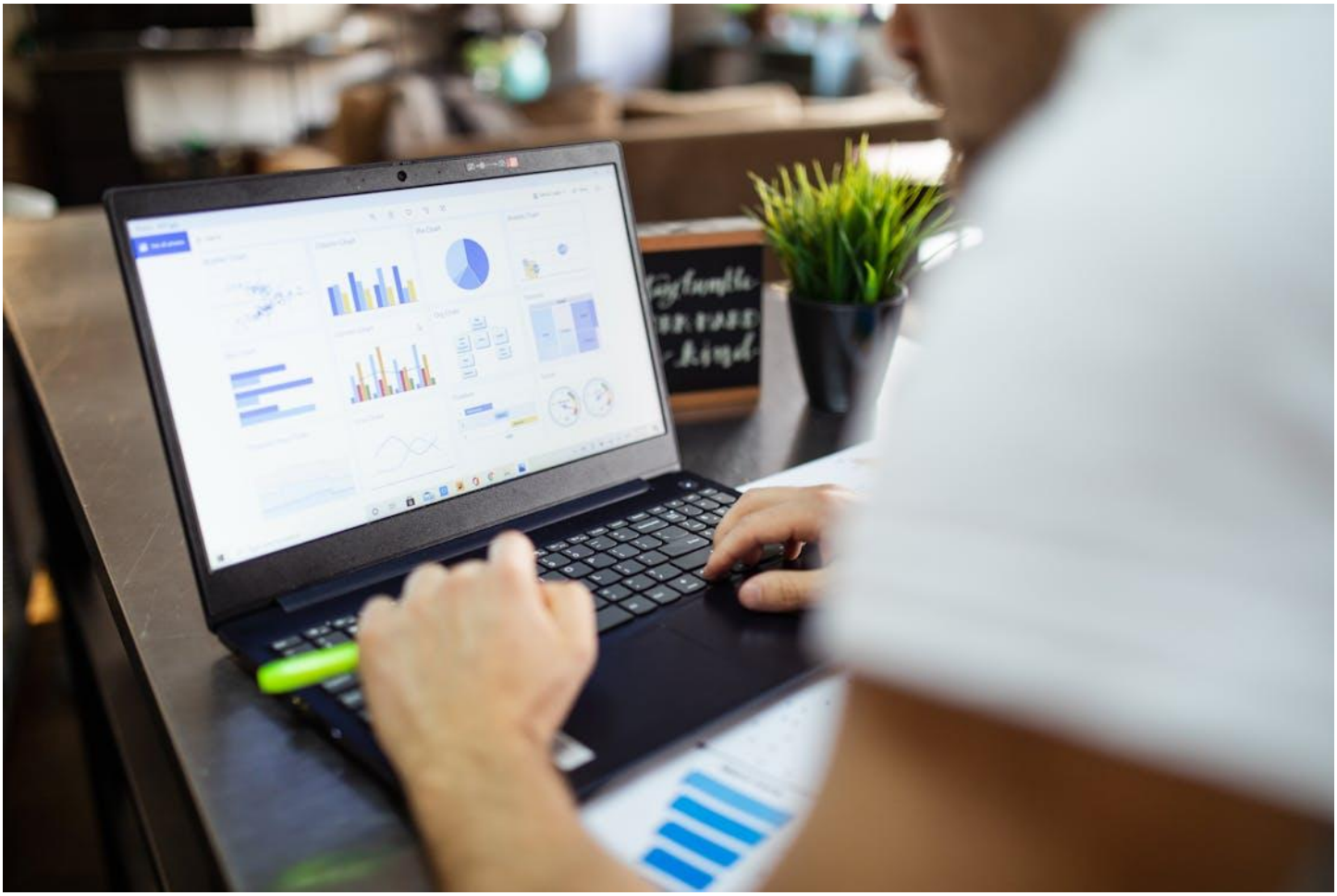

by S&P Global

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Case for India to become a global employment epicentre

The global labour market is undergoing rapid transformation, with demand for skilled workers rising sharply across advanced as well as emerging economies because of ageing population in many countries and businesses looking to adopt and scale up digitalisation.

Take the case of high-income countries such as Germany, Japan and the UK, which are experiencing significant skill shortages owing to shrinking working-age populations and low pool of employees adept at navigating the rapidly changing technological landscape.

This has presented India, which is home to one of the world's youngest populations, a unique opportunity to become a global hub for skilled talent.

This report explores the evolving global skilling landscape and how India can transform its large young population base into a demographic dividend.

At the outset, over 78 million net new jobs are expected to be created globally by 2030 as per World Economic Forum, with strong requirement for jobs in sectors such as healthcare, information and communication technology (ICT), green energy, logistics and construction.

An analysis of Australia, Canada, Europe, the Gulf Cooperation Council (GCC) countries, South Korea and the US reveals a convergence of these in-demand job roles aligning with India's skill base, such as nurses, elderly care workers, electricians, software engineers, truck drivers and renewable energy technicians.

Still, India's current skilling ecosystem remains underprepared to respond to this global demand.

While government schemes such as Pradhan Mantri Kaushal Vikas Yojana (PMKVY) have seen considerable enrolment, data shows a sharp deterioration in the training-to-enrolment ratio, certification rates and placement outcomes over successive phases. This signals critical gaps in demand alignment, delivery models and global job-readiness.

To unlock the potential of India's young population, a three-pronged strategy should be adopted:

- **Enhancing global readiness within the national skilling ecosystem:** The national skilling ecosystem should focus on assessing the required qualifications in the various countries, country-specific skilling pathways (e.g., Germany's dual vocational model or GCC-aligned certifications) and pre-departure readiness, including language and cultural training. Additionally, it is recommended to build and scale globally-benchmarked training centres.
- **Employing CSR as a catalyst:** India's corporate social responsibility (CSR) ecosystem invests a significant proportion of its funds in skilling. But most of these skilling programmes are fragmented and focus on generic trades, without alignment to global job markets or outcome-based tracking. Companies must shift their CSR programmes from passive funding to becoming strategic investors. In partnership with the government, companies can:
  - Build simulator labs and smart training centres (e.g., for welding, elderly care, green energy)
  - Fund critical language and soft skills labs (e.g., Japanese, German, Arabic)
  - Invest in globally-benchmarked training centres
  - Align skilling with export-oriented industries and corporate value chains
  - Support the development of a centralised real-time skill demand dashboard
  - Sectoral CSR coalitions, such as a consortium of automotive companies funding global electric vehicle (EV) mechanic training, to bridge domestic and global workforce gaps while enhancing ESG impact reporting

- **Implementing a tiered approach to skilling:** The report categorises global skilling opportunities for India, based on feasibility, infrastructure readiness and deployment time:
  - Short-term (1–2 years): Roles in nursing, elderly care, construction and logistics, where India already has training ecosystems
  - Medium-term (2–5 years): ICT, hospitality and green energy jobs that require targeted curriculum updates and global partnerships
  - Long-term (5–10 years): Advanced roles in robotics, clean tech, artificial intelligence (AI)/machine learning (ML), and precision manufacturing that demand systemic curriculum transformation and stronger public-private partnerships (PPPs)

1. The global labour paradox

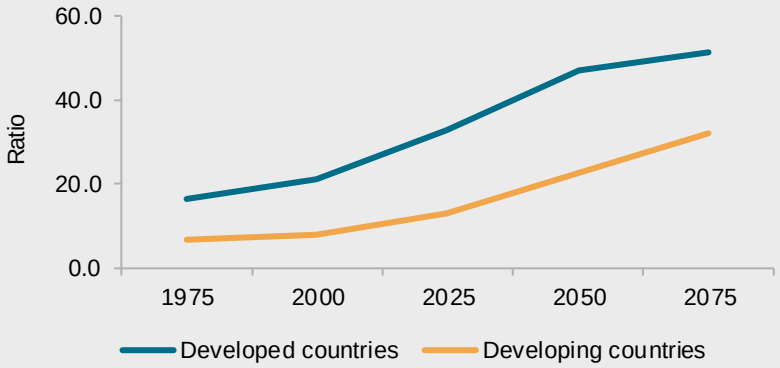
The global labour market is undergoing a contradictory situation, where some countries are experiencing rising unemployment even as employers struggle to find skilled workers. According to the World Economic Forum, 63% of employers identify skill gap as the biggest barrier to industry growth, with 22% of global jobs expected to be impacted between 2025 and 2030 despite a requirement of net increase of 78 million jobs globally.

The primary reason for the skill shortage is growing demographic divergence as high-income countries experience swift population ageing, owing to sustained decline in fertility and increasing life expectancy, leading to high dependency of the elderly in the working population. In contrast, lower- and middle-income countries are experiencing a demographic expansion, with increasing number of younger people entering the workforce.

Hence, by 2050, these countries are projected to account for nearly two-thirds of global workforce entrants as per IMF World Economic Outlook.

This presents an opportunity for India to leverage its young population by providing surplus labour and addressing skill shortages in high-income countries. However, the country's labour market challenges, including underqualification and skill gaps, may impede its ability to fully leverage this advantage.

Figure 1: Ratio of elderly person-to-working age population in developed and developing countries



The graph illustrates the demographic divergence between developed and developing countries, with developed countries experiencing a rapid increase in elderly dependency ratio due to ageing populations, while developing countries have a relatively low elderly dependency ratio due to younger populations.

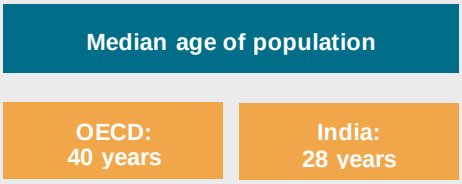
Source: United Nations Population Division medium variant projections

2. India's path to addressing global skilling shortages

India finds itself in a unique position to fill the global skill shortage gap, with 65% of its population under 35 years.

However, despite having a humongous workforce potentially, the skills issue is now endemic.

As per the periodic labour force survey, only less than half of graduates are considered fully employable and less than 4.4% of the workforce have received formal vocational training. India must urgently address structural gaps in its skilling ecosystem.



India is a decade younger than the OECD average, offering a strong workforce advantage

By addressing its skills gap and positioning itself as a global talent hub, India can improve domestic employment, enhance productivity and contribute to bridging the global skilling shortage.

India can also unlock new economic opportunities, increase remittance inflows and emerge as a key player in the global economy.

Why skilling for global market matters for India?

- **Remittance resilience** — High-income migration leads to higher and stable inflows
- **Youth employment** — Reduces stress on domestic job market
- **Global reputation** — India becomes trusted partner for skilled talent
- **Human capital loops** — Returnees bring back capital and competence
- **System upgrade in skilling** — Better standards in training institutes
- **Inclusive growth** — Improve access for women and marginalised groups

India's current remittances status

Remittances more than doubled from fiscal 2011 to 2024 - $55.6 billion to $118.7 billion

Major source of remittances

- USA (27.7%)
- GCC (38%)
- Other advanced economies (50%)

Major destination of remittances

- Maharashtra (20.5%)
- Kerala (19.7%)
- Tamil Nadu (10.4%)
- Telangana (8.1%)
- Karnataka (7.7%)

Source: RBI Survey, 2022

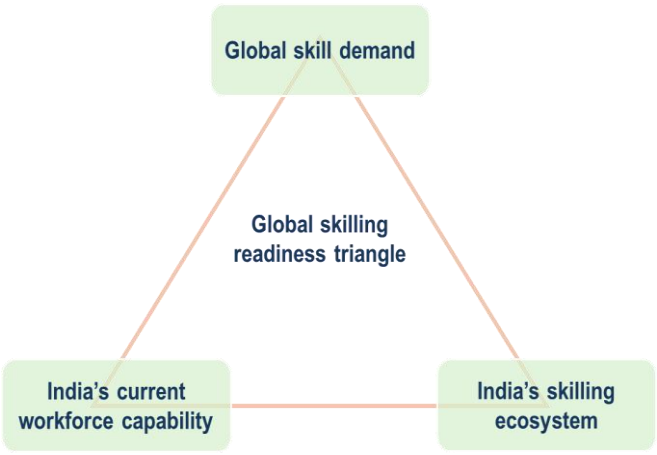
Other benefits

- **Global skilling supports employment absorption.** With a large number of individuals entering the workforce every year and domestic job creation struggling to keep pace, international employment offers a vital gateway while enhancing India's reputation as a skilled labour partner
- **Skilled migration can catalyse reinvestment in domestic systems.** Returnee migrants with capital as well as new knowledge can benefit local growth

While the benefits of global skilling are significant, achieving those requires a clear understanding of three critical dimensions:

- **Global demand landscape:** The types of skills, sectors and roles that are seeing persistent shortages across high-income and ageing economies
- **Workforce capabilities:** The preparedness in technical, digital and soft skills necessary for international employment
- **State of skilling ecosystem:** The ability to deliver high-quality, industry-aligned training at scale to address the mismatch between training supply and evolving market needs

The following sections analyse each of these dimensions to assess how India can position itself as a reliable source of globally deployable talent.



3. Need for mapping to global skill requirements

To build a responsive skilling strategy, it is essential to understand where global workforce demands are emerging and how those differ country-wise. Each destination country reflects unique economic trends, sectoral demands and demographic pressures that shape the nature of their skill shortages. The following section highlights selected-country-wise analysis to map occupational gaps and priority sectors to offer a ground view of where India's skilling efforts can be most effectively aligned.

Canada

According to the Canadian Occupational Projection System, 56 out of 293 occupational groups will face shortages. These include:

- ICT professionals (software developers, cybersecurity specialists)
- Engineers (civil, mechanical, electrical)
- Managers across sectors
- Skilled trades such as construction workers, welders, and lab technicians
- Healthcare professionals, including nurses and allied health workers

GCC

The GCC labour market is projected to grow at 2.6% CAGR from 2024–2032, driven by large-scale infrastructure, green energy and knowledge economy transitions. This includes:

- Construction: Engineers and sustainability specialists
- Healthcare: Doctors, AI diagnostics, health data analytics
- Oil and gas: Automation, AI integration, sustainability roles
- IT: Software, AI and ML specialists
- Tourism: Multilingual staff, hotel operations, green tourism
- Manufacturing and supply chain: Engineers, production managers, sustainability experts
- Financial services: Fintech, green finance, blockchain, cybersecurity

EU:

Key sectoral shortages: Construction, healthcare, engineering and ICT

High demand roles across EU as per European Labour Authority:

Blue collar	Technical job	Specialised job
• Waiters (17) • Cooks (16) • Carpenter (14) • Bus and tram drivers (13) • Butchers, fish mongers and related (13) • Roofers (12) • Bricklayers and masons (13) • Construction (12)	• Welders and flame cutters (21) • Heavy truck drivers (19) • Motor mechanics (17) • Chefs (13) • Agriculture mechanics (12) • Plumbers (20) • Nursing professionals (17) • Electricians (16) • Healthcare assistants (15) • AC and fridge mechanics (11)	• Systems analysts (16) • Civil engineer (15) • Specialist doctor (18) • Doctors (16) • Software developers (13) • Software workers (12) • Early childhood educators (12) • Application programmers (12) • Special needs teachers (11)

Note: The numbers in bracket indicate the number of countries where shortages exist

UK

UK has over 965,000 Indian migrants many of who are in healthcare, engineering, IT and other professional services. Demand for skilled professionals continues to rise. Priority skills in demand are:

- IT and digital: Programming, data analytics, cybersecurity, AI/ML, software development
- Healthcare: Clinical diagnostics, telemedicine, health informatics, medical technology
- Engineering: Mechanical, electrical, civil and sustainable engineering, project management, automation
- Finance: Financial modelling, risk management, digital banking

Australia

The Jobs and Skills Australia's Skills Priority List identifies significant shortages in occupations such as elderly care workers, engineers, ICT workers, skilled agricultural and construction workers, machine operators, and carpenters. Roles in high demand include:

- Registered nurses, aged care workers, disability support staff, general practitioners
- Teachers and education professionals
- Construction workers such as carpenters, electricians, plumbers, etc
- Engineering trade workers (metal fitters, welders)
- Professionals in law, research, ICT, technical consultancy

Several other developed countries, including the US, South Korea and Japan, are facing worker shortages. As per the World Bank Group, South Korea needs 900,000 new workers by 2032, mainly in construction, manufacturing, elderly care and hospitality, while the US has shortages in healthcare, engineering, ICT, trades and STEM fields, with particular need for 275,000 new nurses by 2030, as well as workers in construction, AI and cybersecurity.

Mapping global demand to India's potential: Key trades and skilling priorities

An analysis of workforce shortage across major destinations, such as the EU, the UK, GCC countries, Canada, Australia and South Korea, reveals a clear convergence around certain trades and skill sets. The demand is for blue-collar, technical and specialised white-collar occupations, offering India a unique opportunity to align its skilling ecosystem for global employability.

Top six global roles for Indian workforce

Sectors	Representative roles
Healthcare	Nurses, elderly care workers
Construction trades	Engineers, electricians, plumbers, masons, carpenters
ICT and digital	Software developers, cybersecurity experts, AI/ML engineers
Transport and logistics	Heavy truck and delivery drivers
Manufacturing and trade	Welders, machine operators, fitters
Renewable energy	Solar/wind technicians, EV specialists, green engineers

Skilling priorities for India: From low-hanging fruits to long-term bets

To effectively respond to global demand, India must prioritise a tiered approach based on the existing capacity, ease of deployment and alignment with future trends.

1) Low-hanging fruits (short term: 1 year-2 years)

These are roles India can scale rapidly with minimal new investment, leveraging its existing training infrastructure.

- **Caregiving and eldercare:** Existing nursing colleges and health institutes can be upskilled for geriatric and international standards
- **Construction workers:** India already trains a large number of masons, electricians and plumbers. With targeted international certification (NSQF+IEC equivalence), they can be made migration-ready
- **Truck drivers and logistics staff:** India's large informal base in transport can be formalised and trained for global driving standards (the UAE and Canada)

Strategic action: Rapidly invest in standardised certification, English/basic language modules and pre-departure orientation.

2) Medium-term opportunities (2-5 years)

These require system-level reforms and ecosystem partnerships but are feasible within a few years.

- **ICT jobs (coding, cybersecurity, AI/ML):** Build global placement partnerships with Europe and North America. Upskill diploma holders and engineers from tier II/ III colleges
- **Green jobs**: Train for solar panel installation, wind energy, EV maintenance—leveraging programmes such as Suryamitra

- **Hospitality and tourism:** Multilingual training, customer service and sustainability-linked modules to cater to GCC and Europe

Strategic action: Embed migration-oriented skilling into Skill India/NSDC programmes with bilateral relationships with host countries.

3) **Long-term strategic bets (5-10 years):** India needs to align with the future of work through curriculum transformation, infrastructure upgrades and regulatory alignment. The intention is to build workforce capable in advance healthcare, automation, advance software skills, robotics, precision engineering, IoT, blockchain, etc.

Strategic action: PPPs with national and global firms, mobility corridors in emerging sectors, and robust digital credentialing.

Case study: India's Suryamitra Skill Development Programme (SSDP)

Launched by the Ministry of New and Renewable Energy (MNRE), SSDP aims to create a skilled workforce in solar photovoltaic (PV) installation, operation and maintenance. Implemented by the National Institute of Solar Energy (NISE), the programme specifically targets ITI/diploma holders in engineering and aims to bridge the gap between India's growing solar energy capacity and the availability of trained personnel.

Since 2015, over 80,000 youth have been trained in solar PV installation across the country. The course spans 600 hours (~3 months) and includes theoretical as well as practical components. Trainees are equipped to become entrepreneurs, work with solar project developers, or seek international placement.

Impact and global linkages

Due to limited domestic absorption, India has started exploring global placements for Suryamitra graduates:

- A collaboration between Indian Skill Council for Green Jobs (SCGJ) and German Solar Association (BSW) has enabled the migration of trained Suryamitras to Germany for solar energy jobs between 2024 and 2026
- This partnership is one of India's first formal labour mobility arrangements in green energy, addressing the projected 1 million renewable energy job demand in the EU by 2027

Strategic significance for India

Short-term win: Utilises the existing training infrastructure to meet immediate international green job demand.

Medium- to long-term potential: Establishes the country as a hub for green skill exports, positioning Indian talent for leadership in the global climate workforce transition. It also encourages further investment in curriculum upgrades, international certification alignment and mobility partnerships.

Policy Implication: The Suryamitra model exemplifies how skilling programs can evolve from domestic employment schemes to strategic migration platforms, meeting global labour shortages while leveraging India's demographic dividend in climate-critical sectors.

4. India's skilling landscape: Capacity, gaps and way forward

India's skilling landscape is anchored to a multi-tiered institutional structure led by the Ministry of Skill Development and Entrepreneurship (MSDE).

At the operational forefront is the National Skill Development Corporation (NSDC), a unique PPP tasked with executing key schemes such as PMKVY, managing partnerships with over 500 private training providers, and supporting the development of Skill India Digital and Skill India International Centres.

Complementing this central architecture are more than 40 Sector Skill Councils (SSCs), which define industry-specific training standards and assessment frameworks. State Skill Development Missions (SSDMs) serve as regional coordinators, translating national priorities into localised skilling efforts. Additionally, more than 20 line ministries, including Rural Development, Textiles and Health, implement sector-specific training schemes. The state governments have also launched their own initiatives, such as the Maharashtra State Skill Development Society (MSSDS) and the Karnataka Skill Development Corporation (KSDC), to promote skill development and entrepreneurship.

MSDE: Nodal body for skilling

NSDC: Executes key schemes such as PMKVY for skilling through PPP

Support system

- 40 SSCs to design industry specific training and assessment.
- State skill development missions to ensure local needs are considered
- Collaborative efforts by complementary ministries
- ITIs and private training providers

The ecosystem includes over 15,000 Industrial Training Institutes (ITIs) and polytechnic colleges that deliver foundational vocational education.

Key initiatives under Skill India

PMKVY is the flagship programme of India's skilling landscape. Its four phases reflect growing ambition:

- PMKVY 1.0 (2015) aimed at fostering skill development through free short-term training and financial rewards for certification
- PMKVY 2.0 (2016-2020) aimed at training 1 crore youth
- PMKVY 3.0 (2021-2022) built upon the earlier phases and focused on establishing District Skill Committees (DSCs) to target skill shortages at district level
- PMKVY 4.0 (2022-2026) focuses on making skill development training more industry-oriented, aligned with national priorities, and accessible

Scheme	Enrolled	Trained	Certified	Placed	Placement %
PMKVY 1	19,86,016	19,86,016	14,51,636	2,53,296	12.70%
PMKVY 2	1,14,84,724	1,10,00,708	91,57,547	21,41,575	19.46%
PMKVY 3	7,94,976	7,37,502	5,08,360	43,016	5.80%
PMKVY 4	23,61,798	5,43,636	2,55,902	2,042	0.37%

Source: MSDE Annual Report, 2023-24

While the PMKVY reflects a bold vision for mass skilling, programme performance over the years reveals systemic challenges.

- Enrolment has fluctuated, but more critically, the ratio of trained candidates to those enrolled has declined, from 1:1 in PMKVY 1 to just 0.23 in PMKVY 4, indicating growing attrition between enrolment and completion
- Certification rates have also fallen, from over 72% in PMKVY 1 to barely 47% in PMKVY 4, while placement outcomes have dropped from 19.46% in PMKVY 2 to a dismal 0.37% in the most recent phase

This downward trend suggests execution inefficiencies and weakening alignment with job market realities, both in terms of demand relevance and delivery mechanisms. However, India's skilling infrastructure continues to offer a solid foundation: wide reading network of training centres, multi-stakeholder partnerships and institutional depth. Hence, the focus of the next phase of India's skilling journey must shift from scale to quality, through stronger curriculum, trainer capacity building, industry aligned content and performance-linked accountability mechanism. This shall be a shift from input-driven targets to an outcome-oriented approach, anchored in industry alignment, global mobility and long-term employability.

India could focus on interconnected fronts: policy alignment, unlocking CSR potential and structurally aligning training to demand.

Way forward

To translate India's demographic dividend into a global skilling advantage, a strategic reorientation is needed. The following three pathways can help accelerate the transformation:

1) Enhancing global readiness: The role of skilling the ecosystem

Recognising that India can become a global talent hub with rising skill shortage across advanced and emerging economies, the national skilling ecosystem can work towards the following:

– Skill harmonisation and mutual recognition of qualifications with destination countries

– Country-specific skilling pathways such as those aligned with German dual vocational training or GCC standards

– Pre-departure orientation, including soft skills, language training and cultural preparedness

– Partnerships with global employers and governments to channel structured labour mobility

Additionally, it is recommended to engage with catalysts within India to offer quality and support, build and scale globally benchmarked training centres, and establish a national skill passport system to standardise credentials and improve global recognition. Industry players can be incentivised to invest in globally relevant skilling, especially under CSR, by providing social certifications or recognition as reputational incentives.

2) Leveraging CSR as a strategic skilling catalyst

As per the Ministry of Corporate Affairs, India's CSR programmes have cumulatively spent more than Rs 2.22 lakh crore from 2014-15 to 2023-24 across various development thematic areas, of which ~3.5%, amounting to Rs. 7,901 crores have been dedicated to vocational and skills training. However, much of this investment is spread thinly across traditional vocations, often without outcome tracking or alignment to emerging global needs.

Strategic potential in skilling

In the past decade, the CSR programmes in skilling largely focused on funding isolated training initiatives in trades such as tailoring, beautician services, or data entry, primarily via NGO partners or training providers. These programmes have typically measured success by training completion rates, not by long-term employment, wage growth, or cross-border mobility. However, changes in the skilling landscape require a transition from CSR in a traditional, compliance-

driven role to that of a strategic investor. This shift requires a mindset change, from merely funding isolated training programmes to investing in India's global talent pipeline.

Under the broader national skilling framework, CSR can evolve in the following ways:

- **Support infrastructure and training assets:** Fund smart labs, which are modern, technology-enabled training facilities that simulate real-world work environments, allowing trainees to practice and develop skills in a realistic and immersive setting. Examples of smart labs include simulator-based welding labs, geriatric-care rooms and robotic maintenance labs. These labs will provide hands-on experience and training in specific industries or occupations, increasing employability and readiness for the workforce.
- **Develop language and cultural labs:** Support labs for teaching critical languages and cultural elements to boost global employability.
- **G2G co-investment:** Partner with the government to build centres aligned with the Technical Intern Training Programme (TITP) and Dual-Vocational Education and Training (DUAL VET) frameworks.
- **Align with industry and value chains:** Rather than generic training, CSR-funded programmes must mirror real demand within the corporate ecosystems:
  - Set up sectoral coalitions (automotive EV mechanics, agri export quality auditors). For instance, a consortium of 10 Indian automotive companies pooling CSR funds to train 10,000 globally certified EV mechanics or consider a collaboration among leading agricultural exporters to create a skilling corridor aligned with ESG and food safety standards in Europe
  - Match CSR skilling outcomes with recruiter needs, ensuring aspirants are job-ready upon completion
  - Encourage CSR contributions tied to ‘jobs created/placed’ instead of certificates issued
  - Export-facing companies should align CSR with their own supply chain needs (traceability tech, ESG audits, sustainable construction)
- **Close systemic gaps through standardisation of high demand and quality skill training:** Standardise Skill Curricula under NSQF and Common Norms, ensuring portability and international relevance.

3) **Strengthening demand-driven skilling:** India must institutionalise a tighter feedback loop between industry needs and training content. Skilling programmes must factor in real-time labour market intelligence, sector-specific forecasts and evolving global trends. Key actions include:
   - **Development of real-time demand mapping and data dashboards:** In convergence with government and industry partners, a centralised platform should be developed to:
     - Monitor global and domestic skill shortages quarterly
     - Feed demand signals into stakeholder groups — preventing mismatches and duplication
   - **Empowering district skill committees to map local and migration-driven demand**
   - **Expanding apprenticeships and on-the-job learning through PPPs**

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