



## Supplying Skills for Jobs: A State-Level Analysis of Training Across India

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By Atisha Kumar

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## List of Abbreviations

Serial No.	Abbreviation	Stands For
1	BRGF	Backward Regions Grant Fund
2	DDU-GKY	Deen Dayal Upadhyay Grameen Kaushal Yojna
3	DGT	Directorate General of Training
4	GDP	Gross Domestic Product
5	HR	Human Resource
6	ITI	Industrial Training Institute
7	LFPR	Labor Force Participation Rate
8	MSDE	Ministry of Skill Development and Entrepreneurship
9	MSMEs	Micro, Small and Medium Enterprises
10	NGO	Non-Governmental Organization
11	NSDA	National Skill Development Agency
12	NSDC	National Skill Development Corporation
13	PMKVY	Pradhan Mantri Kaushal Vikas Yojana
14	RPL	Recognition of Prior Learning
15	SSDMs	State Skill Development Missions





# Introduction

The rapid growth in the size of India's labor force has created a sense of urgency to create jobs and equip the country's young population with the requisite skills for those jobs. The Indian government has been investing heavily in vocational training and skills development outside the formal schooling system. Yet only two percent of the population has undergone any formal training – a drop in the ocean given the magnitude of the challenge.

This report compares state-level investments in skills with state-level economic and social indicators. The analysis helps capture regional variation in skill development infrastructure across the country. Through this approach, the report analyzes the supply side of skills provision. It examines key questions of immediate relevance to policymakers: What factors determine a state's demand for skills training? How should policymakers weigh competing factors in allocating funds for skills across states? The report compares the existing allocation of funding against these factors and presents policy recommendations for the government to align the geographic distribution of skills training facilities with the country's social and economic priorities.<sup>1</sup>

The report highlights that training facilities are located across India, with regional variation, and have grown in number and capacity over time. The spatial dispersion of training centers funded through public-private partnerships (PPPs) is not related to that of technical training institutes under the purview of the Directorate General of Training (DGT). There is no significant correlation between per capita income and the prevalence of training facilities. Facilities tend to be located in states with high human resource requirements, suggesting they are in line with employer demand. A greater number of facilities are found in less urban areas and fewer in remote areas such as the Northeast. Finally, PPP-funded centers are located in states with large youth populations, but there is no clear pattern with Industrial Training Institutes (ITIs).

The report proposes a strategy for skill development that would more effectively allocate funds across states. Policymakers must improve access to skills training at the state level by:

1. **Enhancing coordination** between different agencies and schemes to ensure the particular needs of different states are taken into consideration
2. **Adopting a single framework** for allocating funding to be used across agencies and schemes, which takes into account factors beyond economic and industrial growth
3. **Increasing the use of technology** that complements physical skills training facilities, especially for the Northeast

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<sup>1</sup> While other issues related to skill development such as certification and standards, teacher training and infrastructure are important from a supply side, these issues are beyond the scope of this report. The report focuses on whether the spatial distribution of India's supply side interventions is supporting equitable development.

## Why is Skill Development Important for India?

Skills and vocational training are strategically important for India to sustain its economic growth across states and for different segments of the population. India's growth over the past decade has led to an increase in urbanization and demand for labor in the services and manufacturing sectors. This continuing, employment shift away from agriculture means that individuals must gain new skills. Despite strong growth, there has also been an increase in income inequality, indicative of the fact that much of the Indian workforce still toils in low-paying, low-productivity informal employment.<sup>2,i</sup> The provision of relevant skills is a means of providing higher-quality employment to the poorest segments of the population. Skills are a prerequisite for productive jobs.

India has a young and rapidly growing population. In 2011, the country had a labor force of 496 million people.<sup>ii</sup> In the next two decades, India's labor force is projected to increase by 32 percent. Currently, 54 percent of the country's population is below the age of 25 and 18.5 percent are between the ages of 15 and 24.<sup>iii</sup> This young population must be equipped with productivity-enhancing skills and relevant knowledge to obtain quality jobs and contribute positively to economic growth.

***Around one million people enter the working-age population each month in India.***

Skill development is important for both urban and rural areas. A large and increasing proportion of India's population lives in cities. Nearly 33 percent of India's population lived in urban areas in 2015.<sup>iv</sup> This population needs the necessary skills to be able to find productive employment. However, despite accounting for an important share of the economy, manufacturing employment within 10 kilometers of the city centers of India's seven largest metropolitan areas declined by 16 percent while it increased by almost 12 percent in their immediate peripheries.<sup>v</sup> Further, rural-to-urban migration is fairly common in India.<sup>vi</sup> These potential migrants will be better equipped to assume urban jobs if they are trained with the requisite skills for employment.

A growing middle class has fueled India's economic growth through its domestic spending. The share of middle- and high-income individuals in the total population grew from 23.3 to 27.5 percent from 2004-05 to 2011-12.<sup>vii</sup> Moving forward, one of the country's key challenges in sustaining high growth will be to further expand its middle class through the creation of productive jobs for all segments of the population.

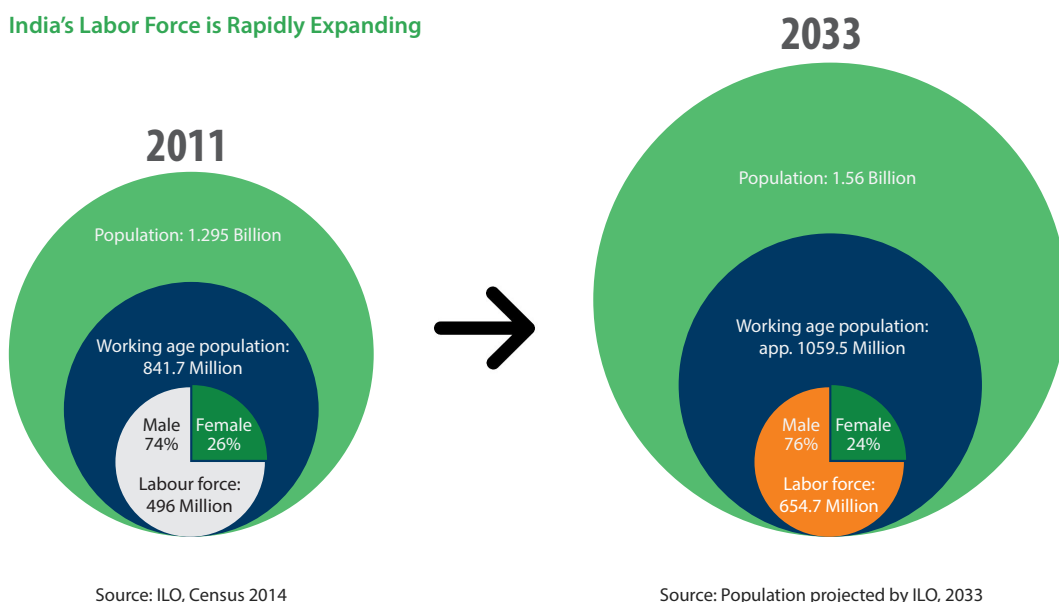
Shifting demographics also highlight the importance of creating new jobs. Around one million people enter the working-age population

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<sup>2</sup> The GINI Index, a measure of income inequality, increased by 3 percentage points between 1993 and 2009 in India, from 30.8 to 33.9.

Figure 1

## India's Labor Force is Rapidly Expanding



each month in India.<sup>viii</sup> Private firms need to create more jobs to absorb these entrants. By improving the availability of skilled workers through vocational training initiatives, the government can attract foreign firms to help boost job creation. The government also hopes that enhancing skills will provide India's young population with additional employment opportunities abroad.<sup>ix</sup>

Existing and new workers are ill-equipped to perform many of the tasks that employers require. Nearly three in five employers reported having difficulties in filling jobs in India, 20 percentage

points higher than the global average and more than double the share in China.<sup>x</sup> More than one-third of global employers attribute this difficulty to the lack of technical competencies. Another

***Nearly three in five employers reported having difficulties in filling jobs in India, 20 percentage points higher than the global average and more than double the share in China.***

17 percent cite the dearth of general competencies, or "soft skills," as a key reason. Although the number of employers reporting difficulties in filling jobs has been declining since 2013, it has increased more than four times over the past decade.<sup>xii</sup>

In a 2014 survey of manufacturing firms, 9.4 percent of all firms cited an inadequately educated workforce as a major constraint to

their doing business.<sup>xiii</sup> The lack of skills may prevent growth of micro, small and medium enterprises (MSMEs) as well as contribute to low productivity. MSMEs account for a large share of employment and output in the country. In 2013-14, MSMEs employed over a hundred million people in India across 46 million units.<sup>xiv</sup> These enterprises together accounted for 38 percent of manufacturing output and 40 percent of total exports.<sup>xv</sup> As of 2014, 11 percent of medium-sized firms and 8.5 percent of small firms perceived an inadequately educated workforce as a major barrier to growth.<sup>xvi</sup> Skill development would help unlock growth among this group of MSMEs that may face human capital constraints.

The formal school system in India – despite boasting high enrollment rates – has failed to contribute significantly to young people's

employability. This holds both at lower and higher levels of schooling. In younger grades, students have not been gaining competency in key general skills. In 2014, 25 percent of class 8 students could not read a text meant for class 2.<sup>xvii</sup> In the same year, only 44.1 percent of Class 8 students in rural India could correctly complete a three-digit by one-digit division problem.<sup>xviii</sup> In higher grades, the government has been attempting to increase the role of vocational training in formal education. In 2014, the central government updated an existing scheme to provide vocational education for 200,000 secondary school students annually until 2017.<sup>xix</sup> Although this represents a significant increase in the proportion of students receiving vocational training through formal education channels, its capacity remains far below India's requirements for a skilled workforce.

## Scope of the Report

This report focuses its analysis at the state level to capture the significant regional differences in economic and social development. Given India's size, governance structure and social and economic history, the country exhibits significant variation across geographies. States are at different stages of development and industrialization, and offer varying levels and types economic opportunities to their population. For example, per capita income in Maharashtra – a fairly urban, industrialized state in western

India – is nearly four times that of the poorest state, Bihar.<sup>xx,xxi</sup> As of 2010, manufacturing accounted for 27.4 percent of total employment in Delhi, while it only accounted for 4.1 percent in Assam.<sup>xxii</sup> And as of 2011, literacy levels were 93.9 percent in Kerala and 63.8 percent in Bihar.<sup>xxiii</sup>

# India's Skill Development Challenge

Policymakers agree that skill development is a priority in the Indian context. It serves as a tool to equip India's youth to find and perform productive work. India's large youth population, increasing urban population, lack of adequate skills added by formal schools, and changing structure of labor market add urgency to the need for skill development. From the demand side, a National Skills Development Corporation (NSDC) study on the skills gap – the difference between the skills required by employers and those provided by the education system or other initiatives – found that India needs an additional 109.7 million skilled workers

by 2022 in 24 key sectors.<sup>xxiv</sup>

Given this need, the National Policy for Skill Development and Entrepreneurship 2015 lays out a framework for all skilling activities in the country with the objective of training 402 million persons by 2022.

Relative to other countries, India lags significantly in the share of its population that is skilled. Only 2.2 percent of India's workforce had undergone any formal skills training in 2011-12.<sup>xxv</sup>

A larger share – 8.6 percent – had undergone informal training, such as on-the-job training. Still, the total proportion of persons having received any skills training – formal or informal – is barely more than one in 10. Further, the annual training capacity – including formal and on-the-job

training – was estimated to be around 7 million in 2014. If India is to skill an additional 402 million workers by 2022, it would need an annual training capacity of close to 60 million.<sup>xxvi</sup>

Shifting labor demand patterns require that any skills provision initiatives also take into account the relevance of skills to growing sectors. The share of workers in agriculture of total employment fell from 60.5 percent in 1994 to 49.7 percent in 2013, while the share of workers in manufacturing and services has increased by almost 6 and 7 percentage points, respectively.

***India needs an additional 109.7 million skilled workers by 2022 in 24 key sectors.***

Jobs in manufacturing are likely to require industry-specific knowledge and the ability to work on an assembly line. Specific skills like welding will

be valuable in construction or manufacturing units. Although manufacturing accounts for 12.6 percent of employment,<sup>xxvii</sup> it only accounted for 17.4 percent of India's gross domestic product (GDP) in 2015.<sup>xxviii</sup> One of the reasons for this is that manufacturing in India remains concentrated in lower-productivity and lower-value-added activities. Improved skills can help improve productivity in the manufacturing sector.

To be successful in any sector – manufacturing and beyond – workers need to build “soft skills” in addition to technical skills.<sup>xxix</sup> These skills are hard to measure since by nature they are generic

or cross-cutting. Examples of “soft skills” include communication, interpersonal skills, and writing that are common across industries. These capacity have been proven to increase employability.<sup>xxx,xxxi</sup>

For both the manufacturing and services sectors, a vocational training system that can provide both technical and soft skills and address shifting labor demand will prove critical.

## The Skills Provision Landscape in India

India’s need to equip its growing labor force with employable skills presents policymakers with a pressing challenge. As discussed above, many factors compound this challenge, including a young and growing population, the dynamic nature of skills demanded by the labor market, the shift away from agriculture, and high rates of urbanization and migration. Before examining trends in skills provision and the implementation of skills development initiatives, it is necessary to take stock of the existing training landscape in India, including the institutional structure and different organizational mandates.

**Table 1** describes the key organizations, schemes or departments working in the skill development space and their areas of focus. Each of these organizations falls under the purview of the Ministry of Skill Development and Entrepreneurship (MSDE). The Appendix contains more information on each organization, its mandate and functions.

The NSDC is tasked with increasing the skill development capacity by providing funding to training providers through a combination of soft loans and equity investments while the NSDA

is responsible for coordinating the overall skill development effort across different ministries. ITIs provide technical training in engineering and non-engineering fields. The ITI courses are one or two years in duration. Typically, there is an associated course fee. However, the fee is often lower than traditional higher education tracks.<sup>xxxvii</sup> The target population for ITIs includes youth who can afford to pay for the training course and/or invest the time to complete an ITI course. Youth are the intended beneficiaries of the DDU-GKY and PMKVY schemes.<sup>5</sup>

The above central organizations work across states. However, most states also have their own State Skill Development Missions (SSDMs) to address state-specific needs through coordinating and implementing state level skilling initiatives. Given the variation in demographics and economics, each state faces different challenges with respect to skill development. However, the success of SSDMs varies by state and most states have not been able to implement and monitor programs in a coordinated manner due to varying parameters of different schemes administered by the central and state governments.<sup>xxxviii</sup>

Table 1

Role of Major Skill Development Bodies<sup>3</sup>

Organization/Scheme	Model	Mandate
National Skill Development Corporation (NSDC)	Public-Private Partnership	<p>Fund and incentivize different training providers (for-profit / private, non-profit industry association or non-profit NGO)</p> <p>Enable support services such as curriculum development, training of trainers, setting of standards and quality assurance</p> <p>Foster private sector involvement in skill development<sup>xxxii</sup></p>
National Skill Development Agency (NSDA)	Autonomous body, part of the Ministry of Skill Development and Entrepreneurship	<p>Coordinate efforts to increase skilling capacity between different departments, the central and state governments, the National Skill Development Corporation (NSDC) and the private sector</p> <p>Advocate for the needs of disadvantaged and marginalized groups in skill development to the NSDC and other important training providers<sup>xxxiii</sup></p>
Industrial Training Institute (ITI)	Standards are set by the National Council on Vocational Training, but can be run by government, non-profits or private sector	Provide high-quality technical training in trades related to industrial growth
Deen Dayal Upadhyay Grameen Kaushal Yojna (DDU-GKY)	Government scheme to give grants to non-governmental training providers	Develop the skills of poor rural youth <sup>xxxv</sup>
Pradhan Mantri Kaushal Vikas Yojana (PMKVY) <sup>4</sup>	Government scheme for skills certification	<p>Equip individuals with industry-relevant skills, especially school or college dropouts and unemployed persons</p> <p>Assess and certify individuals with prior learning experience or skills under Recognition of Prior Learning (RPL) and provide certified individuals with a monetary reward<sup>xxxvi</sup></p>

Source: Population and Housing Census (2011-2035)<sup>iv</sup><sup>3</sup> Each of the agencies, schemes and departments falls under purview of the Ministry of Skill Development and Entrepreneurship.<sup>4</sup> This report restricts its focus to schemes that have been in place for some period of time. Since the PMKVY will be implemented in 2016, it is beyond the scope of this report.

Skill development initiatives do not take into account the relevance of skills for the informal economy. Most national organizations as well as SSDMs allocate and manage funds for skills training based on a mapping of skills in the formal sector. It is challenging for these organizations to assess the existing skills and gauge the future skilling requirements of the

informal economy. The number of jobs added in the informal economy is higher than in the formal economy and about 93 percent of the workforce is engaged in informal or unorganized employment.<sup>xxxix</sup> The current setup thus excludes skills relevant to a sector that is a large source of employment.

## Factors that Determine States' Demand for Skills Training and their Relative Importance

From a policy perspective, assessing state demand for skills training presents a challenge. What factors determine whether a state demands skills training? And once these factors are identified, how should policymakers weigh each of them in allocating funding for skill development across different states? This section intends to provide a general framework for policymakers in considering the allocation of funds for skill development across states.

Once policymakers identify which factors govern states' demand for skill development relative to one another, they must decide how much weight to assign each of these factors in allocating funding. This is especially difficult given often

competing policy priorities. For example, some important considerations include boosting the country's overall economic growth, achieving balanced growth across regions, skilling the

largest number of people in a cost-effective manner and optimizing fiscal resources, and achieving results in the shortest timeframe possible.

For example, states with a large and growing youth population may be in urgent need of skills training to link their young people to jobs. High

unemployment in certain states may also require them to invest in skills training for their working-age population. States with an existing base of industries may demand an upgrading of their workforce's skills to enhance their productivity.

***About 93 percent of the workforce is engaged in the informal or unorganized economy. The current setup thus excludes skills relevant to a sector that is a large source of employment.***

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<sup>5</sup> Specifically, the PMKVY describes its mission as enabling a "large number of Indian youth to take up industry-relevant skill training." Similarly, the DDU-GKY describes one of its objectives as "cater[ing] to the career aspirations of rural youth."



Alternatively, states starting from a low-income base but with high rates of growth may derive a high marginal benefit from providing skills training to their population. Such states may attract industrial growth due to factors such as low labor costs, and skill development initiatives would help fuel this industrial growth.

Other considerations could include a state's existing infrastructure to carry out skills training. Allocating funding for skill development may prove more cost effective if the state already has the requisite physical infrastructure, such as buildings to host skill development institutes or relatively better transit systems to carry trainees to training sites.

**Table 2** provides an overview of relevant factors.<sup>6</sup> The table provides a list of the important factors and policy implications associated with them that shape relative demand for skills at the state level. From an empirical standpoint, many of these factors may be correlated with each other or co-determined. For example, states with high income levels or industrial concentration may also have higher rates of urbanization as people move in search of economic opportunities. Alternatively, industries

may choose to locate near urban centers to have easy access to potential workers.

In reality, a dynamic combination of these factors would determine one state's demand for skills training relative to another's. The challenge with looking at any one of these factors in isolation is that demographic and economic considerations are dynamic. Within a particular state, many of these factors may be interacting with each other over time. For instance, inter-state migration is common in India, where people migrate for

employment to other states. About two out of 10 Indians report moving across district or state lines.<sup>7,xl</sup> India's population pyramid is expected to "bulge" across the age 15-59 group over the next decade – the geographic distribution of this bulge will also be a factor in the demand for skills.

The relevant factors and their weights should ultimately reflect India's skill development needs and landscape, including its institutional framework and national vision for skilling. Data availability will also play a role in the final set of criteria. Although they are beyond the scope of this report, political economy considerations such as election cycles and institutional arrangements will also

***The relevant factors and their weights should ultimately reflect India's skill development needs and landscape, including its institutional framework and national vision for skilling.***

<sup>6</sup> The factors or the considerations for policymakers are meant to be illustrative and not exhaustive.

<sup>7</sup> This migration may be permanent, semi-permanent or seasonal.

**Table 2**  
**Factors Influencing States' Relative Demand for Skill Development**

Factor	Example Considerations for Policymakers
Per Capita Income	The current income level of a state highlights its level of development.
Economic Growth Rate	The growth rate of a state could indicate its attractiveness to domestic and foreign firms for investments that could spur job creation.
Existing Skills	An assessment of the population's existing skills helps determine the skill gap, or the difference between the skills required by employers and those available in the labor market.
Sectoral Composition	The current and projected sectoral composition will also help determine the skills gap. The contribution of different sectors to the state economy will shape the skill requirements of employers.
Industrial Concentration	Areas with high industrial concentration require skilling of new workers due to high turnover and high demand for new workers. They will also require upgrading the skills of existing workers to improve productivity and hence overall output in the long run.
Youth Population	The youth population (ages 15-24) is a direct measure of the target population for many skill and vocational training initiatives.
Urbanization	More urban areas may have higher connectivity and better existing infrastructure than rural areas. Firms often choose to locate in urban areas for these reasons, thus demanding skilled workers. Higher population densities also enable cost-effectiveness in skills provision.
Prevalence of Remote or Poorly Connected Areas	Skills training may not be available for populations of remote areas. Locating initiatives in remote areas would reach otherwise excluded groups, even though it may be costlier to set them up.
Existing Infrastructure	The state's existing physical infrastructure illustrates its ability to support skills training initiatives. For instance, buildings or readily serviced land to set up training centers would make it easier to set them up.
Other Demand Factors	Other factors such as worker interest in receiving skills training as gauged by past enrollment ratios in the state highlight whether or not skills training facilities will be utilized or additional resources for awareness campaigns will be needed.

Source: Population and Housing Census (2011-2035) <sup>iv</sup>

govern the relative allocation of funding for skill development across states.

With these factors composing a general framework, in the next section the report assesses the geographic distribution of skills training

facilities in practice, with special attention to some of the factors identified in [Table 2](#). The final section brings together the proposed factors and current challenges and opportunities for skills provision in India as shown by the data to provide actionable policy recommendations.

## Trends in Allocation of Skill Development Facilities

India's geographic size and variable socio-economic conditions make it difficult for policymakers to provide its population uniform access to skills training facilities. This report focuses largely on NSDC-funded centers and ITIs as skills training outlets. These outlets are dispersed across states.

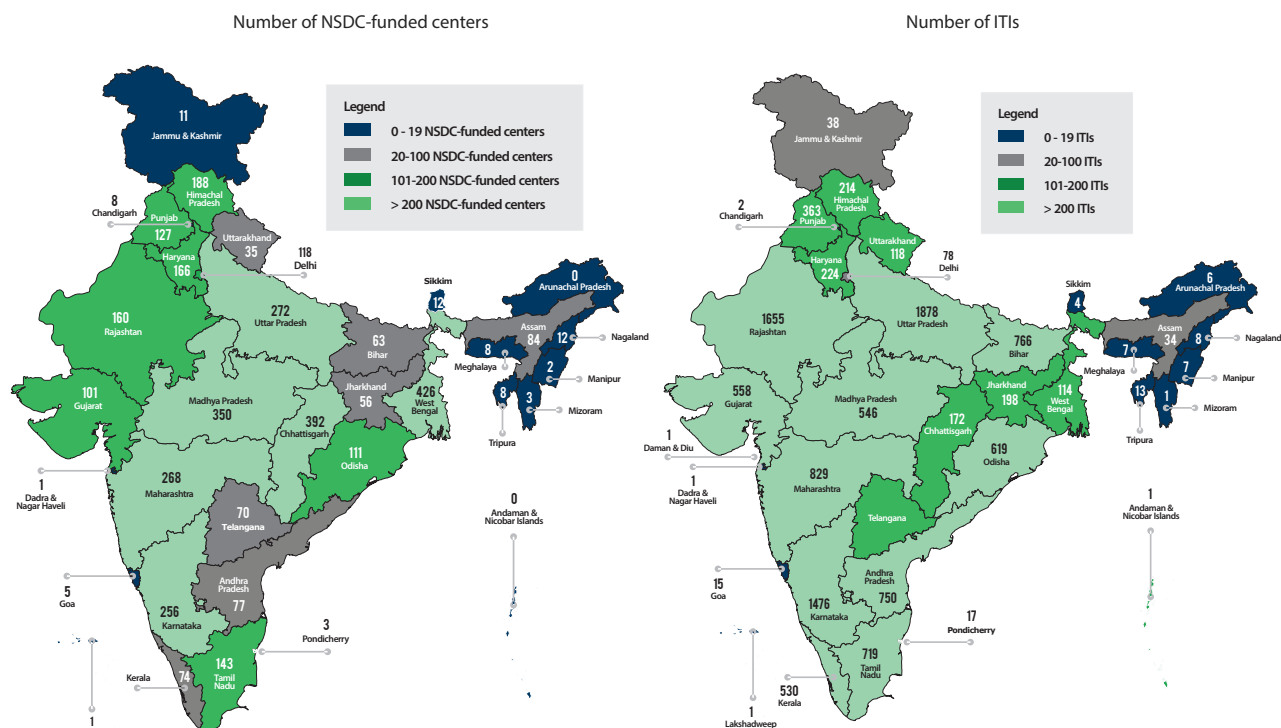
In addition to examining the absolute number of NSDC-funded centers and ITIs, we examine the prevalence of these centers in a given state relative to its youth population. Since vocational training disproportionately targets the youth (ages 15-24), using the ratio of centers to youth adjusts our measure of skills provision by need to some extent. However, the youth population of a state is associated with factors such as urbanization and economic growth and is not always the appropriate measure. For instance, high growth or more urban areas may attract a large share of youth migrants due to the availability of jobs or network effects.

Thus, when examining the demand for skills training, the report uses both measures of vocational training, the absolute number of centers and ratio of centers to youth population. Using data on the number of NSDC-funded centers and ITIs, seven key trends emerge:

1. **Skills training facilities are located across the country, with a lot of regional variation. They have expanded considerably over time.**

[Figure 2](#) shows the number of NSDC-funded centers and ITIs across the country. Overall, there are over 3,500 NSDC-funded centers across India. In absolute terms, at 426, West Bengal has the most NSDC-funded centers, followed by Chhattisgarh and Madhya Pradesh, with 392 and 350, respectively. Uttar Pradesh has the highest number of ITIs at 1,878, followed by Rajasthan and Karnataka. Himachal Pradesh has the highest number of NSDC-funded centers and ITIs relative to the size of its youth population.

**Figure 2**  
Number of NSDC-funded Centers and ITIs across India, 2014-15

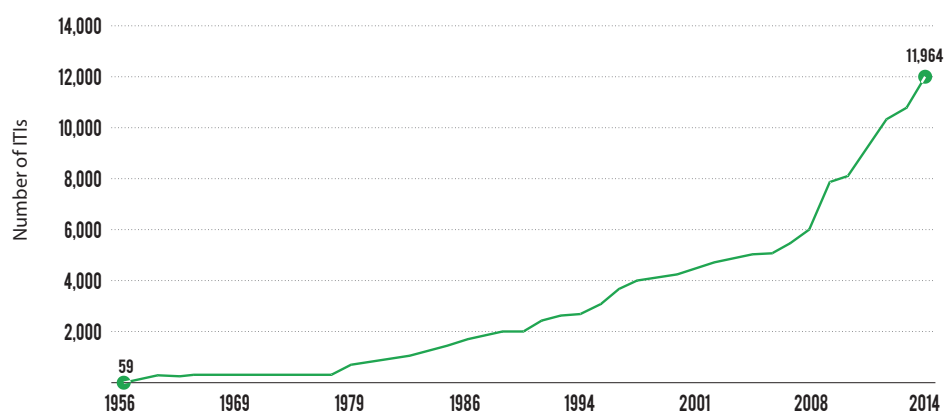


Across all states and union territories, there are a total of 11,964 ITIs. Of these, 2,284 are run by the government and 9,680 are private. The ITIs provide training in 126 trades, of which 73 are engineering fields, 48 are non-engineering and five are for the visually impaired.<sup>xli</sup> As **Figure 3** shows, the number of ITIs has grown considerably since the 1950s.

## 2. There is no significant correlation between income levels and the concentration of NSDC-funded centers or ITIs.

In terms of GDP, the three states with the largest number of NSDC-funded centers and the three states with the largest number of ITIs fall among the ten richest states. Conversely, the poorest state in terms of per capita income – Bihar (INR

**Figure 3**  
**Number of ITIs in India, 1956-2014**



Source: Directorate General of Training (DGT)

16,832 or about US\$ 250) – has the fifth highest number of ITIs, with 766. The lack of a clear trend between skills facilities and income suggests that, historically, income has not been a primary factor driving policymakers’ funding decisions.

### 3. Broadly, skills training facilities are located in states with high projected human resource requirements.

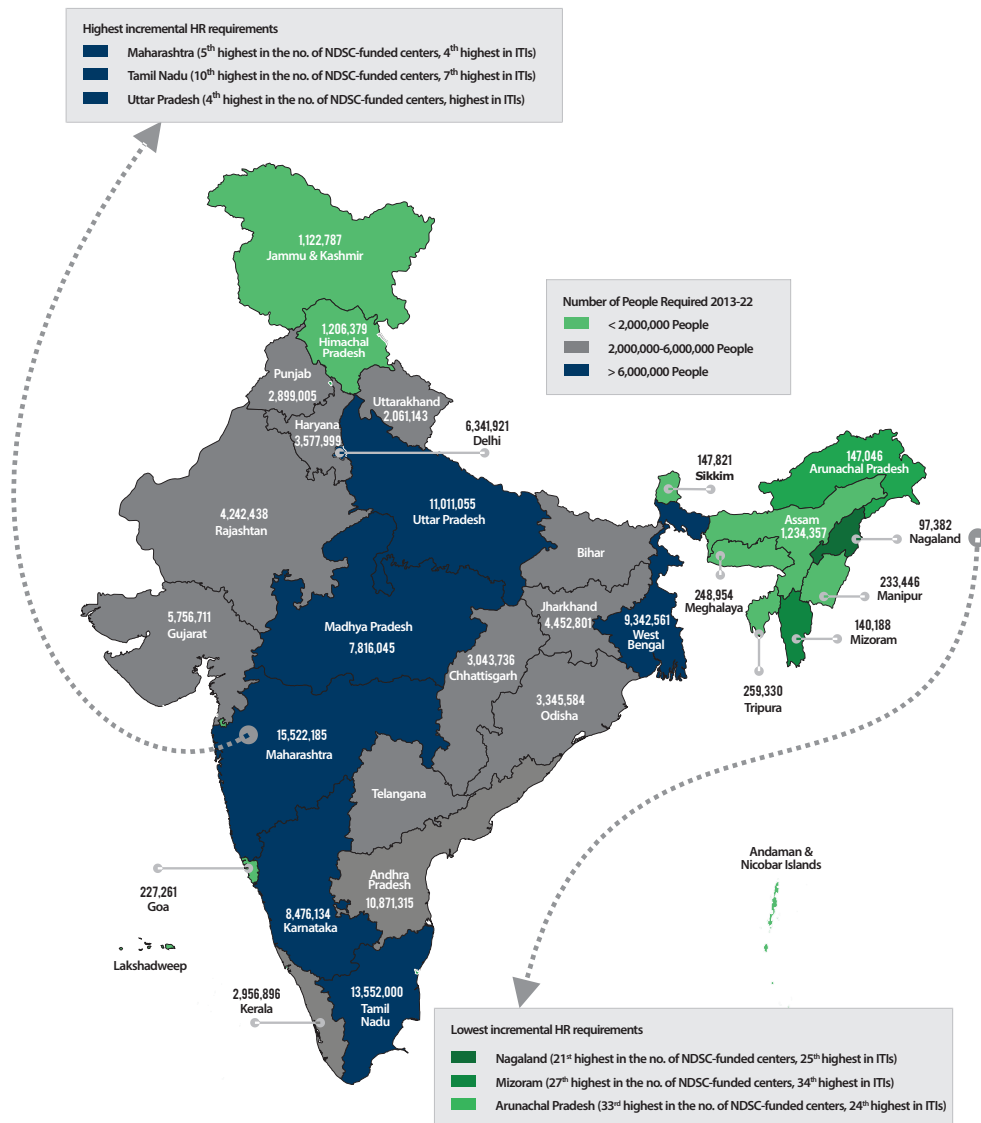
Between 2013 and 2022, the country’s incremental human resource (HR) requirements to sustain economic growth total 109.7 million persons. **Figure 4** highlights state-wise incremental HR requirements. It maps the three states with the highest and lowest requirements. Maharashtra, which will require over 15 million workers in key sectors, currently contains the fifth- and fourth-

highest number of NSDC-funded centers and ITIs, respectively.

Beyond Maharashtra, the next two states with the highest HR requirements also have a high concentration of NSDC-funded centers and ITIs, suggesting that the supply of skills training may be well in line with projected industry demand. Uttar Pradesh, with an HR requirement of over 11 million, has the highest number of ITIs in India.

This suggests that locations of NSDC-funded centers and ITIs are driven more by industry demand relative to other relevant factors such as income, growth and existing skills. Given that many of these factors – including HR requirements – interact with each other and will evolve over time, industry demand should not be

**Figure 4**  
**Training Efforts are Closely Aligned with States' HR requirements<sup>8</sup>**



Source: National Policy for Skill Development and Entrepreneurship 2015; NSDC Annual Report 2014-15. DGT.  
 Note: HR Requirement Projections for Telangana and Bihar are not available.

<sup>8</sup> The data presented is available for 34 States and Union Territories of India

the only metric driving the allocation of funding for skill development.

#### **4. There is little correlation between NSDC-funded centers and ITIs.**

For most states, a higher ratio of NSDC-funded centers to their youth population is not correlated with a high ratio of ITIs to their youth population. For example, while Chandigarh, Chhattisgarh and Delhi have the second, third and fourth largest numbers of NSDC-funded centers relative to their youth population, they have the 23<sup>rd</sup>, 24<sup>th</sup> and 22<sup>nd</sup> largest number of ITIs per young person, respectively. Meanwhile, other states, like Kerala, perform far better when ranked by ITI per youth than NSDC center per youth.

It is important to look at NSDC-funded centers and ITIs as they are responsible for skilling a high proportion of India's working-age population. In 2014-15, the NSDC-funded centers trained 3.4 million candidates across India's states.<sup>xlii</sup> ITIs presently have a seating capacity of 1.8 million across India.<sup>xliii</sup> The majority of ITIs are either government-run or privately-run, for-profit centers that charge a fee for their technical courses. NSDC-funded centers could be for-profit / private, run by a non-profit industry association, or run by a non-profit NGO. The ITIs primarily focus on industrial training and apprenticeships. Trainees from ITIs are often eligible to pursue higher studies in their vocation – for example, diploma courses in engineering. Thus, the two initiatives attract

different types of candidates, and one should not be considered a substitute for the other. Since the NSDC-funded centers and ITIs are run by different entities, variation between the distribution of the two types of facilities is not surprising. At first glance, however, two competing hypotheses could be at play here that are hard to disentangle. First, the two organizations, despite having similar goals, do not use similar criteria in deciding where to locate centers and thus cater to different target groups. Second, the NSDC and ITIs could be locating in different regions to maximize the coverage of skills provision across states, but we do not have enough data to support this claim.

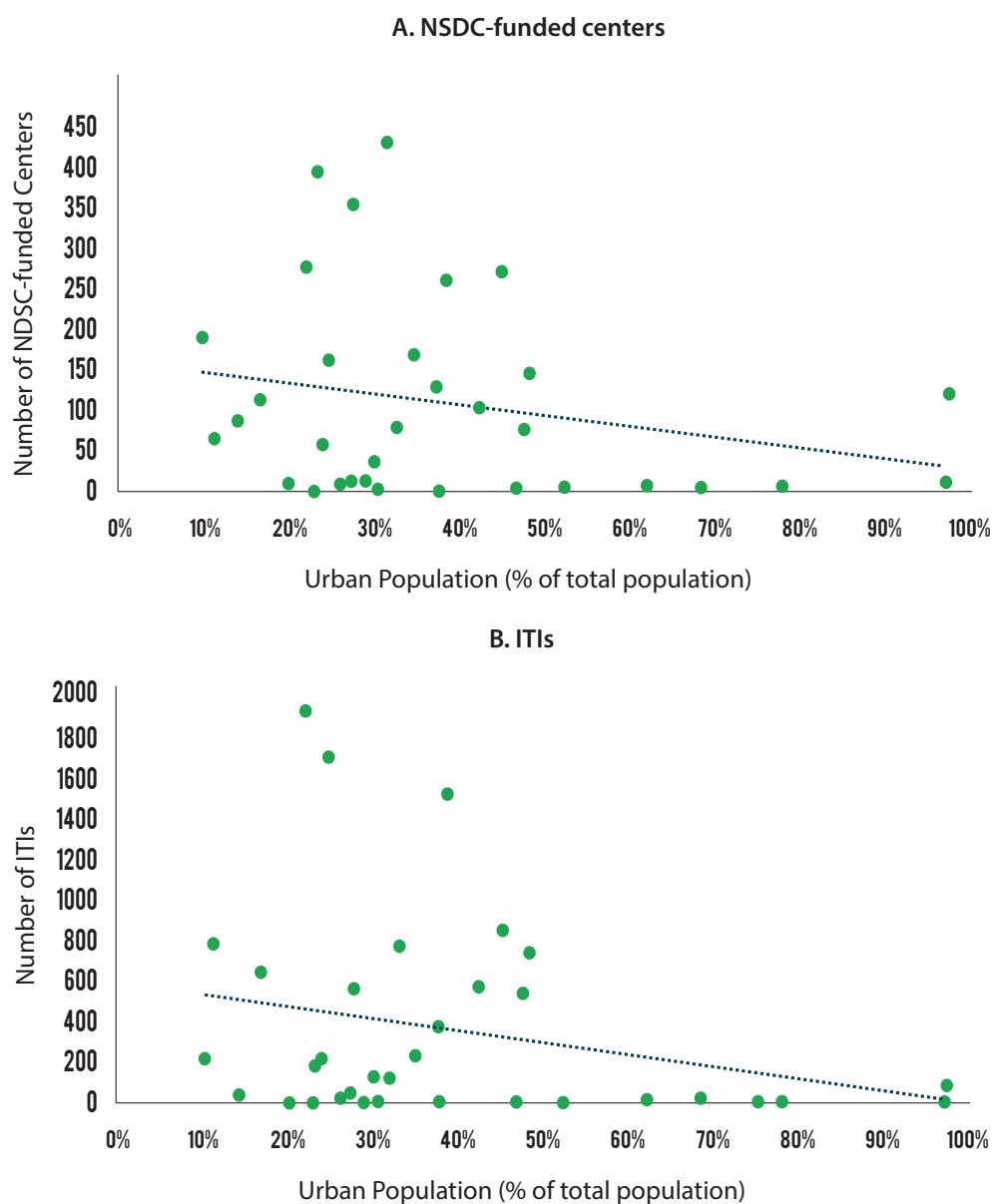
#### **5. Skills training facilities are more prevalent in less urban states.**

In 2011, 73 percent of Indian households resided in rural areas.<sup>xliv</sup> Are skills training facilities accessible to these households? An impact assessment of the NSDC found that NSDC training partners have set up a large number training centers in rural areas. Their penetration rates are 92 percent in rural areas and 94 percent in districts covered by the Backward Regions Grant Fund (BRGF).<sup>9,xlv,xlvi</sup> The reach of skills training facilities across rural areas is also illustrated by state-wise data on the number of NSDC-funded centers and ITIs. **Figure 5** highlights that states with lower urbanization rates tend to have a larger number of NSDC-funded centers (Panel A) and ITIs (Panel B).

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<sup>9</sup> The Backward Regions Grant Fund (BRGF) is designed to redress regional imbalances in development. The fund provides financial resources for 250 identified districts, so as to bridge critical gaps in local infrastructure, strengthen governance capacity facilitate participatory planning and decision making initiatives to reflect local felt needs and provide professional support to local bodies for planning, implementation and monitoring their plans.

Figure 5  
State-wise Distribution of Training Facilities, by Urban Population (2014)



Source: Data on ITIs are from Parliament data cited by Minister of State for Labor and Employment and are from 2013 and 2014. Data on NSDC-funded centers are from the NSDC and are from 2014-15.



Again, this trend presents competing considerations for policymakers. On the one hand, in many developing countries, urban areas often attract youth in search of economic opportunities.<sup>xlviii</sup>

This implies that a large population that would benefit from skills training may be concentrated in more urban areas. Locating skills training facilities in more urban regions could be a more cost-effective way to reach a larger population. On the other hand, rural areas often have lower per capita incomes and poorer physical infrastructure that deters private investment in skill development facilities. This implies that even though it may not be cost-effective to set up training facilities in rural areas, the less urban states may have high unmet demand for skill development that the NSDC-funded centers and ITIs are trying to meet.

#### **6. Remote areas such as the Northeast face additional challenges for skills development.**

The Northeastern states,<sup>10</sup> due to their difficult terrain and lack of adequate infrastructure, face additional challenges in setting-up skills training facilities. The seven Northeastern states together have 117 NSDC-funded centers and 76 ITIs, less than the number of centers in many

union territories. Although the population of these states is also small relative to the rest of India – they make up 2 percent of the country's population – they also show low levels of income and industrial growth. With the exception of Assam, the region's states have the lowest levels of absolute GDP.

States within the region exhibit variation with respect to the facilities they have. Arunachal Pradesh has no NSDC training centers at all, while Assam has the most in the region (73). However, relative to its youth population, even Assam lacks adequate facilities with 4.36 ITIs per 1000 youth, the second lowest ratio among all states.

The scarcity of training centers in the region suggests that industrial demand is a driving factor in government and private sector decisions to set up skills facilities. The Northeastern states are among the lowest in terms of projected human resource requirements in key sectors between 2013 and 22. That these states lag the rest of the country with respect to industrial growth and employer demand also implies that there is low demand for technical skills. This could be contributing to the small number of NSDC-funded centers and ITIs. From a policy perspective, the correlation between industrial demand and skills training facilities suggests that projected industrial demand may be the key driver of skills

***The seven Northeastern states together have 117 NSDC-funded centers and 76 ITIs, less than the number of centers in many union territories.***

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<sup>10</sup> The seven Northeastern states are: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura.

funding decisions across states rather than factors such as income or inaccessibility.

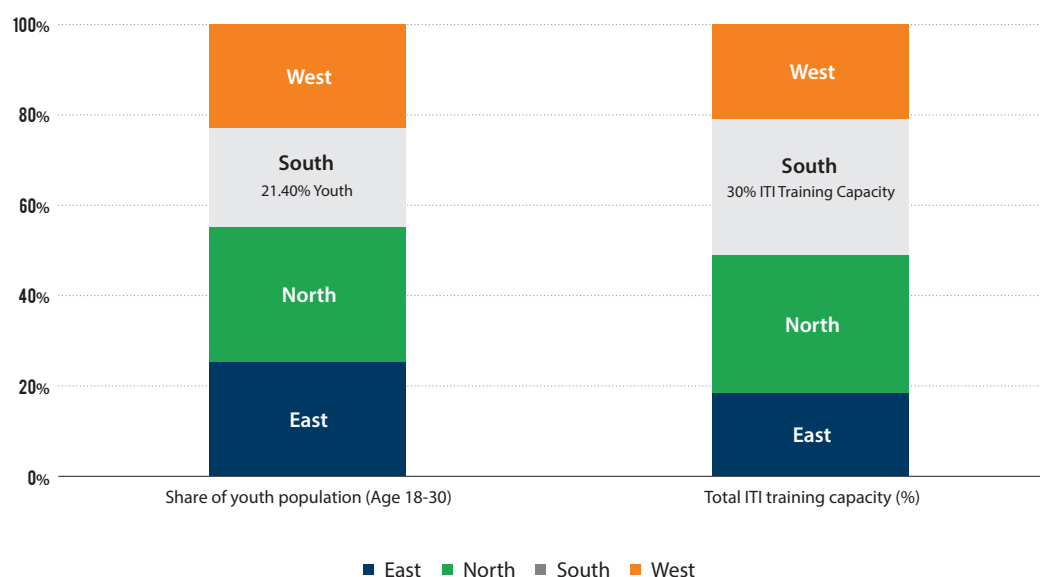
**7. NSDC-funded centers are located in states with a large number of youth, but there is no clear pattern with ITIs.**

In general, states with a larger youth population tend to have a higher number of NSDC-funded centers. Uttar Pradesh, Maharashtra and West Bengal have the highest number of youth residents. These states also are among the top states in terms of NSDC-funded centers. However, the pattern is less clear with respect to ITIs.

On a regional basis, youth comprise a smaller share of the population in South India compared to other regions. Still, as [Figure 6](#) highlights, the southern states (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Lakshadweep and Puducherry) have almost the same ITI capacity as the northern states.

One of the NSDC's mandates is to support and incentivize private sector involvement in skills training. One potential reason for why NSDC-funded centers tend to be situated in states with large youth populations could be that these states exhibit high potential for private investment in skills. For example, Uttar Pradesh and Maharashtra

**Figure 6**  
**Share of Youth Population and ITI Capacity, by Region (2011)**



Source: Data on ITIs from Directorate General of Training. Data on youth population from the 2011 Census.

not only have high youth population but also have large rates of urbanization (45 and 48 percent, respectively). As hosts to several large cities, these

states could be viewed by policymakers as having a higher chance of attracting private involvement.

## An Area for Future Research: Who is Receiving Skills Training?

How can the government's strategy for skills training take into account the fact that different populations have different levels of access to the labor market, especially in skilled occupations, often along lines of caste and gender? The data on distribution of skills training facilities – the supply side of skills development – does not tell us who the beneficiaries are. That is, these supply-side data do not allow us to gauge if the most vulnerable populations are availing the government's skilling initiatives. Although the question of whether the most "in need" persons are receiving skilling is beyond the scope of this paper, it is an important consideration in any supply-side debate on the provision of skills training and an important area for further research.

What are the overall trends in participation in training? Female participation in vocational education and training is low and/or decreasing compared to male participation.<sup>xlvii</sup> In Rajasthan, while male participation in vocational training had increased to 15 percent between 2007 and 2012, female participation in training had decreased from 23 to 21 percent. Potential reasons for declining female participation in training could be declining labor force participation in some

states, higher female enrollment in schooling, or social and cultural barriers.

To assess the potential of skilling initiatives to unlock particular labor market barriers faced by marginalized populations, one might look at the state with the highest number of NSDC-funded centers: West Bengal. The state's working age population (ages 15-59) is projected to grow from about 60 million to 66 million between 2012 and 2022. Further, the state is projected to witness significant growth in unskilled and informal jobs that would accommodate workers displaced from agriculture.<sup>xlviii</sup> If these existing workers and new entrants to the working-age population were beneficiaries of skills training, they could help meet the state's human resource requirements in key sectors.

Currently, the state has a high number of school dropouts and low female labor force participation. Skills training facilities could help equip these traditionally underserved groups with employable skills. In this way, skills training initiatives would serve not only the economic imperative of bridging the skill gap but also the social imperative of reducing inequality of access to high-quality employment.

Even for those who complete secondary school in the state, higher education opportunities are limited. Given the magnitude of the gap in education system and limitations in quality higher education, vocational training could potentially attract these graduates or school dropouts as a short to medium-term solution until the state builds up its higher education opportunities. Female labor force participation is also low in the state (17 percent) as compared to the national average (24.7 percent). Thus, by providing females with employable skills, training facilities

may help increase their labor force participation. The West Bengal example sheds light on the potential of skill development initiatives to target economically vulnerable or traditionally excluded groups.

Further research is needed to determine the factors that govern who has the opportunity to access skills training facilities and assess whether “in need” populations are being served by existing skills training programs.

## Developing a Strategy for the Geographic Distribution of Skill Development Facilities

Since 2009, India has made skill development a policy priority through the National Policy on Skill Development.<sup>xlix</sup> Since then, it has achieved significant progress in skilling the workforce. In 2014, the annual skills training capacity was 7 million, more than double the capacity of 3.1 million in 2009. The recent growth in provision of training has also been accompanied by increased complexity of the skill development landscape. The trends in the data highlight the need to further increase capacity, expand the reach of training facilities to remote and poorer areas, and increase coordination between different organizations working in the space. Within states,

policymakers should ensure that the supply of skill development facilities reaches marginalized populations like women and school dropouts. This is an area for further research.

***The recent growth in provision of training has also been accompanied by increased complexity of the skill development landscape.***

This section outlines three state-level recommendations that will guide policymakers in achieving geographic inclusion in access to skills training across the country. They are based on India’s unique challenges, policy priorities and the setup of existing schemes. These recommendations provide a coherent vision for enhancing skill development that would more effectively allocate funds across states.

## Enhancing Coordination Between Different Agencies and Schemes to Ensure Regional Needs are Taken Into Account

The data highlight low correlation between the concentration of skill development facilities, run by different agencies across states. Moving forward, it would be interesting to explore the cause behind the low correlation. Increased coordination between the different organizations involved in the provision of skills and vocational training will help ensure wider geographic coverage and more beneficiaries. A clearer division of labor between the NSDC and ITIs would lead to a more effective and inclusive skill development framework.

The government has already recognized the need to enhance synergy across existing skills efforts. The creation of the Ministry of Skill Development and Entrepreneurship (MSDE) attempts to bring together different initiatives to achieve a common, broader goal. The ministry has introduced a common standard and horizontal linkages between its institutions (the NSDC, NSDA and DGT) to harmonize its approach. However, the different agencies in charge of determining the geographic distribution of skills training facilities need to improve coordination in their strategic efforts and implementation plans to ensure more equitable access to skill development in practice.

## Adopting a Single Framework for Allocating Funding across Agencies and Schemes, based on Factors that move beyond Economic and Industrial Growth

Currently, different agencies or schemes under the MSDE utilize their own set of tools in assessing a state's demand for skill development. The NSDC currently focuses its resources into what it calls the "Viable Segment," or high growth segment of people that they deem high-risk with respect to income levels and marketable skills.<sup>11</sup> The high degree of risk discourages private players from providing training, at least in the short term. The NSDC also complements the private sector's skills training initiatives in what it deems the "Attractive Segment" or the segment of people with respect to income levels and skills it views as highly marketable.

ITIs focus on areas displaying industrial growth and technical trades relevant to these areas. Pockets of industrial growth are often drivers of economic growth. In 2012, just 49 clusters were responsible for 70 percent of India's GDP!<sup>1</sup> The data highlight that there are a large number of ITIs in high-growth, larger states. The ITIs focus has scope for significant overlap with the NSDC's "Attractive Segment." The DDU-GKY is currently the only operational scheme that focuses primarily on the "Completely Unviable Segment." The rural poor and historically excluded social groups fall under this segment ([Appendix](#)).

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<sup>11</sup> As discussed in the Appendix, the NSDC segments the market into three categories: the "Attractive Segment," the "Viable Segment" and the "Completely Unviable" segments. These categories serve as a framework for thinking about their funding decisions.

Given its mandate to coordinate all skill development efforts, the MSDE should develop a comprehensive measure that serves as a tool for assessing state- or even district-level demand for skills training. This framework should ideally bring together several economic and social factors in addition to income levels and industrial growth, such as existing skills, projected youth population, urbanization and human resource requirements for skills facilities. The proposed measure should be distinct from the NSDC's current segmentation of markets into "Attractive," "Viable" and "Not Viable" groups as it would take into account criteria other than just growth or industrial concentration. The factors listed in [Table 2](#) are intended to serve as a guide for policymakers in formulating this framework.

The MSDE should ensure that this measure is common across the agencies and schemes under its oversight. That is, all agencies and schemes – not just the NSDC – should utilize this single measure. A single system of categorization or market segmentation will help avoid overlapping resources for skills provision. It would also ensure that schemes are monitored and evaluated along similar metrics. In the long term, the evaluation of schemes will also help bridge the gap in quality and resource differentials between different schemes.

***Given its mandate to coordinate all skill development efforts, the MSDE should develop a comprehensive measure that serves as a tool for assessing state- or even district-level demand for skills training.***

By using a comprehensive, single framework to assess the nature and scale of subnational demand for skill development, policymakers could direct the state-wise allocation of funds in a more efficient manner. For example, using such a measure, one approach would be for ITIs to focus on existing high industrial growth but not necessarily richer states, with NSDC channeling funds into centers in more profitable, high-performing states, and the DDU-GKY and new schemes such as the PMKVY directing their resources toward hard-to-access states with low levels of industrialization.

### **Increasing the Use of Technology to Complement Physical Skills Training Facilities, Especially for The Northeast**

Technology has the potential to expand skill development beyond the reach of physical facilities. In areas with fewer physical facilities or unavailability of serviced land to build new facilities, technology can enable skills training to the population. Beyond increasing access to training, technology can also help streamline processes across training centers in different states.

Technology would be especially useful in hard-to-access or remote states, where existing facilities

are few in number. The data show that more remote states, especially in the Northeast, do not have as many NSDC-funded centers or ITIs. Recently, the government has expressed interest in establishing the northeast as a trade channel from India to Southeast Asia. A more skilled workforce in the northeastern states would help achieve this.

Beyond the Northeast, economic transformation is taking place in many other states and sectors. Skill development initiatives will help meet these diverse needs. For instance, Gujarat has been focusing on tourism as a driver of growth. Tourist inflows have increased from 8 million to 22 million between 2003 and 2012. Technology-based initiatives can enhance the reach of skill

development programs, the capacity of which may not expand fast enough to meet additional skilling requirements in the sector.<sup>iii</sup>

To ensure that the residents of these states have equitable access to skill development, policymakers should use technology to enable skill development to complement existing efforts and enable access for people in remote areas. This could also be a cost-effective way to scale up the capacity of existing facilities. The National Skills Development Policy 2015 discusses technology as an enabler for skills development. Existing NSDC-funded centers and ITIs should adopt online learning to expand their reach, especially in districts with low penetration of centers and higher education.

## Conclusion

Any supply side approach to skills training must take into account India's geographic diversity. Of the population skilled by the NSDC in 2014-15, nearly 53 percent belonged to five states composing 35 percent of the country's population: Tamil Nadu, Maharashtra, West Bengal, Karnataka and Andhra Pradesh.<sup>iiii</sup> A more equitable spread of training facilities across regions will ensure that skill development takes place in a geographically balanced manner.<sup>liv</sup>

Moving forward, the government must continue its prioritization of skilling initiatives across the country. Providing all states and segments of the population with employable, productivity-enhancing skills and knowledge will help sustain India's economic growth in an inclusive manner.

# Appendix

## Skill Development Agencies in India

### National Skill Development Corporation (NSDC) and Criteria for NSDC Funding

The NSDC is tasked with increasing skill development capacity by providing funding to training providers through a combination of soft loans and equity investments. When providing funding, the NSDC breaks up the market into three segments: the “Attractive Segment,” “Viable Segment,” and “Completely Unviable Segment.”

The “Attractive Segment” refers to the section of the market or group of people that is seeing a high degree of growth based on income and marketability of skills. In this segment there is a demand in industry for skills and private players are providing training. The private sector takes the lead in this segment to meet training needs and the NSDC is an additional source of funding.

The “Viable Segment” of the market is the segment where there is a high degree of risk, but skill opportunities for returns. NSDC identifies this as an area of focus. The aim is to make training provision in this segment more attractive and incentivize private players to provide training.

As the name suggests, the “Completely Unviable Segment” is the segment where there is no scope of economic returns for provision of training. The NSDC aims to work with other government departments in order to make this segment more viable in the long-term.

By dividing the market into these three segments, the NSDC has a template to think through the status of different fields of training in different areas. There is also an acceptance from the NSDC that not all training provision will be done by the private sector without government involvement. It is unlikely, for example, that there would be significant investment in the “Completely Unviable Segment” by the private sector as this segment is not likely to generate profits.

### National Skill Development Agency (NSDA) and its Mandate

The Agency is set up to coordinate efforts to increase skilling capacity between different departments, the central and state governments, the National Skill Development Corporation and the private sector.

It is also meant to tackle the problem of under-representation of disadvantaged and marginalized groups in skill training. The Agency is meant to do this through by advocating for their needs with the NSDC and other important training providers.

In addition to this, the policy includes a National Skill Qualification Framework that defines a set of standards for vocational training and skills in different industries and occupations. These standards are then used by the NSDA and the NSDC to ensure a high quality of training.



## **Industrial Training Institutes (ITIs)**

Industrial Training Institutes (ITIs) are training institutes with the intention of providing high-quality technical training. ITIs are meant to focus on trades related to industrial growth. Accordingly, ITIs provide training in 126 different fields, of which 73 are related to engineering.

While ITIs were first established in the 1950s, the number only grew substantially in the 1980s. Growth of ITIs accelerated again after 2007. After the adoption of the National Policy for Skill Development in 2004, the number of ITIs continued to rise. The number of ITIs nearly doubled between 2008 and 2014 – from 6,079 to 11,964.

ITIs can either be run by the government or private organizations. Both sets of ITIs are approved and recognized by the Directorate General of Employment & Training (DGET). ITIs fall under the mandate of the Ministry of Skill Development. Since 2012, the Quality Council of India, has been responsible for accreditation of government and private ITIs.

While the NSDC funds private players with the view of encouraging the training provision across fields of training, ITIs are set up to provide training only in technical fields. ITIs typically offer one-or-two year courses for specific industrial roles like electrician or machinist. While NSDC-funded courses may also be in these areas, they are likely to be much shorter – three to six months – and less likely to be in technical fields.

Also, NSDC affiliates receive loans at low interest rates if their proposed operations are deemed to complement NSDC objectives. However, there is no comparable incentive from the government to private ITI operators.

While most ITIs were originally government-run, an overwhelming majority are now privately operated. In 2014, there were 9,680 private ITIs and only 2,284 government ITIs.

The longer duration and higher cost of ITI courses makes ITIs responsive to the training demanded by the youth who can afford to pay for the training course and invest the time to complete an ITI course. However, it leaves out the large section of the population that can not afford these courses.

## **Deen Dayal Upadhyay Grameen Kaushal Yojna and Skills Provision in Rural Areas**

The Deen Dayal Upadhyay Grameen Kaushal Yojna (DDU-GKY) is a scheme run by the Ministry of Rural Development. Previously called the Ajeevika skills program, DDU-GKY is a placement-linked program for the rural poor that is part of the National Rural Livelihoods Mission (NRLM). Grants are given to training providers to run projects with a clear target population and a target number of trainees.

Under the scheme, nine states are categorized as “Annual Action Plan” (AAP) states. Training providers interested in running a project through the scheme submit a proposal to the state government for AAP states or to the Ministry of Rural Development in the central government

for other states. State and central government, therefore, control the flow of funds in this scheme. Funds can be allocated to the organizations, fields of training, and locations that they judge to provide the greatest benefit to the rural poor.

As with the NSDC, training providers are not obliged to apply for DDU-GKY funding. However, sizeable grants for projects can incentivize training providers to provide training in the professional fields and rural locations that the DDU-GKY prioritizes.

States are selected to be AAP states if they have:

- Systems at the district and state levels dedicated to human resources
- A policy to judge potential projects that is in sync with DDU-GKY policy
- A policy on how to build government infrastructure

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