

Human Resource and Skill Requirements in the **Building, Construction and Real Estate**

Executive Summary



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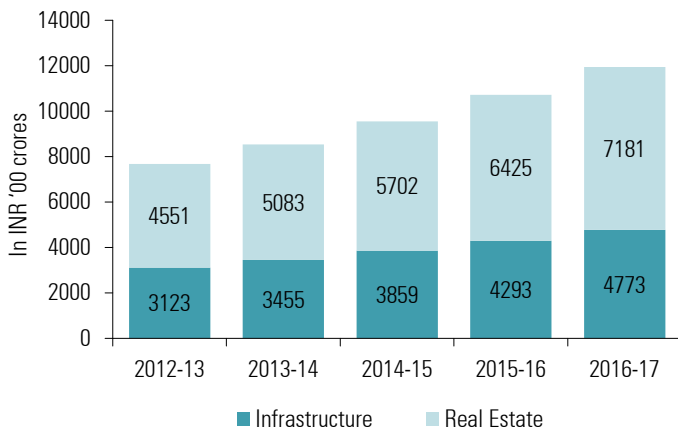
Industry Overview

Construction Sector is projected to grow to INR 11,954 billion by 2017 and is expected to contribute 8.2% to Indian GDP

Key Growth Drivers

- Demand for affordable housing is more likely to increase from current level of 29 million households to more than 38 million households by 2030
- Rapid growth in the Information technology and financial services space and upcoming expansion plans of businesses into Tier-II and Tier-III cities
- Investments required in key infrastructure segments' including power, road, railways, ports and civil aviation is expected to reach \$1 trillion during the 12th Plan period
- Demand for warehousing space (ambient and cold chain) in the country in major Tier-I and Tier-II cities is expected to surge as industrial parks are being setup and food trends shifting to more processed food
- Increasing consumerism and relaxation of FDI in multi-brand retail has surged aggressive growth among Indian retailers

Construction Sector Growth Forecast till 2017 (Rs. Billion)



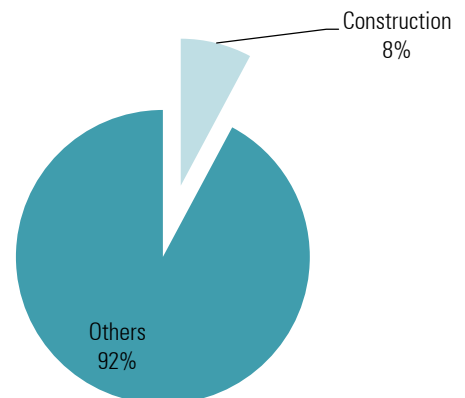
- The market value of construction sector in India is projected to expand up to INR 11954 billion by 2017.
- Sector witnessed cumulative foreign direct investments to the tune of Rs 40,399 million from 2000 till 2013 of which 91% was in real estate development.
- Indirectly, the sector generates 5 times higher value for the other sectors.
- Infrastructure constitutes 40% of the market value and real estate the remaining 60%. This percentage is expected to remain constant during the projected period.

Contribution to Indian Economy

Industry highlights

- Construction sector is the largest contributor to central exchequer
- Construction sector is the 2nd largest employer in the country.
- It creates more than 45 million jobs either directly or indirectly among various classes of individuals in the country.
- Between 2000 and 2013, the sector attracted USD 40399 million as foreign direct investment. It is expected to attract FDI of USD 180 billion by 2020
- The sector grew at a CAGR of 9.42% between 2003-04 and 2012-13.
- Capital investments in the sector is anticipated to rise from USD 651 billion in 2012-13 to USD 1181 billion in 2019-20.

Contribution of Construction to GDP in 2012-13

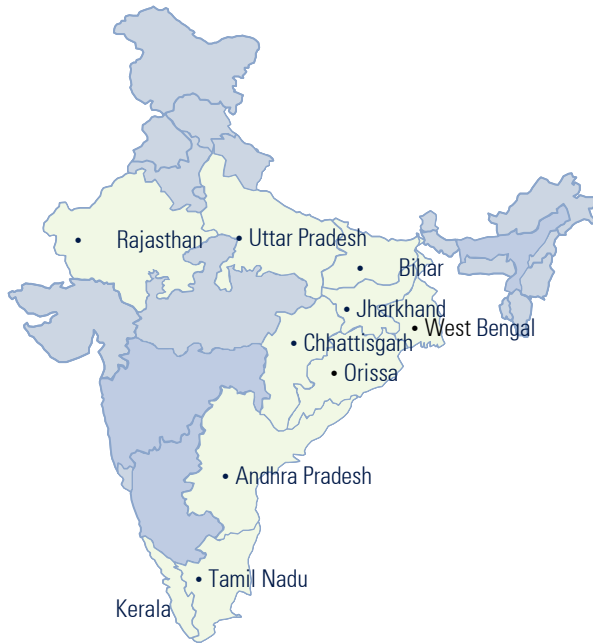


Sources: KPMG in India analysis

Demographic characteristics of workforce

Majority of workforce is from Eastern India

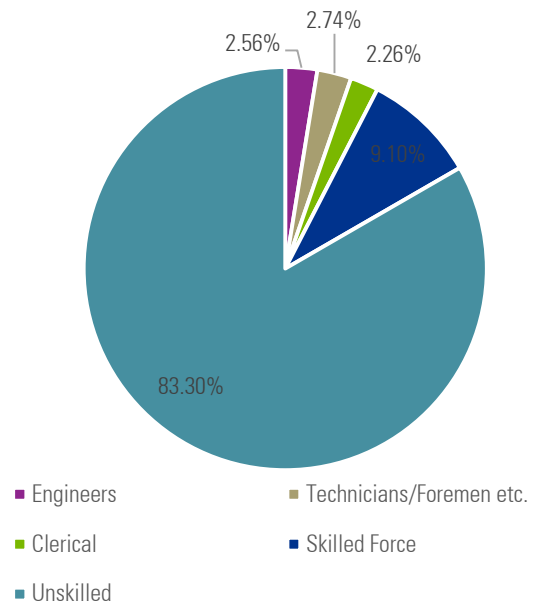
Major Sources for Resources - Labour



- The construction sector is one of the largest seasonal employment providers in India next only to agriculture.
- The sector is also highly unorganised and is the principle industry employing short duration out-migrant
- Of the total estimated 15.2 million short duration out-migrants, more than 36.2 percent are employed in the construction industry alone.
- According to 64th NSSO round, there were 58.6 million casual workers in non-agriculture sector of which construction industry alone employed around 58 percent of the casual workers in non-agriculture (i.e. 32 million).

- More than 80% of the employment in Building and Construction sector is minimally skilled workforce
- In terms of employment, technicians/foremen have had the maximum growth of 95% between 2005 and 2011 followed by unskilled workforce (34%).
- Only a meagre 9.8 million construction workers of the total 32 million workers are registered in the country.
- Tripura, Manipur and Lakshadweep are the states/UT that employ the highest number of registered workers in construction sector
- Interestingly, significant number of female workforce form a part of unorganised construction

Employment across work classes in 2011



Sources: Industry Interactions; KPMG in India analysis

Incremental Human Resource Requirement (2013-22)

Current workforce of 45 million (2013) is expected to increase to ~76 million by 2022

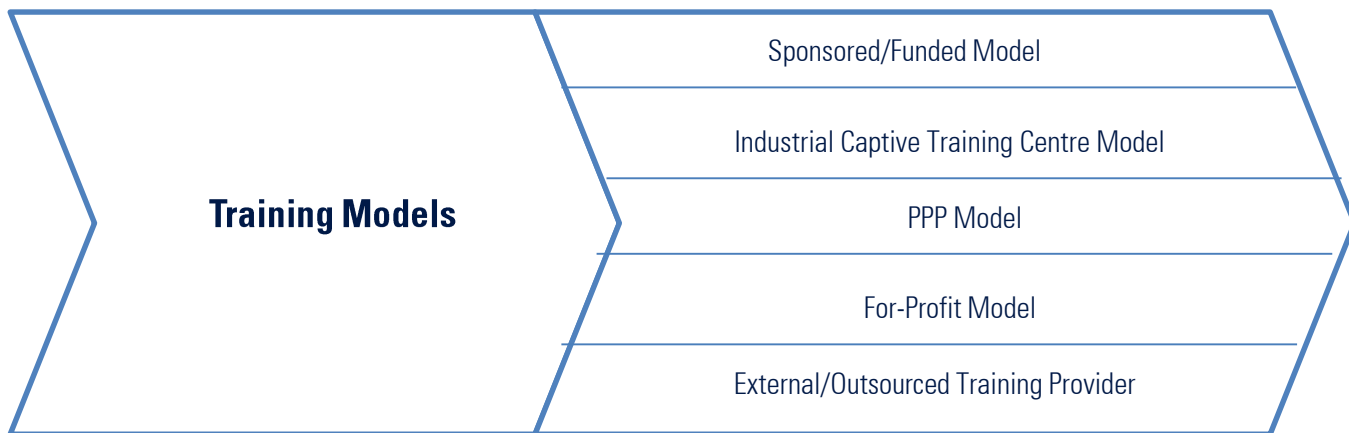
Segment	Employment Base in million		
	2013	2017	2022
Building , Construction & Real Estate	40.14	51.95	66.62
Construction of Buildings	35.52	45.97	58.96
Demolition and site preparation	0.34	0.45	0.57
Electrical plumbing and other construction installation activities	1.00	1.29	1.66
Building completion and finishing	3.27	4.24	5.44
Infrastructure	5.28	7.45	9.93
Construction of roads and railways	4.28	6.04	8.05
Construction of utility projects	0.79	1.12	1.49
Construction of other civil engineering projects	0.18	0.26	0.35
Other specialized construction activities	0.02	0.03	0.04
Overall Sector	45.42	59.40	76.55

Changing skill set requirements

Job Role	Skills Required
Project Managers	<ul style="list-style-type: none"> Project Management Skills, understanding of nuances of multi industry complexities, aptitude, attitude, intellect to react in uncertain times, communication skills, planning and risk management, vision and focus on the , end results, leadership & motivation skills
Site/Project Engineers	<ul style="list-style-type: none"> Analytical, communication skills, project management skills like, planning, scheduling, engineering, designing, procurement & contracting, execution, understanding of Project Risks and legal issues, safety Management Skills, Preventive Maintenance Skills
Supervisors	<ul style="list-style-type: none"> Technical Skills (Domain Knowledge), planning skills - ability to Anticipate & Forecast Material, tools, manpower & Machinery needs, materials scheduling, labour management skills, goal Setting
Bar-Bender, Mason, Plumber, Painter, Welder, Equipment Operator	<ul style="list-style-type: none"> Basic knowledge of construction engineering, Trade Skill – e.g. Bar Bending, Formwork carpentry, plastering, painting, plumbing, etc., Coordination Skills with unskilled workmen, Ability to comply with safety and quality measures, Knowledge of machine operations and basic machine troubleshooting, Ability to operate key equipment such as cranes, especially tower crane operations, and also mechanisms for loading and unloading of cranes

Shortage of talent in the construction sector is a long term problem and will continue to push up project costs and risks

There are different types of training models currently prevailing in the country varying in terms of their sizes, operating structure, industry associations, revenue model etc.



The education and training capacity offered through various schemes currently are inadequate to meet the demand of the large percentage of unskilled workers in the Indian labour market. The education system is often not delivering the required number of specialists across project management, engineering, surveying, contract management and the skilled/semi-skilled labor.

The NSSO findings also reconfirmed that over 97% of individuals between 15 and 65 have no exposure to any training. So the imminent need is to expand the reach of training providers, set up models and institutes with the capability to scale.

Select training institutes

Construction Skills Training Institute

Construction Industry Development Council

National Academy of Construction

National Institute of Construction Management and Research

Different employment levels and the current training/skill scenario

Workers

Near absence of formal training and skill certification systems and institutions & over reliance on conventional sourcing of manpower.

Engineers

A perceptible reduction of share of new trainees in Construction Engineering Streams (Civil, Electrical, & Mechanical Engineering) with a lack of interest of Institutions to raise intake levels

Contractors

Lack of adequate number of skilled contractors for the existing number of projects Organizations especially PSU's have recommended setting up a few contractors' training institutions.

Recommendation	Implications
Govt. and industry body to incentivize and promote collaborative training	<ul style="list-style-type: none"> ▪ Government should give incentives to private players for letting the training providers use their assets for training. ▪ Industry Body should ensure that there is a market for collaboration and use of scarce capital resources. For e.g. there could be a network of employers who commit to train a certain percentage of their workforce and tie-up with training providers for the same making it commercially viable for the training providers.
Financial assistance to be offered to trainees	<ul style="list-style-type: none"> ▪ Corporate sponsored apprenticeship-where the organization bears the training expenses. ▪ Providing scholarships/grants to a certain percentage of trainees ▪ Workers could be provided an interest free loan to afford their training expenses.
National level certification and accreditation body should be set-up	<ul style="list-style-type: none"> ▪ Government should develop a nationally recognized framework for qualification and also work with industry to ensure that the qualification framework is recognized. ▪ A system of 'Graded Certification' depending upon levels of proficiency achieved with a seamless integration with the Higher Education programs should be enforced.
Govt. should enforce conditions on manpower quality and certification while selecting EPC contractors	<ul style="list-style-type: none"> ▪ Pre-qualification process in selection of contractors with a focus on the quality of manpower supplied should be strictly enforced and should form a part of contractual agreements ▪ Govt. should enforce Labor inspection framework to audit major EPC projects by government/private players for upholding minimum labor standards/quality
Industry should foster and nurture strong linkages with Training providers	<ul style="list-style-type: none"> ▪ Industry players and training bodies should initiate steps to develop strong linkages which would serve their collective interest and provide mutual support. This linkage could help the industry in overcoming skill shortage and improving productivity and would help the institutes in various ways like content development, low fixed expenditure etc.
There should be focus on imparting higher order skills training as well	<ul style="list-style-type: none"> ▪ Institutions/Training providers should also impart generic skills such as project management and should also develop and promote executive and management development programmes to solve the problem of higher-order skill shortage
Govt. and industry should make efforts to transform perception about construction and motivate youth to join the sector	<ul style="list-style-type: none"> ▪ Strong and proactive need to portray the industry in a manner such that students/youth feel proud of working in such a space and do not show any hesitancy in joining ▪ Intensive marketing and media activities should be implemented by both Government and Industry players to improve the image and create awareness about the industry and training programs.
Incubation of education cell to address the challenge of qualified faculty for training	<ul style="list-style-type: none"> ▪ Industry Body could undertake measures to incubate an education cell with members support so that industry people can be trained to teach part time by the institutes. ▪ Institutes should follow Train the trainer Model and leverage technology enabled delivery



cutting through complexity

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