



FOUNDATION
FOR ECONOMIC
DEVELOPMENT



WORKER HOUSING

Unlocking
Labour-Intensive
Manufacturing
in India





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Labour-Intensive
Manufacturing
in India**

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Executive Summary

Creating good jobs is India's biggest challenge and export oriented labour intensive manufacturing is key to solving it

Our biggest imperative as a nation is to create good jobs outside agriculture. Currently, 46% of India's workforce is engaged in agriculture, which contributes only 18% to GDP. Manufacturing and services jobs are between 3 to 6 times as productive. Shifting workers out of agriculture is necessary not only for economic advancement and capitalizing on India's demographic dividend but is ultimately critical for improving the quality of life for our citizens.

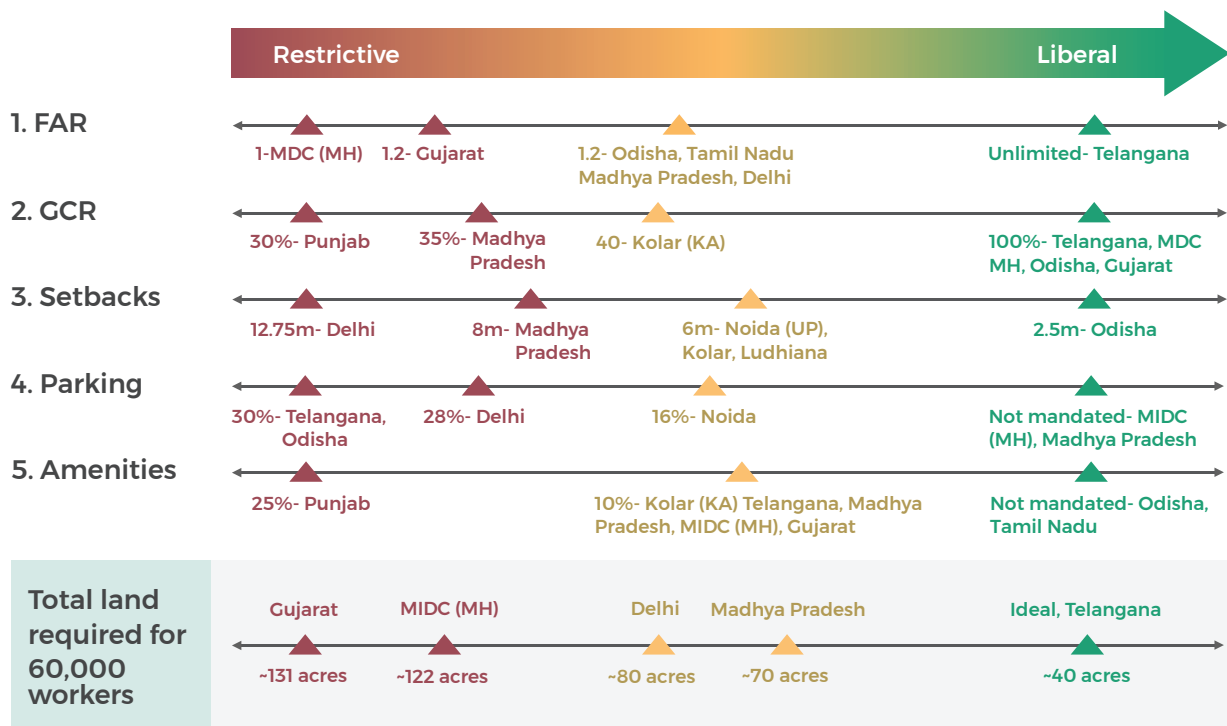
For India to succeed in this imperative, a focus on export-oriented, employment-intensive manufacturing is essential. India's domestic market alone is insufficient – we are relatively small on a per capita basis compared to global markets. As one illustration - while the OECD has a similar population, its GDP is about 18 times larger. Therefore, tapping into global markets is necessary to scale operations, enhance production efficiency, and drive economic growth. Export of services has powered our growth so far, and we should contribute to perform well there, but only manufacturing has the potential to absorb our vast and relatively low skilled working age population.

Large regions specialising in manufacturing will be critical to succeeding in manufacturing and worker housing is an essential unlock

For India to succeed in large-scale manufacturing, we need to understand that it occurs in large industry clusters, capitalize on economies of scale and depending on a labour force that exceeds local supply. This induces migration to meet the substantial labour demand and necessitates housing supply to meet subsequent demand. However, the current state of worker housing in India is largely managed informally, with limited availability and poor living conditions. This prevents workers, particularly women, from migrating in search of better employment opportunities, thereby impact the manufacturing sector's competitiveness.



Figure 3.1: Benchmarking of building standards across manufacturing states and cities



Source: Source: Residential building bye-laws for each manufacturing hub, FED Analysis

Regulatory bottlenecks play a big role in holding back market responses

Market responses through the private sector, which would typically fill the gap, are hampered by regulatory bottlenecks.

The regulatory bottlenecks fall into 3 categories

1



Inflexible zoning regulations prevent housing from being established near factories, even when land is available, unless it's zoned residential. This creates difficulties for industries that want to create their own worker housing units and prevents industrial land from being used for shared worker housing. Kolar in Karnataka is an exception, allowing residential buildings across zones.

2



Illiberal building bye-laws and approval processes further restrict land usage, locking land in suboptimal uses where it could house substantially more people. Unlike global hubs like Japan, where FAR¹ and GCR² are higher with minimal setbacks, Indian industrial zones have low FAR (as low as 1) and GCR (as low as 30%). Parking mandates also consume unnecessary land since most industrial workers don't own cars. Our analysis shows that due to these regulations, Gujarat's land requirement for large-scale worker housing is nearly 4 times greater than Telangana's. Implementing land-optimize reforms could house up to 6 times more workers on the same land without reducing individual space. Further, delays in government approval processes due to bureaucratic hurdles lead to additional costs for private developers. This should be changed to a system of third-party certification, insurance, and self-certification by chartered architects.

3



Operating costs further drive up costs as currently most formal sector hostels are often caught in a legal grey area, with regulations varying by state. In some cases, these accommodations are forced to function as hotels, resulting in significantly higher water, electricity, property taxes, and GST costs — up to five times more than residential rates. By classifying group housing as residential, it would help reduce these costs and make accommodation more accessible and affordable for workers.

Economic constraints would remain even after removing regulatory blocks

However, studies show that the market rent for workers in unauthorised colonies and informal housing is 4 times lower. This illustrates that willingness to pay in this sector remains substantially lower than what even post-reform suppliers will be able to provide on average. To truly unleash the potential of India's manufacturing sector, we need to think of dense, large scale worker housing as infrastructure – something that has co-ordination and externality benefits to several stakeholders and hence government investments will reap large public returns.

Summary of recommendations

Our recommendations therefore cover both regulatory and financial support for worker housing

Sl no.	Reform category	Recommendations	Government body responsible for making the change
Regulatory Reforms			
1	Zoning regulations	Mixed land zoning should be implemented to allow for construction of worker housing in all zones without any restrictions.	State / city level department that govern the use of land across India
2	Building bye-laws	Worker housing should be set up based on residential building bye-laws. These regulations can be further liberalised to bring down land costs. Government prior approvals for construction should be changed to a system of third-party certification, insurance, and self-certification by chartered architects.	State / city level department that govern building regulations across India

3

Operating regulations

Worker housing should be exempted from paying GST and residential rates must be charged for property tax, electricity and water tariffs to bring down operating costs.

Ministry of Finance (Department of Revenue)

Financial support from the government

4

Rental housing scheme

The government can create a pool fund rental housing scheme to subsidise setting up worker housing. These funds can be disbursed through interest subvention, soft loans, capital subsidy, tax reliefs etc.

Ministry of Housing and Urban Affairs

5

Rental housing vouchers

Rental vouchers can be issued to workers which can be exchanged in lieu of rent to subsidise housing and enable access.

Ministry of Housing and Urban Affairs / Ministry of Labour and Employment

6

Indirect methods of subsidising worker housing

Other indirect methods of subsidising the cost of construction worker housing can be implemented, for instance - infrastructure status can be provided for worker housing to reduce the developer's cost of borrowing.

Relevant ministries at the central level.

¹ FAR – Floor Area Ratio. This is a ratio calculated by dividing a building's total floor area by the amount of land it sits on.

² GCR – Ground Coverage Ratio. GCR is represented as the percentage of ground area covered by buildings and other impervious surfaces compared to the total area of the lot.





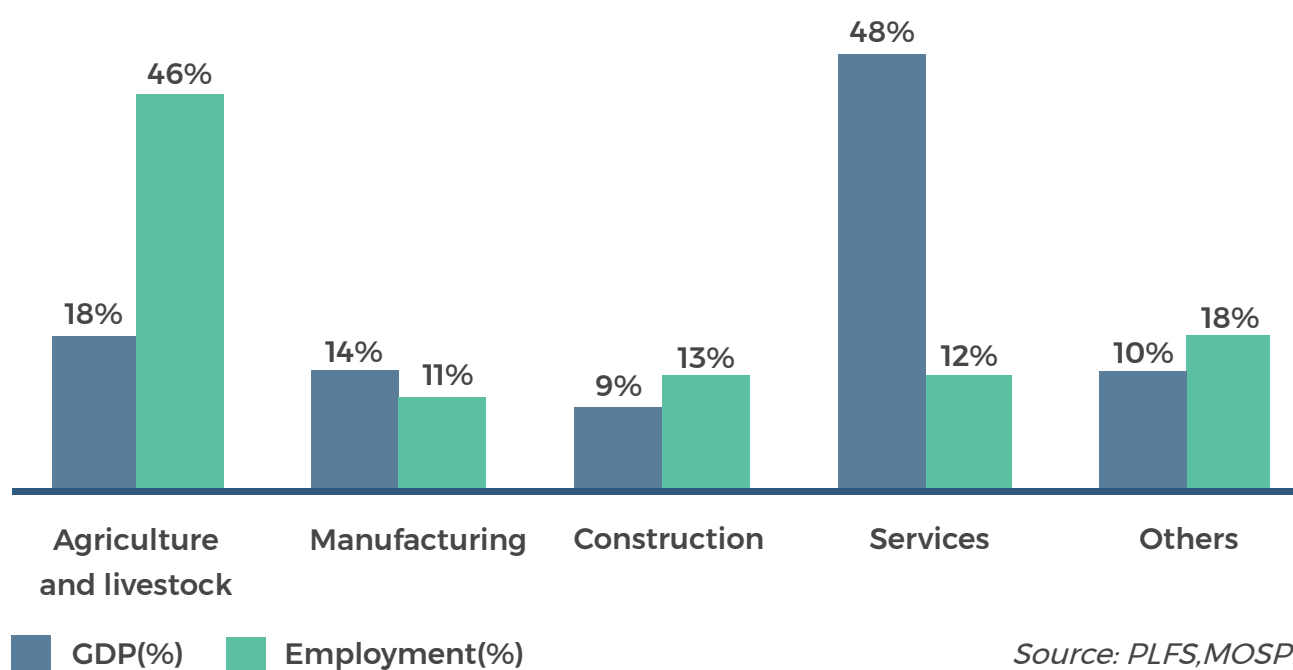


Employment Intensive Manufacturing Exports Are Critical For India

1.1 We need to create higher productivity employment on a large scale

Approximately 46% of workers in India are engaged in agriculture, which contributes only 18% to the nation's GDP. This fact alone shows the need for structural transformation – movement of workers from low-productivity sectors like agriculture to higher-productivity sectors like manufacturing and services. The manufacturing sector today employs just 11% of the workforce but generates 3.2 times³ the GDP contribution per worker compared to agriculture and the services sector generates 5.5 times the GDP per worker than agriculture. Getting just half of the population out of agriculture would require us to create ~130 million new job opportunities⁴.

Figure 1.1: Sector Wise Contribution to GDP & Employment FY 23



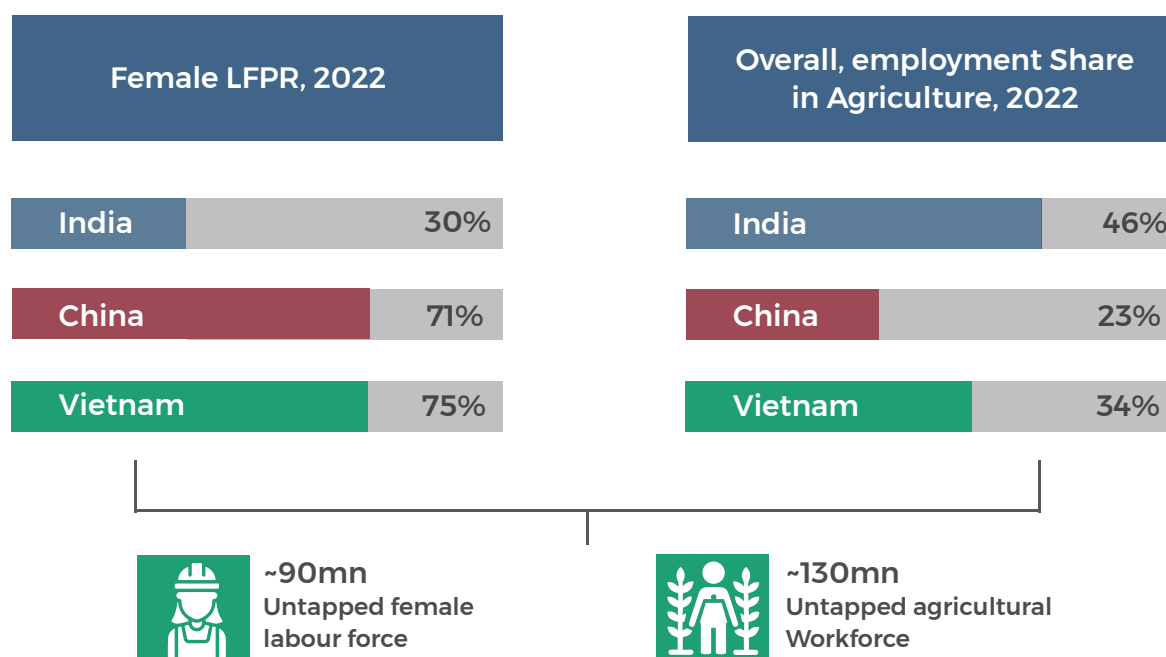
India has also not fully leveraged its demographic dividend. In 2023, while China had 959 million people aged 15-64, with 728 million engaged in the labour force, India had 971 million people in the same age group but only 538 million participating in the labour force. The main disparity here is our female labour force participation rate (LFPR), which was just 30% in 2022, while the OECD average is ~66%, and the female LFPR of countries like China and Vietnam is over 70%!⁵

³ FED Analysis

⁴ FED Analysis

⁵ World Bank, Labor force participation rate, female (% of female population ages 15+)

Figure 1.2: Female LFPR and overall employment share in agriculture, 2022



Source: World Bank, PLFS, FED Analysis

Addressing this gap by increasing labour force participation, especially among women, is crucial for India. Just getting our female LFPR to 50% would imply creating ~90 million addi-

tional jobs for our women⁶. Overall, more than 200 million jobs need to be created. Where will these jobs come from?

1.2 Employment intensive manufacturing will have to be a focus for creating jobs

Throughout modern economic history, manufacturing has consistently been the established route to achieving economic progress and job creation. However, according to some com-

mentators, India should not look to replicate China's success in manufacturing but should rather focus on its strengths – which may be in the services industry.

While the service sector has indeed driven much of our early growth in the late 1990s and 2000s, these areas are skill intensive and do not employ vast numbers of people. While we should continue to facilitate growth in services exports, we will hit diminishing returns. India is already the leading sourcing destination across the world, and expanding market

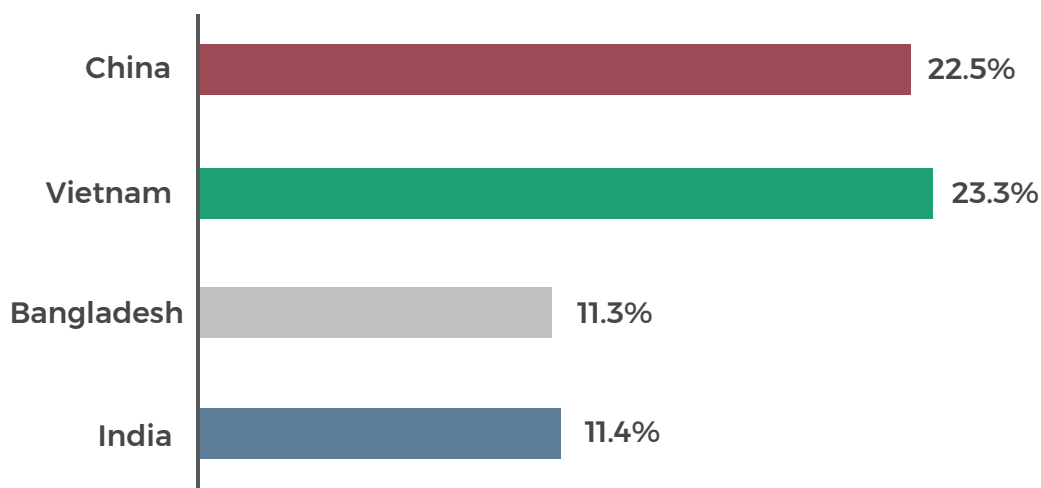
⁶ FED Analysis

share significantly beyond this will prove to be very challenging, especially in the current climate where AI will compete with Indian jobseekers. In FY 23, direct employment in the IT services and BPO/ITeS segment was 5.37 million. This is a tiny fraction of India's substantial workforce. It is highly unlikely that the rest of the services sector can create all the jobs India needs along with productivity driven income boosts for the working population. The biggest challenge the country faces

is creating jobs at scale, which may be difficult to solve using a service-led model alone.

India is adding around 8-10 million new workers to its labour force every year⁷. This pace is said to continue for at least a decade. Manufacturing is one of the few sectors that can potentially absorb such a large workforce. However as shown in figure 1.3 below, compared to competing economies, we are employing very few workers in manufacturing.

Figure 1.1: Sector Wise Contribution to GDP & Employment FY 23



Source: The Economist, General Statistics Office of Vietnam, Bangladesh Labour Force Survey 2022, PLFS

Note: * China's share is from 2021, Vietnam's and Bangladesh's share is from 2022, and India's share is from 2023

In the past decade itself, countries like Vietnam effectively utilized their cost-competitive labour and created a business-friendly environment conducive to large-scale manufacturing. These strategic policies attracted major corporations such as Samsung, then the second-larg-

est mobile phone producer, to gradually shift their production to Vietnam. As a result, Vietnam swiftly transitioned into a global manufacturing hotspot. In contrast to the Vietnam experience, over the years, India has had difficulties in expanding the share of the manufac-

⁷ India's way forward: Services or manufacturing? – Indian Express

turing sector in its economy. But the current geopolitical scenario presents itself as an opportune moment for India to transform into a global manufacturing hub. Besides job creation,

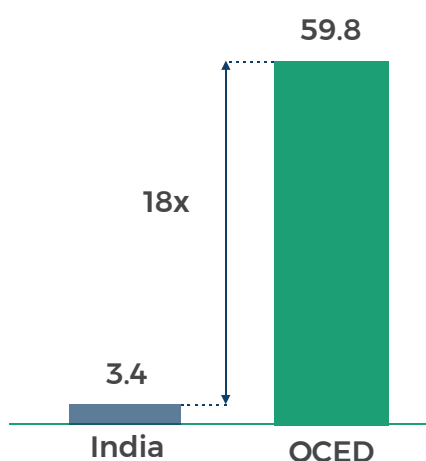
focusing on boosting the sector is also important for the country's future growth potential, since it reallocates labour from lower-productivity sectors to higher-productivity sectors.

1.3 Employment intensive manufacturing will need to be export oriented

On a per capita basis, India's domestic market is relatively small compared to global markets. While the OECD has a population comparable to India, its GDP is ~18 times larger.

Figure 1.4: India vs OECD GDP (USD Trillion), 2022

2022 GDP (USD Trillion)



Source: World Bank, PLFS, FED Analysis

This comparison also holds if we look at specific sectors or markets. Among the manufacturing sectors for instance, in 2019, India's domestic clothing market was valued at ~USD 55 billion⁸, whereas OECD countries collectively imported

clothing worth ~USD 400 billion⁹ — nearly seven times the size of the Indian market. Similarly, India accounts for only about 5% of the global electronics market¹⁰, whereas the US electronics market alone is more than five

⁸ Boston Consulting Group, 2021

⁹ UN Comtrade

¹⁰ UN Comtrade

¹¹ FED Analysis

times larger than India's¹¹. These comparisons highlight the vast potential of global markets compared to the domestic market. Hence, to achieve substantial growth, Indian manufacturers need to focus on becoming globally competitive. By tapping into these larger,

more lucrative markets, Indian manufacturers can scale their operations, increase production efficiency, and drive economic growth.

All fast-growing countries have used exports to grow fast. Japan, Taiwan, South Korea



and other East Asian countries are well known examples. China is often considered the last major economy to gain from transforming into a manufacturing and export powerhouse, but interestingly, India's own growth story was also powered by exports,

which grew from 7% of the economy in 1990 to 25% by 2014¹². The main difference was that our exports were more in high skill services and capital-intensive manufacturing.







2

Worker housing is a key unlock for making India's manufacturing sector globally competitive

2.1 Manufacturing competitiveness depends on large scale clusters and urbanisation, which requires migration

Large-scale manufacturing often occurs in clusters, allowing for the concentration of related industries and for the benefits of economies of scale to be fully leveraged. These clusters rely on large catchments of labour, which the local towns or villages around the clusters alone cannot provide. This induces an influx of migrants to fulfil the labour demand. These migrants are typically from low productivity sectors such as agriculture who move to industrial clusters for better employment opportunities. This idea is conceptualised in the classic Lewis model¹², where the process of development then takes place when labour is transferred from the traditional sector to the higher productivity sector.

This model of development can be observed through 2 decades of growth in China. Between 1980 and 2009, 150 million workers migrated to cities (greenfield and brownfield) and were the principal source of urban low-cost low-skilled labour and of workers in the construction and

manufacturing export industries¹⁴. High economic growth rates became associated with high rates of migration to the cities. Similarly, structural change in India can lead to rapid economic growth with the movement of our large population from low-productivity agriculture to high-productivity industrial jobs. Of the 60 million workers employed in manufacturing, ~10% of total manufacturing workforce are inter-state migrant workers¹⁵, with the share of intra-state migrant workers being much higher. In manufacturing clusters like Tirupur, ~50% of the workers are migrants¹⁶. However, enough migration is not taking place in India, especially among women. As per a survey conducted by NSSO, among the female respondents, only 1% of women migrated from their hometown for better employment opportunities. At the same time, almost 50% of their male counterparts moved out of their hometowns in search of jobs¹⁷. What is preventing women from migrating in search of better employment opportunities? One possible explanation is that most migrants are not provided with adequate housing facilities.



¹² World Bank

¹³ Economic Development with Unlimited Supplies of Labour

¹⁴ The Role of Rural Migrants in the Chinese Urban Economy

¹⁵ EPC World

¹⁶ Economic Times

¹⁷ Business Standard

2.2 Worker housing in India is largely informal or captive

Currently, worker housing in India is managed informally, with industrial clusters making no provision for it. As a result, when industrial areas are close to urban centres, slums and informal housing typically develop. For instance, in Delhi's garment manufacturing clusters, unauthorised multi-storey settlements or 'colonies' of rooms were constructed and given to migrants for rent. These colonies are both sub-scale relative to the massive numbers required, and of low quality. A study¹⁸ that was conducted revealed that these workers' 'colonies' ranged from 30 to 100 rooms, costing Rs 3,000–3,500 a month, which is a little less than half the wage of a garment worker. To save costs, five to seven male workers shared one room and bathroom facilities were shared among around 30 tenants. In these accommodations, water was available for only two hours daily, illegally siphoned from the city's supply, while electricity was diverted from local powerlines and charged to tenants at twice the usual cost. This accommodation was also the cheapest available, located at a walking distance of 15-30 minutes from industrial clusters. If their accommodation was located far away from the factories, time and money would get spent on travel, effectively reducing the real wages of the workers.

Alternatively, in rural areas, factories may tend to avoid setting up close to one another,

because then they end up competing for workers. This ultimately prevents them from making use of the benefits of large clusters and economies of scale. This leaves the industry with two possible scenarios – relatively limited informal housing or slums for workers or sub scale industrial units for manufacturers, both of which prevents our manufacturing sector from being globally competitive.

Availability of housing close to factories will enhance global competitiveness

Several studies suggest that the provision of housing closer to clusters / factories has the potential to make the manufacturing sector more competitive¹⁹. An overview of the benefits of worker housing includes:

Benefits for workers

- Safety and shorter commute to workplace – When housing is provided close to or on the premises of the workplace, it minimises the need for long commutes through potentially unsafe areas and encourages participation of women.
- Formal accommodation – This would provide reasonable living conditions as opposed to slums

Benefits for industry

- Provision of ready access to workers – When large industrial factories are set up, the easiest and fastest way for companies to access large catchments of labour is by creating housing for them near factories.

¹⁸ Beyond the Dormitory Labour Regime: Comparing Chinese and Indian Workplace–Residence Systems as Strategies of Migrant Labour Control

¹⁹ Environment, Housing and Health, Effects of Improved Housing on Worker Performance, Public Workers' Housing Helps Labour-Intensive Manufacturing

- Increased productivity of workers – Workers who do not need to worry about long commutes or unstable living situations are likely to be more focused and productive.
- Low absenteeism – Better living conditions would improve worker's health and nutrition, which would have knock-on effects on reducing absenteeism.
- Stabilisation of the workforce – With stable accommodation, companies can maintain a consistent workforce with lower attrition rates which helps in maintaining quality control and operational efficiency.

Existing worker housing facilities in India

There are two main dimensions across which formal worker housing runs – captive

/ shared and Public / Private/ Private Public Partnerships (PPP). Captive worker housing facilities are set up for exclusive use by a company. Shared worker housing is for general use by paying workers/firms. Captive facilities are the most common and are typically funded and built by the company itself, but in some instances, the government participates in funding, construction and operation. Worker housing can also be set up through PPP - private players tie up with the government, typically through a Special Purpose Vehicle (SPV) to develop worker dorms.

Captive housing facilities

Typically, only large companies can provide such facilities due to high costs of setting up housing. Some examples²⁰ include: (i) SPR Group in Tamil Nadu built captive housing for Salcomp, a major electronics manufactur-



ing company, (ii) State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) along with Tamil Nadu Infrastructure Fund Management Corporation (TNIFMC) set up a captive facility to house 18,000 workers for Foxconn. (iii) Tata Electronics has created an SPV with TNIFMC and others to construct housing facilities for their workers.

We can see examples of captive facilities being set up from back in the 1900s, when chawls were set up in Mumbai by textile mills for their workers²¹. However, in the present day, we cannot rely on individual companies creating their own captive housing infrastructure due to the high cost and burden of setting up and operating such facilities. This type of facility also prevents economies of scale in housing provision, distracts manufacturing companies from their core com-

petence, and potentially increases liability.

Shared housing facilities

In this model, workers of multiple companies are housed in a single facility / in multiple facilities. An example²² includes: TNIFMC has set up small scale shared working women hostels in multiple locations across Tamil Nadu.

Many of the smaller manufacturing companies and Micro, Small & Medium Enterprises (MSMEs) may lack the resources to set up their own captive units. Therefore, shared facilities are more important for large-scale labour-intensive manufacturing, especially within industrial clusters. However, presently large-scale shared housing facilities for workers are not very common, and the existing worker housing facilities have not managed to scale.

2.3 Countries that have successfully industrialised quickly have built worker housing at much larger scale

Countries across the world have enabled migration, especially for women, through the provision of large-scale housing for workers. When one looks at the Chinese experience in developing hundreds of millions of low-skill jobs in large scale labour-intensive manufacturing, the focus is usually on Special Economic Zones (SEZ), and the incentives given to foreign direct investment (FDI). But an

important point that is rarely recognised is that cheap housing was provided for workers, which increased their real wages. A majority of migrant factory workers were accommodated in workers' dormitories built by employers, often on land provided for free by local governments²³. In fact, the dormitory system can commonly be seen across labour intensive industries, including the construction industry.

²⁰ Stakeholder consultations, Business Standard

²¹ Hindustan Times

²² Stakeholder consultations

²³ Public Workers' Housing Helps Labour-Intensive Manufacturing

Table 2.1: International examples of large-scale housing for workers



In China, 80% of the assembly line workers were women, with accommodation a part of their employment contract²⁴.



In Japan, textile industries housed female labour force from faraway villages in dormitory accommodation²⁵.



In Vietnam, the government has committed to build 1 million housing units for low- and middle-income households and for workers in industrial parks²⁶.



In Singapore, 43 dormitories have been built to house 200,000 migrant workers from the construction and manufacturing sectors²⁷.

2.4 Regulatory and cost bottlenecks in setting up large scale housing

We still have a long way to go, as several attempts at setting up large scale worker housing have failed due to regulatory and cost bottlenecks. Private players would be the best equipped to operate and maintain accommodations on such a large scale. However, cost of

capital is high, and rates of returns provided by industrial projects are well below the market rates for the same risk, making it unattractive for private players to enter the space. Our stakeholder interactions revealed that even though there is a demand for worker housing from manufacturing companies, the regulatory environment also makes it hard for manufacturing companies to subsidise the cost. Some of these cases are summarised in table 2.2 below to give a flavour of the issues faced by industry.

²⁴ The Impact of Export-oriented Manufacturing on the Welfare Entitlements of Chinese Women Workers

²⁵ Textile Factories, Tuberculosis and the quality of life in Industrializing Japan

²⁶ Hanoi Times

Table 2.2: Regulatory and cost bottlenecks to setting up worker housing in India

Experience from a large multinational pharmaceutical company	This company attempted to set up worker housing for their manufacturing unit by using CSR funds but were not allowed due to stringent regulations.
Building bye-laws	Worker housing should be set up based on residential building bye-laws. These regulations can be further liberalised to bring down land costs. Prior government approvals for construction should be changed to a system of third-party certification, insurance, and self-certification by chartered architects.
Operating regulations	Worker housing should be exempted from paying GST and residential rates must be charged for property tax, electricity and water tariffs to bring down operating costs.
Experience from a Casino who wanted to house workers nearby	A casino attempted to create housing for 14,000 workers. Due to certain regulations, the cost was high, and the developer could not gain a yield beyond 5% unless the land was heavily subsidised.
Experience from an affordable housing developer	A large affordable housing developer attempted an end to end model of building and operating affordable housing units. This attempt was not successful, and the developer had to switch to senior and student accommodation, as they could be charged higher rent.

Due to such high costs, many private developers are opting out of building worker housing and are instead only building housing for senior accommodation, housing for white-collar working professionals, and student accommodations. An example of this can be seen through a case study²⁹ of Aarusha homes, which is one of the few formal private sector hostels in Hyderabad. They initially wanted

to provide short-term housing to blue-collar workers, but this was not viable given the costs of operating as a formal hostel provider. They now mainly serve students and IT professionals, charging between Rs 3,500–10,000 a month.

The next chapter delves into how certain regulations might drive up the cost of setting up large-scale housing and examines the impact of reforming these regulations.

²⁷ TODAY

²⁸ Hindustan Times

²⁹ India Infrastructure Report 2018: Making Housing Affordable





Building Burdens: The High Cost of Regulations prevents worker housing from scaling

This chapter digs deeper into certain regulations that create pain points on location and costs for manufacturers to set up housing for workers. These regulations are mainly of three types:

1. Zoning: regulations may restrict land use to prevent housing from being set up near factories. While builders / manufacturing companies may have spare land, they may not be able to set up worker housing there since those areas are not ‘residential’ zones.
2. Building: stringent building bye-laws restrict land usage and lock land in suboptimal uses that could otherwise be used to house more people.
3. Operating: the absence of a standardised definition for worker hostels further increases costs, as it leads to the imposition of commercial rates for their operation.

3.1 Zoning regulation constraints

Zoning regulations differ across industrialised states. Table 3.1 provides an overview of whether worker housing can be set up in residential, commercial, and industrial zones among some of the industrial hubs studied.

Table 3.1: Permissibility of setting up worker housing under land zoning regulations

States	Residential	Commercial	Industrial	Free change of land use (CLU)
Telengana	●	●	●	Yes
Tamil Nadu	●	●	●	Yes
Noida (Uttar Pradesh)	●	●	●	No
Kolar (Karnataka)	●	●	●	Yes
Gujarat	●	●	●	No

● Allowed
 ● Allowed with conditions
 ● Not Allowed

Source: World Bank, PLFS, FED Analysis

From Table 3.1, we see that only Kolar in Karnataka allows for the construction of worker housing / hostels in all zones without any restrictions, along with the provision of free change of land use (CLU). In Telangana, industries can be set up in the “Multiple Use Zone” and the “Work Centre Use Zone.” Residential use is allowed only in the “Multiple Use Zone.” In Tamil Nadu, only working women’s hostels can be set up in areas zoned for residential use. Other hostels are categorised as commercial establishments, and while they can be freely constructed in commercial zones, in residential zones they can occupy a floor area of only 500 sqm. In Noida on the other hand, housing can be set up only in residential areas. Request for conversion of industrial plots would not generally be allowed, except in exceptional circumstances, and conversion charges and location benefit charges at 10% of the prevailing land rate would be issued.

3.1.1 Recommendations on industry zoning reform for worker housing

The importance of rental housing with dormitory-type accommodation for industrial workers was recently highlighted in the 2024 Union Budget³⁰, or Budget for FY25. Finance Minister, Nirmala Sitharaman discussed facilitating higher participation of women in the workforce by setting up working women hostels in collaboration with industry. To achieve this, builders need to be provided with the flexibility of setting up worker housing. This can be done through two methods:

- I. Mixed use by default for industrial and commercial zones:** This is a more fundamental reform where industrial

areas allow all types of land use, commercial areas allow all types other than industrial, and only residential zones are restrictive. This type of flexibility can be seen in Japan, where zoning regulations allow a “maximum” use instead of an exclusive use for each zone. Almost all Japanese zones allow mixed use developments.

- II. Worker housing to be allowed in industrial zoning uses:** A relatively easier fix would be to allow worker housing as an acceptable use in industrial zones given its importance for industries. In order to prevent misuse, worker housing can be defined by density (space per person) and builders/operators can self-certify.

The first method of mixed use zoning is the ideal solution. People migrate to places where they can get jobs, i.e. commercial or industrial zones, and would typically look for accommodation near their places of work. This is a more fundamental reform. An alternate solution is the second method, where worker housing is allowed to be set up in industrial areas without any restrictions as it is ancillary to industrial activity.

³⁰ Key features of budget 2024-2025

3.2 Building regulation constraints

3.2.1 Introduction – ‘Fixed’ construction costs necessitate optimisation of land use regulation

Large-scale accommodation needs to be constructed to cater to a large workforce. However, large buildings are more expensive to build on a per-square foot basis than small buildings. Most of the diseconomies in cost are the result of building taller. Each additional floor adds load to the floor below, requiring heavier structural framing, more extensive foundations, stricter fire code requirements and more complex mechanical systems. As the number of floors increases, elevators need to be added which not only adds to costs, but also encroaches on the liveable space. The time taken to build a tall building is also greater. As a result, there are limited options available to reduce building costs. However, a building that has only expanded horizontally would also face diseconomies as a large parcel of land would be required. This leads us to explore strategies to optimise land usage and thereby minimise land expenses.

To estimate the cost of building a worker dormitory for a large workforce, we have considered a scenario to accommodate 60,000 workers, taking India’s largest worker dormitory that Foxconn is currently building as our benchmark³¹. In our construction costs model,

we have followed the minimum standards in terms of living space per worker, toilet facilities, water supply and common rooms, as prescribed under the National Building Code. We have assumed that worker housing is categorised as low-rise affordable residential buildings with maximum 5 floors and no elevator. According to our estimate, the average space inclusive of all common living and recreational space per person is ~78 square feet. This figure reflects the minimum standards, but it can vary between 75 to 100 square feet per person, depending on the allocation for living space, common rooms, and other facilities. The total built-up area, including both core and non-core living areas, is approximately 30 lakh square feet.

The total cost of construction per square feet was provided by a private developer who is currently building worker housing units for apparel manufacturing companies. Based on certain assumptions, we have calculated the cost of electrification, cost of setting up water supply and sanitation, other contingencies, and miscellaneous costs such as architect’s fees and external development cost. Overall, the total cost of construction is ~930 crores.

3.2.2 Building regulations lead to artificial scarcity of land for housing

Building bye-laws or regulations are the set of rules and guidelines that govern the construction and development of buildings and structures. These regulations outline the permissible land uses and zoning restrictions, thereby affecting efficient land utilisation.

The major regulatory instruments examined

³¹ ET Telecom

³² Bertaud 2011

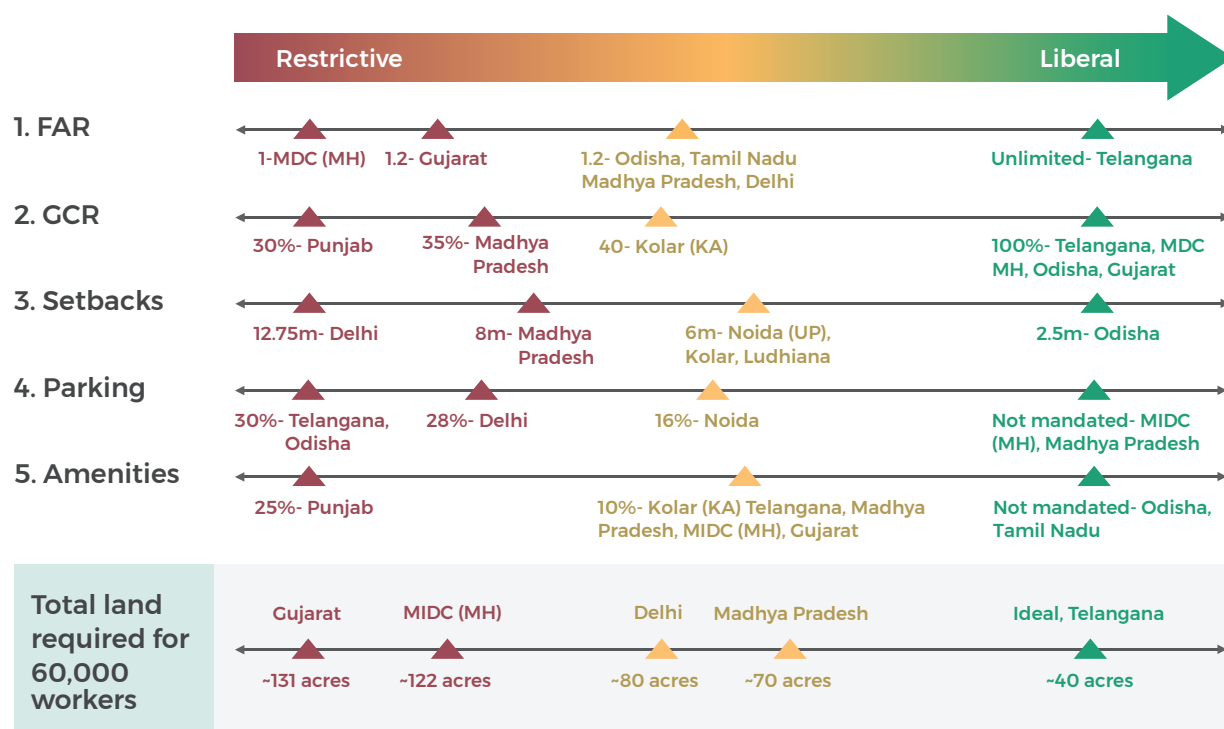
³³ State of Regulation: Building standards reforms for jobs and growth

include:

1. Floor Area Ratio (FAR) / Floor Space Index (FSI): The ratio of a building's total usable floor area to the total plot area
2. Ground Coverage Ratio (GCR): The ratio of land on a site that is covered by a building to the total plot size
3. Setbacks: The minimum open space required along the plot boundary on each side
4. Parking requirements: The minimum number of parking spaces required as specified by the bye-laws
5. Open spaces and amenities requirements: Minimum amenities space required as specified by the bye-laws

FAR and GCR regulate the extent of building coverage on a plot. A higher GCR indicates a greater percentage of the plot covered, i.e., more horizontal growth, and a higher FAR allows greater vertical growth. It is sometimes wrongly assumed that limiting available floor space will limit population density³². However, people migrate for job opportunities, not housing availability, so this approach won't control population density. Setbacks define the minimum distance to be maintained from property lines, roads, and neighbouring properties, which ensures that the building is receiving adequate sunlight, ventilation, greenery, and vehicular access. These margins are also mandated to minimise the risk of fire spreading across buildings. However, very high setbacks can lead to wastage of space. These regulations

Figure 3.1: Benchmarking of building standards across manufacturing states and cities



Source: Source: Residential building bye-laws for each manufacturing hub, FED Analysis

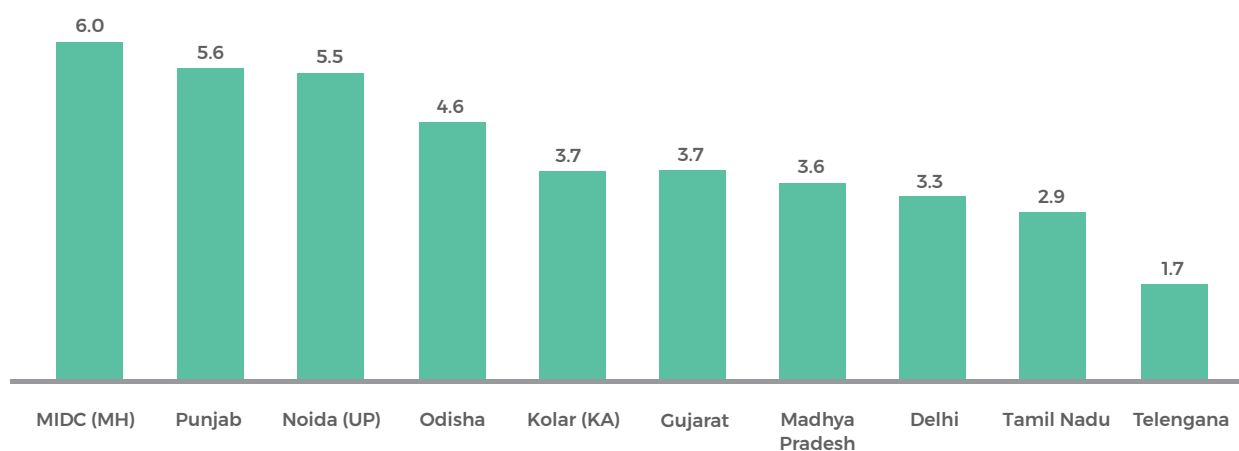
do not account for modernisation in technology and manufacturing processes³³. In addition to the mentioned restrictions, available land is further encumbered by mandatory parking requirements which is unnecessary for industrial housing given that most industrial workers are unlikely to own personal vehicles.

We study the impact of these standards on land cost through a comprehensive analysis of the residential building bye-laws of 10 industrial zones in India. These regulations are compared to the hypothetical ideal scenario that combines the best-in-class regulations from each of the regions. Figure 3.1 below provides an overview of the least

restrictive, most restrictive and ideal benchmarks for each of the 5 regulatory instruments.

Telangana, with its relatively friendly regulations, requires only 40 acres to accommodate 60,000 workers. Conversely, Gujarat's land requirements are over three times greater, indicating significantly more stringent regulations. Rather than imposing separate requirements for parking, amenities, and setbacks in addition to specifying a GCR to maintain green cover, we could simplify by setting the GCR at 55-60%. The remaining open space can be used for setbacks, providing sufficient room for internal roads and sidewalks.

Figure 3.2: Benchmarking of building standards across manufacturing states and cities



Source: PLFS, MOSPI

3.2.3 Government approval process

Delays in approvals can significantly constrain projects in several ways. First and foremost, these delays translate directly into increased costs for the final buyer. These costs include interest accumulated on the land, direct monetary expenses such as bribes, and opportu-

nity costs like the time and manpower spent on repeated office visits and waiting in lobbies. A study conducted in Raipur³⁴, where private developers were interviewed about the timeline for government approvals, revealed that the entire approval process — from initial registration to final clearance — takes between 18 and 26 months.

Table 3.2: Illustrative example of timeline required for government approvals

Sl no.	Process	Office	Time taken
1	Land registration	Office of the Registrar	1-2 days
2	Mutation of property	Office of the Tehsildar	1 month
3	Demarcation	Office of the Patwari	4 months
4	Layout approval	Town and Country Planning Unit	6 months-1 years (sometimes more)
5	Diversion	Court of the Sub Divisional Officer (Revenue)	1-4 months
6	Nazul No Objection Certificate (NoC)	Nazul division	1-4 months (Diversion and Nazul NoC process can run in parallel)
7	Colony Development Permission	Municipality	4-6 months
8	Building approval	Zonal office	2 months

Source: The provision of affordable housing in India: Are commercial developers interested?

The developers that were interviewed for the above study believed that corruption among lower-level bureaucrats significantly worsens delays. While layout approval is granted for the entire project, building permits are issued in phases, with government officials conducting periodic inspections to ensure the construction aligns with the approved plan. Developers highlighted these inspections as unnecessary, suggesting they should occur only after project completion. These periodic checks were said to cause significant delays and offer opportunities for officials to demand

bribes. A major cause for delay can also be attributed to capacity constraints and limited manpower of the government to carry out the necessary procedures for granting approvals.

To ease the process of government approvals, we recommend the government to empanel third party agencies who are authorised to provide the above necessary certifications on behalf of the government. A checklist can be provided with necessary procedures, associated costs and timelines outlined, with a professional independent agency managing the workflow for approvals. Alternatively, as

³⁴ The provision of affordable housing in India: Are commercial developers interested?

recommended by IDFC institute³⁵, an online portal can be created with clearly defined steps mentioned. The developer can review the

checklist themselves and self-certify, combined with the third-party validation by empanelled agencies or random audits by government.



³⁵ India Infrastructure Report 2018: Making Housing Affordable

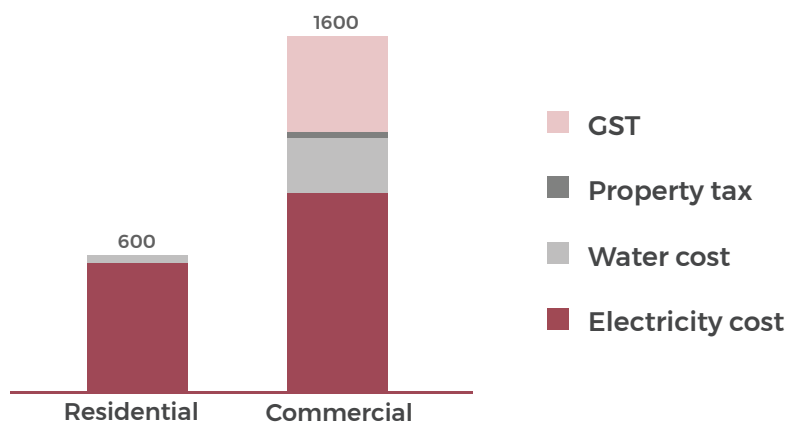
3.3 Operating regulation constraints

At present, the hostel industry largely operates in the unorganised sector with several small players who provide accommodation to migrant workers or outstation students from poor and weaker sections of society. Such hostels provide accommodation facilities for indi-

viduals wherein some incidentals like food / laundry are also covered. While most hostels and dorms are informal, hostels that currently operate in the formal sphere are in a legal vacuum, with their interpretations left open to states. In some cases, they are forced to run as hotels. This implies that they must pay higher rates for water and electricity, and property taxes, since these are typically higher than residential rates. They must also possess a trade license and pay Goods and Services Tax (GST).

Figure 3.3: Sample monthly operating costs per person of a hostel which can house 60,000 workers, residential vs commercial rates in Rs (Tamil Nadu)

Residential vs commercial rates, in INR (TN)



Source: Author's calculation based on Tamil Nadu's electricity tariff schedule, water tariff schedule, property tax rate schedule, GST

Note: These are the costs excluding trade license, maintenance and garbage collection costs.

While the Tamil Nadu Combined Development and Building Rules 2019 classify hostels as residential buildings for property tax³⁶, the 2019 Central Tax notification³⁷ broadened the definition of hotel accommodation to include any commercial place meant for residential purposes. The Madras High Court in 2023 exempted working women's hostels from GST³⁸, emphasising that the end use of

the property was for residential purposes and not commercial. Conversely, in Karnataka³⁹ and Uttar Pradesh⁴⁰, the GST-Authority for Advance Rulings (AAR) ruled that hostel rent isn't exempt from GST as it is not considered a 'residential dwelling', citing shared rooms and monthly bed-based billing as the reason.

As shown in figure 3.3 above, the lack of proper regulations on hostels can force them to pay

much more on operating costs. These costs are then transferred to the workers in the form of higher rents, which ultimately makes such accommodation unaffordable to them. The legal vacuum and subsequently, the costs act as barriers to formal housing being provided in

the market, which contributes to workers' preference in settling in informal housing / slums.

Our recommendation is that we should treat group housing – hostels, worker housing etc. as residential use for the purposes of taxes and operating charges.

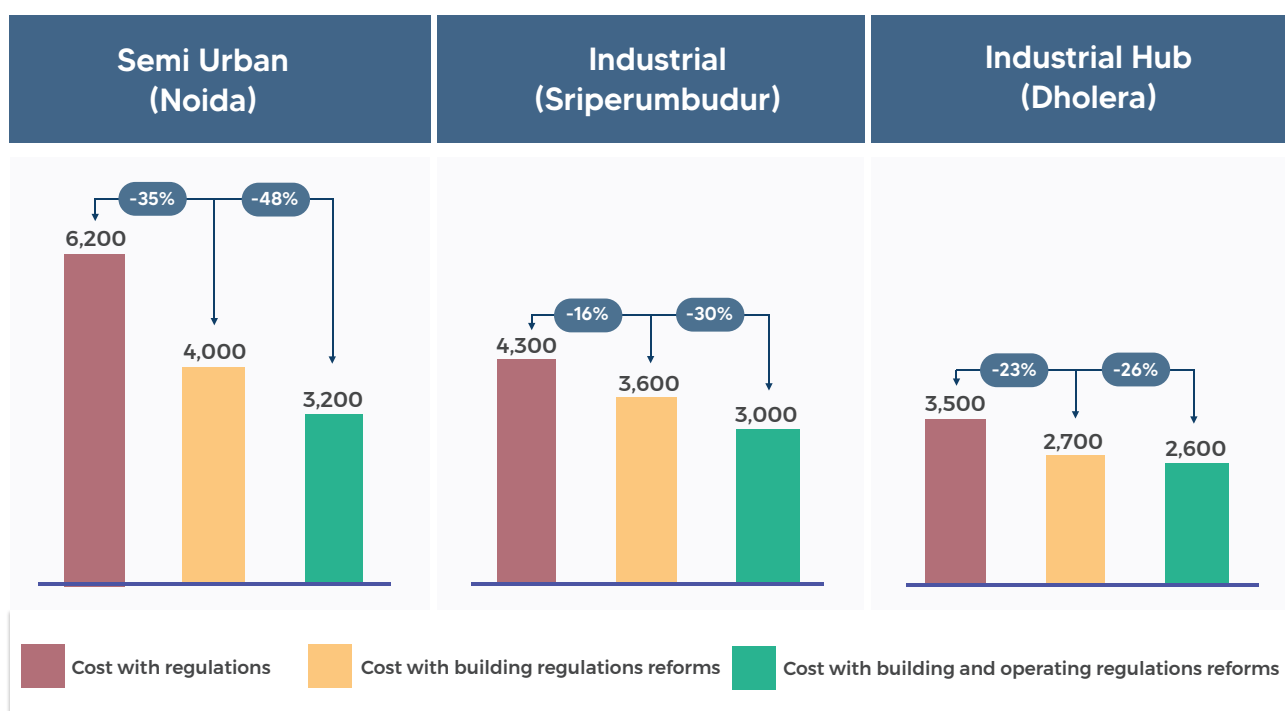


3.4 Impact of reforms

We have divided the manufacturing zones into 3 broad categories, semi urban, industrial, and industrial hubs. As shown in figure

3.4, the impact of reforming building regulations is greater in areas where land is costlier. But across all zones, reforming operating regulations by charging residential rates for worker hostels and exempting them from GST payments has a substantial impact on overall cost. Our estimates suggest that

Figure 3.4: Impact of building & operating reforms on monthly per worker housing cost



Source: Author's calculation based on building and operating regulations

Note: Cost of land is calculated using market rates

monthly housing costs for workers can reduce ~50% in semi urban areas and ~25% in industrial areas through friendlier regulations.

While reforms bring down the monthly cost of housing for workers to a large extent, the

cost is still much more than what they can afford. Therefore, regulatory reform is just a part of the solution. The next chapter provides insights as to how the government can provide support to subsidise worker housing.

³⁶ Tamil Nadu Combined Development and Building Rules, 2019

³⁷ Notification No. 20/2019- Central Tax (Rate)

³⁸ Advance Ruling No.104/AAR/2023

³⁹ Advance Ruling No. KAR ADRG 25/2023

⁴⁰ Advance Ruling No. UP ADRG 26/2023





How can the government enable the provision of worker housing?

4.1 The current gap between formal and informal worker accommodation

As per our model, the total monthly cost per worker in large scale formal housing after regulatory reforms would be ~Rs. 2,500–3,200 for an average space of 78 square feet (inclusive of living and non-living spaces). However, studies⁴¹ show that the market rent for workers in unauthorised colonies and informal housing is 4 times lower. These are typically small single storied buildings with unsafe structures. Here, workers live in cramped spaces, where 5-7 workers share a room in order to minimise cost. In some of these accommodations, water was available for only two hours daily, illegally siphoned from the city's supply, while electricity was diverted from local powerlines. Figure 4.1 summarises the differences in costs of constructing formal large-scale housing and informal small-scale settlements.

Table 4.1: Overview of schemes under PMAY – U

Formal Large-scale housing (Capacity- 60,000 workers)	Informal small-scale settlements (Capacity - 50 workers)
 <ul style="list-style-type: none"> Operating cost: <ul style="list-style-type: none"> Tariff slabs for electricity & water increases with more consumption GST may be charged on occupants Building cost: <ul style="list-style-type: none"> More extensive foundations, better quality of building materials used Land cost: <ul style="list-style-type: none"> More land required for large scale housing purchased on market rates Per person space provided as per national building code Provision of amenities and staircases for multi-story buildings further encroach on liveable space 	 <ul style="list-style-type: none"> Operating cost: <ul style="list-style-type: none"> Electricity and water may not always be available, tariff rates will be lower due to lower consumption Building cost: <ul style="list-style-type: none"> Unsafe structure with no depth in foundation which houses few workers Land cost: <ul style="list-style-type: none"> Less land required, not necessarily purchased by informal landlords Workers live in cramped spaces to save amount spent on rent Single story building with no provision of amenities

Source: PMAY – U (MoHUA), Author's inference

Note: We have assumed a large-scale dormitory to accommodate 60,000 workers taking the Foxconn worker dormitory in Tamil Nadu as our benchmark.

Although studies have found that informal and semi-formal settlements have done a reasonable job in responding to the trade-offs that migrant workers make in terms of quality of housing, affordability and optimal locations that are close to workplaces, the living situation is not ideal, especially for women as

⁴¹ Beyond the Dormitory Labour Regime

it may not fulfil their safety requirements. Once a factory is set up, informal housing comes up over a period of few months or years, which is inconvenient. As opposed to this, formal housing can be set up immediately as per the demand from the industry. However, the construction cost of housing just half of the untapped women manufacturing workers, i.e., 45 million women workers is ~7 lakh crores⁴²!

4.2 Limitations of current housing schemes in India

4.2.1 Overview of the Pradhan Mantri Awas Yojana - Urban (PMAY-U) Scheme.

Currently, there is only one ongoing scheme at the central level, which is the Pradhan Mantri Awas Yojana - Urban (PMAY-U) Scheme. PMAY-U⁴³ was launched in 2015 to curb urban housing shortage initially through four verticals: In-situ slum redevelopment (ISSR), Credit Linked Interest Subsidy (CLSS), Affordable Housing in Partnership (AHP), Beneficiary-led individual house construction or enhancement (BLC).

In 2020⁴⁴, the Affordable Rental Housing Complexes (ARHCs) was included under PMAY-U, which may be considered to be the only relevant scheme for industrial worker housing, since it is a rental housing scheme. Most migrants typically relocate individually, seeking temporary lodging in proximity to their workplaces. Given that they often move without their families, their objective is not to settle permanently or purchase homes in the cities they migrate to, but rather to find convenient, short to medium-term accommodation.

Table 4.1: Overview of schemes under PMAY - U

Sl no.	Overview of schemes under PMAY - U	Relevant for worker housing
1	Credit Linked Interest Subsidy (CLSS)	✗
2	In-situ Slum Redevelopment (ISSR)	✗
3	Affordable Housing in Partnership (AHP)	✗
4	Beneficiary led individual house construction or enhancement (BLC)	✗
5	Affordable Rental Housing Complexes (ARHCs)	✓

Source: PMAY - U (MoHUA), Author's inference

⁴² Author's calculation

⁴³ PMAY-U (Ministry of Housing and Urban Affairs)

⁴⁴ Press Information Bureau

The ARHC scheme is implemented through two models⁴⁵:

Model 1: Utilising existing government-funded vacant houses to convert into ARHCs through public-private partnership or by Public Agencies

Model 2: Construction, Operation and Maintenance of ARHCs by Public / Private Entities on their own available vacant land

4.2.2 ARHC Model 1

Model 1 provided viability gap funding (VGF) to refurbish existing government vacant houses. There are approximately 108,000 government-constructed vacant houses, of which 83,000 potential homes were identified for conversion to ARHCs.

Table 4.2: Current status of state / UT-wise progress under Model 1 of the scheme

Sl no.	State	No. of Houses available for ARHCs	Converted into ARHCs	Conversion
1	Arunachal Pradesh	752		
2	Chandigarh	2,195	2,195	100%
3	Delhi	29,112		
4	Gujarat	4,414	2,467	56%
5	Haryana	2,545		
6	Himachal Pradesh	314		
7	Madhya Pradesh	364		
8	Maharashtra	32,345		
9	Nagaland	664		
10	Rajasthan	4,884	480	10%

⁴⁵ ARHC (Ministry of Housing and Urban Affairs)

11	Uttar Pradesh	5,232		
12	Uttarakhand	377	170	45%
13	Jammu & Kashmir	336	336	100%
Total		83,534	5,648	7%

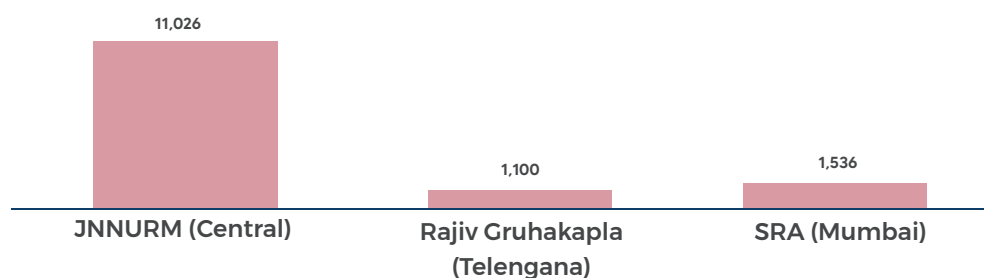
Source: Ministry of Housing and Urban Affairs

As shown in table 4.2, Model 1 of the scheme has a conversion rate of only 7%. Of the 13 states that joined the scheme, only 4 states/ UTs have some conversion. The conversion rate also does not paint a complete picture since there is no visibility on the occupancy of converted houses.

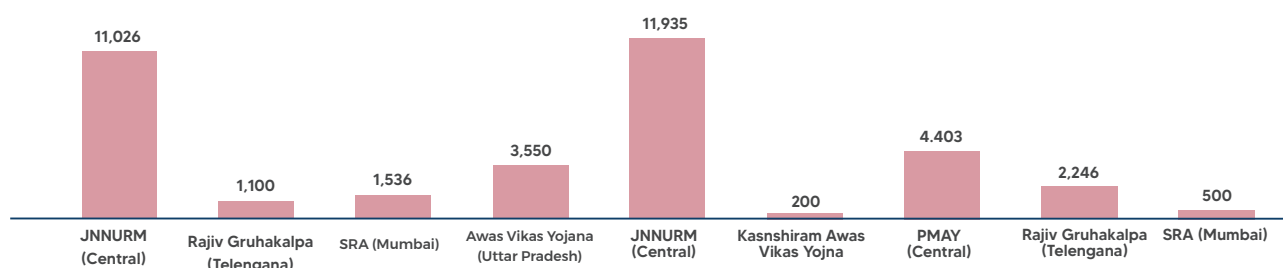
Since 2000, the central government has disbursed over Rs. 1.85 lakh crores on affordable housing schemes, but the overall occupancy rates have been less than 20%⁴⁶. Figure 4.2 below provides the number of vacant houses under various central and state schemes in the last 2 decades.

Figure 4.2: Number of vacant government funded housing by state and central schemes

State and central schemes (2000-2010)



State and central schemes (2011-2020)



A review of literature⁴⁷ suggests that government-built houses are typically located at a distance from city centres, and far away from their workplaces, inhibiting access to livelihoods of the urban poor. Therefore, a possible explanation for many of the government houses being vacant is that they do not conform to the housing priorities of the urban poor.

4.2.3 ARHC Model 2

In Model 2 of the ARHC scheme, the government provides certain benefits to reduce the overall cost of constructing and operating ARHC units to encourage private public-partnership (PPP).

- 1. Operating expenses:** Residential rates charged for operating ARHCs and exempting them from GST and income tax.
- 2. Building and land use:** Change of land use permission needed and 50% additional FAR free of cost.
- 3. Government support:** Loan provided at lower interest rate through concessional window, and grant in the form of Technology Innovation Grant (TIG) is provided for the use of innovative, sustainable, green & disaster resilient technologies.
- 4. Governance:** Single window system for approval of design / drawings and other statutory approvals within 30 days.
- 5. Infrastructure:** Necessary trunk infrastructure like road, sanitation services, water, sewerage, drainage, electricity etc. without any additional cost.

The scheme provides very limited financial support in the form of TIG. Unlike Model 1 of the ARHC scheme, no VGF is provided to construct and operate new ARHC units. As we can see from Table 4.3, under this model, the proposals for development of 78,885 new ARHC units have been sanctioned. However, these sanctions are in just six states.

Table 4.3: State / UT-wise details of ARHC units sanctioned for construction by Public / Private Entities under Model 2 of the scheme

Sl no.	Overview of schemes under PMAY - U	Relevant for worker housing
1	Assam	2,222
2	Chhattisgarh	2,222
3	Gujarat	453

⁴⁶ India infrastructure report, 2018 (Table 1.1), FED Analysis

⁴⁷ India housing report, 2021

4	Tamil Nadu	58,386
5	Telangana	14,490
6	Uttar Pradesh	1,112
Total		78,885

Source: Press Information Bureau, Delhi

Note: Units comprise of single bedroom / double bedroom with living area, kitchen, toilet, bathroom, dormitory beds

Major states like Maharashtra and Karnataka with huge migrant populations are not participating in the scheme, which may be an indication of low uptake from the private sector. In fact, just two states, Tamil Nadu and Telangana contribute 92% of the housing supply. A study conducted on ARHC estimated the average rent charged to be Rs. 2,500 per month⁴⁸. This number comes close to what we have estimated in our analysis for monthly housing rent per worker in industrial areas after implementing building and operating reforms. However, this is much higher than what the informal market offers. Assuming workers are willing to pay slightly more for improved housing compared to slums, they are unlikely to spend more than 10% of their income⁴⁹. Given that minimum wages are approximately Rs.10,000, this number would not be more than Rs.1,000 - 1,200. To enable large-scale worker housing development, greater private sector participation should be encouraged, while ensuring that monthly rents for the units remain within the range of how much the workers are willing to pay.

4.3 Stimulating private investment in worker housing through government support

4.3.1 Overview of financial models for worker accommodation

Lease Rental Discounting (LRD)

Lease Rental Discounting (LRD) is a financial tool that allows property owners to raise funds by leveraging their future rental income. Investors seeking fixed income opportunities typically purchase this type of asset. In this model, the developer does not hold onto the asset long-term. Instead, they aim to construct and develop the building and sell it within few years. The LRD investors buy the asset and earn rental income on their investment year after year. The sale price of the asset each year is based on the lease rental income, capitalised at an appropriate capitalisation rate.

This model can work for worker housing, provided there is a robust contract ensuring reliable cash flow. It is a similar concept to student accommodation in university dorms, where the university guarantees the rental income. For worker housing, employers would need to act as guarantors. The more uncertain the cash flow, the higher the capitalisation rate must be to account for the risk. If only the workers are directly responsible for paying the lease rentals to the developers, there is no guarantee that the payments will be made. To mitigate this risk, strong contractual agreements with the manufacturing company are essential; otherwise, it may be difficult for the developer to attract LRD investors.

Real Estate Investment Trusts (REITs)

Real Estate Investment Trusts (REITs) are investment vehicles that allow individuals to invest in large-scale, income-producing real estate without directly owning the properties. By pooling funds from numerous investors, REITs provide a way to earn income from real estate investments. The concept is similar to LRD, but with a broader investor base. In a REIT, instead of a single or a few LRD investors, the asset is bundled into a trust, and units of the trust are sold to a large number of unit holders. Multiple dormitories across various regions may be grouped together, reducing both geographical and industrial park concentration risk. Similarly, REIT investors owning a pool of worker housing assets would receive returns from the combined cash flows of all the properties within the trust. This diversification ensures that even if one industrial park underperforms, the overall pool remains unaffected. The internal capitalization rate is comparable to the LRD model.

In India, REITs have primarily been used for commercial real estate, particularly office spaces and retail properties that focus on income-generating assets. These office spaces offer yields of around 5-6% in the hand of the unit holders. When the REIT buys the asset from the developer, they would buy at an internal rate of return (IRR) of 11-12% after accounting for the trust's operating costs and management fees. REITs in general enter into a long term contract with lessees (typically 10 years). Similarly for worker housing, guaranteed long-term commitments from user industries would be required to ensure viability. Without such guaranteed offtake, a worker accommodation REIT may struggle to gain traction.

4.3.2 Mechanisms through which the government can catalyse private investment

As discussed in chapter 2, private developers have not been able to enter the market for worker housing due to lack of financial viability. Our stakeholder consultations also reveal that an infrastructure investor would underwrite a worker housing project at a project IRR of 15-17%. The lease rental required to achieve this level of project IRR at least 30-40% of the salary of a worker employed at minimum wages, which is unaffordable at those income levels⁴⁸. Therefore, to attract private developers and investors while ensuring that the housing units remain affordable for workers, government financial support may be necessary, which would in turn create multiplier effects of encouraging productive employment.

⁴⁸ India Housing Report

⁴⁹ Stakeholder Consultations

The government can create a pool fund or rental housing scheme to subsidise the construction cost of worker housing. In fact, some states have entirely funded worker housing for companies, but this is not sustainable given the large number of jobs we aim to create in manufacturing. The government has the following options:




1. Interest subvention – The government can subsidise market interest rate to reduce the cost of borrowing for affordable worker housing builders
2. Soft loans – The government can provide loans with almost no or no interest with extended grace periods to builders
3. Capital subsidy – The government can announce a capital subsidy assistance to bring down the cost of constructing
4. Viability gap funding – The government can fund that gap in financing so that builders get market rate of returns
5. Equity infusion – The government can inject capital in the form of equity to generate attractive risk adjusted returns for worker housing (Ex: TNIFMC Model)
6. Insurance – Insurance for private developers can be provided to reduce lender's risk and encourage more private participation
7. Tax relief – The government can offer tax relief, deductions, or credits to set up and operate worker housing units

⁵⁰ Stakeholder consultations

4.3.3 Rental housing vouchers

Alternatively, the government can issue rental vouchers to workers which can be exchanged in lieu of rent to subsidise housing and enable access. Table 4.4 provides examples of how some countries have attempted to provide market solutions to affordable rental housing for low-income individuals.

Table 4.4: International examples of housing rental vouchers

 United States	 Chile	 South Korea
<ul style="list-style-type: none"> • In the early 1970s, the US initiated the Housing Choice Voucher program to supplement rent payments of low-income individuals. • The program helps approximately 2.2 million households per year. • Recipients choose a house available in the private market and contribute a part of their incomes toward rent. • The program pays the difference to a locally defined “payment standard” • The individuals are responsible for finding a house with a landlord who is willing to participate in the program. 	<ul style="list-style-type: none"> • In 2013, the Chilean Ministry of Housing and Urban Planning (MINVU) implemented the Subsidio de Arriendo (Rental Subsidy) program. • Between 2014 and 2019, MINVU spent USD 325 million. They received ~90,000 applications & assigned 50,000 vouchers. • They use a score to screen applicants and assign short term rental vouchers to the most vulnerable families. • Once voucher recipients are announced, they have two years to find a landlord willing to participate in the program. 	<ul style="list-style-type: none"> • In 2002, housing voucher system was introduced to lighten the housing cost burden on low-income citizens living in rental houses. • Approximately 50,000 households were supported on an average monthly basis between 2002 and 2013. • From 2010, the subsidy was provided in cash instead of coupons. • The Seoul housing voucher system provides aid to households classified in the bottom 20% of income brackets. • It is financed from the “housing assistance account” of the Seoul Social Welfare Fund

Source: United States Department of Housing and Urban Development, Selman, 2022, Seoul Metropolitan Government

4.2 Indirect methods of subsidising worker housing

In addition to financial support from the government, indirect methods of subsidising worker housing can be considered. Some of these include:

- 1. Infrastructure status for worker housing:** In 2017, the affordable housing sector in India was accorded the infrastructure status, which meant that such projects would get easier access to institutional credit, and the developer's cost of borrowing would be reduced. The approval process for affordable projects would also be simplified. Similarly, worker housing should also be given infrastructure status.
- 2. Tapping into CSR funds:** Gender equality is included in the activities that can be undertaken for CSR, so these funds can be used to set up working women's hostels.

However, these funds cannot be used to set up any other hostel / dormitory for workers in general since housing is not included in CSR activities.
- 3. Priority sector lending:** Since housing is included as one of the priority sectors in the economy, a portion of these funds can be used to set up worker housing. While the loans may be provided on priority, the guidelines do not prescribe any preferential rates of interest for lending. Therefore, it does not help in reducing cost of capital.
- 4. Impact bonds:** These are innovative financial instruments that pull private investment to finance high-impact social programs. In India, these bonds have been used by the education sector till now. However, the loans are not provided with preferential rates, so it does not reduce cost of capital.





Conclusion – Overview of recommendations

To create large scale manufacturing clusters like China and Vietnam, creating safe and formal accommodation can be a key unlock. On the one hand, it will help accelerate the migration of women for job opportunities, and on the other it will boost general employee productivity, thereby increasing global competitiveness. However, building such accommodation incurs much higher cost than informal accommodation, making already low margin manufacturing projects unviable. Therefore, if we are to boost employment as well as living conditions, India's objective must be to develop large-scale high-quality accommodation that is economically viable.

In order to set up large scale worker housing, we recommend the overall cost to be reduced through two channels: regulatory unlock and financial support from the government.

1. Regulatory unlock

- I. Zoning regulations across manufacturing states / hubs should be reformed to allow for construction of worker housing / hostels in all zones without any restrictions.
- II. Hostels should be set up based on residential building bye-laws. These regulations can be further liberalised to bring down land costs. Additionally, government prior approvals for construction should be changed to a system of third-party certification, insurance, and self-certification by chartered architects.
- III. Hostels should be exempted from paying GST and residential rates must be charged for property tax, electricity and water tariffs to bring down operating costs.

2. Financial support from the government

Given the large number of jobs that need to be created in manufacturing and the scale of

housing that needs to be constructed to accommodate them, the government can encourage private sector participation by subsidising the cost of setting up worker housing, which can be done through

- I. The introduction of rental worker housing schemes / pooled funds to subsidise worker housing costs.
- II. Rental housing vouchers.

Indirect methods of subsidising worker housing can include

- I. Providing infrastructure status for worker housing.
- II. Enabling CSR funds to be used to set up worker housing.
- III. Providing priority sector loans for setting up worker housing.
- IV. Creating innovative financial instruments or impact bonds to pull private investment for worker housing projects.

India needs to create over 200 million jobs in manufacturing, out of which around 90 million need to be for women. This task can only be accomplished by facilitating large-scale creation of affordable worker housing. In fact, in 2011, the Government of India released the National Manufacturing Policy (NMP) with a vision of creating 100 million jobs by 2025. The shortcomings identified in the country's manufacturing scenario were inadequate physical infrastructure, complex regulatory framework, and inadequate availability of skilled manpower. The policy proposed to set up National Investment and Manufacturing Zones (NIMZs) to provide improved infrastructure and changed regulatory framework which would be developed through greenfield industrial townships. This was a step in the right direction as large-

scale manufacturing often occurs in clusters. However, more focus should be given to the right infrastructure for housing workers for labour-intensive manufacturing industry,

which is where the breakthrough is needed to create the millions of jobs required.



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Appendix

Table 1: Overview of bye-laws studied

State / city	Manufacturing clusters	Building Bye-Laws	Accommodation type
Maharashtra	MIDC, Pune	MIDC, Pune	Residential
Punjab	Ludhiana	Punjab Building Rules, 2021	Group housing
Uttar Pradesh	Yamuna expressway, Noida	The New Okhla Industrial Development Area Building Regulation, 2010	Group housing
Odisha	Bhubaneswar	Odisha Development Authorities (Planning and Building Standards) Rules, 2020	Low risk buildings
Karnataka	Kolar, Narasapura	Kolar Revised Masterplan 2021	Residential
Gujarat	Dholera	Gujarat Comprehensive General Development Control Regulations - 2017	Residential
Madhya Pradesh	Vistara Township, Indore	Madhya Pradesh Bhumi Vikas Rules, 2012	Group housing
Delhi	Okhla	Unified Building Bye-laws for Delhi 2016	Group housing
Tamil Nadu	Sriperumbudur, Kanchipuram	Tamil Nadu Combined Development and Building Rules, 2019	Non High Rise Buildings
Telangana	Maheshwaram, Rangareddy	Andhra Pradesh Building Rules, 2012	Non-high rise building - group development

Table 2: State wise building regulations (1/2)

State / city	FAR	GCR	Setback (average of all sides and scenarios w.r.t approach road)
MIDC (Maharashtra)	1	Not mentioned (assumed 100%)	3.75m
Ludhiana (Punjab)	2.5 (FAR depends on approach road, taken an average)	30% of Site area	Group housing
Noida (Uttar Pradesh)	2.75	35 - 40%	6m
Bhubaneshwar (Odisha)	2	Not mentioned for low risk buildings (assumed 100%)	2.5m
Kolar (Karnataka)	1.75	40%	6m
Dholera (Gujarat)	1.2	Not mentioned for residential zone (assumed 100%)	5m
Indore (Madhya Pradesh)	2 (Based on density, we have considered highest density)	35% (Based on density, we have considered highest density)	8m
Okhla (Delhi)	2	40%	12.75m
Sriperumbudur (Tamil Nadu)	2	Not mentioned for non-high rise building (assumed 100%)	4.20m
Rangareddy (Telangana)	NA (assumed to be unlimited)	Not mentioned (assumed 100%)	4.5m

Table 2: State wise building regulations (2/2)

State / city	Amenity	Parking
MIDC (Maharashtra)	10%	Not mentioned
Ludhiana (Punjab)	Minimum 25% of site area	1 ECS per Dwelling Unit of 90sqm + Additional 10 % guest parking
Noida (Uttar Pradesh)	15%	One ECS / parking space per 80sqm of permissible FAR area
Bhubaneshwar (Odisha)	Not mentioned beyond setbacks	30% parking area to be provided as % of total built up area towards FAR
Kolar (Karnataka)	Minimum of 10% of the land shall be reserved for park & Open space	Min car parking space : 2.50 m x 5.50 m 2 tenements each having a carpet area of 101 to 200 sq.m.
Dholera (Gujarat)	10% of the area of Building	20% of Total Utilised FSI
Indore (Madhya Pradesh)	Minimum open area - 10% of layout	Covered parking may be provided as per the requirements of the project
Okhla (Delhi)	Rate of 0.6% of permissible FAR shall be allowed free from FAR to cater to community need	2.0 ECS/100 sq.m built up area
Sriperumbudur (Tamil Nadu)	Not mentioned	Residential buildings in Panchayat areas - 1 car space for every 100 sq.m.
Rangareddy (Telangana)	Minimum of 10% of site area	30-25% of the total build up area

Table 3: International bye-laws

Standards	Singapore	Japan	Hong Kong	Dubai
FAR	Not specified	In industrial areas, FAR is between 1 and 4	Based on abutting streets and building height. Range – 3 to 10	Not specified
GCR	100% may be utilised for dormitories and ancillary activities	In industrial areas, GCR is between 50% to 60%	Based on abutting streets and building height. Range – 30% to 80%	Not specified
Setbacks	Min road and green buffer is category wise Setback – Min 3m (2m planting strip included)	Roads in Japan should be at least 4 m. If it is narrower, the building setback of 2m is needed	Not specified	Not specified
Parking	Not specified	Not specified	Not specified	Bus calculation based on total number of workers / 2 shifts
Amenities	0.55 sqm per person for indoor, outdoor recreation & open space	Not specified	Not specified	Not specified

Table 4: Major central government urban housing schemes since 2000

Scheme		Time period	Proposed fiscal outlay (central)	Funds disbursed by central government	Percentage of funds disbursed	Number of houses		
			(In Rs. crores)			Approved	Completed	Occupied
Pradhan Mantri Awas Yojana (PMAY-U)		2015-2022	2,03,752	1,64,000	80%	1,18,64,00,000	110,14,00,000	22% 78,75,00,000
Rajiv Awas Yojana (RAY)		2011-2016	10,334	2,269	22%	1,41,848	67,579	42,231 22%
JNNURM	Integrated Housing & Slum Development Programme (IHSDP)	2005-2017	9,591	17,907	55%	12,40,904	10,76,066	10,76,066
	Basic Services to the Urban Poor (BSUP)		23,129					
Valmiki Ambedkar Awas Yojana (VAMBAY)		2001-2007	1,100	970	88%	4,57,465	3,18,930	Not available
Rajiv Rinn Yojana (RRY)		2013-2016	1,054	50	5%	17,113 beneficiaries living in slum dwellings that received aid (Rs 17.86 crores of subsidies mentioned) between 2009-2014.		
Interest Subsidy Scheme for Housing the Urban Poor (ISHUP)		2008-2013	591	54	9%			



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