

# PERMITTED IS NOT **BUILDABLE:**

HOW FSI, SETBACKS AND  
ROAD-WIDTH RULES SHAPE  
HOUSING SUPPLY IN KERALA,  
TAMIL NADU AND ANDHRA PRADESH

Research Report



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IN KERALA, TAMIL NADU AND ANDHRA PRADESH**

**Research Report**

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## Abstract

Floor Space Index (FSI) is the most visible lever in debates on urban housing supply, yet the floor area a plot can actually deliver depends on how FSI interacts with coverage limits, setbacks, road-width rules and height thresholds. This paper examines that interaction in the residential building rules of Kerala, Tamil Nadu and Andhra Pradesh. It combines a provision-by-provision regulatory review with a buildable-unit model applied to a common 2,500 sq m plot. The results show that the stated FSI is a poor guide to housing supply. Stated FSIs range from 2.0 to 5.0, but buildable EWS units on the same plot range from 153 to 263. Kerala and Tamil Nadu can build all the floor area their FSI allows on this plot, whereas Andhra Pradesh, with the highest FSI (5.0 in Amaravati's S3 zone), loses 31 per cent of it to height-graded setbacks and open space and ends up only 14 per cent ahead of Kerala. Height is not rewarded in Kerala, is rewarded only through a single step at 18.30 m in Tamil Nadu, and is penalised above 18 m in Andhra Pradesh, and fixed-width setbacks cut the usable share of FSI sharply on smaller plots, where much affordable housing is built. The paper recommends publishing effective development capacity alongside nominal FSI, removing step changes at height thresholds, scaling setbacks to plot size, making density charges cost-based and transparent, and moving towards performance-based spatial standards.

**Keywords:** Floor Space Index; effective FSI; setbacks; building regulations; housing supply; affordability; Kerala; Tamil Nadu; Andhra Pradesh

## 1. Introduction

The availability and affordability of housing in Indian cities are shaped not only by land prices and market demand but also by the regulatory compliance under various laws. Development Control Regulations (DCRs) and building bye-laws determine the amount of floor space that can be constructed, the height at which it can be built, the extent of land that must remain open, and the access road widths that a development must satisfy. Since land and building regulations fall substantially within the domain of state and local governments, these requirements vary considerably across cities and states.

Among these regulations, Floor Space Index (FSI) has received particular attention in the debate on housing supply. FSI, also termed Floor Area Ratio (FAR), governs the intensity of development. The Town and Country Planning Organisation (TCPO) defines FAR as the total built-up space that a plot is permitted to accommodate (TCPO 1999).

The discourse surrounding FSI liberalisation, nonetheless, remains unresolved. A segment of the literature posits that expanding floor space can augment housing supply, whereas another perspective challenges whether increased development capacity genuinely aids lower-income families or

merely enhances the stock of high-value residences (Sridhar 2010; Somanathan and Natarajan 2019). Data from Hyderabad indicates that the mere liberalisation of FSI does not inherently lead to extensive vertical development, as the outcomes of regulatory changes are influenced by variations in pricing, demand, and institutional contexts (Tirumala and Tiwari 2025).

The effect of FSI cannot, however, be assessed independently of other development regulations. A plot may have a relatively high permissible FSI but still be unable to realise that floor area because of restrictions on road width, setbacks, building height, plot size, open space or other building requirements.

This interaction creates an important distinction between permitted FSI and achievable effective FSI, which is set out in Section 2. This distinction is particularly important for vertical development. In principle, building upwards allows more housing to be accommodated on scarce urban land. The economic literature on urban form has long recognised the potential benefits of allowing greater density in locations where land is scarce, while also highlighting the infrastructure and congestion considerations that accompany increased density (Bertaud 2002; Sridhar 2010). In practice, however, the setback and height-linked requirements discussed in Section 2 mean that building taller does not proportionately increase usable floor space.

Setbacks, road width and coverage restrictions have immediate implications on the affordability of housing. Where regulations restrict the quantity of salable floor space or the number of units that can be developed on a plot, the fixed costs of land, infrastructure, approvals and compliance are spread over a smaller development. Additional FSI does not offset this on its own: if the extra capacity is expensive to acquire or cannot be physically utilised, it adds little to affordable supply. Restrictive land-use regulation may also carry wider welfare costs, including higher housing costs and longer commuting distances (Somanathan and Natarajan 2019).

The paper addresses three questions in the study. First, how do FSI, coverage, setback, road-width and height-threshold provisions interact in the residential building rules of Kerala, Tamil Nadu and Andhra Pradesh? Second, on a common test plot, how much of the stated FSI can actually be built in each state, and how many housing units does this yield for EWS, LIG and MIG-I households? Third, what regulatory reforms would narrow the gap between permitted and buildable floor area without compromising safety, light, ventilation and infrastructure objectives?

The paper is organised as follows. Section 2 sets out the conceptual framework that distinguishes permitted from effective FSI, and Section 3 describes the data and the buildable-unit model. Section 4 compares high-rise thresholds across the three states. Sections 5 to 7 review the rules in Kerala, Tamil Nadu and Andhra Pradesh, and Section 8 applies the model to a common test plot. Section 9 discusses six cross-cutting patterns against Indian and international evidence, Section 10 sets out recommendations, Section 11 notes limitations and Section 12 concludes.

## 2. Conceptual Framework: From Permitted FSI to Effective FSI

This paper distinguishes permitted FSI, the floor area that the rules allow on a plot, from effective FSI, the floor area that can actually be built once coverage, setback, roadwidth and height-threshold rules are applied (buildable floor area divided by plot area). The difference between the two measures the regulatory efficiency gap: the share of granted development rights that cannot be realised on the ground. FSI does not, however, determine how that floor area is distributed vertically. Four further constraints mediate between permitted and effective FSI.

Road-width requirements can operate as an initial constraint. In some systems, greater development intensity is contingent on wider roads because of concerns relating to traffic movement, emergency access, and infrastructure capacity. Road width can therefore determine whether a plot can access the development potential permitted under its FSI entitlement.

Setbacks impose a second constraint. Front, rear, and side setbacks require portions of the plot to remain open and consequently reduce the footprint available for construction. Where setbacks increase with building height, the constraint becomes progressively more significant for vertical development. A taller building may have a smaller floor plate at its upper levels, requiring a larger plot to realise the same aggregate floor area.

Maximum ground coverage imposes a third constraint. By capping the share of the plot that any floor may occupy, it limits the floor plate independently of setbacks; whichever of the two is tighter determines the usable footprint. Where coverage binds, the permitted FSI can be reached only by adding floors.

Height thresholds impose a fourth. Once a building crosses the height at which it is classified as high-rise, additional fire-safety, structural and procedural requirements apply and, in some states, larger setbacks, wider roads or a different FSI schedule. Thresholds create step changes: a small increase in height can trigger a disproportionate change in the regulatory burden or in the floor area permitted.

The following sections therefore examine Kerala, Tamil Nadu and Andhra Pradesh not only in terms of their respective FSI limits but also in terms of how FSI, road width, setbacks and height-related requirements combine to determine the effective development capacity of urban land.

## 3. Data and Methodology

### 3.1 Regulatory Review

The paper is based on a section-by-section legal review of the residential building rules in force in each state, including the amendments cited in this paper up to June 2026: the Kerala Municipality Building Rules (KMBR) 2019 and Kerala Panchayat Building Rules (KPBR) 2019, as amended by S.R.O. No. 1240/2025; the Tamil Nadu Combined Development and Building Rules (TNCDBR) 2019, as amended by G.O.(Ms) No. 69 of 2024 and G.O. Ms. No. 126 of 2026; and the Andhra Pradesh Building Rules (APBR) 2017, as amended by G.O.Ms. No. 4 of January 2025 and G.O.Ms. No. 273 of December 2025, read with the Amaravati zoning regulations for FSI. The review focuses on residential buildings (Group A1 in Kerala) and on five parameters: FSI, maximum coverage, setbacks, road-width and access requirements, and height thresholds

### 3.2 Buildable-Unit Model and Test Plot

FSI limits the total floor area of a building. Coverage and setbacks limit the area of each floor. The floor area that can actually be built is the smaller of the two, and dividing it by the unit size gives the number of units:.

$$N = \{ (1 - c) \times \min [ FSI \times A , n \times F ] \div B \}$$

$$F = \min [ k \times A , ( L - sf - sr ) \times ( W - 2 ss ) - O ]$$

| Symbol           | Meaning                                               | Value used                      |
|------------------|-------------------------------------------------------|---------------------------------|
| N                | Number of buildable units                             | Calculated                      |
| $A = L \times W$ | Plot area (depth $\times$ width)                      | 2,500 sq.m (50 m $\times$ 50 m) |
| FSI              | Permissible FSI                                       | State rule                      |
| n                | Number of floors (height = $n \times 3.0$ m)          | Chosen to give the most units   |
| k                | Maximum ground coverage                               | Kerala 65%; TN high-rise 50%    |
| $S_f, S_r, S_s$  | Front, rear and side setbacks (rise with height)      | State rule                      |
| O                | Open space required at ground in addition to setbacks | AP 5% or 10% of plot            |
| F                | Footprint of each floor                               | Calculated                      |
| c                | Common areas (corridors, stairs, lifts)               | 8% of floor area                |
| B                | Built-up area per unit                                | EWS 30, LIG 60, MIG-I 75 sq.m   |

## From FSI, coverage and setbacks to buildable units

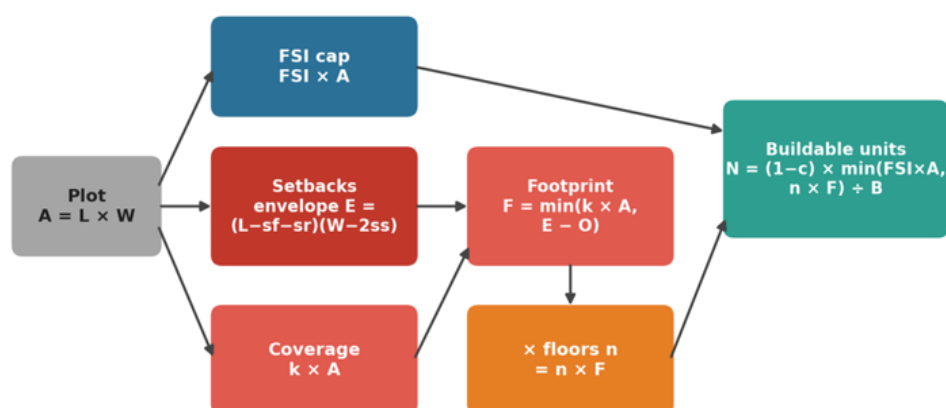


Figure 1: How FSI, coverage and setbacks combine

If  $FSI \times A$  is the smaller value, FSI is the binding limit and every unit the FSI allows can be built. If  $n \times F$  is smaller, coverage and setbacks are binding, and the difference is the number of units lost to them. Because setbacks grow with height, adding floors does not always add units; the analysis tests every height and reports the one that gives the most units.

The same 2,500 sq.m square plot is used in all three states. It is assumed to be vacant, flat, adequately serviced and located within an appropriately zoned municipal area, with a floor-to-floor height of 3.0 m. Parking requirements are not deducted.

The model is applied to residential buildings using three unit sizes: 30 sq m (EWS), 60 sq m (LIG) and 75 sq m (MIG-I) of built-up area per unit. For each state and plot size, every feasible building height is tested and the height that yields the most units is reported. The analysis considers FSI, coverage, setbacks and the open space tied to them only; road-width eligibility, premium FSI, land value and parking are outside its scope (see Section 11). For Andhra Pradesh, the FSI of 5.0 applicable in Amaravati's S3 zone is used, and for Tamil Nadu the high-rise FSI is taken at the top tier of 3.25.

## 4. High-Rise Development and Regulatory Thresholds

The interaction between FSI, road width and setbacks becomes particularly important when development crosses prescribed height thresholds. Because these thresholds vary considerably across states, similar buildings may be subject to different regulatory regimes depending on their location.

- In Kerala, the amended Rule 80 of the Kerala Municipality Building Rules (KMBR) classifies a building as high-rise when it exceeds five floors or reaches a height of 16 metres. This threshold is distinct from the separate 15-metre threshold under Rule 5(4)/Table A, at which

a Fire Safety NOC becomes mandatory. The distinction remains relevant under subsequent statutory amendments, including S.R.O. No. 1240/2025.

- Whereas Tamil Nadu applies a higher height threshold, buildings exceeding 18.30 metres are classified as high-rise under Rule 2(58) of the Tamil Nadu Combined Development and Building Rules (TNCDBR) 2019.
- Andhra Pradesh currently applies a high-rise threshold of 24 metres under the December 2025 amendment to the Andhra Pradesh Building Rules 2017, which raised the previous threshold of 18 metres.

**Table 2: State-Wise High-Rise Definition**

| State                 | High-Rise Definition                                                                                                                                          | MSB / Other Threshold                                                                                                                                                |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Kerala</b>         | Building with <b>more than five floors OR height above 16 m</b> from ground level (Rule 80, KMBR 2020 amendment, Chapter XVII)                                | No separate "MSB" category; Chapter XVII provisions apply to all buildings above 16 m regardless of use.                                                             |
| <b>Tamil Nadu</b>     | Building <b>exceeding 18.30 m</b> in height (Rule 2(58), TNCDBR 2019)                                                                                         | Non-High-Rise Cap: ≤18.30 m (amended from 12 m to 14 m for a simpler category per G.O. Ms. No. 69, 2024; the 18.30 m ceiling for the non-high-rise category remains) |
| <b>Andhra Pradesh</b> | Building <b>≥24m height</b> (G.O.MS.No.273, December 2025, amending Rule 2 of AP BR 2017 — raised from the previous threshold of ≥18m, including stilt floor) | Non-High-Rise: buildings below 24 m, governed by Rule 57/Table 17 setback regime                                                                                     |

Kerala also applies a separate 15 m threshold under Rule 5(4)/Table A, at which a Fire Safety NOC becomes mandatory; this is distinct from the 16 m high-rise threshold under Rule 80. These differences are important for assessing vertical development because a lower high-rise threshold brings a wider range of mid-rise buildings within a more stringent regulatory regime. For instance, an 18 m building that is non-high-rise in Tamil Nadu or Andhra Pradesh would be high-rise in Kerala. The significance of the threshold is therefore not simply classificatory. It can alter the regulatory and economic conditions under which additional floors can be built.

The high-rise threshold should consequently be understood as part of the regulatory chain governing development: FSI establishes the potential floor area and road-width and access provisions

(examined for each state in Sections 5.3, 6.1, and 7.2). The following sections trace the impact and practical realities of this interaction across Kerala, Tamil Nadu, and Andhra Pradesh's regulations.

## 5. Kerala: Regulatory Overview of FSI, Setbacks and Road Width

### 5.1 High-Rise Residential Development and the Effective FSI Constraint

A distinctive feature of Kerala's regulatory framework is that building height does not, by itself, generate a higher FSI entitlement for residential buildings, as the state does not have an exclusive high-rise FSI schedule. Consequently, a developer does not receive additional floor-area entitlement merely by constructing a taller building. Instead, the regulatory implications of greater height arise through other provisions: progressive setbacks under Rule 26 (Section 5.2), access-road requirements linked to built-up area under Rule 28 (Section 5.3), and the fire-safety requirements triggered at the 15 m and 16 m thresholds (Section 4).

This distinction is important for understanding the economics of vertical development. Where the permitted FSI remains constant across building heights, increasing the number of floors does not increase the aggregate floor area that can legally be developed. For example, on a 1,000 sq. m plot with an FSI of 3.0, the maximum floor area is 3,000 sq. m, whether it is built as five floors of 600 sq. m or ten floors of 300 sq. m; adding floors merely redistributes the same floor area over a smaller floor plate. Height nonetheless carries additional regulatory costs: because Kerala's setbacks increase progressively with building height (Rule 26), a taller building must leave more of the plot open and meet additional fire-safety and compliance requirements, without receiving any additional floor area in return. The regulatory structure can therefore make vertical construction progressively more demanding without providing a corresponding increase in permissible floor area.

**Table 3: FSI and Coverage for Residential High-Rise (Group A1, Table 6, KMBR/KPBR 2019)**

| Base FSI (no fee) | Additional FSI                                                                       | Max Coverage (statutory limit) |
|-------------------|--------------------------------------------------------------------------------------|--------------------------------|
| 3.0               | 4.0 (₹5,000/sqm fee for additional area)<br>6.0 (₹7,500/sqm fee for additional area) | 65%                            |

Source: Table 6, Rule 27, KMBR

Regardless of whether one builds a 4-storey or a 30-storey building, Kerala applies the same uniform statewide base FSI of 3.0 and 65% maximum coverage to Group A1 residential buildings. This means that there is no FSI incentive for builders to build taller; a developer is eligible for the same floor area regardless of the number of floors built.

### 5.1.1 Cost of additional FSI

The cost of using Kerala's additional FSI can be illustrated on a 2,500 sq.m plot (50 m × 50 m) with a floor-to-floor height of 3.0 m. Construction is costed at ₹20,000 per sq.m of built-up area, and the additional FSI at the KMBR Table 6 rates: ₹5,000 per sq.m for built-up area between FSI 3.0 and 4.0, and ₹7,500 per sq.m between FSI 4.0 and 6.0. Unit numbers assume 8% of built-up area for common areas and EWS units of 30 sq.m.

**Table 4: Construction cost and additional FSI fee on a 2,500 sq.m plot, Kerala**

| Scenario                            | FSI used | Floors (height) | Built-up area (sq.m) | Construction cost | Additional FSI fee | Total cost | Cost per sq.m | EWS units | Cost per EWS unit |
|-------------------------------------|----------|-----------------|----------------------|-------------------|--------------------|------------|---------------|-----------|-------------------|
| i) Base FSI 3.0                     | 3.00     | 5 (15 m)        | 7,500                | ₹15.00 cr         | Nil                | ₹15.00 cr  | ₹20,000       | 230       | ₹6.52 lakh        |
| ii) Premium FSI 4.0                 | 4.00     | 7 (21 m)        | 10,000               | ₹20.00 cr         | ₹1.25 cr           | ₹21.25 cr  | ₹21,250       | 306       | ₹6.94 lakh        |
| iii) Premium FSI 6.0                | 5.52     | 14 (42 m)       | 13,811               | ₹27.62 cr         | ₹4.11 cr           | ₹31.73 cr  | ₹22,975       | 423       | ₹7.50 lakh        |
| Government scheme, FSI 5.0 (no fee) | 5.00     | 9 (27 m)        | 12,500               | ₹25.00 cr         | Nil                | ₹25.00 cr  | ₹20,000       | 383       | ₹6.53 lakh        |
| Private project, FSI 5.0 (with fee) | 5.00     | 9 (27 m)        | 12,500               | ₹25.00 cr         | ₹3.13 cr           | ₹28.13 cr  | ₹22,500       | 383       | ₹7.34 lakh        |

At the base FSI of 3.0, the plot supports 7,500 sq.m of built-up area, or about 230 EWS units, at a construction cost of ₹15 crore (₹6.52 lakh per unit). Raising the FSI to 4.0 adds 2,500 sq.m and 76 EWS units, but the ₹1.25 crore fee raises the cost of every square metre built by 6.3%, to ₹21,250. Because the 65% coverage limit caps each floor at 1,625 sq.m, even FSI 4.0 cannot be accommodated in six floors: the building must rise to seven floors (21 m) and so enters the high-rise category.

Pursuing FSI 6.0 raises the fee to ₹4.11 crore and the cost per square metre to ₹22,975, 14.9% above the base scenario. The additional FSI fee then accounts for about 13% of total project cost and adds almost ₹1 lakh to the cost of each EWS unit, before accounting for the higher structural, fire-safety and approval costs of a 14-storey building.

## 5.1.2 FSI 6.0 is not achievable in practice

**Kerala: base FSI is used up at 5 floors; FSI 6.0 cannot be fully used**

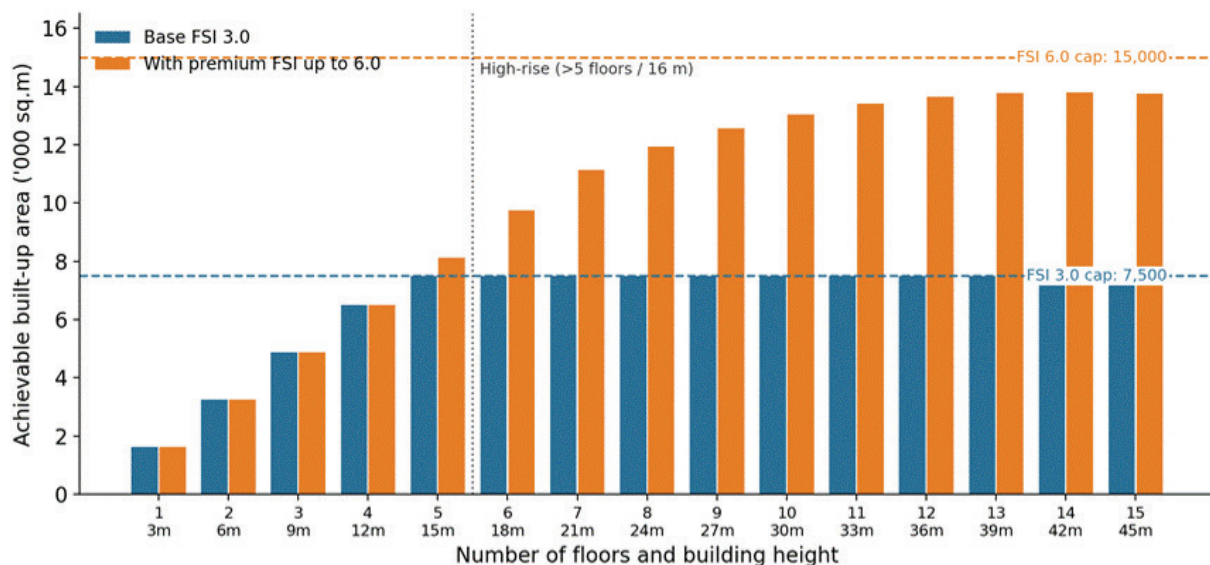


Figure 2: Achievable built-up area by number of floors, Kerala (2,500 sq.m plot)

Although Table 6 permits an FSI of up to 6.0 (15,000 sq.m on this plot), that floor area cannot be built. As the building rises, Rule 26 adds 0.5 m to every yard for each 3 m of height above 10 m, and Rule 43 requires part of the recreational space (35% of an area equal to 6% of built-up area) to be provided at ground level, outside both the building footprint and the mandatory yards. Together these reduce the footprint from 1,625 sq.m at seven floors to about 1,300 sq.m at ten floors and under 1,000 sq.m at fourteen. Beyond about fourteen floors, each additional floor adds less area than the footprint loses, so the achievable built-up area peaks at about 13,800 sq.m, an effective FSI of 5.52, or 92% of the permitted 6.0. The top tier of Kerala's FSI schedule is therefore partly notional: a developer can pay for it but cannot fully build it within the other rules.

## 5.1.3 Higher FSI for government affordable housing

KMBR Rule 27(2)(ii) permits an FSI of 5.0 for affordable housing complexes built under government schemes, without any additional fee. On the same plot, this allows 12,500 sq.m and about 383 EWS units at ₹6.53 lakh each. A private developer building the same 12,500 sq.m would pay ₹3.13 crore in additional FSI fees, adding ₹0.82 lakh to the cost of each EWS unit.

The concession, however, is restricted to projects under government schemes. Much of the affordable housing in Kerala's urban areas is built by the private sector, which cannot use it and must either stay within the base FSI of 3.0 or pay the additional FSI fee. Government housing initiatives have also largely taken the form of individual houses rather than apartment complexes, so the higher FSI has done little to encourage more intensive vertical housing. Extending the fee-free FSI

of 5.0 to privately built affordable housing that meets defined unit-size and price criteria would allow the same plot to deliver about 66% more EWS units than the base FSI, at no additional regulatory cost per square metre.

## 5.2 Setbacks and the Erosion of the Buildable Footprint

**Setbacks** (front, rear, and sides) reduce the net buildable area on each building floor. They mandate the amount of empty space from the plot boundary to be left around the building. As building height increases, progressive setback rules in all three states under consideration shrink the footprint at upper floors, requiring larger plot sizes.

**Table 5: Base Setbacks for Group A1 Residential (Rule 26, Table 4, KMBR/KPBR 2019)**

| Yard  | Group A1 & A2 (any built-up area) | Small plot under A1 (plot $\leq 125$ sqm, BUA $\leq 200$ sqm) |
|-------|-----------------------------------|---------------------------------------------------------------|
| Front | 3m                                | 1.8m                                                          |
| Rear  | 1.5m                              | 1m                                                            |
| Sides | 1m                                | 0.6m                                                          |

The base setbacks in Table 5 are supplemented by a height-related increase, which makes Kerala's setback regime progressively more demanding as building height increases. Under Rule 26, buildings above 10 metres are subject to an additional 0.5 metres of yard for every 3 metres, or fraction thereof, of height above 10 metres, until the applicable yard reaches 16 metres. The additional setback is required at ground level rather than being confined to the individual upper floors.

This progressive setback mechanism becomes a constraint on achieving FSI in taller residential buildings. As building height increases, setbacks consume the buildable footprint, which, once additional FSI is purchased, keeps achievable FSI well below the 6.0 permitted (figure 2 above). The rationale for increasing setbacks with height is to secure adequate light and ventilation for taller buildings and their neighbours, to maintain separation distances that limit the spread of fire, and to provide space around the building for fire-tender movement and emergency evacuation. Because the increase applies at ground level, however, it reduces the footprint available on every floor, not only on the upper floors. The setbacks calculation is affected by other provisions in the KMBR Rules. The following are certain cases.

- The progressive setback mechanism also collides with Kerala's recreational space mandates. Rule 43 requires buildings with more than 12 dwelling units to reserve recreational open space equal to at least 6% of total built-up area, with a minimum of 35% of that space provided outside the building footprint at ground level. However, Rule 26(10) separately prohibits mandatory setbacks from being utilised for recreational space. On small to mid-sized urban plots where mandatory setbacks absorb most open ground, developers face statutory difficulty locating compliant ground-level recreational space.

- Under Rule 2(bf), Kerala excludes specific rooftop structures from height calculations—including staircase towers, overhead tanks, AC plant rooms, lift rooms, cellular equipment, tower structures, chimneys, rooftop helipads, open swimming pools, and parapet walls. Unlisted enclosed structures (such as rooftop lobbies or changing rooms) are included in total height, potentially pushing a building past the 16m/four-floor high-rise threshold or triggering Rule 26(6) setback escalation.
- For small accessory structures, Rule 67 exempts watch-and-ward (security) cabins incidental to Group A1 residential buildings from building permit requirements, provided the area street boundary does not exceed 15% of the plot's open space, height does not exceed 2.5m, distance matches single-storey residential norms, and a minimum 1m distance is maintained from plot boundaries and main structures. Any deviation from these thresholds—a marginally larger cabin, or one repurposed to double as a driver's room—forfeits the exemption and pulls the structure into the standard permit process. The setback requirements of an average of 3 m and a minimum of 1.8 m, similar to single-storey residential homes, reduce the plot area that could be used for other purposes.
- For buildings on a podium of 16 m or less, yards corresponding to the podium's top level must be provided at ground level subject to a minimum of 3.0 m, and the built-up area of any floor above the podium may not exceed 75% of the podium's covered footprint area. This forces a stepped massing above the podium and reduces usable ground-floor area, even on plots where the podium's own setbacks would otherwise have permitted fuller site coverage.

The regulatory implication is that a taller building does not simply build additional floors over the same footprint. As height increases, the required open space increases, reducing the portion of the plot that can be occupied by the building. This creates a potential gap between the FSI permitted by the rules and the FSI that can be physically realised within the prescribed building envelope.

This distinction is particularly important on smaller urban plots. A relatively high statutory FSI may have limited practical significance if the combination of plot dimensions and setbacks produces a floor plate that is too small to utilise the permitted aggregate floor area efficiently. The constraint is therefore not necessarily the FSI ceiling itself, but the interaction between the FSI ceiling and the physical building envelope created by the setback rules.

### 5.3 Access-Road Requirements

Kerala differs from Tamil Nadu and Andhra Pradesh in the way road access is incorporated into the regulation of intensive residential development. Rather than establishing a single minimum abutting-road width for all high-rise residential buildings, the Kerala framework links the required access-road width to the total built-up area of the proposed development.

**Table 6: Minimum Road Width for Access (Rule 28, Table 7, KPBR (Amendment) 2020)**

| Total Built-Up Area | Minimum Access Width                             |
|---------------------|--------------------------------------------------|
| Up to 300 sqm       | No minimum (single unit) / 1.2 m (multiple unit) |
| 300 – 600 sqm       | 2.0m                                             |
| 600 – 1,000 sqm     | 3.0m                                             |
| 1,000 – 4,000 sqm   | 3.6m                                             |
| 4,000 – 8,000 sqm   | 5.0m                                             |
| 8,000 – 18,000 sqm  | 6.0m                                             |
| 18,000 – 24,000 sqm | 7.0m                                             |
| Above 24,000 sqm    | 10.0m                                            |

For example, a ten-floor (30 m) building with 3,000 sq m of built-up area on a 1,000 sq m plot (FSI 3.0) needs only a 3.6 m access road in Kerala, whereas a building of that height requires a 12 m abutting road in Tamil Nadu and an 18 m road in Andhra Pradesh. Provided fire safety NOC and access requirements for the total BUA are met, Kerala imposes no outright cap on building high-rise on a narrow road.

With the October 2025 amendment on road width measurement (S.R.O. No. 1240/2025), it was defined that "the minimum width of the road at any point and includes carriageway, footpath, service roads, flyovers, medians, roadside drains, street furniture... The minimum existing width or the width as specified in the respective asset register of the custodian of the road, whichever is higher, shall be considered." The definition now ensures building setbacks and development permissions rely on accurate, cumulative measurements, encompassing all elements within the right-of-way, and prevents the underestimation of road widths.

The significance of this arrangement is that access requirements are linked to the built-up area rather than directly to the number of floors. A taller building is not automatically required to abut a wider road solely because of its height. Instead, the required access width rises with the total built-up area. This creates a different regulatory mechanism from systems in which road width directly determines eligibility for high-rise development or the maximum FSI available.

This does not mean that road access is a minor constraint in Kerala. Because the required access width increases with built-up area, a project seeking to maximise its FSI may move into a higher

access-width category. The road requirement can therefore become binding precisely when a developer attempts to increase the amount of floor space supplied on a plot. Kerala's unique geographic access also makes it difficult to obtain wide roads for development, as its roads are generally narrow by nature.

## 5.4 Regulatory Character of the Kerala Framework

The policy concern for Kerala is not simply the absence of high-rise construction, but the absence of a sufficiently strong regulatory and economic incentive for vertical development. Where urban land is scarce and housing demand is increasing, a framework that makes additional vertical development expensive or difficult can encourage development to spread horizontally rather than make more intensive use of existing urban land.

Kerala's regulatory structure consequently presents a specific policy question: if the objective is to increase housing supply through vertical development, is maintaining a common FSI across building heights sufficient when the spatial requirements associated with greater height progressively increase? The answer depends on whether the additional height permits the developer to realise more of the available FSI or instead makes the same FSI more difficult and costly to construct.

## 6. Tamil Nadu: Regulatory Overview of FSI, Setbacks and Road Width

### 6.1 FSI, Road Width and High-Rise Eligibility

Tamil Nadu links FSI explicitly to road width. Non-high-rise residential buildings receive an FSI of 2.0. For high-rise buildings, the FSI rises with the width of the abutting road: 2.0 on a 12 m road, 2.5 on a 15 m road and 3.25 on a road of 18 m or more (Table 7). The schedule reflects the principle that wider roads can support greater density. TN's 3.25 FSI on an 18 m road is the highest stated base FSI for residential buildings among the three states examined. Because this figure is built into the base schedule, a developer on a qualifying road obtains it without purchasing Premium FSI.

**Table 7: FSI and Road Width Schedule, Residential (TNCDBR 2019, Rules 35 and 39)**

| Building category                                       | Normally permissible FSI | Max. coverage | Min. road width   |
|---------------------------------------------------------|--------------------------|---------------|-------------------|
| Non-high-rise A: up to 16 dwelling units, up to 14 m    | 2.0                      | Not stated    | No minimum stated |
| Non-high-rise B: above 16 dwelling units, up to 18.30 m | 2.0                      | Not stated    | 9 m               |

|                                        |      |     |      |
|----------------------------------------|------|-----|------|
| High-rise (above 18.30 m) on 12 m road | 2.0  | 50% | 12 m |
| High-rise on 15 m road                 | 2.5  | 50% | 15 m |
| High-rise on 18 m+ road                | 3.25 | 50% | 18 m |

Access to this schedule depends on road and location conditions:

- **Road width and continuity:** High-rise buildings are permitted only on roads of at least 12 m. That width must be continuously available for 500 m in the Chennai Metropolitan Area (CMA) and other Municipal Corporations and for 250 m elsewhere, with up to 10 per cent deviation allowed (Rule 39, Explanation 1).
- **Larger non-high-rise developments:** These need a 9 m road, maintained for 250 m from a junction in the CMA and corporations (100 m elsewhere).
- **Location:** In the CMA, high-rise buildings are confined to the areas listed in Annexure XIX. Elsewhere they are permitted unless a Master Plan or the Competent Authority prohibits them.
- **Panel scrutiny:** Since G.O. Ms. No. 126 of June 2026, every building above 18.30 m must be scrutinised by a multi-agency panel under Rule 39(25). The panel has twelve members in the CMA and ten elsewhere, drawn from the fire, water, electricity, planning, traffic and engineering departments, plus an independent architect. It is triggered by height alone, so a building just above 18.30 m goes through the same review as a much taller tower.

Additional floor area may be obtained through Premium FSI under Rule 49, subject to the road-width-based limits below. The amount available depends on road width: up to 50 per cent of the normally permissible FSI on roads of 18 m and above, 40 per cent on roads of 12–18 m, and 30 per cent on roads of 9–12 m. The charge is levied on the additional area at 50 per cent of guideline value for non-high-rise buildings and 40 per cent for high-rise buildings. It is halved for sites within 500 m of an existing or proposed metro corridor (Rule 30(5)), to encourage transit-oriented development. Because the charge is tied to guideline value, the cost of additional density rises with land value.

## 6.2 Setback Requirements

Below the high-rise threshold, setbacks are relatively light. Front setbacks depend on road width: 1.5 m on roads up to 9 m, 3 m on 9–18 m roads, 4.5 m on 18–30.5 m roads and 6 m above that (Rule 35). Side and rear setbacks depend on height.

- **Larger developments (more than 16 dwelling units):** side and rear setbacks are the same, at 1.0 m up to 7 m, 1.5 m up to 14 m, 2.5 m up to 16 m and 3.0 m up to 18.30 m.

- **Smaller developments (up to 16 dwelling units):** no rear setback is needed up to 7 m, and 1.5 m up to 14 m. G.O.(Ms) No. 69 of 2024 raised the height cap for this category from 12 m to 14 m, which allows an extra storey without moving into the more heavily scrutinised tier.
- **Side setbacks depend on plot width:** plots narrower than 9 m require a setback on only one side, while wider plots require setbacks on both sides.

Crossing 18.30 m changes the building envelope sharply. High-rise buildings must leave 7 m on all four sides up to 30 m. This rises by 1 m for every 6 m of additional height, up to a maximum of 20 m, and coverage is capped at 50 per cent. Unlike Kerala, the same setback applies on every side, and at 7 m it is more than twice Kerala's base front yard. Developments above 3,000 sq m must also reserve 10 per cent of the site, excluding roads, as community recreational space. This space is kept separate from the setbacks and transferred to the local body (Rule 41).

On the procedural side, the Tamil Nadu Single Window Portal for Planning Permission processes applications online, from land development applications to completion certificates. It covers DTCP, CMDA, local bodies, TNFRS and other departments. Small residential buildings (G+1, on plots up to 2,500 sq ft) can get instant self-certified permission.

### 6.3 Regulatory Character of the Tamil Nadu Framework

Taken together, Tamil Nadu's framework presents a relatively clear trade-off between development intensity and infrastructure capacity. The base FSI available for high-rise residential development can reach 3.25 where the site abuts a qualifying road of 18 m or wider. This is a substantial supply-enabling provision because the entitlement is embedded in the base FSI schedule rather than dependent on purchasing premium FSI.

The principal constraints therefore arise elsewhere: road-width and road-length requirements, geographical restrictions, multi-agency scrutiny above 18.30 m, progressively increasing setbacks, and recreational-space requirements for larger developments. The framework does not prohibit high-rise development as a general rule. Instead, it attempts to concentrate higher development intensity where road infrastructure and, in specified locations, mass-transit infrastructure are considered capable of supporting it.

This makes Tamil Nadu analytically distinct from a regulatory system in which height itself produces a progressively restrictive FSI regime. Here, FSI is principally calibrated to road capacity, while height activates additional safety, scrutiny and spatial requirements. The result is a relatively high formal development potential, accompanied by non-FSI regulatory conditions that can nevertheless affect the economic feasibility and effective density of residential projects. Section 8.3 quantifies these trade-offs on a common 2,500 sq m plot.

## 7. Andhra Pradesh: Regulatory Overview of FSI, Setbacks and Road Width

### 7.1 FSI Determined by the Planning Instrument

Andhra Pradesh presents a substantially different regulatory model from Tamil Nadu and Kerala. The Andhra Pradesh Building Rules, 2017 (APBR) do not prescribe a state-wide FSI for residential buildings. Instead, Rule 22(2)(a)(i) provides that FAR, coverage and height shall conform to the applicable Master Plan or Zonal Development Plan. The APBR then set the setbacks, open space, road width, access and fire-safety conditions that the development must fit within. Development intensity is therefore plan-dependent and varies across planning areas; this paper uses the FSI of 5.0 applicable in Amaravati's S3 zone. Tamil Nadu builds development intensity into its building rules through a road-width-linked FSI schedule. Andhra Pradesh leaves intensity to the planning instrument and mainly regulates the physical envelope of the building.

### 7.2 High-Rise Threshold and the 2025 Amendment

The December 2025 amendment (G.O.Ms. No. 273) raised the high-rise threshold from 18 m, including the stilt floor, to 24 m. Buildings in the 18–24 m band, which previously fell within the high-rise framework, are now governed by the non-high-rise provisions. This is a significant relaxation for medium-rise residential development, but it is a reclassification rather than an exemption. Road-width, setback, open-space and structural requirements continue to apply in this band, as do the requirements of the Andhra Pradesh Fire Service Act.

The amendment also introduced staged approval for taller buildings. For buildings proposed to exceed 24 m, initial permission may be issued up to 24 m, with structural design and stability certification based on the full proposed height; approval for the remaining floors follows submission of the Fire NOC. These changes are part of a wider set of approval reforms, including the APDPMS online permission platform and the 2025 guidelines for self-certified building permissions. G.O.Ms. No. 273 itself presented its amendments as an effort to improve the "speed of doing business".

Height, road width and open space are linked in a graduated schedule (Table 8). The required abutting road rises from 12 m for buildings up to 27 m to 30 m for buildings above 45 m. Over the same range, the minimum all-round open space rises from 7 m to 20 m. Road width, therefore, does a different job than in Tamil Nadu: there it determines the FSI band, whereas in Andhra Pradesh it determines how tall a building may be.

**Table 8: Road Width and All-Round Open Space by Building Height, Andhra Pradesh**  
(G.O.Ms. No. 4, January 2025, as amended by G.O.Ms. No. 273, December 2025)

| Building height | Min. abutting road | Min. all-round open space | Status        |
|-----------------|--------------------|---------------------------|---------------|
| 18–21 m         | 12 m               | 7 m                       | Non-high-rise |
| 21–24 m         | 12 m               | 8 m                       | Non-high-rise |
| 24–27 m         | 12 m               | 9 m                       | High-rise     |
| 27–30 m         | 18 m               | 10 m                      | High-rise     |
| 30–45 m         | 24 m               | 11–13 m                   | High-rise     |
| 45–55 m         | 30 m               | 14–16 m                   | High-rise     |
| 55–120 m        | 30 m               | 17–18 m                   | High-rise     |
| Above 120 m     | 30 m               | 20 m                      | High-rise     |

### 7.3 Setback and Open-Space Requirements

The APBR setback framework is the most prescriptive of the three states. Below 24 m, setbacks are set by Table 17 of the APBR. They vary with plot size, building height and, for several categories, the width of the abutting road. On small plots the front setback can be as low as 1–1.5 m. On plots above 1,000 sq m, buildings of 18–24 m need front setbacks of 3–5 m depending on road width, with side and rear setbacks that rise with height. From 24 m, Table 18 replaces these with the single all-round open space shown in Table 8. All setbacks are measured after deducting any area affected by road widening.

Kerala (Rule 43) and Tamil Nadu (Rule 41) also require recreational space in addition to setbacks, but Andhra Pradesh's additive open-space requirements are the most extensive. Within the setbacks, a green planting strip must be provided along the frontage and, on plots above 300 sq m, along the remaining sides. Over and above the setbacks, plots above 750 sq m must provide organised open space equal to 5 per cent of the site. For high-rise buildings this rises to 10 per cent, open to the sky at ground level. Land already left open as a setback cannot be counted towards this

requirement, so the two operate cumulatively. Their combined effect grows with plot size and building height.

The 2025 amendments offer some flexibility at the margins:

- Buildings up to 30 m may transfer up to 2 m of setback from one side to another (other than the front), provided at least 7 m is maintained on all sides.
- Balconies may project up to 2 m into open spaces above 6 m.
- The space reserved for public utilities on plots of 750 sq m and above has been reduced from 3 m × 3 m to 2 m × 2 m.

Other provisions affect development capacity more directly:

- An environmental deck floor given over to amenity uses in buildings of ten or more floors is exempt from height and parking calculations (Rule 66(9)).
- Transferable Development Rights (TDR) may be used to add up to two floors with modified setbacks, but not on roads narrower than 9 m (Rule 167(2)).
- For high-rise and group housing projects of more than 100 units, the competent authority is to prepare a Road Development Plan for the abutting master-plan road (Rule 53(6)).

From a housing-supply perspective, the issue is therefore not that any single setback is excessive in isolation. Rather, the combined effect of front, side and rear setbacks, green strips, organised open space and other site reservations can materially reduce the buildable footprint, particularly as height increases. Section 8.4 tests this on a common 2,500 sq m plot. The regulatory question is whether these requirements are proportionate to their objectives. It is also whether some of them could be met through performance-based or shared-site solutions without compromising access, fire safety, ventilation or public open space.

## 7.4 Regulatory Character of Andhra Pradesh

Andhra Pradesh's approach is therefore best characterised as a planning-led FAR regime combined with a highly prescriptive building-envelope regime. The State Building Rules do not provide a single residential FAR comparable to Tamil Nadu's 3.25 FSI on an 18 m road. Instead, the applicable Master Plan or Zonal Development Plan determines the development intensity, while the Building Rules determine whether that intensity can be physically realised given the site's road access, height, setbacks, open-space requirements and other conditions.

The December 2025 increase in the high-rise threshold from 18 m to 24 m is consequently significant not because it directly increases FAR, but because it reduces the regulatory intensity attached to a substantial band of medium-rise development. Buildings between 18 m and 24 m can avoid the high-rise classification under the amended Building Rules, potentially reducing approval complexity and associated development costs, subject to the continuing operation of fire-safety requirements.

The analysis in Section 8.4 qualifies this: on a 2,500 sq m plot, the 7–8 m setbacks that continue to apply in the 18–24 m band mean that the number of units peaks at 18 m, so the reform eases approvals more than it adds housing capacity.

At the same time, the AP framework imposes substantial spatial requirements once a project enters the high-rise category. Road-width requirements increase sharply with height, while all-round open space expands from 9 m at 24–27 m to 20 m above 120 m. Organised open space of 10 per cent of the site must then be provided in addition to these setbacks, further reducing the buildable footprint.

## 8. Effective Development Capacity: A Cross-State Comparison

### 8.1 Permitted Versus Effective Development Capacity

As defined in Section 2, effective FSI is the floor area that can actually be built once all spatial, height and compliance requirements are applied; the gap between permitted and effective FSI measures the share of granted development rights that cannot be realised.

This section applies the model described in Section 3.2 to the common 2,500 sq m test plot under the rules of Kerala, Tamil Nadu and Amaravati in Andhra Pradesh.

The purpose of the exercise is to examine how the interaction between FSI, coverage, setbacks, height thresholds and open-space requirements affects the amount of floor area, and therefore the number of housing units, that can actually be accommodated. Road-width eligibility and premium FSI charges, discussed in Sections 5 to 7, are not modelled. The comparison demonstrates that the nominal development capacity of a plot can differ substantially from its practical development capacity once the complete regulatory framework is applied. The results are presented state by state in Sections 8.2 to 8.4 and compared in Section 8.5.

### 8.2 Kerala: Buildable Units under a Uniform FSI

Kerala applies an FSI of 3.0 (without additional fee) to Group A1 residential buildings at every height, with a maximum coverage of 65%. Yards start at 3 m (front), 1.5 m (rear) and 1 m (sides) and increase by 0.5 m for every 3 m, or part of 3 m, above 10 m of height (Rule 26). A building of more than five floors or 16 m is high-rise.

Kerala equation

$$N = \{ 0.92 \times \min [ 3.0 \times A, n \times \min ( 0.65 \times A, ( L - 4.5 - 2\delta ) \times ( W - 2 - 2\delta ) ) ] \div B \}$$

$$\delta = 0.5 \times \max [ 0, ( 3n - 10 ) \div 3 ] \text{ (yard increase for buildings above 10 m)}$$

**Table 9: Parameters and buildable units, Kerala**

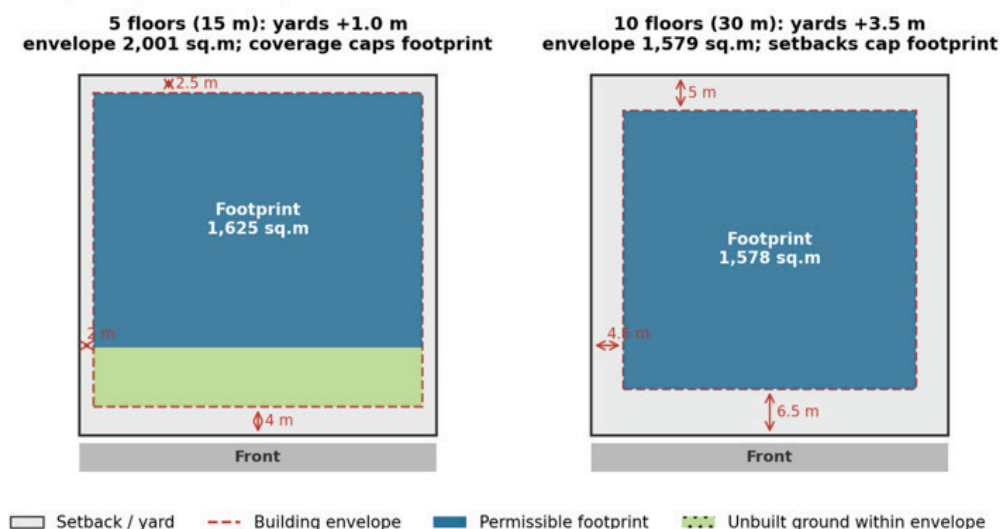
| Symbol                           | Meaning                                                                                             | EWS           | LIG           | MIG-I         |
|----------------------------------|-----------------------------------------------------------------------------------------------------|---------------|---------------|---------------|
| A                                | Plot area                                                                                           | 2,500 sq.m    | 2,500 sq.m    | 2,500 sq.m    |
| FSI                              | Permissible FSI                                                                                     | 3.00          | 3.00          | 3.00          |
| k                                | Maximum coverage                                                                                    | 65%           | 65%           | 65%           |
| n                                | Number of floors (height)<br>Taken as 5, as FSI 3 is completely<br>utilised by 5 floors             | 5 (15 m)      | 5 (15 m)      | 5 (15 m)      |
| $\delta$                         | Yard increase at this height                                                                        | 1 m           | 1 m           | 1 m           |
| $s_f / s_r / s_s$                | Front / rear / side setbacks                                                                        | 4 / 2.5 / 2 m | 4 / 2.5 / 2 m | 4 / 2.5 / 2 m |
| E                                | Envelope inside setbacks (area<br>that is available for built up after<br>deducting setback spaces) | 2,001 sq.m    | 2,001 sq.m    | 2,001 sq.m    |
| F                                | Footprint per floor (area against<br>max. coverage) - $k \times A$                                  | 1,625 sq.m    | 1,625 sq.m    | 1,625 sq.m    |
| $\min(FSI \times A, n \times F)$ | Buildable floor area                                                                                | 7,500 sq.m    | 7,500 sq.m    | 7,500 sq.m    |
| c                                | Common areas                                                                                        | 8%            | 8%            | 8%            |
| B                                | Built-up area per unit                                                                              | 30 sq.m       | 60 sq.m       | 75 sq.m       |
| N                                | Number of buildable units                                                                           | 230 units     | 115 units     | 92 units      |

## Floor-by-floor results

**Table 10: Buildable units by number of floors, Kerala (\* high-rise)**

| Floors<br>(n) | Height | Setbacks<br>F / R / S<br>(m) | Envelope<br>E (sq.m) | Footprint<br>F (sq.m) | $n \times F$<br>(sq.m) | Buildable<br>area<br>(sq.m) | EWS<br>units | LIG<br>units | MIG-I<br>units |
|---------------|--------|------------------------------|----------------------|-----------------------|------------------------|-----------------------------|--------------|--------------|----------------|
| 3             | 9 m    | 3 / 1.5 / 1                  | 2,184                | 1,625                 | 4,875                  | 4,875                       | 149          | 74           | 59             |
| 4             | 12 m   | 3.5 / 2 / 1.5                | 2,092                | 1,625                 | 6,500                  | 6,500                       | 199          | 99           | 79             |
| 5             | 15 m   | 4 / 2.5 / 2                  | 2,001                | 1,625                 | 8,125                  | 7,500                       | 230          | 115          | 92             |
| 6*            | 18 m   | 4.5 / 3 / 2.5                | 1,913                | 1,625                 | 9,750                  | 7,500                       | 230          | 115          | 92             |
| 7*            | 21 m   | 5 / 3.5 / 3                  | 1,826                | 1,625                 | 11,375                 | 7,500                       | 230          | 115          | 92             |
| 8*            | 24 m   | 5.5 / 4 / 3.5                | 1,742                | 1,625                 | 13,000                 | 7,500                       | 230          | 115          | 92             |
| 9*            | 27 m   | 6 / 4.5 / 4                  | 1,659                | 1,625                 | 14,625                 | 7,500                       | 230          | 115          | 92             |
| 10*           | 30 m   | 6.5 / 5 / 4.5                | 1,579                | 1,579                 | 15,785                 | 7,500                       | 230          | 115          | 92             |

## Kerala: coverage caps the footprint until setbacks overtake it



At five floors (15 m) the yards leave an envelope of 2,001 sq.m, but the 65% coverage limit caps each floor at 1,625 sq.m. Five such floors (8,125 sq.m) exceed the 7,500 sq.m that FSI 3.0 allows, so FSI is the binding limit. The plot holds 230 EWS, 115 LIG or 92 MIG-I units, all within the 16 m high-rise threshold.

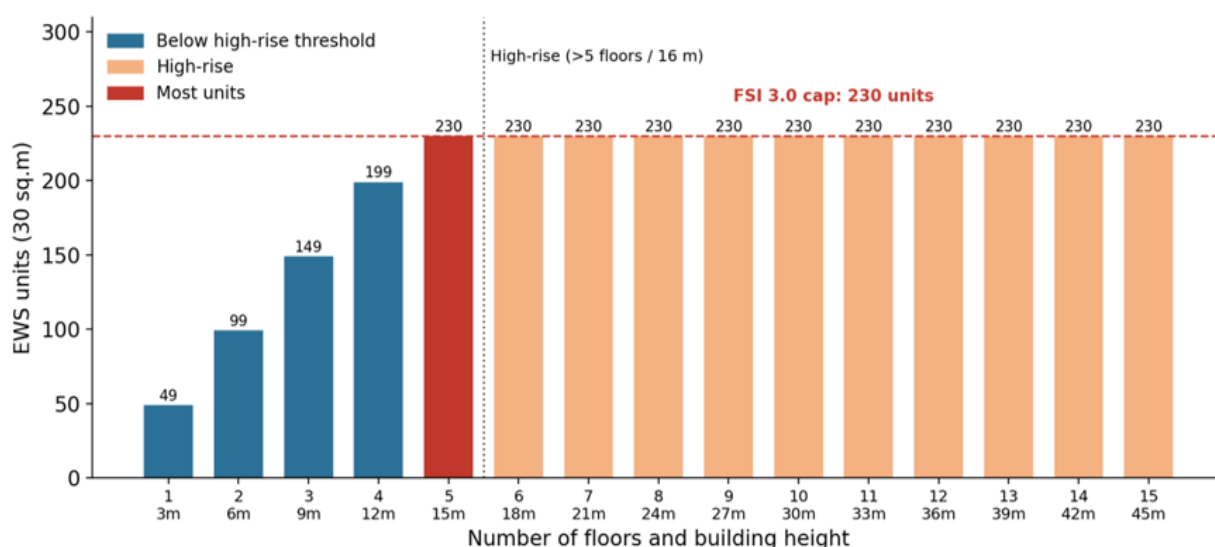


Figure 4: EWS units by number of floors, Kerala

Every floor above the fifth only spreads the same 7,500 sq.m more thinly; the unit count stays flat. Setbacks overtake coverage only at about 10 floors (the envelope falls to 1,579 sq.m), which matters only if extra FSI is purchased.

## Results

**Table 11: Buildable units on the 2,500 sq.m plot, Kerala**

|   | Indicator                                                                | EWS                  | LIG                  | MIG-I               |
|---|--------------------------------------------------------------------------|----------------------|----------------------|---------------------|
| a | Units the stated FSI allows ( $0.92 \times \text{FSI} \times A \div B$ ) | 230 units            | 115 units            | 92 units            |
| b | Buildable units (best height)                                            | 230 units            | 115 units            | 92 units            |
| c | Units lost to coverage and setbacks (a – b)                              | 0 units (0%)         | 0 units (0%)         | 0 units (0%)        |
| d | Floors and height giving the most units                                  | 5 floors (15 m)      | 5 floors (15 m)      | 5 floors (15 m)     |
| e | Buildable units below the high-rise threshold                            | 230 units (5 floors) | 115 units (5 floors) | 92 units (5 floors) |
| f | Effective FSI (buildable area $\div$ A)                                  | 3.00                 | 3.00                 | 3.00                |
| g | Share of stated FSI that can be built                                    | 100%                 | 100%                 | 100%                |

## Discussion

The results show that the issue is not simply that the rules restrict building height. Rather, FSI and coverage operate together to determine how much development can actually be accommodated vertically. A 65% coverage limit allows a relatively large footprint, but an FSI of 3.0 limits the total floor area that can be distributed across that footprint. Once the permitted FSI is exhausted, adding more floors requires additional FSI rather than merely increasing the building's height. Premium FSI is available, but at a cost (Section 5.1.1): moving to FSI 4.0 raises the cost per square metre by 6.3 per cent, and using the full schedule (effective FSI 5.52) adds almost ₹1 lakh to the cost of each EWS unit. For an affordable housing project, this materially affects unit costs and reduces the commercial attractiveness of pursuing greater height.

The policy implication is that Kerala's building rules do not currently provide a strong incentive for builders to build higher and use land more intensively. Instead, the interaction between relatively limited base FSI, coverage restrictions and the cost of additional FSI can make taller development economically unviable. The result can be a pattern of development that is more horizontal than vertical, particularly in housing projects where affordability is a primary consideration.

## 8.3 Tamil Nadu: Buildable Units across the High-Rise Threshold

Tamil Nadu has two regimes. Buildings up to 18.30 m get an FSI of 2.0, a 3 m front setback and side and rear setbacks of 1.0–3.0 m that rise with height; no coverage limit is stated. Buildings above 18.30 m are high-rise, with an FSI of 3.25 (the top tier of the high-rise schedule), a maximum coverage of 50% and a 7 m setback on all sides up to 30 m, increasing by 1 m for every 6 m above 30 m.

## Tamil Nadu equation

$$\text{Up to 18.3 m: } N = \{ 0.92 \times \min [ 2.0 \times A, n \times (L - 3 - s) \times (W - 2s) ] \div B \}$$

$$s = 1.0 \text{ m } (\leq 7 \text{ m}), 1.5 \text{ m } (\leq 14 \text{ m}), 2.5 \text{ m } (\leq 16 \text{ m}), 3.0 \text{ m } (\leq 18.3 \text{ m})$$

$$\text{Above 18.3 m: } N = \{ 0.92 \times \min [ 3.25 \times A, n \times \min (0.5 \times A, (L - 2s) \times (W - 2s) ) ] \div B \}$$

$$s = 7 \text{ m up to 30 m; } 7 + [ (H - 30) \div 6 ] \text{ m above 30 m}$$

**Table 12: Parameters and buildable units, Tamil Nadu (high-rise, FSI 3.25)**

| Symbol                                           | Meaning                                                                                       | EWS         | LIG         | MIG-I       |
|--------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------|-------------|-------------|
| A                                                | Plot area                                                                                     | 2,500 sq.m  | 2,500 sq.m  | 2,500 sq.m  |
| FSI                                              | Permissible FSI                                                                               | 3.25        | 3.25        | 3.25        |
| n                                                | Number of floors (height)<br>Taken as 7, as FSI 3.25 is completely utilised by 5 floors       | 7 (21 m)    | 7 (21 m)    | 7 (21 m)    |
| k                                                | Maximum coverage (for high-rise)                                                              | 50%         | 50%         | 50%         |
| S <sub>f</sub> / S <sub>r</sub> / S <sub>s</sub> | Front / rear / side setbacks                                                                  | 7 / 7 / 7 m | 7 / 7 / 7 m | 7 / 7 / 7 m |
| E                                                | Envelope inside setbacks (area that is available for built up after deducting setback spaces) | 1,296 sq.m  | 1,296 sq.m  | 1,296 sq.m  |
| F                                                | Footprint per floor (area against max. coverage) - k*A                                        | 1,250 sq.m  | 1,250 sq.m  | 1,250 sq.m  |
| min(FSI*A, n*F)                                  | Buildable floor area                                                                          | 8,125 sq.m  | 8,125 sq.m  | 8,125 sq.m  |
| c                                                | Common areas                                                                                  | 8%          | 8%          | 8%          |
| B                                                | Built-up area per unit                                                                        | 30 sq.m     | 60 sq.m     | 75 sq.m     |
| N                                                | Number of buildable units                                                                     | 249 units   | 124 units   | 99 units    |

## Floor-by-floor results

**Table 13: Buildable units by number of floors, Tamil Nadu (\* high-rise)**

| Floors (n) | Height | Setbacks F / R / S (m) | Envelope E (sq.m) | Footprint F (sq.m) | n × F (sq.m) | Buildable area (sq.m) | EWS units | LIG units | MIG-I units |
|------------|--------|------------------------|-------------------|--------------------|--------------|-----------------------|-----------|-----------|-------------|
| 3          | 9 m    | 3 / 1.5 / 1.5          | 2,139             | 2,139              | 6,416        | 5,000                 | 153       | 76        | 61          |
| 4          | 12 m   | 3 / 1.5 / 1.5          | 2,139             | 2,139              | 8,554        | 5,000                 | 153       | 76        | 61          |

|     |      |               |       |       |        |       |     |     |    |
|-----|------|---------------|-------|-------|--------|-------|-----|-----|----|
| 5   | 15 m | 3 / 2.5 / 2.5 | 2,003 | 2,003 | 10,013 | 5,000 | 153 | 76  | 61 |
| 6   | 18 m | 3 / 3 / 3     | 1,936 | 1,936 | 11,616 | 5,000 | 153 | 76  | 61 |
| 7*  | 21 m | 7 / 7 / 7     | 1,296 | 1,250 | 8,750  | 8,125 | 249 | 124 | 99 |
| 8*  | 24 m | 7 / 7 / 7     | 1,296 | 1,250 | 10,000 | 8,125 | 249 | 124 | 99 |
| 9*  | 27 m | 7 / 7 / 7     | 1,296 | 1,250 | 11,250 | 8,125 | 249 | 124 | 99 |
| 10* | 30 m | 7 / 7 / 7     | 1,296 | 1,250 | 12,500 | 8,125 | 249 | 124 | 99 |
| 11* | 33 m | 8 / 8 / 8     | 1,156 | 1,156 | 12,716 | 8,125 | 249 | 124 | 99 |

### Tamil Nadu: crossing 18.3 m shrinks the footprint by 42%

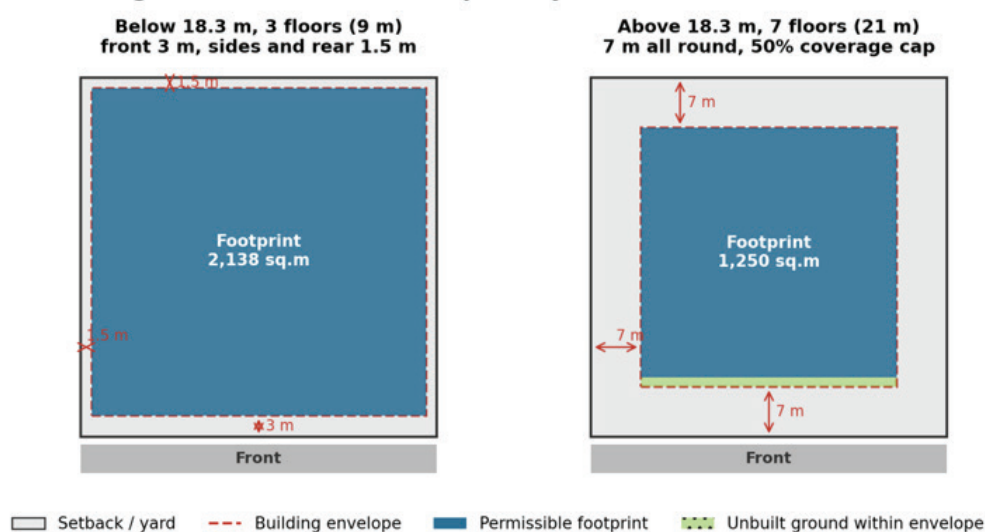


Figure 5: Site plans below and above 18.3 m, Tamil Nadu

Below 18.3 m the setbacks are light: at three floors the footprint is 2,139 sq.m and the FSI of 2.0 (5,000 sq.m) is used up, giving 153 EWS units. Above 18.3 m the 7 m setback on every side leaves a 36 m × 36 m envelope (1,296 sq.m), which the 50% coverage limit trims to 1,250 sq.m. The higher FSI of 3.25 (8,125 sq.m) is still reached at seven floors (21 m), giving 249 EWS units.

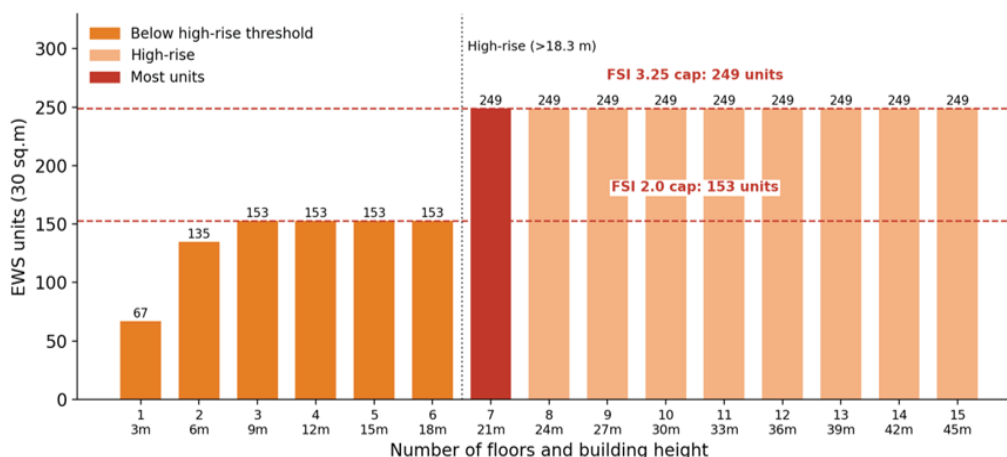


Figure 6: EWS units by number of floors, Tamil Nadu

The chart shows a step at the threshold. From three to six floors the unit count is fixed at 153 by FSI 2.0. At seven floors the building becomes high-rise and the count jumps to 249, a 63% increase, but only by accepting the larger setbacks, the coverage limit and high-rise approval requirements.

## Results

**Table 14: Buildable units on the 2,500 sq.m plot, Tamil Nadu**

|   | Indicator                                                                | EWS                  | LIG                 | MIG-I               |
|---|--------------------------------------------------------------------------|----------------------|---------------------|---------------------|
| a | Units the stated FSI allows ( $0.92 \times \text{FSI} \times A \div B$ ) | 249 units            | 124 units           | 99 units            |
| b | Buildable units (best height)                                            | 249 units            | 124 units           | 99 units            |
| c | Units lost to coverage and setbacks (a – b)                              | 0 units (0%)         | 0 units (0%)        | 0 units (0%)        |
| d | Floors and height giving the most units                                  | 7 floors (21 m)      | 7 floors (21 m)     | 7 floors (21 m)     |
| e | Buildable units below the high-rise threshold                            | 153 units (3 floors) | 76 units (3 floors) | 61 units (3 floors) |
| f | Effective FSI (buildable area $\div$ A)                                  | 3.25                 | 3.25                | 3.25                |
| g | Share of stated FSI that can be built                                    | 100%                 | 100%                | 100%                |

## Discussion

Unlike Kerala, Tamil Nadu provides a clear increase in FSI when a project moves from the relevant Non-High-Rise category into High-Rise development. However, the additional FSI is accompanied by larger setbacks, road-width requirements and additional high-rise scrutiny.

The higher FSI is also not available simply by increasing height. High-Rise development requires a minimum 12 m road width and the prescribed continuous road width for the required distance. This means that the ability to use higher FSI depends not only on the plot but also on the surrounding road network. The FSI of 3.25 modelled here additionally requires an abutting road of 18 m or more. Premium FSI provides another route to increase development capacity and, as in Kerala, it involves an additional charge, which in Tamil Nadu is linked to guideline value. Therefore, while the Tamil Nadu framework provides a stronger incentive for vertical development than a system where FSI remains unchanged across the height threshold, the economic and spatial value of the additional FSI is partly offset by larger setbacks, infrastructure requirements and the cost of additional development rights.

The issue in Tamil Nadu is not whether the rules allow higher buildings, but whether the additional FSI granted to High-Rise Buildings can be economically utilised. Where these offsets are signifi-

cant, the effective incentive for vertical development may be weaker than the increase in permitted FSI suggests. Where the objective is to promote compact urban development, the regulatory framework should ensure that this additional capacity remains realistically usable.

## 8.4 Andhra Pradesh: Buildable Units under Height-Graded Setbacks

Andhra Pradesh takes its FSI from the Master Plan; the analysis uses the FSI of 5.0 in Amaravati's S3 zone. The Building Rules set no coverage limit but grade setbacks and open space by height. Up to 18 m, Table 17 applies (for plots above 1,000 sq.m, about 3 m at the front and 6 m on the other sides). From 18 m to 21 m, 7 m is required on all sides, and 8 m from 21 m to 24 m. From 24 m the building is high-rise, starting at 9 m all round and rising in steps to 20 m. Organised open space of 5% of the plot (below 24 m) or 10% (high-rise) must be provided in addition to setbacks.

### Andhra Pradesh equation

$$N = 0.92 \times \min [ 5.0 \times A, n \times ( ( L - sf - sr ) \times ( W - 2 ss ) - o \times A ) ] \div B$$

Up to 18 m:  $sf = 3$ ,  $sr = ss = 6$  m,  $o = 5\%$ ;

18–21 m: 7 m;

21–24 m: 8 m;

24 m and above: 9–20 m,  $o = 10\%$

**Table 15: Parameters and buildable units, Andhra Pradesh**

| Symbol                           | Meaning                                                        | EWS         | LIG         | MIG-I       |
|----------------------------------|----------------------------------------------------------------|-------------|-------------|-------------|
| A                                | Plot area                                                      | 2,500 sq.m  | 2,500 sq.m  | 2,500 sq.m  |
| FSI                              | Permissible FSI                                                | 5.00        | 5.00        | 5.00        |
| n                                | Number of floors (height)                                      | 6 (18 m)    | 6 (18 m)    | 6 (18 m)    |
| O                                | Organised open space (5% of plot for a building height of 18m) | 125 sq.m    | 125 sq.m    | 125 sq.m    |
| $s_f / s_r / s_s$                | Front / rear / side setbacks                                   | 3 / 6 / 6 m | 3 / 6 / 6 m | 3 / 6 / 6 m |
| E                                | Envelope inside setbacks                                       | 1,558 sq.m  | 1,558 sq.m  | 1,558 sq.m  |
| F                                | Footprint per floor                                            | 1,433 sq.m  | 1,433 sq.m  | 1,433 sq.m  |
| $\min(FSI \times A, n \times F)$ | Buildable floor area                                           | 8,598 sq.m  | 8,598 sq.m  | 8,598 sq.m  |
| c                                | Common areas                                                   | 8%          | 8%          | 8%          |
| B                                | Built-up area per unit                                         | 30 sq.m     | 60 sq.m     | 75 sq.m     |
| N                                | Number of buildable units                                      | 263 units   | 131 units   | 105 units   |

## Floor-by-floor results

**Table 16: Buildable units by number of floors, Andhra Pradesh (\* high-rise)**

| Floors (n) | Height | Setbacks F / R / S (m) | Envelope E (sq.m) | Footprint F (sq.m) | n × F (sq.m) | Buildable area (sq.m) | EWS units | LIG units | MIG-I units |
|------------|--------|------------------------|-------------------|--------------------|--------------|-----------------------|-----------|-----------|-------------|
| 4          | 12 m   | 3 / 6 / 6              | 1,558             | 1,433              | 5,732        | 5,732                 | 175       | 87        | 70          |
| 5          | 15 m   | 3 / 6 / 6              | 1,558             | 1,433              | 7,165        | 7,165                 | 219       | 109       | 87          |
| 6          | 18 m   | 3 / 6 / 6              | 1,558             | 1,433              | 8,598        | 8,598                 | 263       | 131       | 105         |
| 7          | 21 m   | 7 / 7 / 7              | 1,296             | 1,171              | 8,197        | 8,197                 | 251       | 125       | 100         |
| 8*         | 24 m   | 9 / 9 / 9              | 1,024             | 774                | 6,192        | 6,192                 | 189       | 94        | 75          |
| 9*         | 27 m   | 9 / 9 / 9              | 1,024             | 774                | 6,966        | 6,966                 | 213       | 106       | 85          |
| 10*        | 30 m   | 10 / 10 / 10           | 900               | 650                | 6,500        | 6,500                 | 199       | 99        | 79          |
| 11*        | 33 m   | 11 / 11 / 11           | 784               | 534                | 5,874        | 5,874                 | 180       | 90        | 72          |
| 12*        | 36 m   | 12 / 12 / 12           | 676               | 426                | 5,112        | 5,112                 | 156       | 78        | 62          |

### Andhra Pradesh: each height step shrinks the footprint

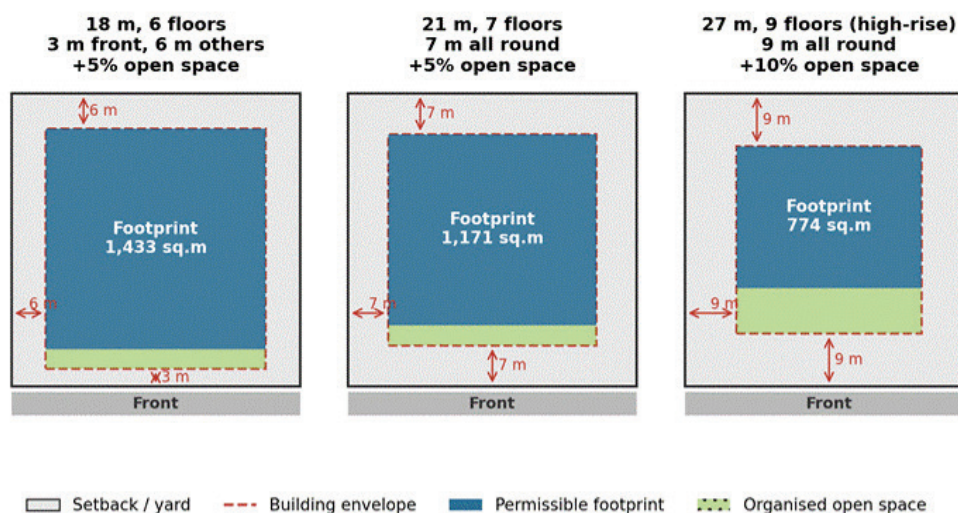


Figure 7: Site plans at 18 m, 21 m and 27 m, Andhra Pradesh

The FSI of 5.0 allows 12,500 sq.m, enough for 383 EWS units, but setbacks bind at every height. At six floors (18 m) the footprint is 1,433 sq.m after the 5% open space, giving 8,598 sq.m and 263 EWS units. A seventh floor pushes the setbacks to 7 m and the total falls to 251 units. At 24 m the building turns high-rise, the footprint shrinks to 774 sq.m and the count drops to 189.

#### Andhra Pradesh: units peak at 6 floors (18 m), far below FSI 5.0

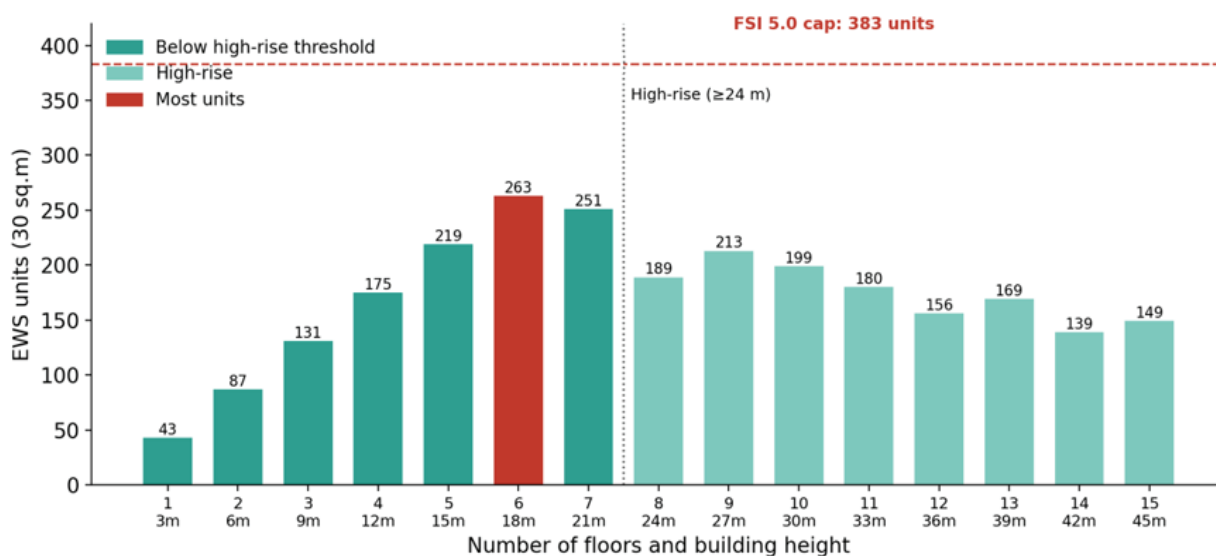


Figure 8: EWS units by number of floors, Andhra Pradesh

Units peak at 18 m, and every higher band removes more footprint than the extra floor adds. The best result is an effective FSI of 3.44, 69% of the stated 5.0.

## Results

Table 17: Buildable units on the 2,500 sq.m plot, Andhra Pradesh

|   | Indicator                                                                | EWS                  | LIG                  | MIG-I                |
|---|--------------------------------------------------------------------------|----------------------|----------------------|----------------------|
| a | Units the stated FSI allows ( $0.92 \times \text{FSI} \times A \div B$ ) | 383 units            | 191 units            | 153 units            |
| b | Buildable units (best height)                                            | 263 units            | 131 units            | 105 units            |
| c | Units lost to coverage and setbacks ( $a - b$ )                          | 120 units (31%)      | 60 units (31%)       | 48 units (31%)       |
| d | Floors and height giving the most units                                  | 6 floors (18 m)      | 6 floors (18 m)      | 6 floors (18 m)      |
| e | Buildable units below the high-rise threshold                            | 263 units (6 floors) | 131 units (6 floors) | 105 units (6 floors) |
| f | Effective FSI (buildable area $\div A$ )                                 | 3.44                 | 3.44                 | 3.44                 |
| g | Share of stated FSI that can be built                                    | 69%                  | 69%                  | 69%                  |

## Discussion

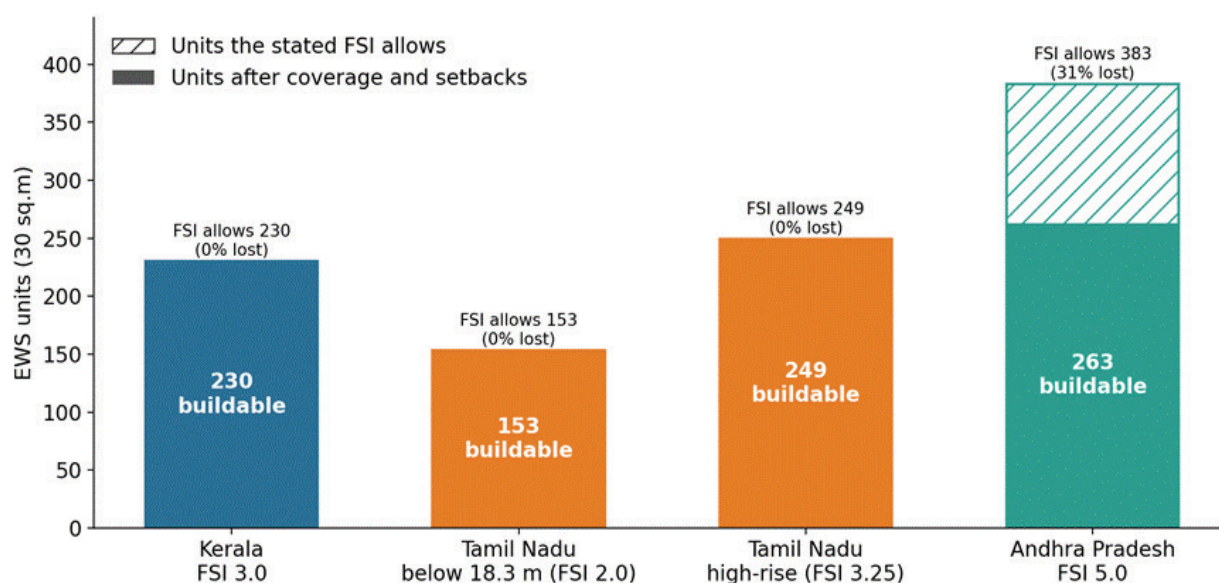
On the 2,500 sq m plot, the key constraint in AP is not simply the amount of FSI theoretically available but the extent to which mandatory setbacks and organised open-space requirements shrink the actual building footprint. Although the 2025 amendment raised the high-rise threshold to 24 m, the 7–8 m setbacks that still apply in the 18–24 m band mean that units peak at 18 m, before the new threshold is reached.

## 8.5 Cross-State Comparison

**Table 18: Buildable units on the same 2,500 sq.m plot**

| State / regime           | Stated FSI | Floors (height) | Buildable area (sq.m) | Effective FSI | EWS units | EWS units lost | Binding limit           |
|--------------------------|------------|-----------------|-----------------------|---------------|-----------|----------------|-------------------------|
| Kerala                   | 3.00       | 5 (15 m)        | 7,500                 | 3.00          | 230       | 0 (0%)         | FSI                     |
| Tamil Nadu, below 18.3 m | 2.00       | 3 (9 m)         | 5,000                 | 2.00          | 153       | 0 (0%)         | FSI                     |
| Tamil Nadu, high-rise    | 3.25       | 7 (21 m)        | 8,125                 | 3.25          | 249       | 0 (0%)         | FSI                     |
| Andhra Pradesh           | 5.00       | 6 (18 m)        | 8,598                 | 3.44          | 263       | 120 (31%)      | Setbacks and open space |

**EWS units allowed by FSI versus units that can be built, 2,500 sq.m plot**



*Figure 9: EWS units allowed by FSI versus units that can be built*

The stated FSIs range from 2.0 to 5.0, a 2.5-fold difference, but buildable EWS units on the same plot range only from 153 to 263. Kerala and Tamil Nadu build everything their FSI allows; Andhra Pradesh, with by far the highest FSI, loses 31% of it to setbacks and open space and ends up only 14% ahead of Kerala.

#### Buildable units by income group on the same 2,500 sq.m plot

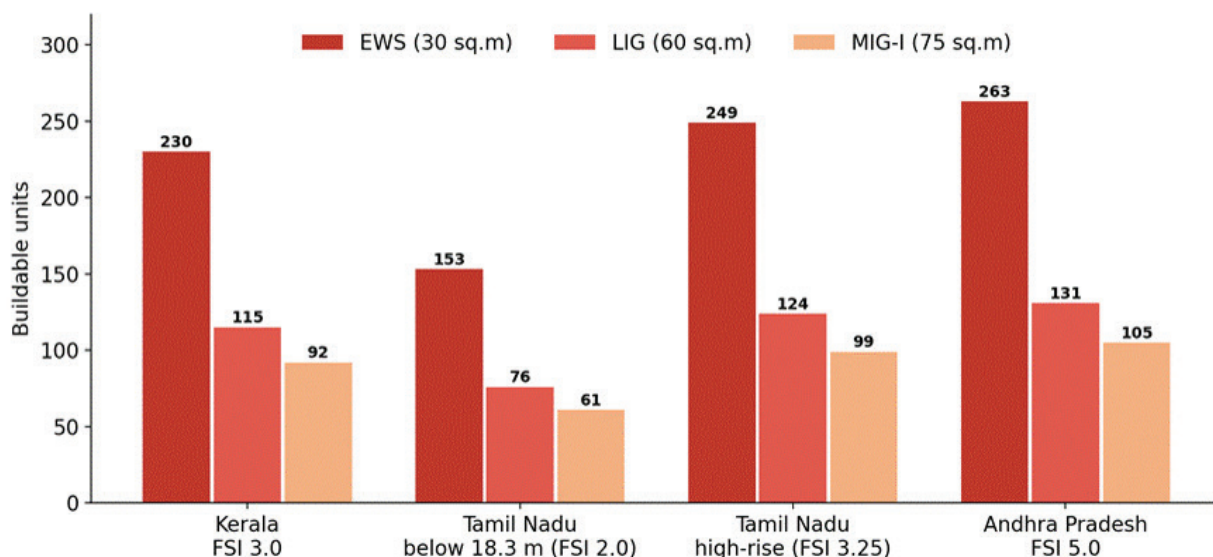


Figure 10: Buildable units by income group

The ranking is the same for LIG and MIG-I units, since unit counts scale directly with buildable floor area.

#### Share of stated FSI that can be built, by plot size

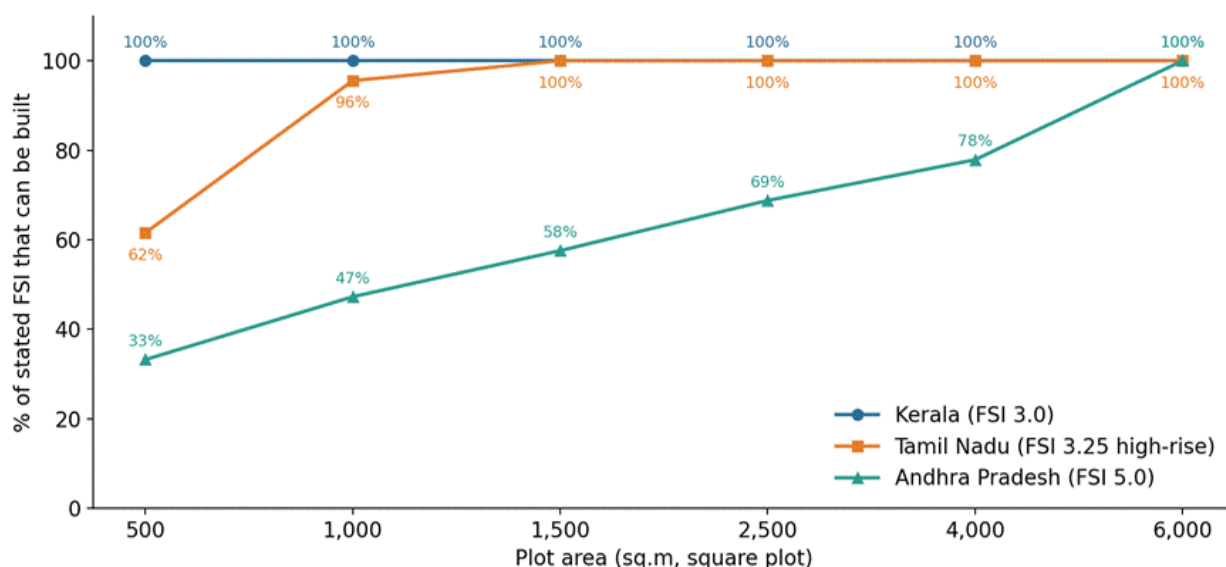


Figure 11: Share of stated FSI that can be built, by plot size

**Table 19: EWS units by plot size (best height)**

| EWS units<br>(buildable / FSI<br>allows) | 500 sq.m | 1,000 sq.m | 1,500 sq.m | 2,500 sq.m | 4,000 sq.m | 6,000 sq.m |
|------------------------------------------|----------|------------|------------|------------|------------|------------|
| Kerala                                   | 46 / 46  | 92 / 92    | 138 / 138  | 230 / 230  | 368 / 368  | 552 / 552  |
| Tamil Nadu                               | 30 / 49  | 95 / 99    | 149 / 149  | 249 / 249  | 398 / 398  | 598 / 598  |
| Andhra Pradesh                           | 25 / 76  | 72 / 153   | 132 / 230  | 263 / 383  | 477 / 613  | 920 / 920  |

Plot size matters more than the FSI figure suggests. Setbacks are fixed widths, so they take a larger share of small plots. Kerala loses almost nothing at any size. Tamil Nadu loses heavily below about 1,000 sq.m, where the 7 m high-rise setback leaves too little footprint to use FSI 3.25. Andhra Pradesh loses at every size up to 4,000 sq.m, building only 33% of its FSI on a 500 sq.m plot and 47% on 1,000 sq.m. Since affordable housing is often built on smaller urban plots, setback rules shape its supply more than the FSI figure does.

### Cross-state findings

- **Stated FSI is a poor guide to housing supply.** The highest FSI (Andhra Pradesh, 5.0) delivers only slightly more units than Kerala's 3.0 on the same plot.
- **Each state is limited by a different rule.** Kerala by its FSI; Tamil Nadu by its FSI and the 18.3 m threshold that unlocks the higher tier; Andhra Pradesh by height-graded setbacks and open space.
- **Height thresholds do not reward extra floors.** Kerala gives no extra FSI for height; Tamil Nadu gives more only above 18.3 m; Andhra Pradesh loses units above 18 m.
- **Small plots lose the most.** Fixed-width setbacks cut the buildable share of FSI sharply on plots below about 1,500 sq.m in Tamil Nadu and Andhra Pradesh.

## 9. Discussions

Sections 4 to 8 traced FSI, Road Width, and Setback as independent entities interacting with each other to produce different regulatory architectures across three Indian states. When analysed in parallel, it reveals that they present the same structural challenges, also identified by analysts in the literature independently of this byelaw analysis. The six patterns traced below further posit the three state rules with parallel international planning literature.

### 9.1 Stated FSI and achievable FSI diverge

The cross-state analysis in Section 8 shows how far stated and achievable FSI can diverge and that the gap arises through different mechanisms. In Kerala, the base FSI of 3.0 is the binding limit on a 2,500 sq m plot and is used up at five floors; the progressive setbacks of Rule 26 bite only on small

plots, and the conflict between Rule 43 and Rule 26(10) over recreational space adds a further constraint that the model does not capture. In Tamil Nadu, the FSI is fully usable on plots of about 1,500 sq m and above, but on a 500 sq m plot, the 7 m all-round high-rise setback leaves too little footprint to use the high-rise FSI of 3.25. Andhra Pradesh shows the largest gap: on the 2,500 sq m plot, height-graded setbacks and organised open space reduce the Amaravati FSI of 5.0 to an effective 3.44, and on a 1,000 sq m plot only 47 per cent of the FSI can be built. Karteek (2015) documents a similar effect for Andhra Pradesh statistically: buildings on wider roads, which Table 17 assigns larger setbacks, achieve lower effective FSI than buildings on narrower roads despite qualifying for greater height.

This pattern is documented outside India as well. Houston has no conventional use-zoning and controls building form through subdivision rules on lot size and setbacks. In 1998, and citywide in 2013, it reduced minimum lot size from 5,000 to 1,400 sq ft and mandatory front setback from 25 ft to 5 ft. This produced roughly 34,000 narrow attached townhomes between 2005 and 2018, concentrated in the inner city. A comparison of land prices before and after the 2013 expansion found no measurable increase attributable to the reform. Although Houston's case is a different regulatory system, it confirms that the setback-footprint relationship found in the study is a general property of this kind of regulation, not specific to Indian byelaws.

## 9.2 Density charges are levied without a stated cost basis

Kerala's ₹5,000/sqm fee for FSI above 3.0, Tamil Nadu's Rule 49 premium at 25% of guideline land value for Metro-corridor sites, and Andhra Pradesh's TDR pricing under Rule 167 are structurally the same instrument: a charge for floor area that is already permissible under the state's own rules. None of the three states publishes what the revenue funds or how the rate relates to infrastructure cost. Gandhi and Phatak (2016) find that premium FSI charges in Mumbai raised project costs by roughly 6% and crowded out the formal affordable segment. Nagpal and Gandhi (2026) identify the same design flaw this rule-by-rule reading shows: the charge is levied on floor area, not on the infrastructure load that area creates, so it functions as a tax rather than cost recovery.

Other jurisdictions charge for the same access to density while keeping pricing and earmarking explicit. São Paulo's 2014 Plano Diretor publishes a free basic FAR and a paid maximum by zone, with 30–40% of proceeds legally required for social housing. Bogotá's Law 388 of 1997 claims 30–50% of any value increase a rezoning creates, proportional to that increase rather than flat, though the city took until 2004 to begin collecting under the law and proceeds were still under 1% of own-source revenue by 2009. Vancouver keeps the density bonus, the negotiated Community Amenity Contribution, and the Development Cost Levy as three separate instruments; 2021 CACs were valued at roughly CAD 299 million, with social and rental housing exempted. These examples indicate that stating the cost basis and the earmarked use – absent in Kerala's flat fee, Tamil Nadu's guideline-value premium, and Andhra Pradesh's TDR pricing – is what distinguishes a development charge from an untethered tax.

### 9.3 Setbacks are sized by geometry, not by the outcome they are meant to produce

Every setback table in this paper – Kerala's Table 10, Tamil Nadu's height-banded all-round setback Table 13, and Andhra Pradesh's Table 16 – sizes required open space off-road width, plot size, and building height, without reference to daylight or ventilation outcomes. Kumar and Kranthi (2017) test this directly and find fully compliant buildings routinely miss the National Building Code's minimum illumination standards, with the worst performance on the smaller side and rear setbacks – the same yards reduce relative to the front. Shaikh et al. (2019) find that 80–95% of mandated setback area is illegally occupied in sampled high-rises, which indicates the standard has become disconnected from the outcome it is meant to secure, independent of enforcement.

Copenhagen's perimeter block (karré) typology addresses the same daylight-and-ventilation requirement through a different spatial arrangement. Buildings run to the street on all four sides of a block, and light, air, and fire-escape access come from one shared courtyard at the block's centre rather than four separate buffer strips. Denmark's 1939 building law introduced FAR and the courtyard requirement in the same statute, treating density and daylight as one design problem – closer to how the AP Building Rules treat open space and setback as additive under Rule 57(6)(e) and Rule 66(6), but resolved differently. Despite the absence of individual setbacks, the typology – units roughly 11m deep, dual-aspect, five to six storeys – reaches 150 – 170 homes per net hectare. This indicates that Kumar and Kranthi's (2017) finding is a property of the geometric approach to setbacks specifically, not an unavoidable cost of daylight regulation generally.

### 9.4 Road width as an eligibility gate excludes areas of highest demand

Andhra Pradesh Building Rule 66 (Table 18) and Tamil Nadu's Rule 39 both use road width as the gate to high-rise eligibility. This concentrates legally available high-density development where roads are already wide, generally the periphery, and excludes older, well-connected inner-city areas with roads in the 6–10m range, common in cities across all three states. Chennai adds Annexure XIX's zone restriction and Rule 39's 500m road-continuity requirement in the CMA. Kerala's Rule 28/Table 7 mechanism departs from this pattern: it sets no minimum abutting road width and instead ties required access-road width to the building's total built-up area. A 10-storey building on a 500 sqm plot needs only a 6 m access road under this rule, against the 12 m floor Tamil Nadu and Andhra Pradesh apply regardless of the specific building's requirements. This distinction between an access road sized to the actual load and an abutting road sized as a flat capacity threshold is more developed within this paper's three-state sample than in the comparative cases below.

Two international examples show this kind of exclusion being revised. Hong Kong's "street-shadow rule" tied building height to street frontage width for 84 years, producing the base-heavy, tapering towers still visible in its older districts, before being repealed in 1987 once it was found to suppress

achievable floor area specifically in narrow-streeted areas – the same category of streets excluded under Tamil Nadu's current 12m floor. New York's 2013–2017 East Midtown rezoning opened the transfer of unused floor area ("air rights") from Grand Central – previously transferable only to directly adjoining lots – to any qualifying site across a 73-block district, with buyers required to fund transit and public-realm upgrades in exchange. This is a comparable loosening of a rigid geographic eligibility rule to Chennai's Annexure XIX.

## 9.5 Regulatory complexity has distributive effects

Andhra Pradesh states no FSI figure in its own rules, deferring to a Master Plan that may be outdated or silent on the point. Kerala runs twelve occupancy categories across two settlement tiers, with a premium mechanism and the Rule 26 progressive setback layered on top. Tamil Nadu's Rule 39 combines road-continuity requirements, geographic eligibility, and FSI tiers keyed to road width. This complexity is costlier for smaller developers and individual homeowners, who cannot absorb the specialist consultants larger players use routinely. Shaikh et al.'s (2019) 80–95% setback-violation finding is one indicator of this: a rule this widely unfollowed functions as a constraint mainly for those unable to work around it.

Two jurisdictions publish the applicable figure directly rather than requiring it be derived. Japan's Building Standards Act (Article 52) gives every plot a zoned FAR, capped where the fronting road is narrow, using a fixed formula (road width in metres  $\times$  0.4 for residential) zones) that requires no discretionary Master Plan lookup, in contrast to Andhra Pradesh's Rule 2 deferral. Singapore's Urban Redevelopment Authority publishes the Gross Plot Ratio for every parcel on a public map, while stating that the figure is a ceiling rather than a guarantee, since setbacks and height limits can lower what is achievable – the same stated-versus-achievable distinction traced through Kerala, Tamil Nadu, and Andhra Pradesh's tables above, made visible in advance rather than discovered plot by plot.

## 9.6 FSI is not used as a transit-linked density instrument

None of the three states provides a zero-charge transit-oriented FSI uplift as part of its TOD framework. Kerala's 2024 TOD Policy allows FSI over and above the limits prescribed under the prevailing building rules within TOD zones, but such additional FSI is explicitly subject to premium pricing. Tamil Nadu's TNCDBR Rule 30(5) similarly provides for premium FSI at concessionary rates in Transit Oriented Development areas. For properties within 500 m of existing or proposed Metro Rail corridors, Premium FSI is charged at 50% of the normal Premium FSI rate. Thus, while Tamil Nadu provides a substantial concession on the premium applicable to transit-proximate development, it does not constitute a zero-charge FSI entitlement. Andhra Pradesh's TOD Policy 2022 follows a different approach: existing statutory fees and charges continue to apply within TOD zones, with an additional Impact Fee applicable as prescribed by the Government from time to time. Somanathan

and Natarajan (2019) propose restructuring FSI into a basic FAR attached to the property right, with anything above it purchasable through calibrated TDR auctions rather than a flat fee, released in limited annual tranches, and targeted at CBDs, transit corridors, and high-growth localities rather than applied city-wide. They note this kind of TDR market functions safely only in already-serviced areas. Their reference case, France's 1975 land-reform formula, is no longer in force: France dismantled the underlying charge between 2000 and 2014 and abolished FAR as a national planning tool the same year, having found the structure suppressed more floor area than it recovered in value.

## 10. Policy Recommendations

The recommendations below draw on the regulatory review (Sections 4–7), the buildable-unit analysis (Section 8) and the literature in Section 9. They are grouped into cross-cutting and state-specific measures, and Table 26 summarises them by time horizon. None requires diluting fire-safety standards. The aim is to tie spatial requirements more closely to the outcomes they are meant to secure.

### 10.1 Cross-Cutting Recommendations

**Publish effective development capacity.** Alongside nominal FSI, each state should publish the floor area and number of units that can actually be built on standard plot sizes, or offer a plot-level calculator. Singapore's Gross Plot Ratio map and Japan's road-width formula (Section 9) show that publishing the figure in advance reduces uncertainty. That matters most for small developers and households, who bear the heaviest cost of regulatory complexity.

**Scale setbacks to plot size.** Fixed-width setbacks take a far larger share of small plots. On a 500 sq m plot, Andhra Pradesh can build only 33 per cent of its FSI, and Tamil Nadu cannot use its high-rise FSI at all (Section 8.5). Setback schedules for smaller plots should be revised to meet fire-access, light and ventilation objectives with less loss of buildable area.

**Remove step changes at height thresholds.** In none of the three states does crossing the high-rise threshold reward additional floors proportionately (Section 8.5). Requirements should instead rise progressively with height, so that a small increase in height does not trigger a disproportionate regulatory burden.

**Move towards performance-based standards.** Over the longer term, geometric setbacks could be supplemented by performance standards for daylight, ventilation and fire access. Alternative forms, such as shared courtyards, could then be permitted where they achieve equivalent outcomes (Section 9.3).

## 10.2 Kerala

Raise the high-rise threshold, with safeguards. Kerala has the lowest threshold of the three states: more than five floors or 16 m, against 18.30 m in Tamil Nadu and 24 m in Andhra Pradesh. Its FSI is exhausted at five floors (Section 8.2), so crossing 16 m adds setbacks and compliance without adding units. Following Andhra Pradesh, Kerala could raise the Rule 80 threshold to 24 m, or at least 18.30 m, with three safeguards:

- Retain the Fire Safety NOC at 15 m;
- Base structural certification on the building's full height;
- Adopt staged approval for taller projects.

Any revision should be assessed against the capacity of the Kerala Fire and Rescue Services and the state's narrow road network.

**Reward height where land is scarce.** Kerala could allow a higher base FSI in high-demand locations and along transit corridors. It could also extend the fee-free FSI of 5.0 under Rule 27(2)(ii) to private affordable housing that meets unit-size and price criteria. The trade-offs are lower premium-FSI revenue for local bodies, and the need to check that the additional capacity reaches the intended income groups.

**Resolve the recreational-space conflict.** Rule 43 requires recreational space outside the building footprint, while Rule 26(10) prohibits using mandatory setbacks for it. Permitting part of this space within setback areas that exceed the minimum would resolve the conflict on small and mid-sized plots without reducing fire access.

## 10.3 Tamil Nadu

Graduate road-width, setback and scrutiny requirements by height. Rule 39 currently treats a 20 m building in the same way as a much taller tower. Both face the same 12 m road requirement, the same 7 m all-round setback and the same multi-agency panel review. A graduated schedule would address this:

- Allow a lower high-rise band (18.30–24 m) on roads of 9 m or more, with smaller setbacks;
- Reserve the 12 m, 15 m and 18 m road requirements for progressively taller buildings;
- Scale panel scrutiny to building height.

This would retain the link between density and infrastructure while opening inner-city areas, where roads are often narrower than 12 m, to mid-rise housing. Alternatively, Tamil Nadu could follow Andhra Pradesh in raising its high-rise threshold while retaining fire-safety requirements.

## 10.4 Andhra Pradesh

**Revisit setbacks in the 18–24 m band.** The December 2025 amendment took this band out of the high-rise category, but its 7–8 m all-round setbacks still mean that units peak at 18 m on the test plot (Section 8.4). Bringing these setbacks closer to the Table 17 regime, while keeping fire-safety requirements, would let the reform translate into additional housing.

**Reduce the cumulative loss of footprint.** Andhra Pradesh could take three steps:

- Allow part of the organised open space to be met within setbacks that exceed the minimum, so that the same land is not effectively reserved twice;
- Let green strips be consolidated into a single usable space, and let adjoining plots pool their open space into a shared park;
- Cap the total share of the site that must remain unbuilt.

Extending the existing setback-transfer provisions to taller buildings would be a practical first step.

## 11. Limitations and Further Research

The buildable-unit model is deliberately simple. It considers FSI, coverage, setbacks and the open space tied to them; road-width eligibility, premium FSI, land value, parking and approval timelines are outside its scope, so the results show the physical ceiling on housing supply rather than what the market will deliver. It uses a flat square plot, a 3.0 m floor-to-floor height and an 8 per cent allowance for common areas; irregular plots, road-widening deductions and different floor heights would change the results. For Andhra Pradesh, the FSI of 5.0 applies only to Amaravati's S3 zone, and FSI elsewhere depends on the applicable Master Plan; the setbacks used up to 18 m (3 m front and 6 m on other sides for plots above 1,000 sq m) should be verified against the amended Table 17. For Tamil Nadu, the high-rise FSI is taken at the top tier of 3.25, which requires an 18 m road.

Further research could extend the analysis in three directions: first, by mapping the actual distribution of plot sizes and road widths in the cities concerned, to estimate how much land falls into each regulatory regime; second, by incorporating construction cost, land value, premium charges and approval timelines to estimate per-unit costs; and third, by drawing on interviews with developers and approving authorities to test whether the constraints identified here shape actual building decisions.

## 12. Conclusion

This paper set out to explain why the floor area that building rules permit on paper often differs from the floor area that can be built. Across Kerala, Tamil Nadu and Andhra Pradesh, the answer lies not in any single provision but in how FSI, coverage, setbacks, road-width rules and height thresholds

combine. Each state constrains housing supply through a different mechanism: Kerala through a uniform FSI that is exhausted at five floors and gives no reward for height; Tamil Nadu through a road-width-linked FSI whose higher tier is unlocked only by crossing the 18.30 m threshold and meeting road-continuity and panel-scrutiny requirements; and Andhra Pradesh through height-graded setbacks and organised open space that leave almost a third of its master-plan FSI unbuildable on a 2,500 sq m plot.

The common lesson is that stated FSI is a poor guide to housing supply, and that smaller plots, where much affordable housing is built, bear the heaviest losses. Reform therefore needs to look beyond the FSI figure. Publishing effective capacity, removing step changes at height thresholds, scaling setbacks to plot size and outcomes, and pricing additional density transparently would allow the three states to retain the safety and liveability objectives of their rules while converting more of the development rights they already grant into homes.

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