

**Working Paper No. 361**

**Land use and Land Acquisition  
laws in India**

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**July 2018**



**INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS**

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## Abstract

The enactment of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Rehabilitation Act, 2013, has made sweeping changes in the land acquisition laws of India (LARR Act, 2013). By increasing the compensation for acquired land, mandating a social impact assessment to be undertaken and requiring the prior consent of land holders in particular cases, the Act has no doubt corrected the imbalance that existed between the interests of land-owners and of the government as the custodian of public interest in the earlier land acquisition procedures. It has significantly increased transparency in the land acquisition process and given a voice to land owners in decisions on land acquisition. But the implementation of the Act, as originally enacted, could also retard the development process by slowing down the building of public infrastructure, and the processes of industrialisation and urbanisation. It could impede the provision of affordable housing for the vast majority of the population moving from rural to urban areas, which is crucial for controlling the spontaneous development of sprawls taking place across the country. The central government has tried to alleviate some of the adverse effects by introducing an amendment bill but its passage in Parliament has been stalled. Six states, however, have obtained presidential assent for carrying out amendments on the lines of the bill introduced in Parliament. This paper analyses the LARR Act, 2013, examines its impact on the development process and makes recommendations on the way forward for the central and state governments to lighten the adverse effects on infrastructure, industrialisation and urbanisation. While analysing the developments on urbanisation, the paper also makes an assessment of the possible expansion of urban settlements in the country in future and of the impact of such expansion on the area under agriculture.

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**Key words:** *Land use, land acquisition, urbanization, India*

**JEL classification:** *Q15, R52, R58*

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# Land use and Land Acquisition laws in India

Anwarul Hoda

## 1. Introduction

Agricultural land constitutes a major proportion of India's geographical area, with forests the next biggest user. Non-agricultural users, mainly urban settlements, industries and infrastructure have so far accounted for a relatively small share of land use but this share is likely to rise rapidly in future, as the country modernises and urbanises. Much of the privately-owned land in the country is used for cultivation and is recorded as agricultural land. Land owners are free to transfer land to other users but a change in use from agricultural to commercial, industrial or any other purpose usually requires the permission from revenue authorities; such permission is generally accorded easily on the payment of a fee. When large parcels of land are needed for the construction of roads, railways, canals or other public infrastructure, urban housing or any other public purpose, land is acquired compulsorily by the government on payment of compensation in accordance with land acquisition laws. There is a provision in these laws for acquisition of land for the establishment of industry owned by the private sector as well. While changes in land use take place gradually and incrementally over time through decisions by land-owners, big changes require decisions by the governments and compulsory land acquisition is the main vehicle for bringing changes on a large scale.

Since the British days, the framework of law for compulsory acquisition of private land has been provided mainly by the Land Acquisition Act, 1894. In 1973, a Supreme Court judgement (*Kesavanand Bharati and Others vs. State of Kerala*), which pronounced the doctrine of the basic structure of the Constitution, put in doubt the constitutionality of the land acquisition law. The case raised the issue whether compulsory land acquisition could be construed an infringement on the right to property, which was one of the fundamental rights guaranteed by the Constitution. The situation was remedied after the right to property was removed from the list of fundamental rights by the 44th Amendment to the Constitution. Although the constitutional validity of the land acquisition law is no longer in doubt, legal challenges in individual cases have continued. In these cases, the main points of challenge have been on the adequacy of compensation, genuineness of public purpose and the area of land proposed to be acquired being more than necessary.

However, in 2007, land acquisition for the establishment of large industrial units became a source of political turbulence in Singur and Nandigram in West Bengal when the government tried to suppress a farmers' agitation against the acquisition of land for the Tata Engineering and Locomotive Company's Nano project. A similar situation arose in Odisha as well in a number of projects involving acquisition of land for private companies (Tisco, Vedanta and Posco). There was great sympathy for the farmers who were evicted from their only earthly possessions in an extremely poor part of the country. The Nano project of Telco was shifted to Gujarat and the prestigious Posco steel project was abandoned. A bauxite mining project of

Vedanta also met the same fate. The discontent among farmers was exacerbated by the perception that government's power to acquire land was being used mainly for the benefit of private industry. The resentment was particularly acute among the tribal population, who had lost much of their land since independence without adequate compensation and without being provided with employment opportunities. It was also believed that large industries had got land acquired far in excess of their requirement. There was anger also at the use of the urgency clause for land acquisition whereby possession could be taken of the acquired land even before an award of compensation had been made. The general sentiment was that land acquisition laws were heavily tilted in favour of corporate interests and their implementation resulted in less than humane treatment of farmers and tribal owners of land who were uprooted from their habitat.

The political turmoil resulting from land acquisition for mining and industrial projects led the UPA government to undertake a wide-ranging overhaul of the Land Acquisition Act, 1894, and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, (LARR Act, 2013) was enacted. Important provisions in the Act relate to the steep enhancement of the scale of compensation to land-owners and other project affected persons, the requirement of consent of land-owners for acquisition on behalf of private companies and public-private-partnerships, the need to undertake a social impact assessment of the project for which the acquisition is being undertaken and limits on acquiring multi-cropped and other agricultural land. After the NDA government came to power in May 2014, it promulgated an ordinance and introduced the replacement bill, the LARR (Second Amendment) Bill, 2015, proposing, inter alia, exemption in respect of consent of land-owners, social impact assessment and restriction on the acquisition of agricultural land for five categories of projects, including defence, rural infrastructure, other infrastructure projects, industrial corridors and affordable housing. The Bill has been approved by the Lok Sabha but its passage has been blocked in the Rajya Sabha. Thus, the LARR Act, 2013, is the current law of the land on land acquisition.

It is necessary to mention here that Article 254 (2) of the Indian Constitution permits Indian states to enact legislation on subjects in the concurrent list even if such legislation is at variance with an Act approved by Parliament and apply it in the state after obtaining presidential assent. Using this enabling provision, six states, viz., Andhra Pradesh, Gujarat, Haryana, Maharashtra, Tamil Nadu and Telangana, have made, or proposed to make, amendments in the LARR Act, 2013, exempting land acquisition in the respective states from consent and social impact assessment requirements. Some other states are reported to have sent similar amendments for presidential assent.

The objective of this paper is to analyse the evolution of the land acquisition law in the country and evaluate the impact that the LARR Act, 2013, will have on the evolution of land use in the country and the difference that it will make to the processes of industrialisation, urbanisation and modernisation of infrastructure. What is the need for making the changes proposed in the LARR (Second Amendment) Bill, 2015? Section 2 describes the evolution of land use in the country from 1950-51 to 2014-15. Section 3 analyses the earlier laws,

including the Land Acquisition Act, 1894, and the shortcomings that had come to light during their operation from 1894 to 2013. Section 4 outlines the major features of the LARR Act, 2013, while Sections 5, 6 and 7 undertake a critical assessment of the possible impact of the LARR Act, 2013, on infrastructure projects, industrialisation and urbanisation respectively from the perspectives of both land-owners and project developers. In this context, it also examines the consequential changes that might occur in land use pattern and in particular, the possible contraction in net sown area in the country. Section 8 evaluates the changes proposed in the LARR (Second Amendment) Bill, 2015, again from the perspectives of both land-owners and users. Section 9 concludes with a summary of conclusions and recommendations.

## 2. Evolution of land use pattern in India from 1950-51 to 2014-15

To begin with, we look at trends in the evolution of land use pattern in the country during the last seven decades.

The Directorate of Economics and Statistics provides an estimate of agricultural land from year to year, which is shown in the Table below for selected years in the period 1950-51 to 2014-15.

**Table 1: Trends in land use in India in million hectares**

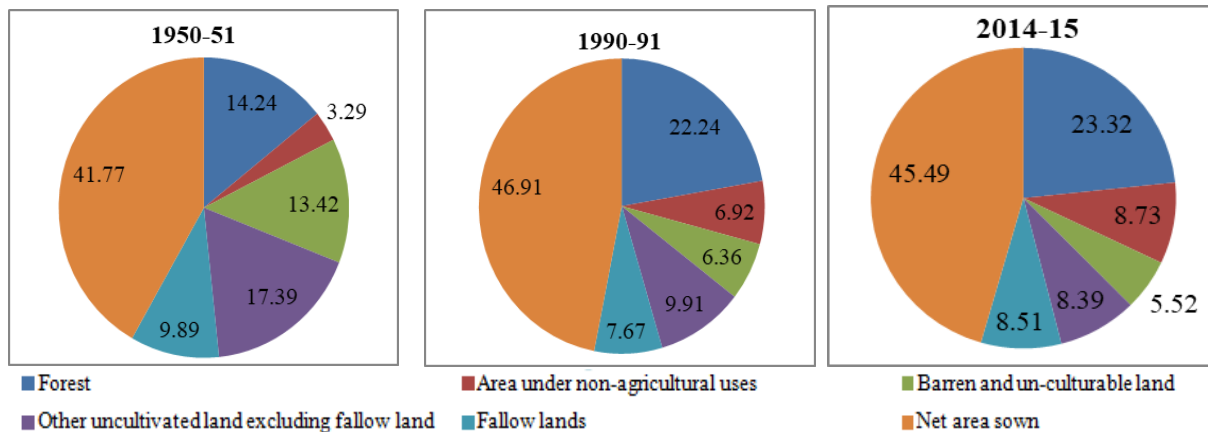
<b>Classification</b>	<b>1950-51</b>	<b>1990-91</b>	<b>2014-15</b>
Geographical area	328.73	328.73	328.73
Reporting area	284.32	304.86	307.80
Forest	40.48	67.81	71.79
Area under non-agricultural uses	9.36	21.09	26.88
Barren and unculturable land	38.16	19.38	16.99
Other uncultivated land excluding fallow	49.45	30.22	25.83
Fallow land	28.12	23.37	26.18
Net area sown	118.75	143.00	140.03
Cropping intensity	111.07	129.89	141.6
Net irrigated area	20.85	48.02	68.38

*Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmer's Welfare, Pocket Book of Agricultural Statistics (2016).*

The net sown area increased impressively from 118.7 million hectares in 1950-51 to 143 million hectares in 1990-91 but in subsequent years, there was a slow decline. During the same periods, there has been a steady upward trend in the use of land for non-agricultural purposes (urbanisation, industrialisation and infrastructure) from 9.36 million hectares in 1950-51 to 21.09 million hectares in 1990-91 and further to 26.88 million hectares in 2014-15. It is evident that the process of urbanisation has put only mild pressure on cropland. If the trend of urbanisation were to remain as modest as it was in the past, there may not be any big threat regarding loss of cropland in the future.

The impression of somewhat mild pressure of urbanisation on cropland is re-confirmed if we calculate the changing proportions of land use in recent decades. Figure 1 shows that non-agricultural use increased from 6.92 per cent of the total land in 1990-91 to 8.73 per cent in 2014-15. However, the future may be somewhat worrisome, as we shall see later.

**Figure 1: Changing land use in India**



Source: Adapted from the Directorate of Economic and Statistics, Ministry of Agriculture and Farmer's Welfare, *Pocket Book of Agricultural Statistics (2016)* and Directorate of Economics and Statistics, *Land Use Statistics at a Glance 2005-06 to 2014-15*, Ministry of Agriculture and Farmer's Welfare.

### 3. Pre-existing land acquisition laws

The Land Acquisition Act, 1894, was earlier the principal legislation providing for acquisition by government of private land for any public purpose. Besides this core legislation on the subject, there were provisions for land acquisition also in the laws enacted for specific purposes such as the construction of railways, national highways, tramways etc.

#### 3.1 Land Acquisition Act, 1894

The main features of the legislation, which was repealed simultaneously with the enactment of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act, 2013) are described below.

Public purpose: The acquisition under the law could be for the use of land not only for the central or state governments or for companies or corporations owned by them but also for privately owned companies. Some specific examples of public purpose were mentioned in the law such as town or rural planning, providing residences to the poor and landless persons, “carrying out any educational, housing, health or slum clearance schemes sponsored by Government” and provision of land for a corporation owned by government. There was also more broadly phrased language, referring to “the provision of land for planned development of land from public funds in pursuance of any scheme or policy of Government and subsequent disposal thereof...with the object of securing further development as planned”. The Act also provided for acquisition of land for “the construction of some building or work

for a Company which is engaged or is taking steps for engaging itself in any industry or work which is for a public purpose”.

### **3.2 Procedure for acquisition**

**Notification:** The first step was the issuance of a preliminary notification in the Official Gazette informing the public of the proposal to acquire the land. Such notification was intended to alert the public of the government’s intention for acquisition and generally resulted in freezing the development of the land as well as its ownership.

**Hearing of objections:** Any person interested in the land notified for acquisition could file an objection within 30 days of the date of publication of the notification and every such person had to be given a hearing by the Collector.

**Declaration:** After hearing the objections and making further inquiry where necessary, the collector was required to make a report with his recommendations on the objections for a decision by the government. After consideration of the report, if the government was satisfied that any particular land was needed for a public purpose, it would issue a declaration to that effect. There was a requirement in the Act as amended in 1984 that the declaration should be made within one year of the initial notification.

**Procedure for compensation:** After the declaration, the Collector proceeded to mark out the land and measure it and then give notice that the government intended to acquire the land and invite claims for compensation for all interests in the land. At the same time, notice had to be given to the occupiers of any of the land and to all persons known to have an interest in the land. After making enquiries on the claims, the Collector made the award, specifying the area of land, compensation to be paid and “the apportionment of the compensation among the persons known or believed to be interested in the land”. The award had to be made within a period of two years of the declaration, failing which the entire proceeding was deemed to have lapsed. If any person did not accept the award on the basis of “measurement of land, amount of compensation, or the person to whom it was payable”, or to the apportionment of the compensation, he had the right to ask for the matter to be referred to a court.

**Determination of compensation:** The main compensation to be paid to the interested persons was the market value of land that prevailed at the time of the initial notification. To this had to be added interest @ 12 per cent for the period between the publication of notification and the date of award or possession, whichever was earlier. More importantly, the compensation was to be enhanced by 30 per cent of the market value, “in consideration of the compulsory nature of the acquisition”. There was also an entitlement to compensation on account of damage to standing crops or the damage caused to other property at the time of taking possession. There was provision also for payment of reasonable expenses incidental to change of residence or place of business if such a change was necessitated by the acquisition.

**Possession:** After the award had been made, the Collector would take possession of land,



“which thereafter vested absolutely in the government free from all encumbrances”. In cases of urgency, the Collector would take possession of the land even before the award of compensation once notice had been given of the intention of the government to acquire the land. In cases of urgency, the declaration of acquisition could be made even without hearing of objections. A criticism of the relevant provision is that the law did not define urgency and the determination of what constituted urgency was left to the subjective determination of the government

### **3.3 Other pre-existing laws:**

Two legislations for specific purposes, with provisions on the acquisition of land, were enacted in the British era, namely the Land Acquisition (Mines) Act, 1885, and the Indian Tramways Act, 1886. Several laws relating to infrastructure, enacted after independence e.g., the Damodar Valley Corporation Act, 1948, the National Highways Act, 1956, the Coal Bearing Areas Acquisition and Development Act, 1957, the Petroleum and Minerals Pipelines (Acquisition of Right of User of Land) Act, 1962, the Metro Railways (Construction of Works) Act, 1978, the Railways Act, 1989, also contain specific provisions for acquisition of land.

The essential features of these laws were the same as those of the Land Acquisition Act, 1894.

### **3.4 Shortcomings of pre-existing land acquisition laws**

In India, land is a scarce resource, with the majority of the population having very small parcels of agricultural land on which their livelihood is dependent. In such a country, compulsory acquisition of land can create a deep sense of deprivation. Since farming is the only occupation to which the rural folks are accustomed, compensation for the lost land cannot really be enough for most of them. The money was spent very quickly and, without an alternative means of livelihood, the erstwhile landholder became a destitute.

The effect of compulsory land acquisition on the small landholder could be calamitous but all landholders, big and small, suffered from the erstwhile land acquisition laws for the following main reasons:

- (a) Although the Act mandated payment of compensation on the basis of the market value of land, the market value was determined on the basis of rates shown in registered sale deeds, in which both the vendor and the vendee had a vested interest in underquoting the price, in order to save on the stamp duty. As a result, despite the payment of a 30 per cent solatium in recognition of the compulsory nature of the sale, the landholder ended up getting a compensation that was lower than the market rate.
- (b) Although there was a provision in the law for objections to be raised on the land acquisition itself, distinct from the objection to the amount of compensation, the authorities did not really heed such objections once a preliminary decision had been taken to acquire the identified land for a public purpose.

- (c) The most important lacuna was the absence of a provision for the rehabilitation and resettlement of the persons displaced by the acquisition and sometimes uprooted from their homes.

#### **4. Changes in the land acquisition law in 2013**

The UPA government sought to remedy the deficiencies mentioned above and in fact do more for the landholder by enacting the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (LARR Act, 2013). The aim of the legislation was far-reaching in that it sought to redress the imbalance inherent in the procedures laid down in the Land Acquisition Act, 1894, between the interest of individual landholders and the authority of the government acquiring land for a public purpose. The following are the salient features of the LARR Act, 2013.

**Broadening of the concept of “interested persons”:** Persons having interest in the land include not only those with title but also persons with easement and tenancy rights, including sharecroppers, and equally importantly “any person whose primary source of livelihood is likely to be adversely affected”.

**Purpose of land acquisition:** Land can be acquired for land needed by the government for its own use, including public sector undertakings and for any public purpose including strategic purposes, infrastructure projects, or urbanisation or housing projects. Land acquisition under the Act can also be made for public private partnership (PPP) projects and for private companies for public purposes, but prior consent of 70 per cent of landholders is required for the former and 80 per cent for the latter.

**Enhancement of compensation:** The most far-reaching change in the 2013 Act is a steep increase in the compensation to be paid to the landholder for compulsory acquisition of land. For land in rural areas the compensation, including solatium, is four times the value of the average of registered sale deeds and for urban lands, it is twice as much.

**Rehabilitation and resettlement:** The rehabilitation and resettlement package granted by the Act includes a constructed house if a house is lost in the land acquisition. Affected persons are to be provided with one of three options: a job to at least one member of the affected family, or one-time payment of INR five lakh or annuity policies that pay not less than rupees two thousand per month per family for twenty years. Each affected family displaced from the acquired land is also entitled to a subsistence allowance of Rs 3,000 per month for 12 months. Substantially, the same package has to be offered to those who lose livelihood as a result of the acquisition, including the landless. Besides compensation and the R&R package, 26 infrastructural facilities have to be provided in the resettlement area. A private company purchasing land through private negotiations equal to or more than the limits prescribed by government also has liability to provide for an R&R package as may be determined by the Collector.

In the case of irrigation projects, as far as possible, affected families owning land lost due to acquisition are to be allotted a minimum area of one acre of land in the command area of the project. Similarly, in the case of urbanisation projects, 20 per cent of developed land has to be reserved for allotment on a proportionate basis to those whose land has been acquired, on payment of the cost of acquisition plus the cost of development.

**Social Impact Assessment:** In addition to the stipulation for consent of the majority of landholders, there is a requirement for a social impact assessment of the project, somewhat akin to the environment impact assessment under environmental laws. The social impact assessment begins with a study of all aspects of the project and its impact on the livelihood of affected families and on the facilities and amenities enjoyed by them. A public hearing and involvement of the local body (*panchayat*, municipality or municipal corporation) are also mandated. Among other things, the government has to consider whether the potential benefits and public purpose “outweigh the social costs and adverse social effects as determined by the Social Impact Assessment”.

**Urgency clause:** The LARR Act, 2013, limits the invocation of the urgency clause, whereby possession can be taken even before the award of compensation is made, only to “the minimum area required for the defence of India or national security or for any emergencies arising out of natural calamities or any other emergency with the approval of Parliament”.

**Food security and agricultural land:** The LARR Act, 2013, provides, as a general rule, that no irrigated multi-cropped land shall be acquired under the Act. Where such land is acquired in exceptional circumstances, the aggregate for all projects shall not exceed prescribed limits for the district or state. Whenever multi-crop irrigated land is acquired, an equivalent area of culturable wasteland has to be developed for agricultural purposes. In the alternative, an amount equivalent to the value of land acquired has to be deposited with the government for “investment in agriculture to enhance food security”. It is also envisaged that the acquisition of agricultural land, other than irrigated multi-cropped land, must not exceed the prescribed limit in terms of a percentage of the net sown area for the district or state. The limits for acquisition of agricultural land, however, have been made inapplicable for “projects that are linear in nature, such as those relating to railways, highways, major district roads, irrigation canals, power lines and the like”.

**Land Acquisition under other Acts:** The LARR Act, 2013, lists in its Fourth Schedule 13 specific Acts, which contain provisions for acquisition of land for specific purposes, including, but not limited to physical infrastructure, such as the Railways Act, the Highways Act, the Metro Railways (Construction of Works) Act. Section 105 (1) provides that the provisions of LARR Act, 2013, do not apply to the land acquisition under these laws, but Section 105 (3) mandates the central government to issue a notification within one year applying to the land acquisition under the Acts in the Fourth Schedule the provisions of the Larr Act, 2013 on compensation and R&R. Such a notification was issued by the Ministry of Rural Development on August 28, 2015, after the one year period stipulated by Section 105 (3) of the LARR Act, 2013 had passed but the delay was condoned by an order issued under Section 113 of the Act, which empowers the government to remove difficulties.

The features of the LARR Act, 2013, outlined above speak for themselves on the extent to which rebalancing of landholder's interest vis-à-vis the government's authority in carrying out compulsory land acquisition has been accomplished. Without doubt the landholders have been immensely benefited. They now receive compensation that is considerably more than what they received under the old laws and, in addition, they are also entitled to a very generous R&R package. The entitlement to receive compensation and R&R benefits has also been broadened beyond title holders to include livelihood losers (Wahi et al. 2017). The landholders now have a voice in the land acquisition process collectively in the social impact assessment process. The requirement of prior consent to the land acquisition of 70 to 80 per cent of the land holders in private or PPP projects has resulted in a quantum increase in the bargaining power of land-owners and other interested persons. But the critical question is how the changes described above are to be viewed from the perspective of the development process. How are these changes going to affect the construction of physical infrastructure, urbanisation and industrialisation, which are the main purposes for which land acquisition procedures are used? How seriously would the process of the modernisation of the country by building world class infrastructure, urbanisation and industrialisation be affected by the land acquisition law? The new law also addresses the concern regarding agricultural land being diverted for non-agricultural purposes and provides for limits to be prescribed for both irrigated multi-crop land and other agricultural land for each district and for the state as a whole, beyond which land would not be acquired. We need to assess the potential for diversion of agricultural land for non-agricultural purposes and evaluate the seriousness of the resulting threat to food security and then look at what safeguards have been provided by the LARR Act, 2013, against such diversion. We look at these questions in turn in section 5, 6 and 7.

## **5. Impact of LARR Act, 2013 on infrastructure projects.**

Construction of public infrastructure projects is at the heart of the process of development in the country. For India's Eleventh Five-year Plan (2007-2012), it was estimated that an investment of US \$ 500 billion would be required; this increased to US \$ 1 trillion during the Twelfth Five-year Plan (2012-2017). Among infrastructure projects, railways, highways, metro railways, and irrigation canals require large amounts of land and electricity lines, telecommunication lines and petroleum pipelines need to acquire the right of user of land. All these projects are likely to be affected by the higher cost of acquisition of land, including compensation to interested persons and the R&R package. There is an equal amount of concern as well on the delays likely to be involved in undertaking and completing the social impact assessment. However, as noted earlier, the provisions of the LARR Act, 2013, have been made inapplicable to the enactments relating to land acquisition listed in the Fourth Schedule of the Act, and this Schedule includes legislation relating to railways, national highways, metro railways, petroleum pipelines, electricity etc. The requirement of the social impact assessment, therefore, will not apply to infrastructure projects covered by the enactments listed in the Fourth Schedule. In addition, irrigation projects have been separately exempted from social impact assessment if they are already subject to environmental impact assessment. We need to note, however, that although many of the big infrastructure projects

would be excluded from the purview of the provisions on social impact assessment, several infrastructure projects that fall outside the enactments listed in the Fourth Schedule would still be covered by these provisions, e.g., airports, logistics parks, state highways, and major and minor district roads, to name a few. Implementation of these projects would be delayed, because of the need to undertake social impact assessment. Many of these projects are undertaken as PPP projects and where this is the case, there would be further delays because of the need to obtain the consent of 70 per cent of the land-holders. Further, the government has by notification already extended to the projects falling under the enactments in the Fourth Schedule the benefits of the LARR Act, 2013, relating to compensation and R&R. As a result, the costs of land acquisition for these infrastructure projects, as well as those not covered by the enactments listed in the Fourth Schedule, will certainly go up. Thus, we come to the conclusion that the procedural complexities of land acquisition (particularly the requirement for social impact assessment) will affect a subset of infrastructure projects but the higher costs will affect all of them. PPP projects will also be subject to the additional procedural hurdle of obtaining consent of 70 per cent of the landholders.

However, most major infrastructure projects will be unaffected by the constraint imposed on the acquisition of agricultural land as the Act specifically exempts “projects that are linear in nature such as those relating to railways, highways, major district roads, irrigation canals, power lines, and the like”, as mentioned earlier.

## **6. Impact of the LARR Act, 2013 on industrialisation**

There is consensus among policy makers in the country that if India is to significantly step up its GDP growth rate to eradicate poverty and raise the standard of living of its population to a decent level, it must revive manufacturing. Manufacturing cannot expand unless land is provided to entrepreneurs at a price that does not affect our competitiveness vis-à-vis emerging countries in Asia. Competitiveness is important not just for being able to export to foreign markets. Due to falling tariffs, we have to ensure that our manufacturers are able to compete with imports in the domestic market as well. Land cost is an important constituent of manufacturing cost and we need to look at the cost of land for manufacturers in other countries. Our main competitors in manufacturing are China, Malaysia and Thailand and we need to look at the scale of compensation for acquisition of land in these countries.

In China, the payment of compensation as well as of resettlement allowance is based on the average value of annual production in the past three years. For land, the law requires payment of compensation to be in the range of six to 10 times the annual production value, and for resettlement in the range of four to six times, provided that the maximum payment does not exceed 15 times the annual value of production. There is an overriding clause that this ceiling may be exceeded if it is insufficient for the dispossessed farmer to maintain the original quality of life. However, the total payment must not exceed 30 times the average value of annual production. What needs to be noted is that the compensation is in terms of the annual production value of the land, not its market value.

Land acquisition in Malaysia is governed by the Land Acquisition Act, 1960, which allows compulsory acquisition of land with adequate compensation for any public purpose, for any purpose beneficial to the economic development of Malaysia, or for mining, residential, agricultural, commercial, industrial or recreational purposes.

The law lays down the principles for payment of ‘adequate compensation’ for compulsory land acquisition. The amount of compensation must take into account aspects related to the market value of land and incidental expenses incurred as a result of change of residence or place of business. The law also lays down the procedure for land acquisition, which includes public hearing, not on the purpose of the acquisition but on the amount of compensation.

Thailand’s Constitution recognises the concept of ‘eminent domain’ whereby the state has the right to take over private immovable property compulsorily without the consent of the owner for a public purpose, which includes public utilities, national defence, exploitation of natural resources, town and country planning, promotion and preservation of the quality of environment, and agricultural and industrial development. However, a fair compensation has to be paid promptly to the owner as well as to all persons having rights on the land, who suffer as a result of the acquisition.

Thus, we find that in countries that compete with India in manufacturing, the procedures for acquisition of land are uncomplicated and the compensation for land or for resettlement is based on the market value or, in the case of China, on the average value of annual production of agricultural land. In no other country is compensation for acquired land a multiple of the market value. If in India industrial units have to pay the price of land allocated to them in industrial parks, national manufacturing zones or industrial corridors on the basis of the cost of acquisition of land by the government, including the compensation paid to the “interested persons” and the amount spent on the resettlement and rehabilitation of such persons as required by the new land acquisition laws, it would certainly affect their competitiveness.

It is not realistic to envisage any changes in the land acquisition laws for downward revision of the scale of compensation or R&R. The landholders across the country are inclined to regard the scale of compensation and R&R embodied in the LARR Act, 2013, as acquired rights and it would be politically impossible for the government to attempt such a revision. The only way the situation can be remedied is for government not to pass on the full cost of land to the industrial units and charge concessional or subsidized rates.

In addition to the enhanced cost of land for industrialisation, there is also a concern that the newly introduced procedure for social impact assessment will cause delays in the acquisition of land by government for allocation to industrial units. PPP projects will be affected even more because of the need to obtain the consent of 70 per cent of the land holders. Governments have for long followed a policy of establishing industrial areas and industrial parks. In the last decade, industrial parks were also set up for specific groups of products. In 2011, the UPA government had enunciated the National Manufacturing Policy (NMP) in which it was envisaged that the share of manufacturing in GDP would be increased from 15 to 25 per cent by the year 2025. The NMP had envisaged

the establishment of national investment and manufacturing zones to facilitate the growth of manufacturing. Separately, the concept of industrial corridors also emerged in 2007 with the commencement of the Delhi Mumbai Industrial Corridor (DMIC) project in the states of Uttar Pradesh, Haryana, Rajasthan, Madhya Pradesh, Gujarat and Maharashtra. Subsequently, the following five industrial corridors have also taken shape:

1. Chennai-Bengaluru Industrial Corridor (CBIC) covering Tamil Nadu, Andhra Pradesh, and Karnataka.
2. Bengaluru-Mumbai Economic Corridor (BMEC) covering Maharashtra and Karnataka.
3. Amritsar-Kolkata Industrial Corridor (AKIC) covering Punjab, Haryana, Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal.
4. East Coast Economic Corridor (ECEC) covering West Bengal, Odisha, Andhra Pradesh and Tamil Nadu.

There has been an apprehension that the provisions of Chapter II of the LARR Act, 2013, on social impact assessment will delay the acquisition of land needed for the establishment of industrial corridors. The procedural delays will be even longer in PPP projects on account of the need to obtain the consent of 70 per cent of the landholders.

## **7. Impact of the LARR Act, 2013, on urbanisation**

On the basis of experience in the developed and even other developing countries the expectation has been that the process of urbanization will gather pace as the rural folks move out in search for livelihood in industries and services. By the year 2050, India is expected have an additional population of about 400 million people and agriculture and allied activities that provide livelihood to about 220 million people in 2011 cannot be expected to absorb any more. Consequently, there would have to be a major exodus from rural to urban areas (Kundu, 2013). However, the statistics as revealed in the past four decennial censuses show that the decadal rate of growth of urban population has been decelerating, having declined from 24.66 per cent in 1971-81 to 23.87 per cent in 1981-91, to 21.54 per cent in 1991-2001 and 17.70 per cent in 2001-11. The percentage of urban population has risen only modestly from 20.2 in 1971 to 31.16 per cent in 2011.

Scholars have raised doubts on whether there is some amount of undercounting of urbanisation in the periodic censuses. The Census of India uses three criteria for identifying urban settlements: the population size must be above 5,000; the density must be more than 400 persons per square km; and more than 75 per cent of the male workforce must be employed in non-farm occupations. The lower level of urbanisation reflected in the censuses could have at least partly resulted from the use of multiple criteria for identifying urban areas (Mukhopadhyay, 2013). Urbanisation in India is widespread in the periphery of large cities and in rural areas between urban settlements in a somewhat unplanned manner. At many places, newly built or improved highways form the axis of urbanisation. The population has a preference for developing habitations and commercial complexes and establishing even small

industrial units in rural areas outside the jurisdiction of urban municipal bodies in order to be outside their regulatory reach. The process has also led to the growth of urban slums in the vicinity of big cities, housing low-income segments of people who provide various types of service in the commercial and industrial complexes and residential colonies in the cities. The result of these spontaneous processes is that much of the urbanisation that is happening in India is “messy” and “hidden” as observed in a World Bank report on urbanisation in South Asia (World Bank, 2016).

The Government of India did try to tackle the problems of urbanisation through the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), which began to be implemented in the middle of the Tenth Five-year Plan in 2005 and continued over the Eleventh Plan (2007-12) and the Twelfth Plan (2012-17). The JNNURM had four components, namely, urban infrastructure and governance (UIG) in 65 cities, the urban infrastructure development scheme for small and medium towns (UIDSSMT), basic services to urban poor (BSUP); and the integrated housing and slum development programme (IHSDP). However, the JNNURM was concerned essentially with the rejuvenation of the city core. In order to tackle the challenges of urbanisation, we now need to focus our attention not only on the core but also on the periphery of these cities and indeed on the areas lying beyond the immediate vicinity. The Working Group on Urban Strategic Planning for the Twelfth Plan (Ministry of Housing and Urban Poverty Alleviation 2011) had recommended the replacement of the current system of regulating land use through master plans by a system based on urban strategic planning. Master plans would be replaced by spatial and development plans (SDP), embodying both the proposed land use and development control regulations. A strategic densification of existing cities was proposed together with the development of new cities along the transport and industrial growth corridors. The working group placed emphasis also on integrating land use and transport planning to facilitate functional and spatial linkages between housing, workplaces and commercial areas.

The World Bank Report on Urbanization in South Asia (World Bank, 2016) has also placed emphasis on the improvement of transport links and connectivity between urban areas and on spatial planning of city peripheries. Further, it stresses the need to provide affordable housing to the poor as well as to the middle class. To undertake spatial planning, the existing law for town and country planning will provide the statutory authority but such planning will also entail land acquisition, as in the past. Under the Master Plan for Delhi, 1962, for instance, over 60,000 acres of land was acquired for residential and commercial purposes and for parks. For residential purposes, the government may choose to leave it to private estate developers to acquire land for the upper income brackets, while providing only the trunk lines for power and water supply as well as for sewerage. But for affordable housing as well as for providing such facilities as parks, hospitals, public educational institutions and marketing complexes in all housing projects, the government may have to go in for substantial land acquisition on a compulsory basis. In fact, the government may need to subsidise the cost of land for affordable housing as without such support, housing will not be affordable for the lower income groups. The increase in compensation provided by the LARR Act, 2013, will facilitate acquisition. Besides, the provision in the Second Schedule to the Act that in



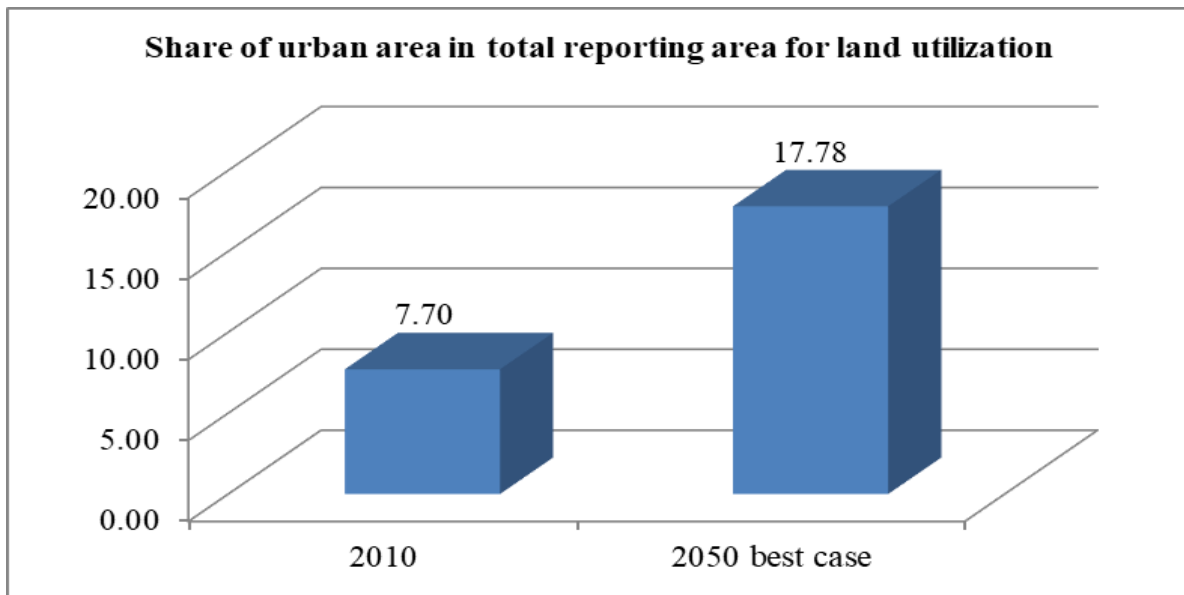
urbanisation projects 20 per cent of the developed land will be reserved for allocation to land owners (on payment of the cost of land acquisition and the cost of development) in proportion to the land acquired is expected to facilitate acquisition. The requirement for social impact assessment may be a procedural hurdle but, as we have mentioned earlier, the government has proposed to remove this impediment in respect of affordable housing through an amendment in the Act.

How will agricultural land be affected by urbanisation and what difference will the LARR Act, 2013, make in terms of reducing the loss of agricultural land?

The process of urbanisation needs to be accelerated if the country is to live up to its potential for development and if the dire economic situation of the rural population is to be remedied. We have recommended above that in order to save the country from chaotic urbanisation spatial planning needs to be undertaken and the spontaneous development of urban sprawls prevented. The sprawls result in low density urbanisation and have the tendency to swallow large areas of cropland. No estimates exist on the area of land at present occupied by infrastructure projects or by industrial areas or by individual industrial units. Estimates have however, been made in respect of urban area expansion. Bren d'Amour et al (2016) have projected an expansion of urban area by 3.3-3.7 million hectares in India and the consequent loss of an equivalent amount of croplands by 2030. The World Bank (Ellis and Roberts, 2016) estimates, made on the basis of observation of the night-lit areas, suggest that during the period 1999-2010, the urban footprint expanded in South Asia by five per cent per year, which was twice the urban population growth of about 2.5 per cent. This rate of growth suggests that without strong intervention, urban areas in India will need to expand more than six-fold from 23.6 million hectares in 2010 to 146.8 million hectares in 2050. Even if the process of urbanisation is properly regulated, World Bank projections suggest that very large areas of land would need to be provided for meeting the housing needs of the population.

According to these estimates, against the total urban area in 2010 of about 23.7 million hectares (236,934 square km), the requirement will be about 54.8 million hectares (547.553 square km) in 2050, so that urban land as a proportion of total available land will rise from 7.70 per cent in 2010 to 17.78 per cent in 2050.

**Figure 2: Share of urban area in total land area**



*Source: Directorate of Economic and Statistics, Ministry of Agriculture and Farmer's Welfare (2016) and Ellis and Roberts (2016).*

Even if the urbanisation policy is upgraded and urban expansion regulated in the manner recommended by the World Bank (Ellis and Roberts, 2016), the additional requirement of land would certainly put pressure on cropland. Additional land with an area of 31.1 million hectares cannot be found without touching cropland. If the entire requirement comes from cropland, it would shrink the net sown area by 22 per cent. Assuming that at least half the requirement will be provided from cropland, it will account for 11 per cent of the net sown area. The safeguards provided in LARR Act, 2013 against acquisition of agricultural land are very relevant.

Thus, it may be difficult to prevent the loss of cropland to urbanization in the decades to come. It must be mentioned, however, that it may be possible to make good the loss of agricultural production through increased productivity as well as through multiple cropping. We have seen in Table 1 above that the cropping intensity (percentage of gross cropped area to net area sown) has increased from 111.07 in 1950-51 to 142.02 in 2013-14. The real limiting factor will be the availability of water for irrigation. The ultimate irrigation potential in the country is assessed at 139.89 million hectares against which, up to the end of the 11<sup>th</sup> Five-year Plan (31-3-2012), irrigation potential of 113.53 million hectares had already been created (CWC 2015). Although there is scope for some expansion of irrigation, potential climate change has affected the outlook. Adaptation to climate will require exploitation of micro-irrigation (drip and sprinkler irrigation) in order to conserve water and at the same time increase agricultural production in order to make good the decrease in agricultural production due to the loss of cropland.

## **8. Changes proposed in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Amendment) Bill, 2015**

As observed in the analysis in the previous sections, the provisions of the LARR Act, 2013, will result in a significant increase in the cost of acquisition and place procedural hurdles leading to delays in the implementation of projects. A reduction in the scale of compensation is not possible politically but the central government has made an attempt to eliminate the delays inherent in the provisions on social impact assessment and for securing the consent of land holders by introducing an amendment bill.

The main change being sought in the bill is to exempt the following categories of cases from the requirement of obtaining prior consent of affected persons:

- (a) Projects vital for national security or defence
- (b) Rural infrastructure projects
- (c) Affordable housing and housing for the poor
- (d) Industrial corridors
- (e) Infrastructure and social infrastructure projects including PPP projects

The proposed legislation also seeks to enable the government to exempt by notification projects in these categories from the need to undergo social impact assessment as well as exempt land acquisition from the restrictions in respect of agricultural land.

Although the bill is yet to be passed by the Rajya Sabha, a number of states, viz., Andhra Pradesh, Gujarat, Haryana, Maharashtra, Tamil Nadu and Telangana, have already enacted legislation amending the LARR Act, 2013, exempting or enabling exemption of land acquisition in respect of the five categories listed in the amendment bill from prior consent, social impact assessment requirements and the restrictions in respect of agricultural land.

The amendment legislations of three states, Gujarat, Telangana and Maharashtra, which are available on the websites of these states, contain some provisions/language that are in addition to those included in the Amendment Bill, 2015, introduced in Parliament. These relate to industrial corridors and payment of lump sum in lieu of R&R in some cases. For instance, the Gujarat Act has specified that industrial corridors are those that are “set up by the State Government and its undertakings (in which case the land shall be acquired up to one kilometre on both sides of designated railway line or roads for such industrial corridors)”. The Maharashtra Act also specifies the width of industrial corridors similarly, while the Telangana Act leaves it open for the government to decide up to what distance on both sides of the railway line or roads the industrial corridor would extend. A provision in the Maharashtra Act adds industrial estates and industrial areas to the list of projects exempted from the requirements of prior consent, social impact assessment or restriction for acquisition of agricultural land.

The Gujarat Act also gives the government the alternative to pay a lump sum equal to 50 per cent of the amount of compensation paid to the land owner in lieu of R&R in two situations, (i) if an area of less than one hundred hectares is to be acquired for government's own use or (ii) whenever the land is to be acquired for projects of a linear nature such as railways, roads etc. There is a similar provision in the Maharashtra Act. The Telangana Act also has a provision for lump sum payment in lieu of R&R but with a difference. It is applicable to all categories of cases in which land acquisition has been exempted from the requirements for prior consent, social impact assessment and restriction on acquisition of agricultural land. Furthermore, the Telangana Act keeps it open to government to pay "such lump sum amount as may be prescribed in the Rules", instead of limiting it to 50 per cent of the compensation amount for land.

## **9. Summary of conclusions and recommendations**

The land acquisition laws that India inherited from colonial times were undoubtedly heavily loaded against the interests of land owners and other people dependent on land for their livelihood. The LARR Act, 2013, has enhanced significantly the scale of compensation to be received by land owners and additionally provided for their rehabilitation and resettlement (R&R) in the event of displacement. Sharecroppers and others dependent on land for their livelihood have been brought within the purview of compensatory payments and action for R&R. The transparency of the process of land acquisition has been considerably increased through the processes of social impact assessment and prior consent of land owners and other affected persons in certain cases. They not only get more compensation but have a say in whether land acquisition should be undertaken at all. Safeguards have also been introduced against large-scale acquisition of agricultural land that might diminish food production and jeopardise food security.

The changes described above have undeniably resulted in a rebalancing between the authority of government as the custodian of public interest and the rights of individual land owners. While land owners and other affected persons have gained considerably, it can be argued that some of the provisions could prove to be stumbling blocks in the process of development. Most people are reconciled to the increase in compensation and to the additional cost of R&R as these are construed to be provisions justified from the point of view of fairness and equity, even though there could still be a fall-out on the process of development due to the increase in the cost of infrastructure, for instance. However, there is widespread concern regarding the impact that the newly introduced processes of social impact assessment and prior consent would have on the building of infrastructure and on industrialisation and urbanisation. There is some worry also that the safeguard for food security might prove to be a hindrance.

In order to alleviate these concerns, the central government had introduced an amendment bill in 2015, seeking to make a number of changes in the land acquisition statute. The main changes sought were for alleviating the concerns regarding prior consent, social impact assessment and restrictions on the use of agricultural land in respect of five categories of projects, viz., those for national security or defence, rural infrastructure, affordable housing, industrial corridors and infrastructure and social infrastructure. The amendment bill has got

stuck in the Rajya Sabha. However, pursuant to Article 254 (2) of the Indian Constitution, six states have already enacted legislation amending the LARR Act, 2013, exempting or enabling exemption of land acquisition from consent and social impact assessment requirements and the restrictions in respect of agricultural land for certain categories of projects as envisaged in amendment bill introduced in Parliament. It is open to other states to follow the same course, but some of them may not have the political will to push such legislation through. In those states, the building of infrastructure, industrialisation and urbanisation will suffer. It would be, therefore, appropriate for the central government to keep trying to generate a political consensus, as they did in the case of the GST Bill and obtain approval of the amendment bill in Parliament.

Acquisition of land for infrastructure covered by enactments in the Fourth Schedule is already exempt from the new procedural complexities introduced by the LARR Act, 2013. In respect of infrastructure projects not covered by the enactments in the Fourth Schedule, as well as for industrial corridors and affordable housing, the proposed amendment bill or the amendment legislation in the states already enacted or those that might be enacted in future will eliminate the potential for delays that could be caused by the application of procedures for prior consent, social impact assessment or for agricultural land. However, all these three categories of projects will be affected by the increased cost of acquired land, as a result of which fewer projects will be taken up.

In industrial corridors, the escalation of cost of land may impair the competitiveness of industries. Similarly, the increase in the cost of land for housing projects will result in a situation in which the housing provided will not be affordable for the poorer segment of the population. To remedy the situation in both cases the government will have to grant subsidies to enable the industries set up on acquired land to remain competitive and to assure that the housing constructed on such land remains affordable.

The evolution of land use in the last seven decades shows that the construction of public infrastructure and the processes of industrialisation and urbanisation have not put too much pressure on the cropland. The proportion of the net area sown to the total area available for various uses increased from 41.77 per cent in 1950-51 to 46.91 per cent in 1990-91 before declining to 45.49 per cent in 2014-15. The area under non-agricultural uses, which could be assumed to cover public infrastructure, industries as well as urban settlements, rose slowly from 3.29 per cent in 1950-51, to 6.92 per cent in 1990-91 and further to 8.73 per cent in 2014-15.

However, the future could be different. Tracking urban footprints from night lit areas, a World Bank study (Ellis and Roberts, 2016) has come to the conclusion that the cities are rapidly sprawling in South Asia and in the period 1999-2010, urban land area in the region grew at a little more than 5 per cent per year, almost twice the growth rate of urban population. The study projects on this basis that the urban area in India could go up six-fold from 23.7 million hectares in 2010 to 146.9 million hectares in 2050 in the absence of effective urban planning and regulation. Even with such planning, the urban land requirement

in India in 2050 in the best-case scenario will be 54.8 million hectare or 31 million hectares more than in 2010.

Some of the additional requirement for urban areas could come out of barren and unculturable land, other uncultivated land and fallow land, but it would be reasonable to assume that at least fifty per cent of the future requirement of land for urbanisation would come out of cropland (net sown area). Even if the assumption is set at this minimum, there would be a cropland loss of about 10 per cent by 2050. Would it be possible to make good the loss of agricultural production through increased productivity as well as through multiple cropping? Given the current average level of productivity of various crops in the country as compared to the levels prevailing in major agricultural producing countries as well as the additional possibility that exists for multiple cropping, it may not be impossible to make up for the loss of agricultural production on account of the expected loss of cropland to urbanisation. The limiting factor will be the availability of water rather than of land. The overriding imperative for government policy is to undertake effective spatial planning in order to restrict urban expansion so as to ensure that urban settlements do not occupy more than 55 million hectares in 2050, creating unacceptable pressure on cropland.

## References

- Bren d'Amour, C., Femke Reitsma, Giovanni Baiocchi, Stephan Barthel, Burak Güneralp, Karl-Heinz Erb, Helmut Haberl, Felix Creutzig, and Karen C. Seto (2017).** “Future urban land expansion and implications for global croplands”, *Proceedings of the National Academy of Sciences*, Vol. 114, No. 34, pp. 8939-8944.
- Central Water Commission (2015),** *Water and Related Statistics*, Water Resources Information System Directorate.
- Directorate of Economic and Statistics (2016),** *Pocket Book of Agricultural Statistics (2016)*. Ministry of Agriculture and Farmer's Welfare, Government of India.
- Directorate of Economics and Statistics, Land Use Statistics At a Glance 2005-06 To 2014-15,** Ministry of Agriculture and Farmer's Welfare, Government of India. Accessed on June 20, 2018, at [https://eands.dacnet.nic.in/LUS\\_1999\\_2004.htm](https://eands.dacnet.nic.in/LUS_1999_2004.htm)
- Ellis, Peter, and Mark Roberts (2016).** *Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability*. South Asia Development Matters. Washington, DC: World Bank.
- Kundu, Amitabh (2013).** “Exclusionary cities: The exodus that wasn't”, *Infochange Agenda: Urban Transition*, Issue 27, Centre for Communication and development Studies, Pune.
- Ministry of Housing and Urban Poverty Alleviation (2011).** *Report of the Working Group on Urban Strategic Planning: 12th Five-year Plan*, Steering Committee on Urban Development & Management, Government of India, October 4.
- Mukhopadhyay, Partha (2013).** “The ‘other’ urban India”, *Infochange Agenda: Urban Transition*, Issue 27, Centre for Communication and Development Studies, Pune.
- Wahi, N., Bhatia, A., Gandhi, D., Jain, S., Shukla, P., and Chauhan, U. (2017).** *Land Acquisition in India: A Review of Supreme Court Cases from 1950 to 2016*, Centre for Policy Research, New Delhi, 2017

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