

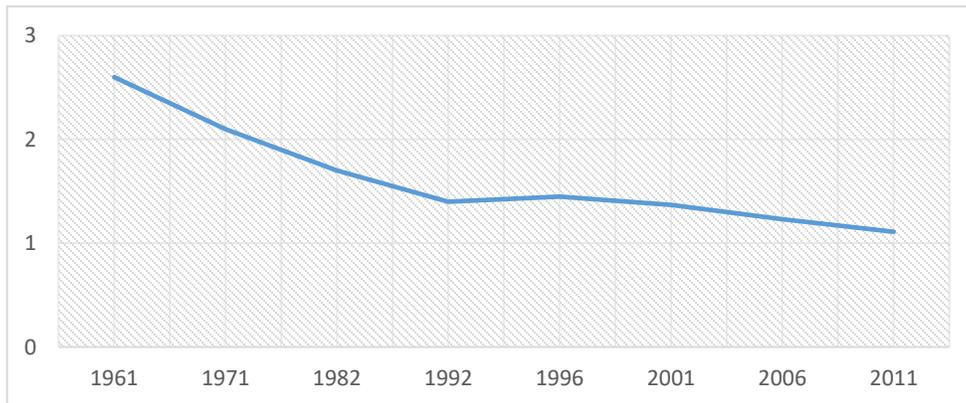


## Digitising Land Records in India

India hosts more than a sixth of the world’s population in about 2% of the global landmass. Its cities are some of the most densely populated regions of the world – Mumbai holds an average of 33,000 people per square kilometer, and in slums such as Dharavi, that number increases to more than 300,000 people per square kilometer. And India’s population continues to rise -- it is projected to overtake China as the most populated country in the world within the next four years. This growth will be concentrated in the densest cities in the country as they remain the primary engines of the economy. The World Urbanisation Prospects 2018 report estimates that India will register the highest growth in urban population between 2018 and 2050 by adding 416 million urban dwellers.<sup>1</sup> In such a context, land is an incredibly limited, and often a tightly contested resource.

To make matters worse, individual holdings of land parcels have been steadily declining due to fragmentation with inheritance of agricultural lands (*see Figure 1*)

*Figure 1: Average size of agricultural land holdings in India (in hectares)*



Sources: Agricultural Census; Ministry of Agriculture

Since broad-based industrial development has been absent in India, economic opportunities are more acutely concentrated in the largest urban centers. Rural-to-urban migration in search of service sector employment has steadily focused on the largest cities such as Mumbai and Delhi, whose metropolitan areas are among the largest urban agglomerations in the world. Coupled with strict constraints on

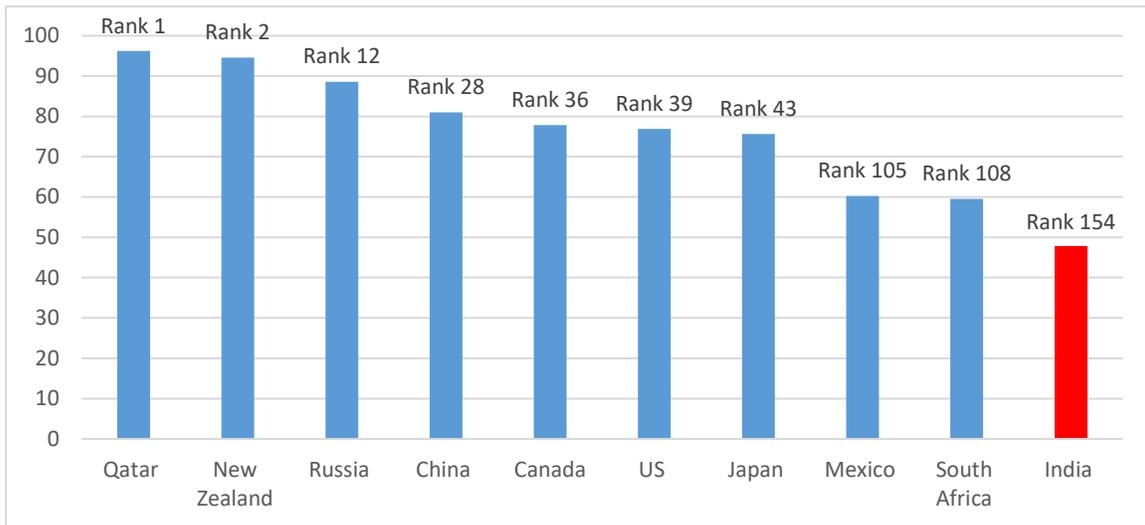
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<sup>1</sup> UN Department of Economic and Social Affairs- (2018)

vertical growth and supply of new housing, this population pressure on limited built up space has led to some of the most unaffordable property markets globally.

Despite such high stakes in the real estate markets, the systems of recording and managing land and property transactions remains strikingly archaic and opaque. According to the World Bank's Ease of Doing Business website,<sup>2</sup> India ranks 154<sup>th</sup> out of 190 countries for ease of registering property transactions with a score of 47.6 (out of 100). In comparison, developing countries like China manage to score 81. (see Figure 2)

Figure 2: Registering Property Score (out of 100) and ranking of Selected Countries



Source: World Bank, Ease of Doing Business 2020

Land and property disputes are widespread and clog up the courts – by one estimate they account for two thirds of all civil litigation in the country<sup>3</sup>. And due to their complexity, these cases also take the longest to resolve – more than 20 years on average, according to the NITI Aayog.<sup>4</sup>

In order to facilitate a steady transparent flow of land and property transactions, a good land record system is needed to ensure there is clarity in terms of land ownership, use and boundaries. This proper system is something that India lacks, and is slow to move towards through the process of digitising and cleaning up its land records and modernizing its land registration processes. In this paper, we will look at the issues affecting India's land records, how digitisation can help solve these issues, the various schemes to promote digitisation and their impact in India as well as the way forward to ensure India moves to a fully digital, online system of land records.

<sup>2</sup> The World Bank Doing Business Website (Accessed on 2 June 2020)

<sup>3</sup> Daksh India (2016)

<sup>4</sup> Niti Aayog (2016)

## Land transactions and issues with land records in India

Land and property transactions in India are a complicated affair. First of all, ownership to property is difficult to prove due to India following a presumptive system of land titling, where the State gives no guarantee as to the validity of the land title. Instead the onus is on the buyer to ensure land is purchased with a clean title. This is a difficult task as no single document assures title to land and it may be required to verify past transactions by looking through multiple registered deeds pertaining to the property. Further the system of recording land transactions in India has been historically poor. Prior to British rule, there was no formal individual ownership of land in India. During the period of British rule (1757-1947), various land ownership and transfer systems were introduced by the British such as the “*zamindari*” system and the “*ryotwari*” system. The land distribution under these systems was extremely unequal and resulted in 40% of India’s rural population working as landless agricultural labourers.<sup>5</sup> While post- independence, these systems have been discontinued, legacy issues from the “*zamindari*” system still affect the clarity of land records in India today.

Land records in India also miss out on key data as many people avoid registering transactions. When registering a sales deed, the buyer has to pay a stamp duty as well as a registration fee. The stamp duty rates vary amongst states but can go upto 10% of the property value, and then an additional 1% for registration fees.<sup>6</sup> By contrast, countries around the world usually tax property transactions below 5% for transfer fees and some such as New Zealand don’t tax transactions at all, opting instead to tax appreciation in value over time. As a result, transacting parties often enter into *Power of Attorney* arrangements to record property transactions that have no official registration with any state agency. While these are not admissible by court in the case of a dispute (see judgement for *Suraj Lamp & Industries vs State of Haryana, 2011*),<sup>7</sup> the high costs of legal registrations were a strong enough disincentive to take this risk. This practice in fact is still common in many unauthorized colonies in Delhi for instance which have more lower-income housing and informal rental arrangements.

In addition to this, many activities that cause division of land parcels or its boundaries are not required to be registered under the law. Under the Registration Act 1908, registration of property is not mandatory for transactions involving the acquisition of land by the government, property being leased for less than one year and heirship partitions. When these activities go unrecorded, land records are bound to differ from the on-the-ground situation.

Another major issue is in the way land records are stored and kept in village offices. In many parts of India, land records are documented on ordinary paper/cloth subject to continuous wear and tear (see images below).

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<sup>5</sup> PacsIndia (Accessed on 2 June 2020)

<sup>6</sup> Bankbazaar (Accessed on 2 June 2020)

<sup>7</sup> IndianKanoon- Suraj Lamp & Industries vs State of Haryana (2011)





Mutation Certificate from Kerala, Image courtesy: Deccan Chronicle (2016)



Paper record of cadastral boundaries in Maharashtra (2015).

Some these documents go more than a hundred years back and preservation of these are a major issue. Further Teshil offices are infamous for their corruption. “Tehsildars” and “Patwaris” are known for delaying registrations, accepting bribes, and in general harassing the poor. As per the India Corruption Survey 2019, 26% of citizens have to pay bribes for property registration and land issues<sup>8</sup>. In many parts of India, it is hard for the poor to access any information relating to land and property without paying bribes to corrupt village officers (see the World Bank’s 2002 Report Card on Service of Bhoomi Kiosks).<sup>9</sup>

There is now an entire industry of lawyers and clerks responsible primarily for checking defects in title by manually visiting different government offices, sometimes having to bribe *patwaris* to pull paper records for all types of property transactions across the country. These poorly kept and inaccessible

<sup>8</sup> Transparency International India (2019)

<sup>9</sup> World Bank (2002)

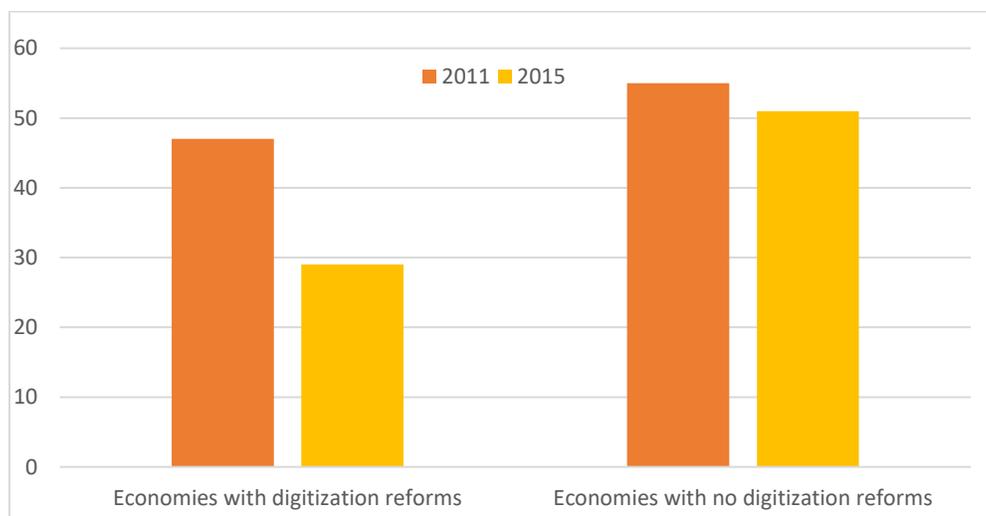
records also pose challenges to banks and other financial institutions that often lend money against property to loan seekers. It is necessary that banks are able to verify the property to be conclusively in the potential borrower's name with no ongoing disputes involving the said property. The absence of proof of title to land or property severely limits one's access to credit and financial inclusion.<sup>10</sup>

### The Benefits of digitisation

With these issues plaguing the land record system in India, the option of making land records available in a digital format is currently being pursued. Computerizing land records helps to consolidate large amounts of data in a single database to identify errors and replicate improvements over large number of records. It also helps to speed up processes like time involved in registering property or speeding up mortgage applications. Consistency checks and data verification can also be done more easily.

Digitisation of land records has already been undertaken by many countries around the world. The World Bank's Doing Business Report 2016 reported that in the 2011-2015 period, 37 countries computerized their land registry. It was found that in countries where digitisation took place, the time required to transfer property fell by 38% compared to a fall of 7% in the countries which did not digitise their land registries. The report suggested countries move from paper to digital records and then move on to fully online registration of property. It cited the example of England and Wales - who had one of the world's oldest online land registration authorities in existence, following this system to create a fully digitised land record system where it is now possible to transfer property online using digital signatures. The report also cited many developing nations like Kenya & Cape Verde working to digitise land records.

Figure 3: Average Time to Register Property (days)



Source: Doing Business 2016

Besides reducing property transaction time, a fully digitised, open public platform can provide equitable access to land records. The issues of dealing with corrupt Tehsil officers and paying bribes to avoid delays in registration of property can be minimized if the system is fully online and accessible to all. By

<sup>10</sup> Reserve Bank of India (2008)

making the land records available publicly, transparency can be ensured as the records are accessible to all stakeholders.

Digital land records can also speed up loan processes. In the present system banks take around 5-15 days to verify the borrower's title, as farmers often have to retrieve history of the title flow from the tehsil office and then the lender will have to verify it.<sup>11</sup> With access to digital records, banks and NBFCs can quickly verify the borrower's title over the land and its value faster. This will ensure that the rural poor will be able to access loans from banks and will not have to rely on unscrupulous and exploitive lenders. This idea has been echoed in a report by the Department of Economic Affairs who recommended that financial service providers be allowed real time access to digital land records data as this will help banks to make informed decisions on lending and increase the formal credit supply.<sup>12</sup>

Digital land records are also expected to lower cases of land disputes as records of sales and transfers can be more easily traced and ownership can be more clearly proved. Some land administration authorities in foreign countries have also leveraged their database to offer certificates of non-encumbrance online within minutes of a request. In Azerbaijan, notaries have been able to obtain non-encumbrance certificates online since 2014.<sup>13</sup>

### **Challenges to digitisation**

Digitisation of land records is not an easy task as there are large volumes of records that are stored manually at different levels. They are also spread across different departments and may not be updated simultaneously. Property transaction registered through a sales deed may not be updated in the survey department that records spatial information. Further in the constitution of India, land is regarded as a state subject. Different states have different laws and procedures governing land, and as such the digitisation of land records takes place at the discretion of the State government. It is difficult to even out these differences and ensure that accurate digital records of land are captured pan-India.

In addition to this, issues of land are often politicized in India. This has also had an effect on the digitisation process of land records. Recently, the Maharashtra government ruled that digital land records would no longer be as considered authentic documents. This means the public will have to revert to obtaining the records from the Talathi offices (revenue department functioning at village level). While the government cited some cases of misuse of these digital records as the reason for the move, the spokesman of the state opposition party claimed the system of digital records was much more convenient and was being removed as "this government wants to reverse all decisions taken by its predecessor".<sup>14</sup>

### **Digitisation schemes and effects**

Since the First Five year plan, the need for proper maintenance for land records has been advocated as a need for good administration and social justice. It was mentioned again in subsequent five year plans. The first significant step advocating the digitisation of land records was at a conference of Revenue Ministers of States in 1985. The State representatives believed the computerization of land and crop

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<sup>11</sup> Group General Counsel, ICICI Bank (2019)

<sup>12</sup> Department of Economic Affairs (2019)

<sup>13</sup> World Bank Doing Business (2016)

<sup>14</sup> Mumbai Mirror (2020)

data would assist in development planning and make records more accessible to the people. A workshop was held in 1987 where the States shared their experiences in computerizing land records on their own initiative and suggested the Centre to fund pilot projects for computerizing land records. The Government approved the pilot projects in 8 districts in 1988 with 100% financial assistance. This came to be known as the Computerisation of Land Records Scheme (CLR).<sup>15</sup> Around the same time in 1987, the Ministry of Rural Development launched the pilot phase of the Updating Land Records (ULR) programme in Bihar and Odisha. Over 1989-90, the initiative was launched across all states in India. The emphasis of the initiative was on capacity building in survey departments and surveying areas where there were no pre-existing records. There was also support for updating survey maps, reports and documents using latest technology.<sup>16</sup> The CLR scheme meanwhile spread to many districts in different states over the years with the Ministry of Rural Development providing funding for the States. However the progress of the computerization process for CLR was very slow. States were also not forthcoming with feedback and many states delayed in transferring the funds provided by the centre to the implementing authorities. Other issues that were faced was the delay in installation of computers, delay in development of software and lack of training for revenue officials to handle the computers. These two central schemes (CLR and ULR) were eventually combined to form the Digital India Land Records Modernisation Programme (DILRMP) in 2008.<sup>17</sup>

In 2000, a significant step towards the digitisation of land records was through project “Bhoomi” undertaken by the government of Karnataka.<sup>18</sup> The project involved computerizing all available Record of Rights, Tenancy and Crops (RTC) in Karnataka and setting up land record kiosks (Bhoomi centres) where a farmer could go and request a printout of the RTC to a parcel of land. The project was labelled a success by the World Bank<sup>19</sup> and helped farmers to obtain land records without going through long delays or paying bribes to the Tehsil officers. The “Bhoomi” project also had much long lasting effects, in 2018-19, it enabled the state government to save an estimated Rs 4000 crores in crop loan waiver schemes. The “Bhoomi” database having details of 40 lakh farmers helped prevent duplication of payment to farmers and eliminate around 8 lakh loans that were identified as non-farm.<sup>20</sup> Following the “Bhoomi” project, Andhra Pradesh and Tamil Nadu also started computerizing village property records.

Another initiative was the Computer Assisted Registration of Deeds (CARD), which was introduced in Andhra Pradesh in the late 1990s. It aimed to streamline the process of registering property at the State’s SROs as well as making Encumbrance Certificates (ECs) and deed extracts available online to allow easy verification of property value and ownership claims. The CARD project was not an outright success due to issues of lack of standardization in the online deeds and failure to integrate registration with traditional land records in rural areas. However, it had a notable impact in urban areas where the online access to ECs allowed lenders easier low cost access to encumbrances and faster loan processing which led to 15% increase in credit supply in urban areas of the state in the 11 year period it took for the state to roll out the plan (1997-2007).<sup>21</sup>

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<sup>15</sup> Geospatial World (2010)

<sup>16</sup> Indian Institute for Human Settlements (2015)

<sup>17</sup> Department of Land Resources Website (Accessed on 2 June 2020)

<sup>18</sup> Karnataka Government Website (Accessed on 2 June 2020)

<sup>19</sup> World Bank (2001)

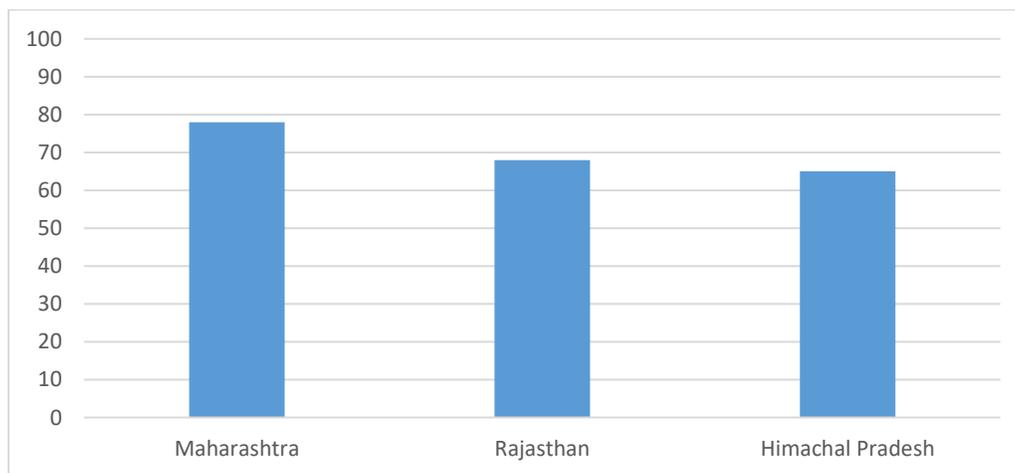
<sup>20</sup> The Geospatial (2019)

<sup>21</sup> Klaus Deininger, Aparajita Goyal (2010)

In 2008, the Centre launched the National Land Records Modernisation Programme (NLRMP) to complete the digitisation process pan-India (later renamed as Digital India Land Records Modernisation Program- DILRMP). The DILRMP was brought in to computerize property records and the registration process, survey and prepare maps using modern technology and move towards a conclusive land title recording system.<sup>22</sup> In November last year, Rural Development Minister Narendra Tomar stated that more than 90% land records in 23 states and UTs had been computerized under the DILRMP. In addition to this, 90% cadastral maps had been digitised in 19 states and UTs. However these figures can be misleading. While these many records have been digitised, the quality of the records may not have improved, as much of this data has not been confirmed by additional surveys. In Jharkhand, where 99% of land records are digitised, locals have been complaining of discrepancies in the online records as they discovered many parcels of land had abruptly changed hands and strangers had been listed as heirs to family land. Jharkhand is also one of the poorest performing states in the area of land surveys with only 2.33% of land surveyed and new maps drawn.<sup>23</sup>

These discrepancies were further exposed when in November 2017, the National Council of Applied Economic Research (NCAER), the National Institute of Public Finance and Policy (NIPFP) and the Indira Gandhi Institute of Development Research (IGIDR) conducted pilot assessments of the DILRMP's implementation in Himachal Pradesh, Rajasthan and Maharashtra respectively. The report employed a Real Time Mirror (RTM) check to examine the status and extent of variation between the digital land record and the on-the-ground situation. It was found that 20% of the digitised land records in Himachal Pradesh did not show accurate ownership details, while the ownership details of Rajasthan and Maharashtra were mostly accurate. However in terms of land area, 78% of digital records in Maharashtra showed inaccurate land areas, while 68% and 65% of land records were inaccurate in Rajasthan and Himachal Pradesh, respectively as shown in the below figure.

*Figure 4: RTM Check- Inaccurate land area records (%)*



Source: NCAER study team (2017)

<sup>22</sup> Dr Madalasa Venkataraman (2014)

<sup>23</sup> Scroll (2019)

To provide better insight into the extent of digitisation and quality of records across states, the NCAER released its Land Records and Services Index (N-LRSI 2020)<sup>24</sup> in February this year. The report provides a score to each state based on the digitisation and quality of textual and spatial records. The results of the report are quite sobering, the average score attributed to the different states was 38.46 out of 100. It also noted that some states/UTs like Chandigarh, Jammu and Kashmir, Sikkim and Ladakh were yet to make any of their digitised Records of Rights copies available on the web.

On April 24 2020, a new scheme called *Swamitva Yojana* was launched.<sup>25</sup> The scheme aims to help villagers in rural areas who do not have documents to prove ownership of land. It also acknowledged that surveys had not been done in these areas to verify ownership. The scheme proposes to measure residential land in villages using drones and based on that create property cards for every property in the village. These cards will be issued to property owners and will be acknowledged by the land revenue records department. The scheme aims to create a non-disputable record of property owners, facilitate tax collection and free the land of title disputes whilst providing owners with a clear proof of title through its digital mapping.<sup>26</sup>

### **How can the digitisation process be improved?**

Despite India's steps towards digitisation through the DILRMP, as mentioned earlier, it is currently ranked 154th on the World Bank's Doing Business website under the "Registering property" parameter. The parameter measures the quality of the country's land administration system by looking at reliability of infrastructure, transparency of information, geographic coverage, land dispute resolution, and equal access to property rights. Needless to say, the computerizing of land records alone is not enough to solve India's land issues. As can be seen in the NCAER reports, while land records have been digitised to a large extent, the digitised records often fail to meet on-the-ground realities. Rather than blindly digitising land records, the government needs to work on ensuring correct information gets captured digitally. Incorporating drone technology and GIS in land surveys (as in the proposed *Swamitva Yojana* scheme) to map boundaries correctly would be a welcome step to ensure accurate information gets captured.

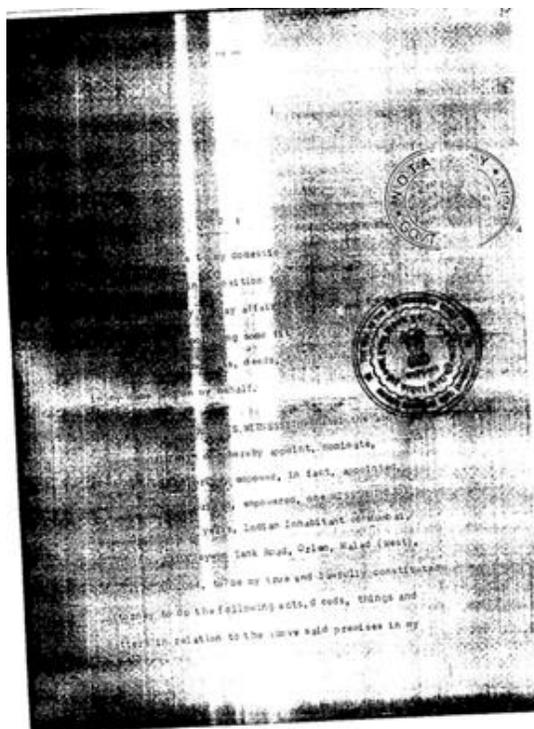
A significant point to note is that digitisation does not mean mere scanning of manual records (see below image of a scanned registration document from Haryana). It is important that data is readable and interpretable. If scanning is done, checks should be made to ensure the scanning is of a high resolution, that no markings obscure the text, characters do not overlap, alignments are uniform and hand written notes are avoided (if these are required, the notes should be legible and readable). The best way to ensure uniform formats would be to use a software with in-built validation checks at the time of scanning/digitisation. Software can also be used for multilingual functionality at the point of entry which will make easier for different stakeholders to access the information later. An additional useful intervention would be to generate unique IDs for properties/land parcels at the time of registration such that every property and land parcel has a unique identifier.

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<sup>24</sup> NCAER (2020)

<sup>25</sup> Press Information Bureau (2020)

<sup>26</sup> Hindustan Times (2020)



*An illegible scanned registration document from Haryana*

The functionality of the digital records is another area to be improved on. There is not much value in digitising manual land records if the digital copies are not legally usable. The N-LRSI report points out that certain states have achieved digitisation of their land records but the digital copies cannot be used for legal purposes, hence the concerned person still has to visit the departmental office for legally usable land records.

It is also necessary for the digital records to be audited regularly. On the ground checks will have to be made to ensure the digital records match. Not all digital records are accurate and title is not always verified before digital entry is made. Going forward, the government needs to ensure that the record is correct before it is digitised. For the already digitised records, a robust feedback system needs to be put in place for the public to highlight to the relevant authorities any discrepancies they find the online records. In the Jharkhand debacle, some villagers had reported showing documents that prove their ownership to the local authorities, only for the authorities to respond that they were helpless to change the record as it was online. This should not be the case. The records should be able to be amended by the relevant authority if the required proof is provided.

The available digital records also need to be more easily accessible and the sites on which they are stored need to be improved. The N-LRSI report noted that in 12 States, there were instances where the names of villages were incorrectly spelt in the land records portals. Further only 4 States had an onscreen Help/FAQ option to assist the users. The absence of this option can make it difficult for users to understand how to use the site. In fact, there is potential for the State governments to partner with technology firms with the necessary expertise to improve the functionality of these portals. Technology firms can also help in validating, cleaning and linking the digitised land records data by applying Machine Learning and Artificial Intelligence algorithms. In addition to this, the online registration of property

needs to be introduced across all states to ensure records get updated directly and in real-time onto the digital portals continuously.

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