



WOMEN'S OWNERSHIP IN LAND, THEIR AGENCY, AND TENURE SECURITY: A CASE STUDY OF MAHARASHTRA

Diya Uday Patkar Ajay Shah Teesta Shukla

October 2023



Women's ownership in land, their agency and tenure security:
A case study of Maharashtra

Diya Uday Patkar
Ajay Shah
Teesta Shukla
eGov-XKDR Forum

October 2023

Contents

Acknowledgements	5
Executive summary	6
1 Introduction	8
1.1 Current policy challenges	9
2 State profile of Maharashtra	14
2.1 Demography, geography and administrative profile	15
2.2 Historical land tenure systems	17
2.3 Evolution of land rights and legal framework	18
2.3.1 Legal framework and policies on women's land ownership	18
2.3.2 Land records infrastructure and digitisation	21
3 Approach and methodology	24
3.1 <i>De jure</i> mapping of women's land rights	24
3.2 <i>De facto</i> control over land and perception of tenure security	25
3.2.1 Preparation of fieldwork	25
3.2.2 Fieldwork	26
4 Findings	28
4.1 <i>De jure</i> land ownership of women	30
4.1.1 Question 1: The proportion of women land owners	30
4.1.2 Question 2: Land ownership patterns among women	38
4.2 Women's awareness about land ownership	46
4.2.1 Question 3: Women's awareness about their <i>de jure</i> land ownership	46
4.3 Women's agency over owned land	50
4.3.1 Question 4: Agriculture land	51
4.3.2 Question 4: Non-agriculture land	55
4.4 Women's tenure security	57
4.4.1 Question 5: Improvements and investments in land	57
4.4.2 Question 5: Perception of tenure security	57
4.4.3 Perceived tenure security among women non-owners in rural areas	58
4.4.4 Perceived tenure security among male owners in rural areas	58
4.5 Women's perception of the effect of land ownership	59
4.5.1 Perceived effect of land ownership among women non-owners in rural areas	59
4.5.2 Perceived effect of women's land ownership among male owners in rural areas	60
5 Learnings for policy	61
Glossary	66
Appendix	68

List of Tables

1.1	Policy interventions towards women's land ownership in India	9
1.2	Limitations in the current datasets on women's land	11
1.3	Variations in data on women's land ownership in Maharashtra	12
2.1	Administrative profile of Maharashtra	15
2.2	Demographic profile of Maharashtra	16
2.3	Legal framework governing land in Maharashtra	21
3.1	Field sample summary	27
3.2	Methods of data collection	27
4.1	Summary of key findings	29
4.2	Summary statistics of digitised land records of Pune district	31
4.3	Summary statistics of digitised land records of Nashik district	32
4.4	Summary statistics of digitised land records of Nagpur district	34
4.5	Proportion of land holdings in Pune District by size	36
4.6	Proportion of women landowners in Pune district	36
4.7	Proportion of women landowners in Nashik district	37
4.8	Proportion of women landowners in Nagpur district	37
4.9	Gender wise landholding data	37
4.10	Ownership pattern of women in Pune district	38
4.11	Ownership pattern of women in Nashik district	39
4.12	Ownership pattern of women in Nagpur district	40
4.13	Nature of women's joint ownership of land in Pune district	42
4.14	Nature of women's joint ownership of land in Nashik district	42
4.15	Nature of women's joint ownership of land in Nagpur district	43
4.16	Landholding size data for males disaggregated by ownership patterns	45
4.17	Landholding size data for females disaggregated by ownership patterns	45
4.18	Women's awareness of land ownership	46
4.19	Mode ownership	46
4.20	Mode ownership	47
4.21	Awareness of de jure ownership pattern	47
4.22	Awareness of women in joint ownership structures of their de jure co-owners	48
4.23	Women's reporting on the area of owned land	48
4.24	Percentage deviation of incorrect area reported from land record	49
4.25	Awareness of the office to approach for land transactions	49
4.26	Our framework for measuring women's agency in owned land	50
4.27	Respondents' involvement in decisions on farming of agriculture land	52
4.28	Respondents involvement in decisions to transact in owned land: agriculture	53
4.29	Respondents' perception of control over decisions on transacting in owned land)	54
4.30	Respondents' perception on contribution towards decisions on owned land)	54
4.31	Respondents involvement on decision making with respect to non-agricultural land use	55
4.32	Respondents involvement in decisions to transact in owned land: non-agriculture	56
4.33	Respondents' perception of control over decisions on transacting in owned land: non-agriculture	56

4.34 Respondents' perception on contribution towards decisions on owned land: non-agriculture	56
4.35 Improvements and investment in land	57
4.36 Perception of tenure security: agriculture	58
4.37 Perceived effect of land ownership by women owning land	59

List of Figures

2.1	The State of Maharashtra	14
2.2	Revenue divisions and districts in Maharashtra	16

Acknowledgements

We express our sincere and heartfelt gratitude to the Revenue Department officials in Pune and Nashik districts in Maharashtra, who supported us throughout the survey exercise. Their cooperation and efforts in locating female landowners and bridging the communication gap played a crucial role in the success of our field study. We extend our heartfelt appreciation for their patience in addressing our numerous inquiries. Despite the inherent challenges and unpredictability of the field, their support made the entire process feel like smooth sailing. We are immensely grateful for their efforts.

Our deep appreciation goes to Mr. Chockalingam, Director General of YASHADA, Pune; Ms. Sarika Narke, State Director of Government of Maharashtra Revenue and Forest Department; and Ms. Mrinalini Sawant, Additional Collector and Director of the Centre for Disaster Management, YASHADA. Their invaluable insights and feedback during our preliminary analysis were pivotal in refining and enhancing our study.

We are grateful to our Advisory Committee members, Dr. Amita Bhide, Dean of the School of Habitat Studies, Tata Institute of Social Sciences, Mumbai; Ms. Shipra Deo, Director of Women and Land at Landesa; Mr. Pranab Ranjan Choudhury, Convener of the Center for Land Governance; and Dr. K.P. Krishnan, Honorary Professor at the Centre for Policy Research. Their regular feedback and guidance provided us with a clear direction and enriched our project.

We would like to thank TEAL for providing us with the land records data to carry out this study. Your contribution has made it possible for us to carry out this study and provides a proof of concept of what can be done with land records data on India.

We would like to extend our thanks to Mr. Deepak Dhopat and his team of surveyors for their invaluable assistance in collecting field data. Their expertise and dedication greatly contributed to the success of our research.

We extend our deepest gratitude to the respondents of our study. Their willingness to participate and generously share their time and perspectives made our research possible. Their contributions are truly appreciated, and we thank them for trusting us with their experiences.

Without the support and contributions of all the individuals mentioned above, this report would not have been possible. We are truly grateful for their immeasurable support and assistance throughout our research journey.

Executive summary

This study was conceived with two objectives. First, to explore an efficient, accurate and sustainable way of measuring the extent of women's de jure land ownership. Our focus on de jure ownership is account of the fact that these rights are recognised by the state and, therefore, holders of these rights can exercise their rights without challenges arising from non-recognition of rights. Second, to link the de jure findings on land ownership to de facto variables that either facilitate or hinder effective utilisation of ownership right, such as awareness, control and perceptions of tenure security of women land owners. We aim to answer five questions:

1. What proportion of land parcels are owned by women?
2. What are the patterns of women's land ownership structures?
3. Are women aware of the facts of their land ownership?
4. Do women have agency over the land parcels they own?
5. Do women feel secure in their ownership tenure?

Previous studies on the subject of women's land ownership have used datasets that have some inherent limitations. For one, they are survey-based and assume that reported facts match de jure land ownership facts. Further, sampling strategies, the type of land, type of questions asked vary (See Table 1.2). As a result, for a single state, there may be two datasets with very different findings within a similar time period (See Table 1.3).

Further, these studies do not give us insight into the de facto elements of land ownership of women: awareness about their land, their agency and tenure security. We posit that de jure ownership in and of itself will be rendered ineffective:

- if women are not aware about their rights and facts of ownership as these are essential for transacting and managing land (**awareness**);
- if women do not have control over decisions made with respect to the land that they own as she is then unable to exercise autonomy over her owned land and therefore will be less empowered despite having an asset to her name (**control and agency**);
- if women feel insecure about their tenure even when they are owners as they maybe not invest in their land or transact in it, therefore, not capitalising on their asset (**perception of tenure security**).

In this study we argue that all three de facto elements coupled with de jure land ownership are required for better outcomes towards gender equality. We attempt to link the de jure to the de facto using a combination of novel desk research and field work. Our findings support this as highlight that gaps in the de facto elements of land ownership.

We present some inputs for policy, based on evidence from our findings with the aim of improving women's agency in land and their awareness which we argue are the missing pieces for achieving greater gender equality. Some of the highlights of this study are as follows:

- We present evidence and a novel methodology that states may use to measure women's land ownership using land records.

- We present evidence for increased land awareness programmes coupled with titling programmes for women land owners.
- We demonstrate that land titling programmes and policies for women should not assume agency of women land owners.
- We present evidence for increased implementation of titling programmes for women in target regions of the state.
- As a departure from existing policies, we find no evidence for increased focus on women's land ownership in rural areas.
- There are indications that existing programmes on lower transaction cost have little effect on women's land ownership.
- We find that most women land owners in our sample are secure in their land tenure; as are their male counterparts.
- We learn that de jure land records play a limited role in improving perceptions on tenure security, indicating that de facto elements perhaps matter more.
- Social norms in rural areas suggest that women are less comfortable interacting with male revenue officials and that revenue departments must have more women employees to encourage women landowners to deal with administrative matters pertaining to their land themselves.

Some limitations of our study are that we focus on rural and peri-urban areas, since land in urban areas is often owned by housing societies. Our proposed methodology will be useful in states that have land records that are digitised and are machine-readable. Further, work with free land records made available for public viewing on the Government of Maharashtra land records website. To the best of efforts, we interviewed women separately and where this was not possible, we discounted responses from women respondents that were prompted by male members of the family.

Chapter 1

Introduction

The issue of women's social and economic rights has a longstanding history in the field of public policy, with the movement gaining momentum in the 1970s (Agarwal, 1994). A key theme in this movement is improving women's access to productive assets, particularly land. The literature in this field consistently underscores that access to land is a critical pathway to women's economic development and attainment of a higher social status, both within the household and in society. Some of these include:

- heightened participation in political processes (Niasse, 2012),
- a reduction in gender-based violence (Agarwal, 1988; Kelkar and Jha, 2016),
- enhanced bargaining power within and outside the household (Agarwal, 2008),
- greater involvement in household decisions regarding health and education (K. Mishra and Sam, 2016; Allendorf, 2007),
- increased tenure security (UN, 2013), and
- a stronger fallback position during times of crises (Agarwal, 2008; K. Mishra and Sam, 2016; Kelkar and Jha, 2016; Doss, Kieran, and Kilic, 2020; Doss, Meinzen-Dick, and Bomuhangi, 2014; Agarwal, 1988).

The importance of land as a fundamental element in the development process is duly recognised by the SDG. Target 1.4 aims to eradicate poverty by ensuring equal rights to economic resources, including land and other forms of property¹. Similarly, Target 5.7 seeks to undertake reforms that grant women equal rights to economic resources and access to ownership and control over land². These targets recognise the significance of land in achieving poverty eradication, gender equality, and economic empowerment.

The recognition of women's land rights in Indian policy discourse began in 1980, during the formulation of the Sixth Five-Year Plan. This plan acknowledged the necessity of joint titles for women and aimed to grant joint titles to both husbands and wives in land and house distribution programs (Agarwal, 1994). There have been several legislations and policies since that aim to remove barriers that hinder their legal access to land at the Union and state-level. For instance, the 2005 Amendment to the Hindu Succession Act, 1956 granted daughters the right to become coparceners in ancestral property. Various states have implemented measures such as reduced stamp duties, tax exemptions, and lower interest rates on property loans to incentivise women to own property (Awasth, Pyle, Aggarwal, and Rakhimova, 2023). Table 1.1 sets out a summary of such programmes at the central and state level in India.

¹Target 1.4 of Goal 1 SDGs, available at last visited on 29 August 2023

²Target 5.7 of Goal 5, SDGs, available at last visited on 29 August 2023

Table 1.1: Policy interventions towards women's land ownership in India

Intervention	Description	Where applicable
HS Amendment Act 2005	Daughters are coparceners in ancestral property	All Hindu inheritance in India
Maharashtra Stamp Act 1958	Reduction in stamp duty on transactions by women introduced by 2021-22 budget	Maharashtra
PMAY Credit Linked Subsidy Scheme	Gender-based home loan concessions	LIG and MIG in urban areas
Property tax discounts	Some municipal governments offer discounts on property taxes for women	Pimpri-Chinchwad Municipal Corporation, Municipal Corporation of Delhi
Other stamp duty concessions	Women in some states receive stamp duty concessions for property ownership, whether jointly with their spouse or as sole owners	Assam, Uttar Pradesh, Delhi, Haryana, Gujarat, etc.

1.1 Current policy challenges

1. Opacity in women's land ownership data

There is a lack of comprehensive and reliable data on women's property ownership. *Government de jure land records do not always identify women owners*. This poses a challenge in evaluating the effects of these policy measures and increases reliance on other datasets.

While there are several national-level datasets that provide some information on women's land rights, they are often plagued by gaps and limitations that obscure the actual picture of women's land rights in India. As a result of these limitations, a fundamental question remains unanswered:

What proportion of landowners in India are women?

There is also opacity on questions related to women's ownership structures and the area of land owned. The limitations of existing datasets include the following:

1. *Survey-based reported ownership*: Data on ownership is primarily collected through self-reporting, where respondents are asked who owns the land. This approach assumes women's awareness about their landownership. Our prior field experience suggests that many women may not be fully aware of their ownership structure and details recorded in land records.

There is also no verification against ownership documents, leading to potential ambiguities in the data obtained and a disconnect with de jure titles recognised by the state. Given the challenges in land records, these datasets might give us an inaccurate picture.
2. *No information on ownership pattern*: These datasets often do not collect data on ownership patterns, such as single ownership or joint ownership by men and women. Understanding these ownership patterns is crucial for designing effective policy interventions and assessing gender disparities in land ownership.
3. *No information on area*: Another limitation is the absence of data on the area of land owned. While the Agriculture Census, ICRISAT, and N-LRSI collect some area information, they focus on operational holdings and have limited geographical scope, respectively.
4. *Manual data collection*: Since the data collection process is manual, there is a risk of significant errors. For instance, the NFHS-4 data have faced criticism for non-sampling errors, highlighting the challenges associated with manual data collection (Agarwal, Anthwal, and Mahesh, 2021).
5. *Cross-sectional and not time series data*: Many datasets are outdated, and subsequent versions have not been undertaken or released. This poses challenges in understanding land ownership patterns

over time, given the evolving nature of ownership structures on account of succession and market transactions.

6. *Primary focus on agricultural land:* The existing datasets primarily focus on agricultural land, overlooking the significant portion of non-agricultural land. This limited scope prevents a comprehensive assessment of women's land ownership, as it fails to capture the complete landscape of land rights. Table 1.2 provides a summary of the existing datasets and highlights their limitations.

As a result of the limitations sets out in Table 1.2, data on women's land ownership varies even for a single state in a similar time period. Table 1.3, highlights the variation for Maharashtra.

Table 1.2: Limitations in the current datasets on women's land

Dataset	Indicator	Unit of enumeration	Limitations
Agriculture Census, 2015-16 ³	Share of female operational holdings among total operational holdings of agricultural land	Land holding (operational)	• Does not collect data on ownership • Prone to errors due to the re-tabulation of information maintained by Patwaris in village land records
NFHS, 5 ⁴	Share of women aged 15-49 owning land alone or jointly	Individual	• Self-reported so may differ from de jure • No differentiation between agricultural and non-agricultural land • Excludes women over the age of 49 • Data not disaggregated by ownership pattern • No data on area of land owned
SECC, 2011 ⁵	Share of female-headed households owning any type of land (irrigated, unirrigated, other)	Household	• Assumes the gender of the household head as the gender of the land holder • No data on area of land owned • Information available for rural India only
ICRISAT, 2014 ⁶	Share of women landowners among all landowners in landed households	Household	• Self-reported so may differ from de jure • Restricted to agricultural land
IHDS, 2012 ⁷	Share of adult women owning agricultural land	Individual	• Self-reported • No data on quantity of land owned
N-LRSI, 2020 ⁸	Share of female landowners among total landowners	Land holding (ownership)	• Lack of clarity on gender identifier • Restricted to rural India

Source: Authors' analysis

³ Department of Agriculture, Farmers Welfare, and Welfare, 2020⁴ for Population Sciences (IIPS), 2021⁵ Department of Rural Development, 2011⁶ Agarwal, Anthwal, and Mahesh, 2021⁷ Lahoti, Y. and Swaminathan, 2016⁸ Jain et al., 2022

Table 1.3: Variations in data on women's land ownership in Maharashtra

Dataset	Extent (%)	What measured	Where measured
IHDS (2012)	6	of women in landed households land ownership	Rural
NFHS (2014)	23	of women own land alone or jointly	Rural and urban
ICRISAT (2014)	11.2	of women own land in landed households	Rural
Agri. census (2015)	12	operational holdings of women	Rural
SECC (2011)	5.5	female heads of household owning land	Rural

Source: Authors' compilation from datasets

2. Women's land ownership is viewed as an end in itself

The existing policies on women's land ownership are built on the following considerations:

- *Ownership is the most desirable form of rights*: These policies focus on improving women's land ownership more than any other form of rights. This is perhaps drawn from the Coasian idea that ownership is a bundle of rights and comprises the widest range of possible rights when compared to other land tenures such as leasing. There is, therefore, limited emphasis in policy on improving access to land by other land tenures such as leasing.
- *Access to land is more important than utilisation or exercise of ownership rights*: The idea that access to land alone increases agency and empowers women is inherent in these policies. They focus on granting access to land for women but *do not consider the women's utilisation ability and other de facto considerations*. There is a notion that access leads to empowerment without full recognition of whether women are indeed able to effectively exercise their ownership rights and utilise the land to avail its benefits. This is a crucial step because empowerment depends on a woman's ability to reap the benefits of the land rather than be just a nominal owner.

We posit that legal recognition of land rights is just the initial step. In order for women to truly benefit from land ownership, it is essential to ensure the effective realisation of these rights in practice. It is crucial to understand whether female landowners have meaningful agency and control over the land they own. Unfortunately, ascertaining this information is not straightforward and requires surveys specifically designed to measure women's agency in relation to land. *Several questions pertaining to a woman land owner's ability to exercise her ownership rights and to utilise her land in the manner she desires remain unanswered*. We, therefore, cannot assume access to land leads to empowerment.

This study aims to address these knowledge gaps and examine the following research questions:

1. What proportion of land parcels are owned by women?
2. What are the patterns of women's land ownership structures?
3. Are women aware of the facts of their land ownership?
4. Do women have agency over the land parcels they own?
5. Do women feel secure in their ownership tenure?

To answer these questions, we use data from digitised land records from three districts in Maharashtra, namely Pune, Nashik, Nagpur, and a publicly available gender identifier to estimate the proportion of female landowners. Additionally, we employ a novel framework to assess women's agency in land, conducting a survey with approximately 200 female landowners in Pune and Nashik. This survey instrument also allows us to gauge the respondents' perceptions of tenure security.⁹

⁹Please see section 3

By addressing critical gaps in existing datasets, our study aims to provide more accurate insights into female land ownership. While our research has been conducted on a limited scale, the primary objective is to showcase a novel methodology that can be applied at a larger scale to improve data management. We believe this study will be valuable for stakeholders, including revenue officials, practitioners, researchers, and academicians.

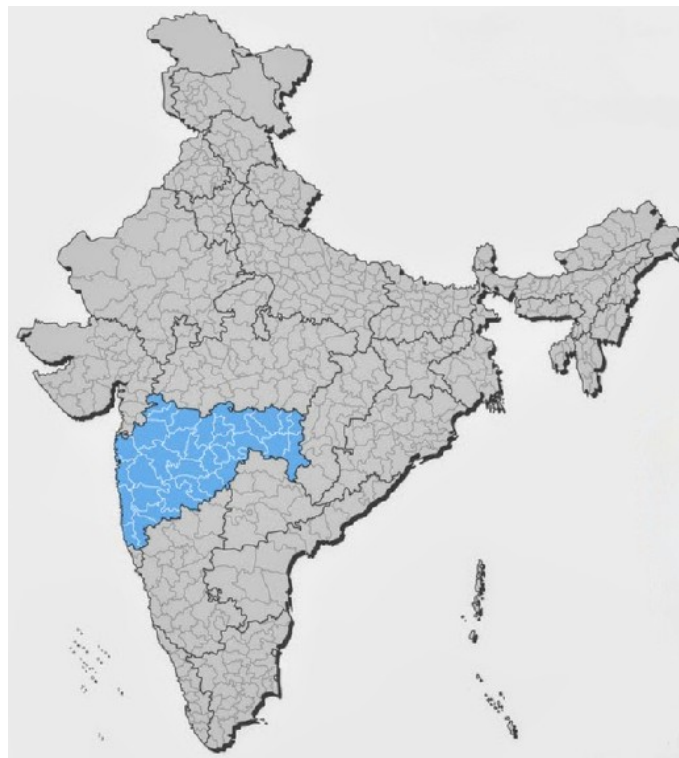
This report is structured as follows. Following this introduction, chapter 2 gives an overview of the features and policies in the state of Maharashtra, setting the contextual background for our study. Chapter 3 outlines the methodology adopted in our research. Chapter 4 presents the findings, divided into three sections: de jure ownership of women (4.1); women's awareness about land ownership (4.2); women's agency over owned land (4.3); women's tenure security (4.4) and perceived effect of ownership (4.5). Chapter 5 is a discussion of our findings and offers policy recommendations.

Chapter 2

State profile of Maharashtra

In this chapter, we provide an overview of the state of Maharashtra. We focus on features that may be relevant to our study. These include the historical evolution of its land tenure systems and the current legal framework on women's property ownership. We also delve into the state's land records system, exploring its digitisation process, to establish the necessary context for our study.

Figure 2.1: The State of Maharashtra



Box 1: Revenue divisions and their districts

1. Amravati: five districts, namely Akola, Amravati, Buldhana, Washim, and Yavatmal.
2. Aurangabad: eight districts (Aurangabad, Beed, Hongoli, Jalna, Latur Nanded, Osmanabad, and Parbhani)
3. Konkan: seven districts (Mumbai City, Mumbai Suburban, Palghar, Raigad, Ratnagiri, Sindhudurg, and Thane)
4. Nagpur: six districts (Bhandara, Chandrapur, Gadchiroli, Gondia, Nagpur, and Wardha)
5. Nashik: five districts (Ahmednagar, Dhule, Jalgaon, Nandurbar, and Nashik)
6. Pune: five districts (Kolhapur, Sangli, Satara, Solapur, and Pune)

2.1 Demography, geography and administrative profile

Administrative features

Maharashtra comprises of a total of 36 districts and is further organised into six revenue divisions: Amravati, Aurangabad, Konkan, Nagpur, Nashik, and Pune. This divisional structure, established under the Maharashtra Land Revenue Code of 1966, was aimed to facilitate efficient administrative operations. Table 2.1 presents an overview of the state's key administrative profile

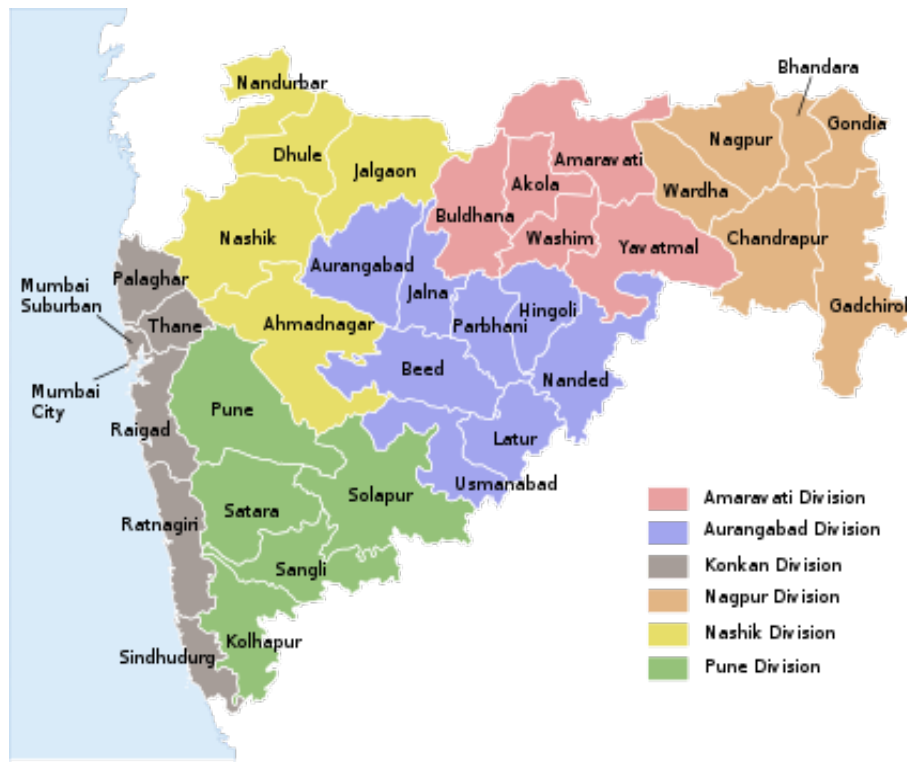
Table 2.1: Administrative profile of Maharashtra

Administrative divisions	Number
Districts	36
Talukas	357
Revenue divisions	6
Villages	43,665
Towns	534

Source: Government of Maharashtra website and Census 2011

Each district comprises one or more sub-divisions, contributing to the decentralised nature of governance. These are talukas, forming the basic administrative units. At the most granular level, talukas consist of individual villages that form the foundation of Maharashtra's rural landscape. Box 2.1 lists the revenue divisions and districts.

Figure 2.2: Revenue divisions and districts in Maharashtra



Source: Government of

Maharashtra website

Population

Maharashtra is the second-most populated state in India after Uttar Pradesh. The 2011 Census recorded a 16 per cent increase in the population of the state. When compared to other states' population growth, Maharashtra falls in the middle with the highest increase being 28.8 per cent (Puducherry) and least being 6.30 per cent (Lakshadweep).

The sex-ratio in Maharashtra is 929, which is not very far from the Kerala, the state with the highest sex-ratio (1084). The state with the lowest sex-ratio in India is Haryana (877).

Disaggregated population data indicates that the male and female population in Maharashtra is almost equal. We see this with rural and urban population as well. Table 2.2 sets out a summary of the population characteristics of Maharashtra.

Table 2.2: Demographic profile of Maharashtra

Demography	
Total population (crores)	11.24
Male population (%)	51
Female population (%)	49
Rural population (%)	55
Urban population (%)	45

Source: Census 2011

2.2 Historical land tenure systems

The present day State of Maharashtra came into existence in 1960 by linguistically dividing the erstwhile State of Bombay into two states, Maharashtra and Gujarat, by the Bombay Reorganisation Act, 1960. While Gujarat was carved out of the former states of Kutch and Saurashtra, Maharashtra comprised the Konkan, Deccan, and Khandesh regions from the Bombay Province; Marathwada region from Hyderabad; and Vidarbha region from the former Central Provinces and Berar (Rajasekaran, 1998).

Each of these regions were governed by different land tenure systems. The land revenue framework established by the British broadly consisted of three systems — Zamindari, Mahalwari, and Ryotwari. These systems defined the relationships among landlords, tenants, and the state and described who had the onus of paying the land tax to the British. In the zamindari system, a landlord was in charge of collecting land revenue from a village and enjoyed the autonomy to fix the tax rate levied on the peasants. Since the Zamindar was duty-bound to pay a fixed sum to the colonial government, he could charge exorbitant rates from the peasantry and pocket the difference (Banerjee and Iyer, 2005). By bestowing an immense amount of power in the hands of the zamindars, the British created a very powerful intermediary class, thereby making the zamindari system highly exploitative. Thus, it could be said that property rights effectively rested with the Zamindar. This system was mainly prevalent in the present day Bengal, Bihar, Odisha, Madhya Pradesh, and some parts of Tamil Nadu and Andhra Pradesh.

The Mahalwari system, also known as the village-based system, divided land into mahals (or estates) and the revenue settlement was made with each Mahal wherein land tax was collected by village bodies or village headmen. Here, the land ownership rights resided with the peasants cultivating the land. The system was mainly prevalent in the north western regions of the country.

Finally, the ryotwari system was an individual cultivator-based system, which means that the revenue settlement was directly made between the State and the peasants with no involvement of the middlemen (Banerjee and Iyer, 2005). In other words, farmers were seen as proprietors of the land and enjoyed significant rights with respect to use and transfer of land. Since the State directly collected taxes from the peasants, it needed to establish a robust institutional presence at the district and village level to collect information on land held by peasants. To achieve this, the colonial government vested the revenue responsibilities into a chain of officials — district collector, clerks for recording land related information in the district, and village accountants. The land records, thus, contained comprehensive fields of information such as land size, land productivity, crops grown, mortgages, owner details, etc. (Lee, 2019). These institutional processes are a testament to the well-established property rights in ryotwari areas. This system of land tenure was largely prevalent in the present day states of Maharashtra, Karnataka, Assam, Meghalaya, and some parts of Tamil Nadu, Andhra Pradesh and Gujarat. It is interesting to note that the Zamindari and Ryotwari systems together governed around 95 percent of the country (Hanstad, Nielson, Vhugen, and Haque, 2009).

Although Maharashtra was predominantly under the ryotwari system of land tenure, there were variations in the revenue settlements and agrarian relations across the State. Among the other land revenue systems in existence, Malguzari system was prevalent in many parts of the Vidarbha region. Under this system, a malguzar or revenue farmer, was given the proprietary rights over land along with revenue collection duties, thereby effectively making him a powerful intermediary between peasants and the State (Deshpande, 2002). The kingdom of Nagpur in the Vidarbha region was governed by the zamindari system (Banerjee and Iyer, 2005). Adjacent to the Vidarbha region, the Marathwada region was under a mixed system ranging from the Ryotwari to the Jagirdari system (the latter was in vogue because the region was ruled by the Nizams ruled by a Jagirdar). In the Konkan region, the Khoti or a system of double tenure prevailed, under which Khot were responsible to collect land revenue from the peasantry, in turn becoming an intermediate between the State and its subjects (Deshpande, 2002).

To understand the repercussions of the land tenure systems discussed above on the current land ownership patterns, and agrarian relations, we have selected three districts from both zamindari and ryotwari areas, namely Pune and Nashik (Ryotwari) and Nagpur (Zamindari), for our study.

2.3 Evolution of land rights and legal framework

At the time of India's political independence, policymakers grappled with rampant poverty and inequality, with one major underlying cause being the inequitable distribution of land ownership. India inherited an agrarian system characterised by exploitative revenue systems, significant disparities in land ownership, insecure land tenure for cultivators, and low agricultural productivity (Hanstad et al., 2009).

To address these pressing challenges, the states implemented legislative measures aimed at reforming the agrarian structure, which included:

- a) abolishing intermediaries
- b) regulating tenancy
- c) setting a maximum limit on the size of landholdings and redistributing surplus land

Among these reforms, the abolition of intermediaries achieved considerable success, as most states implemented this reform more comprehensively than the land ceiling and tenancy reforms.

As described in section 2.2, tenancy arrangements in India were often exploitative, burdening tenants with exorbitant rents. Furthermore, tenancy agreements were frequently informal, leaving tenants vulnerable to landlords who could terminate their tenures at will, without facing any consequences. Consequently, after independence, states enacted tenancy reforms to provide greater security of tenure and permanent land rights to landless cultivators. However, these reforms fell short of their initial objectives, with limited success because in order to circumvent these legislations, some landowners resorted to evicting tenants on a large scale (Hanstad et al., 2009).

Lastly, the implementation of land ceiling legislation aimed to restrict the amount of land owned by individuals or families and redistribute surplus land among land poor, landless, and marginal farmers. However, the effectiveness of these ceiling laws was hindered by landowners exploiting loopholes in the legislation, coupled with outdated land records, which posed challenges to their implementation (Hanstad et al., 2009).

2.3.1 Legal framework and policies on women's land ownership

Although the state acknowledged the importance of property rights due to their economic and social benefits, it is important to highlight that land distribution and titles were predominantly granted to male heads of households. Consequently, this exclusion of women had significant implications:

- a) Women were not perceived as active participants or targets in the development process. Policy-making operated under the assumption of a unitary household¹, assuming that benefits provided to the household head would automatically extend to all individuals within the household. However, this assumption does not hold true (Beneria, 2008).
- b) As a result, women did not benefit from the land reforms, despite having the legal right to own property within the Indian legal framework.

Several economic and socio-cultural factors contribute to the limited ownership of land by women. These factors include restricted economic opportunities, patriarchal norms that impede their access to resources, and the practice of patrilocality, which hinders their ability to claim a stake in their family's property.

In the realm of promoting women's access to property, Maharashtra has achieved notable milestones. In 1994, the state was among the first five states to amend the HS Act of 1956 to recognise daughters as coparceners in ancestral property, including agricultural land. While this amendment was undoubtedly a positive step, unfortunately, there is a lack of available data on the number of women who have directly benefited from this reform.

Maharashtra has been witness to various campaigns and movements led by social organisations and tribal groups advocating for land rights. These efforts have yielded favourable outcomes, with the government issuing several resolutions aimed at enhancing women's access to land and acknowledging their rightful

¹In economics, a unitary household refers to a household having a single utility function and does not differentiate between different household members, their preferences, bargaining power, and decision-making authority.

Box 2: Government resolutions for promoting women's property rights

1. *GR of September 15, 1992* commonly referred to as *Laxmi mukti*, emerged from a campaign led by the Shetkari Sangathan, a farmers' organisation. The campaign started in the Vitner village, then located in the Dhule district (now in Jalgaon district), where the villagers allocated half of their lands in the names of women (wives and daughters-in-law). This grassroots initiative led to the GR, granting women the right to register their names alongside men on the 7/12 extract extract^a (Kulkarni, Tiwari, and Bhat, 2008; Dewan, 2017).
2. *GR of August 10, 1994* issued by the Revenue and Forest Department stipulates that all houses, forest lands, grazing lands, and other similar lands allocated through government schemes be registered in the names of both husband and wife. The GR specifies that if the beneficiary received the land or house while being unmarried, their spouse will automatically become a co-beneficiary (Dewan, 2017).
3. *GR of May 20, 2000*, issued by the Revenue and Forest Department, was implemented in the Raigad district by the Adivasi Hakk Suraksha Sanghatana. The struggle of this tribal organisation led to the successful transfer of homestead lands in the names of tribal women (Dewan, 2017).
4. The Rural Development and Water Conservation Department of the GoM issued a *GR dated November 20, 2003*, commonly referred to as "*Ghar doghaanche*" (house belongs to both). This GR mandated that the gram panchayats register houses in the names of both husband and wife. However, it is important to note that this scheme specifically targeted married women (Dewan, 2017).

^aPlease see Glossary

entitlements (Dewan, 2017). For a more comprehensive understanding of these government resolutions, please refer to Box 2.3.1.

Unfortunately, the lack of publicly available data hampers our ability to assess the precise impact of these government resolutions. However, alongside these government resolutions, the Maharashtra government has introduced schemes aimed at promoting property ownership among women. Such schemes are also rolled out at the district level. As an illustration, in 2023, the Pune district launched "Mission Grahswamini," a year-long campaign focused on enabling women to become co-owners in family property records. It is important to note that this particular initiative solely applies to homestead property.

For an overview of schemes initiated by the State government, please refer to Box 2.3.1, while schemes implemented by the Central government can be found in Box.

We examined the legal framework on land ownership applicable to Maharashtra. We find that these laws do not always contain gender specific language or consider women's land rights as a special case. For instance, the Maharashtra Land Revenue Code 1966 does not specifically refer to women land owners or have specific provisions creating exceptions for women.

We find however more recent laws and amendments such as the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, have gender-specific language and also provide for increased land access to women. A summary of this analysis is in Table 2.3.

Box 3: State government schemes

1. Rajmata Jijau Graha Swamini Yojana - Announced in March 2021^a the scheme provides for a 1 percent concession in stamp duty to women home buyers provided that the transfer of residential property or registration of sale deed is in the name of a woman or women only. This initiative was undertaken to give an impetus to women's ownership of property.
2. Mahasamruddhi Mahila Sashaktikaran scheme - The Rural Development and Panchayati Raj Department of the Maharashtra government launched the Mahasamruddhi Mahila Sashaktikaran scheme^b in March 2021 which promotes the listing of names of wives along with their husbands on the 7/12 extract and house property documents.
3. MHADA Lottery Scheme - MHADA runs an affordable housing scheme based on a lottery system. While the scheme is for every income group, MHADA reserves a portion of houses for individuals belonging to the EWS, LIG, and MIG^c.

^aWaghmode, V. (2021, March 8). Maharashtra Govt announces concession in stamp duty for property in women's name. *Indian Express*.

^bMaharashtra govt to launch women empowerment scheme on March 8. (2021, February 25). *Indian Express*

^cLast accessed on 23-01-23

Box 4: Central government schemes

1. PMAYU - PMAYU was launched in 2015 by the mohua^a. It addresses the problem of housing shortage by ensuring a pucca house to all eligible urban households belonging to the EWS, LIG and MIG. PMAYU provides home loans at subsidised interest rates to eligible households. The scheme has provisions for women in terms of low interest rates on loans and registration of houses either in the woman's name or with a woman as a co-owner.
2. PMAYG- PMAYG was launched in 2015 by the Ministry of Rural Development and its objective is to provide a pucca house with basic amenities to all households with no residential property and households living in kutcha and dilapidated houses in rural areas by 2022^b. Under this scheme, beneficiaries are identified based on the SECC, 2011 and verified by the Gram Sabhas.
3. SVAMITVA scheme - SVAMITVA scheme^c, launched by the Ministry of Panchayati Raj in 2020, aims at establishing clear property ownership in rural areas by mapping land parcels through drone technology. It also aims to provide 'record of rights' to eligible households by issuing legal ownership cards, such as property cards and title deeds.

^aWebsite of Pradhan Mantri Awas Yojana - Urban. Last accessed on 23-01-23

^bFramework for Implementation of Pradhan Mantri Awas Yojana-Gramin, 2022

^cWebsite of Ministry of Panchayati Raj. Last accessed on 23-01-23

Table 2.3: Legal framework governing land in Maharashtra

Legislations	Presence of gender specific language	Provisions specific to women's land ownership
Union laws		
Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Yes	Recognises women as separate affected families. Also recognises different categories of women.
Hindu Succession (Amendment) Act, 2005	Yes	Grants daughters the same rights in coparcenary property as that of a son. ²
Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	Yes	Recognises and gives titles to forest dwellers in the joint names of both spouses ³
Transfer of Property Act, 1882	No	Act governing property transfers in India
Registration Act, 1908	No	Procedure for registration of transactions
Maharashtra state laws		
Maharashtra Land Revenue Code, 1966	No	Restrictions on land use by mandating extensive bureaucratic process. ⁴
Maharashtra Tenancy and Agricultural Lands Act, 1948	No	Protection of tenants and provisions on conditions of agricultural tenancy
Hyderabad Tenancy and Agricultural Lands Act, 1950	No	Protection of tenants and provisions on conditions of agricultural tenancy
Bombay Tenancy and Agricultural Lands (Vidarbha Region) Act, 1958	No	Protection of tenants and provisions on conditions of agricultural tenancy
Maharashtra Agricultural Lands (Ceiling on Holdings) Act, 1961	No	Places limits on the extent of land that can be owned
Maharashtra Prevention of Fragments and Consolidation of Holdings Act	No	Restricts on transfer and creation of a fragment
Maharashtra Restoration of Lands to Scheduled Tribes Act, 1974	No	Restoring transferred land to Scheduled Tribes
Maharashtra Stamp Act	No	1 percent stamp duty concession on sale transactions
Maharashtra Gunthewari Developments (Regulation, Upgradation and Control) Act, 2001	No	Regularisation and upgradation of Gunthewari developments
Maharashtra Slum Area (Improvement, Clearance and Redevelopment) Act, 1971	No	Slum re-development and protection of tenants

2.3.2 Land records infrastructure and digitisation

Land records in India form a vital part of the land information infrastructure, providing essential details about individual land parcels. These records are maintained by state governments, leading to variations in

²Section 6

³Section 4

⁴Section 42(1), Section 44

Box 5: Structure of land records in Maharashtra

There are two types of land records in Maharashtra which are as follows:

1. *Textual records*: Textual records contain information about fields such as ownership, area of the land, crops grown on the land (in case of agricultural land) and even encumbrances in some cases. There are two types of textual land records in Maharashtra - urban and rural. Urban records found in cities in Maharashtra (some cities are in the transition phase) are known as Property Cards. Rural records, regardless of whether the land is agricultural or non-agricultural, are called 7/12 extract extracts. There is some variation in the fields of information captured on these records.
2. *Spatial records*: Spatial records are primarily maps. They contain spatial information and provide diagrammatic representations of the land parcels. In one twelve villages in the Mulshi district in Maharashtra, there was a pilot launched to integrate both the textual and spatial records, including a GPS-based scan code to pinpoint the location of the parcel. This effort was a path-breaking one as a key challenge in land information remains the location of the land parcel.

the information fields, recording methods, and maintenance practices across the country. In some states, separate land records are maintained for urban and rural areas. Typically, these records are documented in the state language. Box 2.3.2 outlines the basic structure of land records in Maharashtra.

Land ownership in India is determined through presumptive land titling, where past transactions and documents serve as evidence of land title. These documents include registered sale deeds, records of inheritance, mortgages, leases, records of rights, property tax receipts, and survey documents. However, it is important to note that these registration papers do not guarantee ownership by the government and can lead to disputes (P. Mishra and Suhag, 2017; Jebaraj, 2021).

Land records are stored across three state administration offices in the following manner:

1. **Sale Deed**: A sale deed records the transfer of land or property, including details of past transactions. It is registered on a stamp paper by the sub-registrar office under the Registration Act, 1908.
2. **RoR**: The RoR contains vital information about the land, such as survey numbers, land area, land use, landowners' names, and cultivation details. In rural areas of Maharashtra, the RoR is known as the 7/12 extract, while in urban areas, it is referred to as the Property Card. These documents are maintained by the revenue department.
3. **Spatial land record**: Spatial land records or cadastral maps provide details about the land's area, boundaries, topology, and other relevant information. These records are maintained by the survey and settlement departments of the states.

The fragmented nature of land records maintained by different departments gives rise to significant challenges, resulting in inconsistencies and incomplete information. This complexity poses a major hurdle when engaging in property sales, as individuals are required to verify multiple documents to establish ownership claims on a particular property. Moreover, the absence of a comprehensive repository significantly hampers efficient service delivery, making land transactions a time-consuming, expensive, and inefficient process. Without a centralised and easily accessible database, individuals involved in land transactions have to navigate through various offices and records, increasing administrative burdens and costs (Narayan, Shaikh, Uday, and Zaveri, 2017; P. Mishra and Suhag, 2017).

Unclear ownership poses challenges for accessing formal financial systems, as land cannot be used as collateral without a clear ownership title. Efforts have been made to transition towards conclusive land titling, where the government grants authentic land records designating ownership (Jebaraj, 2021). The Draft Model Act on Conclusive Land Titling published by NITI Aayog in 2019 aims to establish a conclusive land titling system. This approach is expected to reduce land-related disputes by resolving ambiguity around ownership.

The government of India launched two schemes to computerise land records nationwide, namely the Strengthening of Revenue Administration and Updating of Land Records (SRA & ULR) and the Computerisation of Land Records (CLR). These schemes were later streamlined into the National Land Records

Modernisation Programme (NLRMP) and further revamped as the Digital India Land Records Modernisation Programme (DILRMP) in 2016 (GOI, 2020). The primary objectives of the DILRMP include updating existing land records to digital format, integrating textual and spatial records, enhancing interconnectivity among land record offices, conducting surveys and digitising cadastral maps, and transitioning from presumptive land titling to conclusive land titling (Narayan et al., 2017; GOI, 2020).

Based on our previous work on the implementation of DILRMP in Maharashtra (Narayan et al., 2017), the components of the program can be categorised into five main categories:

1. Digitising land records: This involves scanning and uploading land records onto a machine-readable database.
2. Digitising access to records: Enabling retrieval of land records through standalone computers, networked servers, or the web.
3. Digitising the process of recording land transfer: Automating the registration of property-related documents and updating revenue records.
4. Digitisation of maps: Utilising modern survey techniques to survey land and create digital maps with geospatial data.
5. Interconnectivity of land record offices: Establishing connectivity between land record offices to enable real-time updating of land records.

While some states are in the process of digitising their land records, Maharashtra has made significant progress, with nearly 100 percent of textual land records in the state being digitised. However, spatial records in Maharashtra still require further digitisation efforts.

In 2017-18, we conducted an implementation assessment of the DILRMP in Maharashtra, including manual ground verification of textual and spatial information. Our findings revealed a high level of agreement between on-ground ownership information and land records (Narayan et al., 2017).

The Maharashtra government has implemented the e-Mahabhoomi program, which includes various components that align with the digitisation aspects mentioned earlier. While some initiatives fall under the DILRMP, two initiatives, namely e-Chavdi and e-Mojani, are independent of the DILRMP (Narayan et al., 2017).

1. e-Chavdi: This village-level project aims to create an application containing land revenue-related forms maintained by the Talathi.
2. e-Mojani: This project facilitates department officials in managing survey requests, generating challans, and tracking monthly survey fee collection.

However, there exists a significant limitation. During our conversation with revenue officials, we learned that there is now a fee for accessing digitised land records that are digitally signed and verified. To obtain updated and machine-readable information, individuals are required to pay INR 15 per record. In contrast, the intentionally non-machine-readable free search option is provided to encourage the use of the paid search. To deter misuse, certain fields of information in land records have been deliberately concealed by the Revenue Department of the Maharashtra government.

While this measure aims to deter misuse, the requirement to pay for accessing land records not only restricts access but also complicates the extraction and analysis of crucial data for research and decision-making purposes. Furthermore, if anyone wants to access their record, they (i) must be sufficiently able to make such a payment; (ii) and be able to make such a payment online which people in rural areas with limited financial literacy might not be able to do. As a result, they may have to ultimately rely on an agent to do the extraction which might increase the cost.

Chapter 3

Approach and methodology

The existing datasets, as discussed earlier, have certain limitations that hinder our understanding of the complete landscape of women’s land rights in India. To address this gap, our study is driven by two research objectives:

1. Mapping the de jure land rights of women in Maharashtra.
2. Assessing the extent of de facto control over land by women landowners and examining their perceptions of tenure security.

To achieve each objective, we employ distinct methodologies tailored to the specific research aims. The following sections outline these methodologies in detail.

3.1 *De jure* mapping of women’s land rights

We initiated our study by carefully selecting the districts to be included. As explained in Chapter 2, Maharashtra had two land revenue systems — *zamindari* and *ryotwari* — each potentially influencing the maintenance of land records and landowners’ rights. To capture these differences, we chose Pune and Nashik districts to reflect the ryotwari system, and Nagpur district to represent the zamindari system. Additionally, we considered the districts’ large populations based on the 2011 Census and ensured a balanced distribution of male and female populations.

To analyse variations between urban and rural areas, we classified the talukas within each district based on their urban or rural status according to the 2011 Census. Talukas with over 50 percent urban population were labelled as urban talukas, while those with the majority classified as rural were marked as rural talukas.

Our methodology for mapping women’s de jure land rights consisted of three main stages:

Stage 1: *Data Extraction*

We obtained land records from the Mahabhulekh website, an online portal established by the Revenue Department of the Government of Maharashtra. The portal provides a document called the 7/12 extract, which contains essential information about specific land parcels, such as survey number, area, owner’s name, land type, and usage.

The 7/12 extracts are publicly accessible on the Mahabhulekh portal. To extract these documents at scale, we utilised distributed computing, browser automation, and HTML parsers.

Stage 2: *Data Transformation*

The 7/12 extracts are recorded in Marathi, the regional language, and are uploaded on the web portal in the same language. However, a small portion of the records were found to be in English. For standardisation and analysis purposes, we translated all Marathi extracts into English using a combination of proprietary knowledge of property terms and public translation APIs.

Stage 3: *Assigning Gender*

The 7/12 extracts do not explicitly indicate the gender of the land owner or holder. To determine gender, we employed a deep neural-net classifier trained on 13.7 million names from the Delhi voter rolls. This algorithm, developed by Ash et al., 2021, has an estimated accuracy of 97 percent as confirmed by cross-validation.

Through this three-stage methodology, we obtained 7/12 extracts at the village level for Pune, Nashik, and Nagpur. This information allowed us to analyse land ownership patterns across genders and assess the proportion of female land ownership, among other important data points.

It is important to note that a limitation of this study was that we could only extract 7/12 records, which primarily cover rural areas. Urban land records are typically documented through Property Cards (PCs). Although we initially intended to extract urban land records, we encountered challenges as these documents were inaccessible due to CAPTCHAs and OTP requirements. Additionally, the website frequently crashed, leading to timeouts. However, we were able to acquire records for peri-urban areas, which are currently undergoing the process of being updated to Property Cards from 7/12 records.

3.2 *De facto* control over land and perception of tenure security

We divide our discussion in this section into two parts: a) the preparation of fieldwork, and b) the actual fieldwork itself. This division allows for a clear and structured understanding of the steps taken to ensure the successful execution of our research.

3.2.1 Preparation of fieldwork

Survey Instrument design

The first step in preparing for fieldwork was designing the survey instrument. This involved an extensive literature review to gain insights into the land infrastructure, historical land revenue systems, and demography of Maharashtra. We critically analysed national-level datasets and identified their limitations, some of which were presented in Chapter 1. Additionally, we conducted a comprehensive literature review on gender and land to understand how women exercise control over their land parcels. We explored concepts of empowerment, agency, control, and tenure security and examined studies on measuring women's agency with respect to land. Our review included online searches using appropriate keywords, examination of research institutions' websites, and utilising snowball citation techniques to gather a comprehensive understanding of the subject.

Drawing from existing research on the measurement of agency, we retained relevant questions and adapted others to suit our specific research objectives. Employing a first principles approach, we constructed a novel framework to understand the agency of women who own land in India. In order to capture a comprehensive range of land-related decisions made by landowners, we engaged in dialogues with property owners and academicians, which informed our questionnaire design.

We also sought feedback from our Advisory Committee and incorporated their suggestions and recommendations into the survey instrument to enhance its effectiveness and relevance.

District selection

After careful consideration of resource constraints and advice from the Advisory Committee and Revenue officials at YASHADA, we made the decision to narrow down our fieldwork to Pune and Nashik districts. Although Nagpur was initially considered, it was ultimately excluded from our fieldwork due to the reasons stated above.

Sampling method

We utilised three sampling techniques to select female landowners at the village level: stratified random sampling, multistage sampling, and purposive sampling.

After deciding to visit Pune and Nashik districts, we selected one rural and one urban taluka from each district. The classification of talukas as rural or urban was based on their respective populations according to the Census of 2011 as previously discussed. The selection of talukas was based on a high concentration of women.

Once the two talukas (stratas) were established, we employed simple random sampling to obtain a 10 percent sample from each taluka. Within each taluka, which consists of multiple villages, we obtained a list of randomly selected villages. We specifically sought villages with a significant number of female landowners from our digital land records database. Additionally, we aimed to survey women engaged in joint ownership with other women to understand the impact this ownership pattern has on their control over land.

Consequently, we identified villages from each taluka with the highest number of females jointly owning land with other females. From these villages, we randomly selected five villages that met this criterion. Subsequently, we filtered for female ownerships in these five villages, resulting in a sample of land records with females as owners. The sample size from each village varied depending on the number of female land ownerships present.

In total, we selected 80 land records from each district, with 40 from the urban taluka and 40 from the rural taluka. Therefore, we planned to visit women landowners of 160 land records for the survey. However, as elaborated on in Subsection 3.2.2, the final sample size changed due to uncertain events encountered on the field.

Considering the creation of stratas, the application of random sampling at multiple stages, and the focus on female land ownership, our adopted sampling methods were stratified random sampling, multistage sampling, and purposive sampling respectively. These techniques allowed us to obtain a representative sample and examine the specific characteristic of female land ownership in our study.

Ethical considerations

We diligently addressed the following ethical considerations:

1. Privacy: We took measures to protect and respect the privacy of our survey participants, as we collected personally identifiable information.
2. Confidentiality: We upheld the principles of anonymity and confidentiality, ensuring that the identities and responses of our respondents remain strictly protected and undisclosed.
3. Informed consent: Prior to the commencement of the study, we provided comprehensive explanations regarding the purpose and nature of our research to the participants. We obtained their informed consent, ensuring they were fully aware of their voluntary involvement and their rights as participants.

3.2.2 Fieldwork

Fieldwork is indeed characterised by various uncertainties and challenges, and our experience was no exception. Throughout the data collection process, we encountered some obstacles that required us to adapt and find alternative solutions. The following challenges emerged:

1. Difficulty in identifying women-owned land parcels with the owners present: It was challenging to locate land parcels owned by women and ensure their presence during the survey. This issue hindered our ability to gather data from the intended sample of women landowners.
2. Inaccessibility of scattered land parcels: As our sample was randomly selected, some land parcels were not in close proximity to each other. This geographical dispersion posed logistical challenges, making it difficult for us to access all the targeted land parcels efficiently.
3. Constraints related to patrilocality, farm work, and personal commitments: Cultural norms, agricultural responsibilities, and personal commitments of women landowners presented obstacles in engaging them for the survey. These factors limited their availability and participation in the study.

4. Influence and prompting from family members, particularly male members: During the administration of the questionnaire, we observed significant involvement and influence from family members, particularly male members. This influence could potentially affect the accuracy and reliability of the responses obtained from women landowners.

To address these challenges, we sought assistance from the village *talathis*, who provided support in identifying land parcels where women owners were present on the day of our visit. This collaborative effort helped us overcome some of the difficulties encountered during the initial sampling phase.

Sample size

The field sample consisted of land parcels from Pune and Nashik districts. The sample summary is presented in Table 3.2.2, detailing the districts, talukas, villages/cities, classification (rural or urban), and the corresponding sample size.

Table 3.1: Field sample summary

District	Taluka	Village/City	Classification	Sample size
Pune	Khed	Davidi	Rural	58
		Holewadi	Rural	21
	Haveli	Karvenagar	Urban	15
				94
Nashik	Sinnar	Deshwandi	Rural	49
		Dhondbar	Rural	20
		Ashapur	Rural	10
		Patole	Rural	7
		Dubere	Rural	6
Total sample size				186

Data collection method

We employed various methods to collect data from different respondents. Table 3.2.2 outlines the methods used for each respondent group. Computer-Assisted Personal Interviews (CAPI) were conducted with female landowners to gather data on their land ownership, decision-making, and perceptions of tenure security. Focus Group Discussions (FGDs) were conducted with male landowners, female lessees, and female non-owners to gain insights into their perspectives on land ownership and control. These FGDs utilized a combination of CAPI and Pen-and-Paper Personal Interviews (PAPI) to capture the participants' responses. Revenue officials were interviewed using PAPI to gather their insights on various aspects such as the structure of the land records infrastructure, administrative procedures, and to seek clarification on our de jure findings.

Table 3.2: Methods of data collection

Respondents	Data collection method
Female landowners	Computer-Assisted Personal Interviews (CAPI)
FGDs with male landowners & female lessees+non-owners	CAPI and Pen-and-Paper Personal Interviews (PAPI)
Revenue officials	PAPI

Chapter 4

Findings

In this chapter we describe our findings from our desk research as well as our field work. We divide our findings across five sections on: de jure ownership; women's awareness about their land; women's agency; women's tenure security and effect of women's land ownership. In the sections that follow we include factual and perception based findings (where relevant). We also link the research questions set out in Chapter 1 for brevity. We set out a summary of some key findings in Table 4.1.

Table 4.1: Summary of key findings

Theme	Findings
De jure ownership	In Pune district women own nearly 40 per cent of land parcels in the district; in Nashik and Nagpur districts, women own between 17-23 per cent of land parcels in the district. Overall, marginal and small land parcels are a feature of all land ownership. Women own land in both peri-urban and rural talukas The proportion of parcels owned by women in peri-urban and rural areas is close to equal in all districts. Women own land in both single and joint ownership structures Women jointly own land more with men than with other women The patterns in size of owned in relation to ownership structures are similar for men and women More women inherit land than purchase land
Awareness about land ownership	Women are aware of the fact of their ownership but are less aware of how and when they came to be owners Women who own land through inheritance are less aware of when they became owners Women lack awareness about their ownership structures Most women are unaware of the area of the land they own Most women who reported area believe their own more land than they actually do One in three women are unaware of how to transact in their owned land
Agency over owned land	62 per cent of women do not <i>perceive</i> to have control over their land Most women report participating in farming decisions except where use of technology or financial decisions are involved Women are less involved in making marketing decisions Women are more likely to be involved in decision-making on transactions on the land Women tend to be more involved in sale and bequest decisions than mortgage, however 9 per cent of all bequests happen without their involvement 90 per cent of respondent believe that they would be able to prevent other family members from transacting on the land if they did not agree
Perception of tenure security	Most women report being secure in their land rights and would invest on and purchase more land subject to the availability of funds Having their name in the land record is not the reason for perceptions of higher tenure security

4.1 De jure land ownership of women

4.1.1 Question 1: The proportion of women land owners

A key question in this study is to examine the proportion of women land owners to the total land owners in the sample districts - Pune, Nagpur, Nashik, in rural and peri-urban areas. The idea is to provide a base from which we may extrapolate this to examine land ownership across all of Maharashtra. We, therefore, select sample districts that reasonably represent diversity in the state.

Our study focuses on de jure land owners i.e. those land owners that have a title recognised by the state as reflected in government issued land ownership certificates (in this case 7/12 extracts). Our findings are as follows:

Finding 1: Single ownership is more prevalent than joint ownership structures in all sample districts

We first examined landownership features at an aggregate level across the three sample districts, regardless of whether the owners are male or female. Our aim in doing so is to (i) understand the patterns in land ownership and (ii) examine the extent of deviations of female ownership structures from the overall stock of land ownership in Pune, Nashik and Nagpur.

Pune District: We find that peri-urban regions of Pune District (parts of Pune City and Haveli) have 3,02,125 digitised land records, with 60 per cent of land parcels being owned individually and 40 per cent having joint ownership structures. We find that rural regions of Pune District¹ has 16,47,822 digitised land records. Here, too we observe a greater presence of single owners (70 per cent) than joint owners (30 per cent). A summary is presented in Table 4.2.

¹ Amebegaon, Baramati, Bhore, Daund, Indapur, Junnar, Khed, Mawal, Mulshi, Purandhar, Shirur and Velhe)

Table 4.2: Summary statistics of digitised land records of Pune district

Pune (Peri-urban)	
Total no. of talukas in Pune district	14
No. of urban talukas	2²
Total no. of digitised land records (peri-urban)	302,125 11,150 (3.7) ³ (Pune City) 290,975 (96.3) (Haveli)
Total no. of land records with single owner	1,77,213 (58.6) 7,186 (4.1)(Pune City) 170,027 (95.9)(Haveli)
Total no. of land records with joint owners	119,004 (39.4) 3,950 (3.3) (Pune City) 115,054 (96.7) (Haveli)
Mean no. of owners in joint ownership	10
Pune (Rural)	
No. of rural talukas in Pune district	12
Total no. of digitised land records	16,47,822 116,531 (7.1) (Ambegaon) 79,786 (4.8) (Baramati) 173,927 (10.5) (Bhor) 120,292 (7.3) (Daund) 82,176 (4.9) (Indapur) 155,234 (9.4) (Junnar) 220,727 (13.4) (Khed) 147,379 (8.9) (Mawal) 179,013 (10.8) (Mulshi) 140,620 (8.5) (Purandhar) 152,729 (9.3) (Shirur) 79,389 (4.8) (Velhe)
Total no. of land records with single owner	10,83,044 (65.7) 106,414 (9.8) (Ambegaon) 73,798 (6.8) (Baramati) 97,786 (9.1) (Bhor) 73,189 (6.7) (Daund) 74,241 (6.8) (Indapur) 140,325 (12.9) (Junnar) 120,558 (11.1) (Khed) 82,515 (7.6) (Mawal) 102,899 (9.5) (Mulshi) 77,264 (7.1) (Purandhar) 89,106 (8.2) (Shirur) 44,949 (4.2) (Velhe)
Total no. of land records with joint owners	476,576 (28.9) 2,564 (0.5) (Ambegaon) 2,490 (0.5) (Baramati) 66,607 (13.9) (Bhor) 44,809 (9.4) (Daund) 2,827 (0.6) (Indapur)

Continued on the next page

²Pune city and Haveli³All numbers in round brackets are percentages

Box 6: Learnings about digitised land records in Pune district

Pune district comprises 14 talukas of which we have classified two as peri-urban and 12 as rural. The total number of digitised 7/12 land records in Pune district is 19,49,947, however 5 per cent of these land records are not machine-readable and therefore have not been included in our sample as they do not lend themselves to gender analysis by an algorithm.

Revenue officials have clarified that the records available in the free search on the Mahabhulekh portal, while consists of the entire set of digitised land records, contain some fields with smudged information which has deliberately made so. This opacity in data creates difficulties for the algorithm to read all the fields of information. Nonetheless, the proportion of non-machine-readable land records is small and does not pose serious challenges to our analysis.

	3,393 (0.7) (Junnar)
	88,158 (18.5) (Khed)
	58,832 (12.3) (Mawal)
	69,210 (14.5) (Mulshi)
	56,008 (11.7) (Purandhar)
	56,232 (11.8) (Shirur)
	25,446 (5.3) (Velhe)
Mean no. of owners in joint ownership (rural)	10

Nashik District: About 95 per cent of land records in Nashik (Peri-urban) have single owners and barely 2 per cent have joint owners. In Nashik Rural, 97 per cent of land parcels are held as single ownerships, while only 2 per cent are joint ownerships. Unlike in Pune, we observe a highly disproportionate (96 per cent) share of land parcels with single owners, while joint ownerships constitute barely 2 per cent of the share. While there are differences in the proportion, we observe a same trend of overall landholding patterns in Pune and Nashik.

Further in Nashik district not only do we notice a minuscule share of joint ownerships but also a small mean number of owners (2 owners), unlike in Pune district where joint ownership structures have relatively large number of co-owners. The summary statistics of digitised land records in Nashik are presented in Table 4.3.

Table 4.3: Summary statistics of digitised land records of Nashik district

Nashik (Peri-urban)	
Total no. of talukas in Nashik district	15
No. of urban talukas	2 (Malegaon, Nashik)
Total no. of digitised land records	340,775
	158,852 (46.6) (Malegaon)
	181,923 (53.4) (Nashik)
Total no. of land records with single owner	253,096 (74.3)
	115,495 (45.6) (Malegaon)
	137,601 (54.4) (Nashik)
Total no. of land records with joint owners	5,998 (1.8)
	2,233 (37.2) (Malegaon)
	3,755 (62.6) (Nashik)
Mean no. of owners in joint ownership	2
Nashik (Rural)	
No. of rural talukas	13

Continued on the next page

Total no. of digitised land records	751,689 83,498 (11.1) (Bagalan) 71,230 (9.5) (Chandwad) 37,848 (5.1) (Deola) 59,394 (7.9) (Dindori) 72,529 (9.6) (Igatpuri) 41,163 (5.5) (Kalwan) 54,527 (7.2) (Nandgaon) 99,471 (13.2) (Niphad) 17,986 (2.4) (Peth) 93,775 (12.5) (Sinnar) 28,373 (3.8) (Surgana) 32,827 (4.4) (Trimbakeshwar) 59,068 (7.8) (Yevla)
Total no. of land records with single owner	651,742 (86.7) 75,154 (11.5) (Bagalan) 57,931 (8.9) (Chandwad) 35,306 (5.4) (Deola) 50,950 (7.8) (Dindori) 56,876 (8.7) (Igatpuri) 36,252 (5.6) (Kalwan) 49,593 (7.6) (Nandgaon) 88,522 (13.6) (Niphad) 13,204 (2.1) (Peth) 86,356 (13.2) (Sinnar) 22,385 (3.4) (Surgana) 26,850 (4.1) (Trimbakeshwar) 52,363 (8.1) (Yevla)
Total no. of land records with joint owners	13,147 (1.7) 1,069 (8.1) (Bagalan) 1,350 (10.3) (Chandwad) 789 (6) (Deola) 1,123 (8.5) (Dindori) 1,100 (8.4) (Igatpuri) 511 (3.9) (Kalwan) 912 (7) (Nandgaon) 1,996 (15.2) (Niphad) 245 (1.9) (Peth) 2,285 (17.4) (Sinnar) 93 (0.7) (Surgana) 423 (3.2) (Trimbakeshwar) 1,251 (9.5) (Yevla)
Mean no. of owners in joint ownership	2

Box 7: Learnings about digitised land records in Nashik district

Nashik district comprises 15 talukas of which we have classified 2 as urban and 13 as rural. The total number of digitised 7/12 land extracts in Nashik is 10,92,464 with about 86 per cent being machine-readable.

There are 3,40,775 digitised land records in Nashik (Peri-urban) and Nashik (Rural) has 7,51,689 digitised land records. 22 per cent records in Nashik Peri-urban are not machine-readable and 10 per cent of land records from Nashik Rural are not machine-readable. In addition to the deliberate smudging of fields (see Box 4.1.1) another reason is the availability of land records in image format and not HTML format. HTML format enables us to extract relevant information at scale and with optimum resource utilisation. For access to the entire set of land records, we require to pay a fee.

Nagpur District: Following a similar ownership pattern to Nashik, 86 per cent of land parcels in Nagpur Peri-urban have single owners and less than 2 per cent of land owners are in joint ownership structures.⁴ Similar to Nashik's pattern, we observe a small share of joint ownerships as well as a small mean number of owners (2 owners). The summary statistics of digitised land records are presented in Table 4.4.

Table 4.4: Summary statistics of digitised land records of Nagpur district

Nagpur (Peri-urban)	
Total no. of talukas	14
No. of urban talukas	4
Total no. of digitised land records	185,012
	51,973 (28.1) (Hingna)
	36,716 (19.9) (Kamptee)
	68,103 (36.9) (Nagpur (Rural))
	28,220 (15.2) (Nagpur (Urban))
Total no. of land records with single owner	1,58,817 (85.8)
	44,549 (28.1) (Hingna)
	30,817 (19.4) (Kamptee)
	60,085 (37.8) (Nagpur (Rural))
	23,366 (14.7) (Nagpur (Urban))
Total no. of land records with joint owners	3,195 (1.7)
	946 (29.6) (Hingna)
	753 (23.6) (Kamptee)
	1,160 (36.3) (Nagpur (Rural))
	336 (10.5) (Nagpur (Urban))
Mean no. of owners in joint ownership	2
Nagpur (Rural)	
No. of rural talukas	10
Total no. of digitised land records	480,743
	34,346 (7.1) (Bhiwapur)
	36,751 (7.6) (Kalameshwar)
	54,157 (11.3) (Katol)
	62,631 (13) (Kuhi)
	54,876 (11.4) (Mauda)
	51,380 (10.7) (Narkhed)
	37,727 (7.8) (Parseoni)
	43,281 (9) (Ramtek)

Continued on the next page

⁴These numbers take into account the land records which are not machine readable

Box 8: Nagpur district

Nagpur district consists of 14 talukas, of which 4 have been classified as urban and the remaining 10, as rural. At 6,65,755 digitised land records, Nagpur district has the lowest number of 7/12 extracts among all the three districts. Of these, around 83 per cent of land records are machine-readable.

Nagpur (Peri-Urban) contains 1,85,012 land records with 90 per cent being machine-readable. The ownership pattern resembles that of Nashik (Peri-Urban) with 95 per cent of land records individually owned and 2 per cent as jointly. In Nagpur (Rural), the total number of digitised land records is 4,80,743 out of which 81 per cent are machine-readable.

	50,508 (10.5) (Savner)
	55,086 (11.5) (Umred)
Total no. of land records with single owner	376,080 (78.2)
	25,080 (6.7) (Bhiwapur)
	26,765 (7.1) (Kalameshwar)
	43,327 (11.5) (Katol)
	48,580 (12.9) (Kuhi)
	43,333 (11.5) (Mauda)
	39,884 (10.6) (Narkhed)
	26,998 (7.2) (Parseoni)
	32,339 (8.6) (Ramtek)
	42,425 (11.3) (Savner)
	47,349 (12.6) (Umred)
Total no. of land records with joint owners	5,583 (1.2)
	380 (6.8) (Bhiwapur)
	367 (6.6) (Kalameshwar)
	682 (12.2) (Katol)
	823 (14.7) (Kuhi)
	655 (11.7) (Mauda)
	635 (11.4) (Narkhed)
	440 (7.9) (Parseoni)
	424 (7.6) (Ramtek)
	533 (9.5) (Savner)
	644 (11.5) (Umred)
Mean no. of owners in joint ownership	2

Finding 2: Marginal and small land parcels are a dominant feature of land ownership

We examined the area of 32 per cent owned land parcels for Pune district (for which this information was machine readable and available). We find that marginal and small owned land parcels dominate the landscape.

Table 4.5: Proportion of land holdings in Pune District by size

Landholding size ⁵	No. of land records
Marginal (up to 2.47 acres)	3,92,843 (75.59)
Small (2.47-4.94 acres)	67,649 (13.02)
Semi-medium (4.94-9.88 acres)	37,951 (7.30)
Medium (9.88-24.7 acres)	18,107 (3.48)
Large (24.7 acres and above)	3,121 (0.60)
Total no. of land records	5,19,671

Finding 3: Women are de jure owners of land in both peri-urban and rural talukas

Pune district: In peri-urban Pune we find that 42 per cent of land records have at least one woman as an owner in some capacity (either single owner or joint owner). The remaining land parcels in the district belong to males without any women in the ownership structures. Pune (Rural) has 16,47,822 digitised land records, of which 39.5 per cent have at least one woman listed as an owner. The remaining land parcels are owned by males without any women in the ownership structures.

We therefore do not see much disparity between the proportion of women owning land in peri-urban and rural areas in Pune district. This is a deviation from other survey based datasets that posit that women own more land in rural areas and in urban/peri-urban areas. Table 4.6 sets out a summary of our findings across Pune district disaggregated across peri-urban and rural areas.

Table 4.6: Proportion of women landowners in Pune district

Pune (Peri-urban)	
Total no. of digitised land records	302,125
No. of land records with women as an owner	126,666 (42)
Pune (Rural)	
Total no. of digitised land records	16,47,822
No. of land records with women as an owner	655,531 (39.5)

Nashik district: We find a lower proportion of women land owners in Nashik when compared with Pune. In particular 21 per cent of all digitised land records in Nashik Peri-urban have at least one woman as an owner and 24 per cent of land digitised land records in Nashik Rural have atleast one woman as an owner. Similar to Pune district we do not see much disparity between the proportion of women's land ownership in rural and peri-urban areas. Table 4.7 presents the proportion of women landowners in Nashik district.

Nagpur district: We find that Nagpur has the lowest proportion of women's land ownership when compared to Pune and Nashik districts. We find that 19 per cent of digitised land records have at least one woman land owner in peri-urban areas and 18 per cent of digitised land records have at least one woman land owner in rural areas. Similar to Pune and Nashik, we see little disparity between the proportion of women land owners in rural and peri-urban areas. Table 4.8 presents the proportion of women landowners in Nagpur district.

Finding 4: Women predominantly own marginal land parcels

⁵The unit has been converted to acres from hectares as we analysed our field data in acres

Table 4.7: Proportion of women landowners in Nashik district

Nashik (Peri-urban)	
Total no. of digitised land records	340,775
No. of land records with women as an owner	70,876 (20.8)
Nashik (Rural)	
Total no. of digitised land records	751,689
No. of land records with women as an owner	179,412 (23.87)

Table 4.8: Proportion of women landowners in Nagpur district

Nagpur (Peri-urban)	
Total no. of digitised land records	185,012
No. of land records with women as an owner	35,187 (19.02)
Nagpur (Rural)	
Total no. of digitised land records	480,743
No. of land records with women as an owner	86,302 (17.95)

We examined the area of 32 per cent owned land parcels for Pune district (for which this information was machine readable and available). We find that male only, female only and mixed owned land parcels are predominantly in the marginal and small category as reflected in finding 2 above.

When we disaggregate the data, we find that both in women only land ownership structures and where women own land jointly with men, the predominant size of land parcels fall within the marginal category (47 per cent) and small category (8.18 per cent). When we look at the semi-medium, medium and large category of land, we see significant disparity in the proportion of women owned land parcels when compared to male owned land parcels.

Table 4.9: Gender wise landholding data

Landholding size⁶	Male only	Female only	Mixed
Marginal (up to 2.47 acres)	1,27,872 (24.61)	19,528 (3.76)	2,45,443 (47.23)
Small (2.47-4.94 acres)	21,924 (4.22)	3,211 (0.62)	42,514 (8.18)
Semi-medium (4.94-9.88 acres)	9,913 (1.91)	1,290 (0.25)	26,748 (5.12)
Medium (9.88-24.7 acres)	3,429 (0.66)	384 (0.074)	14,294 (2.75)
Large (24.7 acres and above)	614 (0.12)	77 (0.015)	2,430 (0.47)
Total	1,63,752 (31.51)	24,490 (4.71)	3,31,429 (63.77)

4.1.2 Question 2: Land ownership patterns among women

Finding 1: Women own land in both single and joint ownership structures

We find that women own land in both single and joint ownership structures.

Pune district: We find that 34 per cent of land records that have at least one woman as an owner have women as single owners. 66 per cent of parcel have women as joint owners. Joint ownership structures therefore are more prevalent than single ownership structures. Pune (Rural) has 16,47,822 digitised land records, of which 39.5 per cent have at least one woman listed as an owner. The remaining land parcels are owned by males without any women in the ownership structures. Table 4.10 presents the land ownership pattern of women in Pune district.

Table 4.10: Ownership pattern of women in Pune district

Pune (Peri-Urban)	
	No. of land records
Women as an owner	1,26,666 (42)
A. Singly owned by women	42,457 (34)
Pune City	1,518 (4)
Haveli	40,939 (96)
B. Jointly owned by women	84,209 (66)
Pune city	2,715 (3)
Haveli	81,458 (97)
Pune (Rural)	
Women as an owner	655,531 (39.5)
A. Singly owned by women	283,252 (43.2)
Ambegaon	28,168 (9.94)
Baramati	17,655 (6.23)
Bhor	27,642 (9.75)
Daund	16,967 (5.99)
Indapur	15,492 (5.46)
Junnar	38,464 (13.57)
Khed	34,985 (12.35)
Mawal	21,934 (7.74)
Mulshi	26,257 (9.26)
Purandhar	20,600 (7.27)
Shirur	22,447 (7.92)
Velhe	12,641 (4.46)
B. Jointly owned by women	352,758 (53.8)
Ambegaon	1,711 (0.48)
Baramati	1,366 (0.38)
Bhor	55,157 (15.6)
Daund	32,472 (9.2)
Indapur	1,634 (0.46)
Junnar	2,419 (0.68)
Khed	73,379 (20.8)
Mawal	44,695 (12.6)
Mulshi	52,498 (14.8)
Purandhar	45,428 (12.8)
Shirur	41,999 (11.9)
Velhe	19,521 (5.5)

Nashik district: We find that 27 per cent of land parcels have a woman owner in some capacity. Within this, there is a high share (94 per cent) of land records being singly owned by women as against only 6 per cent being jointly owned by them. Within female joint ownerships, we see that 92 per cent of land parcels are jointly owned by women and men, while only 9 per cent are owned by females. While we do not know the exact reason behind this, our conjecture remains the same as mentioned in the previous section: granting land rights to women can help households avail several financial benefits.

Unlike its peri-urban counterpart, Nashik (Rural) has 90 per cent of land records being machine-readable. Out of these land records, 97 per cent are single ownerships, while only 2 per cent are joint ownerships. Within these records, only 27 per cent have a woman owner, just like Nashik (Peri-Urban). Disaggregating female ownership pattern, we find 95 per cent of land records are singly owned by women, while 5 per cent are jointly owned by them. Nashik (Rural) fares exactly like its peri-urban counterpart in terms of the disaggregated ownership pattern within joint ownerships by women, with 90 per cent of parcels being held jointly with men.

Table 4.11 presents the land ownership pattern of women in Nashik district.

Table 4.11: Ownership pattern of women in Nashik district

Nashik (Peri-Urban)	
	No. of land records
Women as an owner	70,876 (20.80)
A. Singly owned by women	66,853 (94.3)
Malegaon	31,282 (46.8)
Nashik	35,571 (53.2)
B. Jointly owned by women	4,023 (5.6)
Malegaon	1,470 (36.5)
Nashik	2,553 (63.4)
Nashik (Rural)	
Women as an owner	179,412 (23.87)
A. Singly owned by women	170,890 (95.25)
Bagalan	19,927 (11.66)
Chandwad	15,329 (8.97)
Deola	9,913 (5.80)
Dindori	13,106 (7.67)
Igatpuri	16,540 (9.68)
Kalwan	9,434 (5.52)
Nandgaon	12,767 (7.47)
Niphad	22,219 (13)
Peth	2,636 (1.54)
Sinnar	24,073 (14.09)
Surgana	4,815 (2.82)
Trimbakeshwar	7,214 (4.22)
Yevla	12,917 (7.56)
B. Jointly owned by women	8,522 (4.75)
Bagalan	657 (7.71)
Chandwad	832 (9.76)
Deola	469 (5.50)
Dindori	730 (8.57)
Igatpuri	796 (9.34)

Continued on the next page

Kalwan	302 (3.54)
Nandgaon	553 (6.49)
Niphad	1,321 (15.50)
Peth	190 (2.23)
Sinnar	1,495 (17.54)
Surgana	75 (0.88)
Trimbakeshwar	309 (3.63)
Yevla	793 (9.31)

Among all the three districts, Nagpur has the lowest proportion of land parcels held by women (22 per cent). This is true for both urban and rural categories of the district. Among these ownerships, 95 per cent are singly owned by women while 4 per cent are jointly owned. Upon disaggregating women's joint ownerships, we see a better distribution as compared with Pune (Peri-Urban) and Nashik (Peri-Urban). Women own 15 per cent of land parcels with other women, while the share of their joint ownership with men stands at 85 per cent.

Similar to Nashik (Rural), Nagpur (Rural) also has 97 per cent of its land records under single ownerships and the remaining as joint. From the lens of female land ownership, 22 per cent of the machine-readable land records have a woman as an owner, which when further disaggregated reveals 96 per cent of land records being singly owned by women and 3 per cent as jointly owned. Within the joint ownerships, barely 9 per cent are held by women along with other women and a large majority of the parcels are jointly owned by both men and women.

Table 4.12 presents the land ownership pattern of women in Nagpur district.

Table 4.12: Ownership pattern of women in Nagpur district

Nagpur (Peri-Urban)	
	No. of land records
Women as an owner	35,187 (19.02)
A. Singly owned by women	33,614 (95.53)
Hingna	10,536 (31.34)
Kamptee	6,355 (18.91)
Nagpur (Rural)	12,815 (38.12)
Nagpur (Urban)	3,908 (11.63)
B. Jointly owned by women	1,573 (4.47)
Hingna	499 (31.72)
Kamptee	407 (25.87)
Nagpur (Rural)	540 (34.33)
Nagpur (Urban)	127 (8.07)
Nagpur (Rural)	
Women as an owner	86,302 (17.95)
A. Singly owned by women	83,233 (96.44)
Bhiwapur	5,038 (6.05)
Kalameshwar	6,578 (7.90)
Katol	10,075 (12.10)
Kuhi	10,808 (12.99)
Mauda	8,552 (9.91)
Narkhed	7,826 (9.40)
Parseoni	5,917 (7.11)
Ramtek	7,613 (9.15)

Continued on the next page

Savner	11,104 (13.34)
Umred	9,722 (11.68)
B. Jointly owned by women	3,069 (3.56)
Bhiwapur	208 (6.78)
Kalameshwar	169 (5.51)
Katol	401 (13.07)
Kuhi	494 (16.10)
Mauda	354 (11.53)
Narkhed	337 (10.98)
Parseoni	221 (7.20)
Ramtek	198 (6.45)
Savner	347 (11.31)
Umred	340 (11.08)

Finding 2: Women jointly own land more with men than with other women

We find that across all three districts, women in joint structures tend to own land with men rather than other women only. We see very few instance of women-only joint ownership structures. We observe this pattern across all three districts. Table 4.13 presents the nature of women's joint ownership of land in Pune district. Table 4.14 presents the nature of women's joint ownership of land in Nashik district and Table 4.15 presents the nature of women's joint ownership of land in Nagpur district.

Table 4.13: Nature of women's joint ownership of land in Pune district

Pune (Peri-Urban)	
1. Jointly with women	4,046 (5)
Pune City	161 (4)
Haveli	3,885 (96)
2. Joint with men	80,163 (95)
Pune City	2,590 (3)
Haveli	77,573 (97)
Pune (Rural)	
1. Jointly with women	11,145 (3.2)
Ambegaon	152 (1.4)
Baramati	287 (2.6)
Bhor	1,064 (9.5)
Daund	1,072 (9.6)
Indapur	168 (1.5)
Junnar	397 (3.5)
Khed	1,406 (12.6)
Mawal	2,326 (20.8)
Mulshi	1,916 (17.2)
Purandhar	896 (8.03)
Shirur	1,461 (13.1)
Velhe	523 (4.7)
2. Jointly with men	341,613 (96.8)
Ambegaon	1,559 (0.45)
Baramati	1,079 (0.32)
Bhor	54,093 (15.8)
Daund	31,400 (9.2)
Indapur	1,466 (0.43)
Junnar	2,022 (0.59)
Khed	71,973 (21.1)
Mawal	42,369 (12.4)
Mulshi	50,582 (14.8)
Purandhar	44,532 (13.1)
Shirur	40,538 (11.8)
Velhe	18,998 (5.6)

Table 4.14: Nature of women's joint ownership of land in Nashik district

Nashik (Peri-Urban)	
1. Jointly with women	370 (9.2)
Malegaon	68 (18.4)
Nashik	302 (81.6)

Continued on the next page

2. Jointly with men	3,653 (90.8)
Malegaon	1,402 (38.4)
Nashik	2,251 (61.6)
Nashik (Rural)	
1. Jointly with women	796 (9.34)
Bagalan	55 (6.91)
Chandwad	65 (8.17)
Deola	40 (5.03)
Dindori	83 (10.43)
Igatpuri	87 (10.93)
Kalwan	16 (2.01)
Nandgaon	31 (3.89)
Niphad	95 (11.93)
Peth	16 (2.01)
Sinnar	161 (20.23)
Surgana	6 (0.75)
Trimbakeshwar	57 (7.16)
Yevla	84 (10.55)
2. Jointly with men	7,726 (90.66)
Bagalan	602 (7.79)
Chandwad	767 (9.93)
Deola	429 (5.55)
Dindori	647 (8.37)
Igatpuri	709 (9.18)
Kalwan	286 (3.70)
Nandgaon	522 (6.76)
Niphad	1,226 (15.87)
Peth	174 (2.25)
Sinnar	1,334 (17.27)
Surgana	69 (0.89)
Trimbakeshwar	252 (3.26)
Yevla	709 (9.18)

Table 4.15: Nature of women's joint ownership of land in Nagpur district

Nagpur (Peri-Urban)	
1. Jointly with women	241 (15.32)
Hingna	66 (27.39)
Kamptee	115 (47.72)
Nagpur (Rural)	50 (20.75)
Nagpur (Urban)	10 (4.15)
2. Joint with men	1,332 (84.68)
Hingna	433 (32.51)
Kamptee	292 (21.92)
Nagpur (Rural)	490 (36.79)
Nagpur (Urban)	117 (8.78)
Nagpur (Rural)	
1. Jointly with women	272 (8.86)
Bhiwapur	10 (3.68)

Continued on the next page

Kalameshwar	15 (5.51)
Katol	43 (15.81)
Kuhi	57 (20.96)
Mauda	29 (10.66)
Narkhed	23 (8.46)
Parseoni	10 (3.68)
Ramtek	23 (8.46)
Savner	30 (11.03)
Umred	32 (11.76)
2. Jointly with men	2,797 (91.14)
Bhiwapur	198 (7.08)
Kalameshwar	154 (5.51)
Katol	358 (12.80)
Kuhi	437 (15.62)
Mauda	325 (11.62)
Narkhed	314 (11.23)
Parseoni	211 (7.54)
Ramtek	175 (6.26)
Savner	317 (11.33)
Umred	308 (11.01)

After disaggregating women's ownership pattern, we observe a higher share (66 per cent) of land parcels being jointly held by women. Disaggregating the joint ownership pattern further, we find that a majority of land parcels (97 per cent) are jointly owned by women along with men, while only 3 per cent of parcels are owned by women singly.

Finding 3: The patterns in size of owned in relation to ownership structures are similar for men and women

We find little difference between the size of land parcels owned by men and women. We find that men and women largely own marginal and small land parcels.

Table 4.16: Landholding size data for males disaggregated by ownership patterns

Landholding size	Ownership pattern	No. of land records	Percentage
Marginal	Single	68,952	13.268
	Joint	58,920	11.338
Small	Single	9,049	1.741
	Joint	12,875	2.478
Semi-medium	Single	2,802	0.539
	Joint	7,111	1.368
Medium	Single	726	0.140
	Joint	2,703	0.520
Large	Single	216	0.042
	Joint	398	0.077
Total LRs		163,752	31.511

Table 4.17: Landholding size data for females disaggregated by ownership patterns

Landholding size	Ownership pattern	No. of land records	Percentage
Marginal	Single	13,940	2.682
	Joint	5,588	1.075
Small	Single	2,072	0.399
	Joint	1,139	0.219
Semi-medium	Single	685	0.132
	Joint	605	0.116
Medium	Single	138	0.027
	Joint	246	0.047
Large	Single	16	0.003
	Joint	61	0.012
Total LRs		24,490	4.713

4.2 Women's awareness about land ownership

In each sample district, we conducted a field survey of women land owners (respondents). These respondents were selected from the list of women land owners having their names in the the government issued 7/12. The questionnaire was divided into three main sections: awareness, agency and tenure security. Our results from this survey are set out below.

In this section, we sought to examine the extent of knowledge of women over their owned land. Our hypothesis being that without awareness about the facts of their ownership, women cannot effectively utilise their land assets. We included questions about the fact of ownership, the ownership patterns, area and transactional awareness. We set out our findings below.

4.2.1 Question 3: Women's awareness about their de jure land ownership

Finding 1: Women are aware of the fact of their ownership but are less aware of how and when they came to be owners

We find that most women in our sample districts of Pune and Nashik, were aware of the fact that they owned land. In 8 cases we found that our respondents' names had been struck off the 7/12 and yet they were unaware that this was the case. They responded to questions in this section based on the facts of their erstwhile de jure ownership. Table 4.18 sets out a summary of the responses on the the fact of ownership.

Table 4.18: Women's awareness of land ownership

Total number of respondents in the study	186
Total number of respondents reporting they owned land	186 (100)
(i) No. of respondents in Pune who reported that they own land	94 (50.53)
(i) No. of respondents in Nashik who reported that they own land	92 (49.46)
No. of respondents that correctly reported ownership (combined)	178 (95.7)
No. of respondents that incorrectly reported ownership (combined)	8 (4.3)

Finding 2: More women inherit land than purchase land

We find that 82 per cent of the respondents came to own land through inheritance rather than self-acquisition (either by themselves alone or with other family members). Table 4.19 summarises this.

Table 4.19: Mode ownership

Total number of respondents in the study	186
Number of respondents reporting self-acquisition	32 (17.2)
Number of respondents reporting inheritance	152 (81.7)

Finding 3: Women who own land through inheritance are less aware of when they became owners

However, we find that 25 per cent of respondents who inherited land, did not know the year in which they inherited the land. We found a distinction between self-acquired owners and inheritance owners - in the former category 94 per cent of owners knew the year in which they became owners. 1 per cent of the respondents who reported self-acquisition did not know when they purchased the land.

However, we found that nearly all women respondents who answered the questions on how and when they came to possess land, often conferred to male members of the family before answering the question. Table 4.20 summarises our findings.

Finding 4: Women lack awareness about their ownership structures

Table 4.20: Mode ownership

Total number of respondents in the study	186
Number of respondents reporting self-acquisition	32 (17.2)
(i) Number of respondents who did not know year of ownership	2 (6.25)
(ii) Number of respondents who knew year of ownership	30 (93.75)
Number of respondents reporting inheritance	152 (81.7)
(i) Number of respondents who did not know year of ownership	38 (25)
(ii) Number of respondents who knew year of ownership	114 (75)

While women are aware of the fact that they own land, they are less aware of the nature of the ownership structure i.e. whether the ownership is single or joint. Tables 4.21 illustrates this.

Table 4.21: Awareness of de jure ownership pattern

Total no. of respondents	186
No. of de jure joint ownerships in this category	130
No. of respondents reporting to have joint ownerships	139 (74.7)
No. of respondents correctly reporting to have joint ownerships	114 (61.3)
No. of de jure single ownerships in this category	31
No. of respondents reporting to be single owners	34 (18.3)
No. of respondents correctly reporting to be single owners	19 (10.2)
No. of respondents who do not know their ownership pattern	13 (6.9)
De jure ownership pattern of the respondents who do not know their ownership pattern	Joint(6), Single(4), Name missing(2), 7/12 unavailable(1)
No. of 7/12s with issues ⁷	25

Further we found that women in joint ownership structures do not always know (i) how many co-owners there are in the joint ownership structure with them; (ii) the names and relationships of their co-owners. Most respondents in joint ownership structures, under-reported the number of co-owners. We calculated mean deviation in the names as the percentage of co-owners and found the mean deviation to be -26.17. Further we also find that our respondents were largely unaware of the names and identity of their under-reported the names of the owners. We found the mean deviation to be -39.40.

Our results indicate that women are relatively more aware about *how many co-owners* are in the ownership structure than the identity of the co-owners. This is an important finding because it indicates that transactions on the land or parts of it are most likely being carried out by other members of the family on their behalf (since transactions will require permission of co-owners any such activity would have indicated to the owner the identity of her co-owners). Further since in most cases the joint ownership structure consists of male and female members, it is likely that male co-owners are at the fore of managing the land.

Another interesting finding is that women are able to more accurately report on their khata or patta (notionally sub-divided land)⁸ rather than the larger land parcel.

Table 4.22 sets out a summary of the responses on the details of ownership structures.

⁷Either missing 7/12s, names struck off from the 7/12, or names missing from the 7/12s

⁸Please see Glossary

Table 4.22: Awareness of women in joint ownership structures of their de jure co-owners

Number of joint owners	
Total no. of respondents	186
No. of respondents correctly reporting the number of joint owners ⁹	65 (34.9)
No. of respondents incorrectly reporting the number of joint owners	96 (51.6)
No. of NA values	25 (13.4)
Mean deviation % in the number of joint owners	-26.17
Names of joint owners	
Total no. of de jure joint ownerships	130
No. of respondents correctly reporting the names of joint owners	36 (27.7)
No. of respondents partially reporting the correct number of joint owners	52 (40)
No. of respondents incorrectly reporting the names of joint owners	42 (32.3)
Average deviation % in the names of joint owners	-39.40

Finding 5: Most women are unaware of the area of the land they own

We find that only 8.7 per cent of our respondents correctly reported the area of the land parcel they own. The remaining respondents incorrectly reported the area of their land. Further 41.6 per cent of women reported that they were completely unaware of the area of their owned land.

Further we once again find that women are able to more accurately report on their khata rather than the overall land parcel. Table 4.23 sets out a summary of the responses on the the area of their owned land.

Table 4.23: Women's reporting on the area of owned land	
Total respondents in the study	186
Total no. of respondents who did not report area or un-verified	38 (20.43) ¹⁰
(i) No of respondents who reported to be unaware of area	15 (39.47)
(ii) No of respondents who have reported area (un-verified) ¹¹	23 (60.52)
Total no. of respondents who reported area (verified)	148 (79.56)
(i) No. of respondents correctly reporting the area	13 (8.78)
(ii) No. of respondents incorrectly reporting the area	135 (91.21)

⁹Includes single owners who have correctly reported the number of joint owners as 0

Finding 6: Most women who reported area believe their own more land than they actually do

We further examined the patterns of reporting of area of women land owners. We find that 72.3% of the women who incorrectly report their area overestimate the area of the land owned and 27.7% of women underestimate the area of the land they own.

Further we find again that women are able to more accurately report on their khata rather than the overall land parcel. Table 4.24 sets out these findings.

Table 4.24: Percentage deviation of incorrect area reported from land record

No. of respondents incorrectly reporting the area	137 (91.3)
1. No. of respondents overestimating area	99 (72.3)
2. No. of respondents underestimating area	38 (27.7)
Total	150
Average deviation % in area	1177.23

Finding 7: One in three women are unaware of how to transact in their owned land

We find that 35 per cent of women are unaware of which land revenue office to approach to transact and get a mutation done in their land record. Women in this category either incorrectly named the office to be approached or answered with an “I do not know”. 3 per cent of women who have been categorised as “incorrect” reported that they do not know which office to approach. The remaining 96.9 per cent of respondents who have been classified as incorrect reported “I do not know” and were completely unaware of which office to approach. Table 4.25 sets out a summary of our findings.

Table 4.25: Awareness of the office to approach for land transactions

No. of respondents with correct responses	121 (65)
No. of respondents incorrect responses or who were unaware	65 (35)
(i) No of respondents who reported being unaware	63 (96.9)
(ii) No. of respondents who reported a wrong office	2 (3)
Total respondents	186

4.3 Women’s agency over owned land

One of the key aims of this study is to examine the level of agency women have over the land that they own and answer the following:

Question 4: Do women exercise agency over their land parcels?

To study agency, we undertook a deep dive in the literature on measuring agency of women with respect to land. We found a gap in the literature that examines women’s agency: (i) First there literature often uses the terms “agency”, “management”; “control” and “empowerment” interchangeably; (ii) Second, these studies did not specifically focus on owned land. While some literature sets out agency indicators for agricultural decisions, gaps remain.

We, therefore, first conceptualised the term “agency” and then built a questionnaire that would capture these elements and give us some insight on the de facto ownership status of women de jure owners of land. We built this measurement framework separately for agriculture land and non-agriculture land.¹² Table 4.26 sets out the framework we have built and used.

Table 4.26: Our framework for measuring women’s agency in owned land

Type of land	Element	How examined
Agriculture	1. Decisions in farming	Questions on the the degree of involvement in the entire farming process from sowing to receiving revenue for the harvest
	2. Decisions on transactions in land	Questions on the degree of involvement in the decision to transact in land
Non-agriculture	1. Decisions on land use	Questions on the degree of involvement in the decision on land use
	2. Decisions on transactions	Questions on the degree of involvement in the decision to transact in land

In the following subsections we present our findings on women’s agency over owned land.

¹²In a forthcoming paper we propose a measurement framework for a woman owners agency over her land

4.3.1 Question 4: Agriculture land

Decisions in farming

We examine three dimensions of agency farming decisions on agriculture land: on-farm decisions (decisions relating to cultivation of crops); market decisions (decisions on selling of harvest) and revenue decisions and collection (revenue collection and spending).

- *On-farm decisions:* We find that most of our respondents participate in making on-farm decisions which include decisions about which crop to grow, which inputs are to be used, whether agriculture technology is to be used, and whether external labour is to be appointed on the farm.

Of these decisions the highest percentage of women respondents were involved in crop decisions and the lowest on the use of agriculture technology.

Across all decisions, women who are involved in the decision making process, are more likely to be involved “sometimes” and not “always”. For instance, even though most of our respondents (86.30 per cent) were involved in crop decisions, only 37.24 per cent of these women were likely to be always involved in the decision making process. This pattern hold across all four components of on-farm decisions over 60 per cent of women involved in decision making were involved sometimes in this decision but not always.

We further see between 13-22 per cent of women landowners never being involved in the decision on which crops to grow. Of all the on-farm decisions, women were least involved in the decisions on (i) whether to use agri-tech or (ii) appoint external labour. One hypothesis is that these involve greater expenditure and interaction with non-family members and, therefore, these decisions were largely made by the male members of the family.

- *Market decisions:* We find that women respondents were less involved in market decisions than in on-farm decisions (70-77 percent). Women are more likely to be involved sometimes than always in these decisions.

When compared with crop decisions, we find that women are less likely to take market decisions (22-31 per cent) than crop decisions (13-22 per cent). We also find that fewer women are likely to be always involved in market decisions (35-37 per cent) than in cropping decisions (46-54 per cent). Again this is perhaps because these actions involve an understanding of the market and interaction with other market participants.

- *Revenue decisions:* We find that women respondents are more likely to be involved in revenue decisions and collection in some way than not. Of these, women are least involved in collection of revenue and more involved in keeping the revenue. However, this difference is not significant. When compared with on-farm decisions and market decisions, women are least involved in revenue decisions and collection.

Of all revenue activities, women are least likely to collect revenue perhaps because these actions involve interaction with other market participants. Table 4.27 summarises these findings.

Table 4.27: Respondents' involvement in decisions on farming of agriculture land

Indicators	Yes always	Yes some-times	Total Yes	Never	Total
On-farm decisions					
Crops to be grown	54 (37.24) ¹³	91 (62.75) ¹⁴	145 (86.30) ¹⁵	23 (13.69) ¹⁶	168
Inputs to be used	54 (38.02)	88 (61.91)	142 (84.52)	26 (15.47)	168
Whether agri. tech. to be used	49 (37.40)	82 (62.59)	131 (77.97)	37 (22.02)	168
Whether external labour to be appointed	46 (34.07)	89 (65.92)	135 (80.35)	33 (19.64)	168
Market decisions					
Quantum of to sell	43 (37.06)	73 (62.93)	116 (69.04)	52 (30.95)	168
Quantum to be allocated for self-use	46 (35.38)	84 (64.61)	130 (77.38)	38 (22.61)	168
Revenue decisions and collections					
Who collects revenue	39 (36.11)	69 (63.88)	108 (64.28)	60 (35.71)	168
Who keeps revenue	44 (36.66)	76 (63.33)	120 (71.42)	48 (28.57)	168
Decision on spending revenue	43 (34.95)	80(65.04)	123(72.21)	45 (26.78)	168

¹³Calculated as a percentage of Total Yes¹⁴Calculated as a percentage of Total Yes¹⁵Calculated as a percentage of Total¹⁶Calculated as a percentage of Total

Decisions on transactions

To examine women's involvement in decision making on transactions on her owned land, we included two questions. The first examined who makes decisions with respect to transacting in land. Given the extent of joint holdings, our answer options were designed to examine (i) whether women make this decision alone (ii) whether women make this decision with other family members (if so who), (iii) if not women, who makes these decisions.

We find that above 77 per cent of women respondents reported being involved in the decisions to transact - either alone (SO), or together with their husband (SWH), or jointly with male and female members of the household (JMFM). Of these, above 55 per cent of decisions are made jointly with family members. When they are not making decisions alone, women are less likely to make decisions with their husbands alone (6.5 - 8 per cent) than with other family members being involved.

Women also tend to make these decisions alone. We find that between 15 and 19 per cent of women who are involved in decision making tend to make these decisions alone. Interestingly, women tend to make alone (15-19 per cent) rather than with their husband (6.5-8 per cent).

At the level of transactions, we observe the following:

- Women are more likely to be involved in decisions on transactions than not. However, the level of involvement and extent of exerting influence may vary.¹⁷
- Women tend to be most involved in transactions of sale and bequests. This is perhaps because their written consent/signature is required under law to sell property. However, they are least likely to make the decision to bequeath land alone (14.8 per cent).
- 9 per cent of women's bequest decisions are made entirely without her involvement.
- Women are least involved in the decision to mortgage her land (77.9 per cent).
- When not involved in decision-making, male members of the family are most likely to make decisions on (i) mortgage of land (15.5 per cent) and (ii) leasing of land (7.1 per cent).
- 67.8 percent respondents reported that bequests were joint decisions taken by them along with the male and female members of the family. Table 4.28 sets out a summary of these findings.

Table 4.28: Respondents involvement in decisions to transact in owned land: agriculture

Indicator	SO	SWH	JMFM	Who makes decision				Total B ¹⁹	Total ²⁰
				Total A ¹⁸	HO	MM	ORS		
To sell land	27 (16.1)	11 (6.5)	112 (66.6)	150 (89.3)	2 (1.2)	6 (3.6)	10 (5.9)	18 (10.7)	168
To lease land	31 (18.4)	12 (7.1)	101 (60.1)	144 (85.7)	2 (1.2)	12 (7.1)	10 (5.9)	24 (14.3)	168
To mortgage land	27 (16.1)	13 (7.7)	91 (54.2)	131 (77.9)	3 (1.8)	26 (15.5)	8 (4.7)	37 (22)	168
Bequeath land	25 (14.8)	14 (8.3)	114 (67.8)	153 (91.1)	1 (0.6)	6 (3.6)	8 (4.7)	15 (8.9)	168

In addition to the factual question on decision-making on transactions. We asked respondents perception-based questions. In particular, we examined (i) whether respondents, if they disagree, would be able to

¹⁷We analyse this in Table 4.29

¹⁸Respondents with some say (SO+SWH+JMFM)

¹⁹Respondents with no say=(HO+MM+ORS)

²⁰SO - Self only, SWH - Self jointly with husband, JMFM - Jointly by male and female members of the household, HO - Husband only, MM - Male members of the household, ORS - Others

prevent transactions in land and (ii) whether they believe that they contribute towards decisions in respect of their land.

We find that above 90 per cent of respondents believe that they would be able to prevent other family members from transacting in land if they did not agree with the decision. Of these, above 70 per cent of women believe that they would always be able to prevent transactions in their land. A relatively small fraction of women (4 - 8 per cent) believe that they will never be able to prevent transactions on their land.

At the transaction level we find that women are least likely to be able to stop mortgage and lease transactions. This pattern is corroborated by the factual question findings set out in Table 4.28 which confirm that women are least involved in lease and mortgage transactions. Table 4.29 sets out a summary of these findings.

Table 4.29: Respondents' perception of control over decisions on transacting in owned land)

Indicators	Yes always	Yes some- times	Total yes ²¹	Never	Total
If disagree, would respondent be able to prevent:					
sale of her land	122 (72.6)	37 (22.02)	159 (94.6)	9 (5.3)	168
leasing out of her land	122 (72.6)	35 (20.8)	157 (93.4)	11 (6.5)	168
mortgaging of her land	120 (71.4)	35 (20.8)	155 (92.3)	13 (7.7)	168
bequeathing of her land	121 (72.02)	41 (24.4)	162 (96.4)	6 (3.6)	168

Lastly, we asked women about whether in their perception of they contribute towards decisions on their owned land. Interestingly, 62 per cent of respondents reported that they did not contribute towards decisions on owned land. This is a departure from their reporting on previous questions on decision-making. However, one reason for this could be that despite being involved in some way, women do not experience agency and do not perceive to have control over their land. This was also reflected by our observations of male members of the family attempting to prompt answers and insisting on being present during administration of the questionnaire.²²

Table 4.30: Respondents' perception on contribution towards decisions on owned land)

Indicator	Respondent answers		
	Yes	No	Total
Contribution towards decisions on owned land	64 (38.09)	104 (61.90)	168

²¹Total yes= Yes always+Yes sometimes

²²To prevent influence of male members of the household on the reporting, we would ask them a set of questions (not related to this study) or speak to women as they took breaks while working on the farm where male members were not present. In cases where a male member has answered on behalf of a respondent, we recorded the answer as "I do not know" where relevant.

4.3.2 Question 4: Non-agriculture land

Decisions on land-use

We examine whether women are involved in the decision on what non-agricultural use their land is to be put to. In our sample we found most non-agricultural land owners used the land for their own dwelling. In addition to this, in some cases, the land was let out to tenants to live on the built-up portion of the land.

Our findings reveal that all respondents are involved in the decision on land use. Of these, 55 per cent of respondents are always involved in this decision. If the decision on land use for non-agriculture land is to be compared with farm decisions, specifically on what crop to grow, for agricultural land, it appears that women have greater agency over non-agriculture land use. While our sample size is small it does give us insight into agency with respect to non-agriculture land. Table 4.31 summarises our findings.

Table 4.31: Respondents involvement on decision making with respect to non-agricultural land use

Indicator	Yes always	Yes some-times	Total yes	Never	Total
Land use	10	8	18 (100)	0	18

Decisions on transactions

To examine women's involvement in decision making on transactions on her owned land, we included two questions. The first examined who makes decisions with respect to transacting in land. Given the extent of joint holdings, our answer options were designed to examine (i) whether women make this decision alone (ii) whether women make this decision with other family members (if so who), (iii) if not women, who makes these decisions.

We find that most women in our sample (77-100 per cent) are involved in the decision to transact in their land. Of these, women tend to make decisions with their family members - both male and female. We also see that women tend to make decisions alone more than with their husbands. We also see that women tend not to make independent decisions. Interestingly, we see similar patterns between agriculture and non-agriculture land decisions.

At the transaction level, we see a similarity between agriculture and non-agriculture land - women tend to be least involved in decisions to mortgage land. However, while women tend to participate less in agriculture land leasing decisions, this is not the case in non-agriculture land. We also see that 94.44 per cent of women are involved in tenant evaluation as well. One reason for this could be that agriculture land restrictions and bars on termination of lease transactions make them harder than for non-agriculture land and, therefore, are taken by male members of the family.

Another departure we see is that 100 per cent of respondents reported that they are involved in the decision to bequeath their land. In 83.33 per cent of cases, however, women consulted with either their husband or other members of the family before making a bequest. Table 4.32 sets out our findings.

²³ Respondents with some say (SO+SWH+JMFM)

²⁴ Respondents with no say=(HO+MM+ORS)

Table 4.32: Respondents involvement in decisions to transact in owned land: non-agriculture

Indicators	Who makes decision								Total
	SO	SWH	JMFM	Total A ²³	HO	MM	ORS	Total B ²⁴	
Sell land	4 (25)	2 (12.5)	10 (62.5)	16 (88.88)	0	2	0	2 (11.11)	18
Lease land	4 (23.52)	2 (11.76)	11 (11.76)	17 (94.44)	0	1	0	1 (5.55)	18
Mortgage land	3 (21.48)	1 (7.14)	10 (71.42)	14 (77.77)	0	4	0	4 (22.22)	18
Bequeath land	3 (21.48)	1 (7.14)	14 (77.77)	18 (100)	0	0	0	0	18
Tenant evaluation	4 (23.52)	1 (5.88)	12 (70.58)	17 (94.44)	0	1	0	1 (5.55)	18

As with agriculture land, we asked respondents perception-based questions. In particular, we examined (i) whether respondents, if they disagree, would be able to prevent transactions in land and (ii) whether they believe that they contribute towards decisions in respect of their land.

We find that more than 89 per cent of women perceive that they will be able to convince their family members to not transact in their land if they did not agree with the decision. Here we see similarities in the pattern where women perceive that they are least likely to influence mortgage and lease decisions.

Table 4.33: Respondents' perception of control over decisions on transacting in owned land: non-agriculture

Indicators	Yes always	Yes some-times	Total yes ²⁵	Never	Total
If disagree, would respondent be able to prevent:					
sale of her land	14 (77.77)	4 (22.22)	18 (100)	0	18
leasing of her land	12 (75)	4 (88.88)	16 (88.88)	2 (11.11)	18
mortgaging of her land	12 (75)	4 (88.88)	16 (88.88)	2 (11.11)	18
bequeathing of her land	14 (82.35)	3 (17.64)	17 (94.44)	1 (5.55)	18

Lastly, we asked women about whether in their perception of they contribute towards decisions on their owned land. Interestingly, 94.44 per cent of respondents reported that they did not contribute towards decisions on owned land. This is a departure from their reporting on previous questions on decision-making. However, one reason for this could be that despite being involved in some way, women do not experience agency and do not perceive to have control over their land. This was also reflected by our observations of male members of the family attempting to prompt answers and insisting on being present during administration of the questionnaire.

Table 4.34: Respondents' perception on contribution towards decisions on owned land: non-agriculture

Indicator	Yes	No	Total
Contribution towards decisions on owned land	1 (5.55)	17 (94.44)	18

²⁵Total yes= Yes always+Yes sometimes

4.4 Women's tenure security

A key question in the study is:

6. Do women feel secure in their ownership tenure?

The literature suggests that tenure security may be either perceived or reflected in some behaviour of the land owner. For instance, it suggests that owners who are secure in their land rights invest more in their land. In agriculture land this would mean larger expenditures on inputs. For other land it could be reflected in home improvements and added construction. We also hypothesise that if an owner is secure in their land rights, they are likely to want to buy more land - especially where their income depends on it.

We, therefore, designed a series of questions to elicit these answers. We conditioned these on the availability of money to avoid any respondents answering differently on account of constraints on funding these purchases and investments.

4.4.1 Question 5: Improvements and investments in land

We find that most respondents reported that they would invest or make improvements on their land, if they had the money to do so. Respondents reported that they were most likely to invest in home improvements (homes on their land), followed by other construction on their land. Both agriculture and non-agriculture land holders reported that they would purchase more land, if they had the resources to do so.

The respondents who own agriculture land and who answered these questions in the negative, were least likely to make large expenditures on farm land inputs.

Table 4.35: Improvements and investment in land

Indicators	Whether respondent would ²⁶		
	Yes	No	Total
Make large expenditures on inputs	107 (63.69)	61 (36.30)	168
Purchase more land in the future	156 (92.85)	12 (7.14)	168
Invest on construction on land	156 (92.85)	12 (7.14)	168
Invest in home improvements	165 (98.12)	3 (1.78)	168
Make other investments on land	38 (22.61)	130 (77.38)	168
Non-agriculture land			
Purchase more land in the future	16 (88.88)	2 (11.11)	18
Invest on construction on land	15 (83.33)	3 (16.66)	18
Invest in home improvements	11 (61.11)	7 (38.88)	18
Make other investments on land	12 (66.66)	6 (33.33)	18

4.4.2 Question 5: Perception of tenure security

We ask two main questions: whether respondents fear they will lose their land against their will; and whether having their name on a land record makes them feel safe from eviction.

We find that most respondents with agriculture land were not afraid that they would lose their land against their will (94.44). However only 34.52 per cent reported that having their name on the land record made them feel safe from eviction. This gives us interesting insights into the role of land records and de jure land ownership in perceived tenure security. It appears that there are other factors that perhaps influence a

²⁶Conditioned on if funds are available

woman land owner's perception of tenure security and that mere title on an official record is not enough. We see the same pattern with non-agriculture land.

We also observe that women owners of non-agriculture land appear to feel relatively more safe (100) than women land owners with agriculture land (94.4). Table 4.36 sets out a summary of our findings.

Table 4.36: Perception of tenure security: agriculture

Indicators	Whether respondent feels		
	Yes	No	Total
Agriculture land			
Safe from eviction on account of name in the land record	58 (34.52)	110 (65.47)	168
Respondent might loose land	10 (5.95)	158 (94.04)	168
Non-agriculture land			
Safe from eviction on account name in land record	0	18 (100)	18
Respondent might loose land	18 (100)	0	18

4.4.3 Percieved tenure security among women non-owners in rural areas

We conducted FGD with women who belonged to the same villages but who were not landowners. We find as follows:

- In rural areas women tend to have some access to land - either through informal tenancy, formal lease or ownership.
- Even women land owners work as leasees on the farms of others for additional income.
- Women who own land but work on other farms as leasees tend to perceive tenure security when compared to women who do not own land but who are leasees.
- Women who own land but work on farms and who work as informal leasees tend to perceive tenure security even though their contracts are not formalised or written.
- Women who do not own land and who work as informal farm workers have perceptions of low tenure security when compared with women who own land but are also informal workers.

4.4.4 Percieved tenure security among male owners in rural areas

We conducted FGDs with men who belonged to the same villages and who were land owners. Out of twelve men who were part of the interview, eleven reported that they were not afraid that they would loose their land. One interviewee stated that he was afraid he might loose his land on account of land acquisitions. When asked whether his land was under an acquisition process, he replied no, but that was what he was afraid of.

While our sample for FGDs was limited, we did not find a significant difference between perceptions of tenure security among women and men landowners in our sample villages.

4.5 Women's perception of the effect of land ownership

We asked respondents whether they believe that their land ownership has improved their lives. In particular we asked about credit access, participation on household decisions, and their position in the household and society.

More than 55 per cent of respondents reported that owning agriculture land had increased their participation on household decisions, and improved their position in society and their household. As a contrast, we see that women owners of non-agriculture land did not feel owning land has improved any of these parameters.

On access to credit, we see that 55 per cent of women owning agriculture land reported that they has improved access to credit after they came to own their land. However owners of non-agriculture land did not report improvement in access to credit. This is perhaps on account of access to other forms of security against which they can obtain credit. It appears that land may be more important for credit access and social standing in rural areas (agriculture) than peri-urban areas (non-agriculture).

Table 4.37: Perceived effect of land ownership by women owning land

Indicators	Whether ownership has		
	Yes	No	Total
Agriculture			
Increased access to credit	93 (55.35)	75 (44.64)	168
Increased participation in household decisions	73 (43.45)	95 (56.54)	168
Elevated position in the household	72 (42.85)	96 (57.14)	168
Elevated position in society	74 (44.04)	94 (55.95)	168
Non-agriculture			
Increased access to credit	5 (27.77)	13 (72.22)	18
Increased participation in household decisions	1 (5.55)	17 (94.44)	18
Elevated position in the household	2 (11.11)	16 (88.88)	18
Elevated position in society	3 (16.66)	15 (83.33)	18

4.5.1 Perceived effect of land ownership among women non-owners in rural areas

We conducted FGDs with women who belonged to the same villages but who were not landowners. We find as follows:

- All women in the FGDs who were non-owners believed that owning land would have a positive effect on their lives.
- When asked what they think these effects would be, we were informed that they believed it would:
 - elevate their position in society,
 - elevate their position in the household,
 - create more respect for them within the household,
 - increase their economic status,
 - improve their access to finance from formal and informal institutions.

While all women in the FGD reported that owning land would significantly improve their lives, women who owned land were not unanimous in their belief that owning land changed their lives for the better.

In fact we were informally informed by a respondent that she was afraid of being divested of her land by relatives who might harm her.

4.5.2 Percieved effect of women's land ownership among male owners in rural areas

All the men we interviewed in the FGDs believed that it is good for women to own land. When asked why they believed it was good, they reported that it was good for her independence and to raise the economic status of the family as a whole.

The interviewees also reported that even when their wives and mothers did not own land, decisions in respect of land are always taken after consulting the women in the family. They further reported that other household decisions were also taken with the participation of the women in the family. This corroborates our findings on agency among women set out in Section 4.3.1.

Chapter 5

Learnings for policy

We executed this study with the object of gaining a deeper understanding of women's land ownership in India. While we were constrained to conduct this study across a limited sample, our study has highlighted some important insights on women's land ownership.

For a nuanced understanding of the subject of women's landownership, we explore not only de jure ownership but also other factors that give us insights into the agency of women de jure land owners. We also examine women's perception of tenure security - both land owners and non-owners. Our study lends some important insights on the subject of women's land ownership:

States can measure women's land ownership using land records

To examine the extent of de jure land ownership of women, we used government maintained land records. Our aim was to demonstrate how land records can be used for this purpose. Our study is evidence that government land records can be used. We find that the key advantages to estimate women's land ownership using government land records are:

- *Universally maintained:* All states and their administrative divisions maintain records of land ownership, albeit in different forms. The common feature of all records across states are: the presence of owners names and presence of area of land owned. This allows inter and intra-state comparison of women's land ownership.
- *De jure ownership records:* Land records have de jure ownership facts reflected in them so they are superior to survey-based instruments to determine women's land ownership. We are not relying on here-say or the owner's knowledge as there are gaps in awareness of women owners (Please see Section 4.2 for more details).
- *High-level of digitisation:* States have largely digitised land records and they lend themselves to examination through algorithms rather than manual analysis that may be subject to human error
- *Continuous information:* Land records are continuously updated with transactions and have new owners names mutated on them and therefore lend themselves well to data collection over time. Government can use this to measure the impact of their policies on women's land ownership.
- *Accuracy in names:* For Maharashtra particularly, in a previous study (Narayan et al., 2017), we found a high degree of congruence between the names of owners in the land records and the on-ground land ownership. Therefore, errors between what is recorded on the land record by way of names of owners are assumed to be minimum.

Land records are increasingly being made more accurate and relied on for purpose other than mere revenue collection. States that do not have robust records, may consider undertaking a programme similar to Telangana's Land Records Updation Programme to create more accurate land records. In a previous study we have described how Telangana did this (Thomas, Uday, and Zaveri, 2020).

- *Error estimation:* We are able to estimate the error margin in collecting the names of women through the algorithm and, therefore, are able to objectively and transparently, understand any limitations in the data. This is a huge advantage and guarantees greater accuracy of the data, which is not the case with other datasets.

Evidence for increased implementation of titling programmes for women in target regions

Our study suggests that despite state-level land titling programmes and laws for women, women's landownership in some areas in the state are lower. For instance, we see that while Pune has a relatively high proportion of land records with at least one woman as the land owner (42 per cent peri urban and 39.5 per cent rural), Nashik (20.8 per cent peri urban and 23.87 per cent rural) and Nagpur (19.02 per cent peri urban and 17.95 per cent rural) are far behind.

This could either be on account of low uptake on account of improper design of these programmes or on account of poor implementation. Our study provides evidence for administrator to explore this further to improve women's ownership in land in specific areas.

No evidence for increased focus on women's land ownership in rural areas

We find that across all districts women's land ownership is almost equal in rural and urban areas (Pune, 42 per cent peri urban and 39.5 per cent rural), Nashik (20.8 per cent peri urban and 23.87 per cent rural) and Nagpur (19.02 per cent peri urban and 17.95 per cent rural). Therefore, there is no evidence for increased focus of women's land titling programmes in rural areas. At present the government has focused on granting titles in rural areas with programmes like Laxmi Mukti and Ghar Doghaanche (please see Box 2.3.1)

Indications of limited effect of existing programmes on lower transaction cost

We find that 81.7 per cent of women reported to have inherited land rather than acquired it by purchase. This is despite the existence of programmes that encourage land ownership by women by reducing transaction costs, such as the 1 per cent reduction in stamp duty. This could be on account of the existence of marginal holdings, predominance of joint ownership structures, restrictive land laws or unavailability of wealth to transact, leading to a thin market where transactions are not frequent.

Our findings are supported by our previous study on stamp duty reductions which suggest that a small reduction in stamp duty may not increase land market transactions in thin markets (Uday, 2019).

Evidence for increased land awareness programmes coupled with titling programmes for women land owners

Our findings suggest that women are aware of some facts about their ownership, such as the fact of ownership itself but know relatively little about their joint ownership structures, the area of the land they own. We further find that one in three women do not know how to transact in their land. These are crucial for effective utilisation of land and supports our hypothesis that titling must not be viewed as an end in itself as in current policies.

We need programmes targeted at women owners that will help them become aware of the facts of their ownership as well as how to transact in land. Without these, they will remain titular owners and access to land will not translate into increased empowerment.

Titling programmes should not assume agency of women land owners

We find that while women have agency in many aspects of land ownership, they lack agency when it comes to making financial decisions and interacting with the market. Programmes may be designed with the understanding that titling alone will not lead to greater empowerment or economic status.

In fact we find that most women report that land ownership has not led to an increase in their participation in the household, elevated their position in the household or in society (Table 4.37). We do find the gap between those that report a change and those have not is relatively small.

Most women land owners are secure in their tenure

Our findings indicate high levels of perceived tenure security among women land owners. We also find that this is case with men who own land. Further, most women also report that they would invest in their land subject to the availability of funds.

Limited role of de jure land records in improving perceptions on tenure security

Our findings suggest that de jure land records play a limited role in perceptions of tenure security. Most respondents reported that having their name on a government land record did not make them feel safe from eviction. Other de fact factors such as social safety-nets and community seems to matter more.

Need for more women employees in land revenue offices

Our discussions with women on the field reveal the need for more female employees in revenue offices so that women landowners/holders feel comfortable in approaching and conversing with the officials. Socio-cultural norms restrict women to converse with unknown men. While we cannot change these norms overnight, we need to come up with ways to navigate through these challenges and hiring more female officials would be a step in the right direction.

Bibliography

- Agarwal, B. (1988). Who sows? Who reaps? Women and land rights in india. *The Journal of Peasant Studies*, 15(4), 531–581.
- Agarwal, B. (1994). *A field of one's own: Gender and land rights in south asia*. Cambridge University Press.
- Agarwal, B. (2008). Engaging with sen on gender relations. In K. Basu & R. Kanbur (Eds.), *Arguments for a better world: Essays in honor of amartya sen* (pp. 157–177). Oxford University Press.
- Agarwal, B., Anthwal, P., & Mahesh, M. (2021). How many and which women own land in india? Inter-gender and Intra-gender gaps. *The Journal of Development Studies*, 57(11), 1807–1829.
- Allendorf, K. (2007). Do women's land rights promote empowerment and child health in nepal? *World Development*, 35, 1975–1988.
- Ash, E., Asher, S., Bhowmick, A., Bhupatiraju, S., Chen, D., Devi, T., ... Siddiqi, B. (2021). *In-group bias in the Indian judiciary: Evidence from 5 million criminal cases*. Retrieved from https://shrug-assets-ddl.s3.amazonaws.com/static/main/assets/other/India_Courts_In_Group_Bias.pdf
- Awasth, R., Pyle, K., Aggarwal, N., & Rakhimova, P. (2023). *Gender-based discounts on taxes related to property: Role in encouraging female ownership: A case study of indian states and cities* (Policy Research Working Paper No. 10287). World Bank Group.
- Banerjee, A., & Iyer, L. (2005). History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India. *The American Economic Review*, 95(4), 1190–1213.
- Beneria, L. (2008). From "Harmony" to "Cooperative Conflicts": Amartya sen's contribution to household theory. In *Arguments for a better world: Essays in honor of Amartya Sen, Volume 2: Society, Institutions, and Development* (pp. 202–218). Oxford University Press.
- Department of Agriculture, C., Farmers Welfare, M. o. H., & Welfare, F. (2020). *All india report on agriculture census 2015-16*. Government of India.
- Department of Rural Development, M. o. R. D. (2011). *Socio Economic Caste Census*. Government of India.
- Deshpande, R. (2002). Land Reforms and Agrarian Structure in Maharashtra. In *Land reforms in india: Performace and challenges in gujarat and maharashtra* (pp. 95–126). Sage Publications India Pvt Ltd.
- Dewan, R. (2017). Land, Land Rights, and Women in Maharashtra. In *Understanding women's land rights: Gender discrimination in ownership* (pp. 209–233). SAGE Publications India Pvt Ltd.
- Doss, C., Kieran, C., & Kilic, T. (2020). Measuring ownership, control, and use of assets. *Feminist Economics*, 26(3), 144–168.
- Doss, C., Meinzen-Dick, R., & Bomuhangi, A. (2014). Who owns the land? Perspectives from rural Ugandans and implications for large-scale land acquisitions. *Feminist economics*, 20(1), 76–100.
- for Population Sciences (IIPS), I. I. (2021). *National Family Health Survey (NFHS-5), 2019-21*. IIPS.
- Framework for Implementation of Pradhan Mantri Awas Yojana-Gramin*. (2022). Retrieved from https://pmayg.nic.in/netiayHome/Uploaded/Guidelines-English_Book_Final.pdf
- Hanstad, T., Nielson, R., Vhugen, D., & Haque, T. (2009). Learning from Old and New Approaches to Land reform in india. In *Agricultural Land Redistribution: Towards Greater Consensus* (pp. 241–263). The World Bank.
- Jain, C., Saxena, D., Mishra, C., Taneja, R., Sanan, D., & Sen, S. (2022). Empirical Evidence of Gender Bias in Land Ownership in India. Working Paper. National Council of Applied Economic Research.

- Jebaraj, P. (2021). The Hindu Explains: Why does india need conclusive land titling? *The Hindu*. Retrieved from <https://www.thehindu.com/news/national/the-hindu-explains-why-does-india-need-conclusive-land-titling/article33891718.ece>
- Kelkar, G., & Jha, S. K. (2016). Women's Agential Power in the Political Economy of Agricultural Land. *Agrarian South: Journal of Political Economy*, 5(1), 98–122.
- Kulkarni, S., Tiwari, S., & Bhat, S. (2008). *Women and Land Rights in Maharashtra: Exploring the facilitating and constraining factors in achieving resource rights*. Society for Promoting Participative Ecosystem Management (SOPPECOM).
- Lahoti, R., Y, S. J., & Swaminathan, H. (2016). Not in Her Name: Women's Property Ownership in India. *Economic and Political Weekly*, 51(5), 17–19.
- Lee, A. (2019). Land, State Capacity, and Colonialism: Evidence from India. *Comparative Political Studies*, 52(3), 412–444.
- Mishra, K., & Sam, A. G. (2016). Does Women's Land Ownership Promote Their Empowerment? empirical Evidence from Nepal. *World Development*, 78, 360–371.
- Mishra, P., & Suhag, R. (2017). *Land Records and Titles in India*. PRS Legislative Research. Retrieved from <https://prsindia.org/policy/analytical-reports/land-records-and-titles-india>
- Narayan, S., Shaikh, G., Uday, D., & Zaveri, B. (2017). Report on the Implementation of the Digital India Land Records Modernization Programme (DILRMP) in the State of Maharashtra.
- Niasse, M. (2012). Gender equality: It's smart and it's right.
- Rajasekaran, N. (1998). Land reforms in Maharashtra: A regional analysis. *Review of Development and Change*, 3(2), 238–263.
- Thomas, S., Uday, D., & Zaveri, B. (2020). Study on linking welfare distribution to land records: A case study of the rythu bandhu scheme in telangana. *Finance Research Group, Indira Gandhi Institute of Development Research*.
- Uday, D. (2019). Do stamp duties affect transaction volumes? a study of real estate transactions in mumbai. *The Leap Blog*.
- UN. (2013). Realising women's rights to land and other productive resources.

Glossary

7/12 extract A type of land record in Maharashtra, typically for agricultural land, containing information on property ownership, land area, land type, details of landowners, etc.. 19, 20, 22

EWS Economically Weaker Sections. 20

FGD Focus Group Discussion. 58, 59, 60

GR Government Resolution. 19

HS Act Hindu Succession Act. 18

HS Amendment Act Hindu Succession (Amendment) Act. 9

ICRISAT International Crops Research Institute for the Semi-Arid Tropics. 9, 11

IHDS India Human Development Survey. 11

Jagirdar Nobles or officials during the Mughal era. 17

Jagirdari Mughal-era land revenue system where *jagirdars* received land grants from the State, with the responsibility of collecting land revenue. 17

Khot Intermediaries with revenue collection rights. 17

Khoti Regional land revenue system in Maharashtra. 17

LIG Low Income Group. 9, 20

Mahal An estate comprising one or more villages for revenue purposes. 17

Mahalwari Colonial land revenue system wherein taxes were collected from each mahal, and cultivators retained land ownership rights. 17

Malguzari British-era land revenue system under the Maratha empire wherein a fixed revenue amount was collected by *malguzars*. 17

MHADA Maharashtra Housing and Area Development Authority. 20

MIG Middle Income Group. 9, 20

mohua Ministry of Housing and Urban Affairs (MoHUA). 20

NFHS National Family Health Survey. 11

N-LRSI National Land Records and Services Index. 9, 11

PMAY Pradhan Mantri Awas Yojana. 9

PMAYG Pradhan Mantri Awas Yojana (Gramin). 20

PMAYU Pradhan Mantri Awas Yojana (Urban). 20

Property Card A type of land record in Maharashtra, typically for non-agriculture land, containing information on property ownership, land area, land type, details of landowners in urban areas. 22

RoR Record of Rights. 22

Ryotwari Colonial land revenue system wherein ryots owned the land and paid taxes directly to the State. 17

SDG Sustainable Development Goal. 8

SECC Socio Economic Caste Census. 11

SVAMITVA Survey of Villages and Mapping with Improvised Technology in Village Areas. 20

Talathi Village-level revenue officer responsible for maintaining land records, land revenue collection, and related administrative tasks. 23

YASHADA Yashwantrao Chavan Academy of Development Administration. 5

Zamindar Landlord with tax collection rights under the zamindari system established under the colonial land revenue system. 17

Zamindari Colonial land revenue system where zamindars were granted ownership and control over land, and collected taxes from peasant farmers. 17

Appendix

Indicators of agency and their explanation

Variable name	Description
DECISION_CROPS	Do you decide what crops to grow on your land in any one cropping season in the year?
DECISION_INPUTS	Do you decide what inputs to use on your land for agriculture (such as seeds, fertilisers, insecticides, etc.) in any one cropping season in the year?
DECISION_AGRIL_TECH	Do you decide what type of agricultural technology/tools are to be used on your land (such as hiring a tractor, buying or renting tools) in any one cropping season in the year?
DECISION_LABOUR	Do you decide whether non-family labour should be employed on your land in any one cropping season in the year?
DECISION_QUANTITY_TO_SELL	Do you decide how much harvest from your land is to be sold in any one cropping season in the year?
DECISION_HARVEST_ALLOCATION	Do you decide how much of the produce is to be allocated for your household consumption or for animal feed instead of being sold in any one cropping season in the year?
SELL_HARVEST	Do you sell the harvest from your land in any one cropping season in the year?
COLLECT_REVENUE	Do you collect revenue earned by selling the harvest from your land in any one cropping season in the year?
KEEP_REVENUE	Do you keep the revenue earned by selling the harvest from your land in any one cropping season in the year?
DECISION_SPEND_MONEY	Do you decide how to spend money earned through the sale of harvest from your land in any one cropping season in the year?
DECISION_SELL_LAND	If you had to sell your land, who will make the decision to do so?
DECISION_LEASE_LAND	If you had to lease out your land, who will make the decision to do so?
DECISION_MORTGAGE_LAND	If you had to take a loan against your land, who will make the decision to mortgage your land?
DECISION_BEQUEATH_LAND	If you had to bequeath your land, who will make the decision to do so?
INFLUENCE_SELL_LAND	Suppose a male member of your household wants to sell this land/house but you do not want to, will you be able to convince him not to do so?

Variable name	Description
INFLUENCE_RENT_LAND	Suppose a male member of your household wants to rent out this land/-house but you do not want to, will you be able to convince him not to do so?
INFLUENCE_MORTGAGE_LAND	Suppose a male member of your household wants to mortgage this land/house but you do not want to, will you be able convince him not to do so?
INFLUENCE_BEQUEATH_LAND	Suppose a male member of your household wants to bequeath this land/-house to someone but you do not want to, will you be able to convince him not to do so?
LAND_EXPENDITURE_INPUT	In the last one year, have you made large expenditures on agricultural inputs such as tractor, water pumps, cattle, heavy tools, etc.?
IF_FUNDS_LAND_PURCHASE	Subject to availability of funds, would you plan to purchase more land/buildings?
IF_FUNDS_CONSTRUCTION	Subject to availability of funds, would you plan to construct/extend current construction on your land?
IF_FUNDS_HOME_IMPROVEMENT	Subject to availability of funds, would you plan to invest in home improvement?
PERCEPTION_LOSE_LAND	Are you afraid of losing your land against your will in the future?
PERCEPTION_LAND_INVESTMENTS	Have you made any kinds of investments on your land? If yes, could you please state them?
PERCEPTION_SAFE_FROM_EVICTION	Does having your name on the land record make you feel safe from eviction?
PERCEPTION_ACCESS_CREDIT	Do you think owning the land has improved your access to the formal credit system?
PERCEPTION_CONTRIBUTION_LAND_DECISIONS	Do you think owning the land has improved your contribution in land/property decisions?
PERCEPTION_CONTRIBUTION_HH_DECISIONS	Do you think owning the land has improved your contribution in household decisions?
PERCEPTION_POSITION_HH	Do you think owning the land has improved your position in the household?
PERCEPTION_POSITION_SOCIETY	Do you think owning the land has improved your position in the society?

Variable name	Description
NA_DECISION_LAND_USE ¹	Do you decide whether to put the land to residential use or commercial use?
WHO_TENANT_EVALUATION	Who evaluates the tenant before leasing out the land?

¹NA - Non-agricultural land