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Agro-Economic Research Centre
(For the States of West Bengal, Sikkim and Andaman & Nicobar Islands)
Visva-Bharati, Santiniketan
West Bengal

Land Titling and Agricultural Productivity in West Bengal

Rishav Mukherjee
Sreejit Roy
Mehedi Hasan
Sridev Adak
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Study sponsored by Ministry of Agriculture and Farmers Welfare
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Preface

The present study, titled ***"Land Titling and Agricultural Productivity in West Bengal,"*** was undertaken as part of the approved work plan, 2021-22, with the objective of examining the role of land tenure security in enhancing agricultural performance and rural livelihoods. The study was conducted by the Agro-Economic Research Centre, Visva-Bharati, under the auspices of the Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi. The study received the necessary financial and administrative support from the Ministry, which enabled its successful completion.

Secure land tenure has long been recognised as a critical determinant of agricultural productivity, investment behaviour, and livelihood security in agrarian economies. In developing countries like India, land is the most important productive asset for rural households, particularly small and marginal farmers. Clear and legally recognised land titles not only enhance farmers' incentives to invest in land improvement and adopt productivity-enhancing technologies, but also improve access to institutional credit, government support schemes, and formal markets. Conversely, insecure or unclear land rights often constrain farm-level decision-making, discourage long-term investments, and perpetuate socio-economic vulnerability.

West Bengal presents a distinctive and policy-relevant context for examining land titling and its implications for agricultural productivity. The state has a long history of land reforms, including tenancy reforms and redistribution of land, which have significantly altered agrarian relations. More recently, initiatives aimed at the digitisation of land records, the issuance of land titles, and the strengthening of land administration systems have sought to further enhance tenure security. Against this backdrop, it becomes imperative to empirically assess whether and how land titling initiatives translate into tangible productivity gains, improved resource use efficiency, and better livelihood outcomes for farming households across different agro-economic regions of the state.

In this context, the present study aims to analyse the impact of land titling on agricultural productivity in West Bengal by examining variations in cropping intensity, input use, investment behaviour, access to institutional credit, and farm incomes. The study also explores the differential effects of land titling across farm size classes and social groups, thereby capturing the distributional dimensions of tenure security. By linking institutional aspects of land governance to farm-level outcomes, the study aims to generate evidence that informs land policy, agricultural development strategies, and rural governance reforms.

The analysis is based on primary data collected through a comprehensive field survey conducted across selected districts of West Bengal, representing diverse agro-climatic and socio-economic conditions. A multi-stage sampling design was adopted to ensure adequate representation of different categories of landholding households. The study employs both descriptive and econometric techniques to rigorously assess the relationship between land titling and agricultural productivity, while accounting for household, farm, and regional characteristics. Secondary data from official sources have also been used to supplement and contextualise the primary findings.
The study's findings underscore that land titling is not merely a legal or administrative exercise, but a critical institutional intervention with far-reaching implications for agricultural growth, equity,

and rural transformation. While evidence suggests that secure land titles positively influence farm investment and productivity, the magnitude and nature of these effects vary across regions and household categories. The results highlight the importance of complementary measures—such as access to credit, access to government schemes and benefits, and market linkages—in fully realising the productivity-enhancing potential of land titling initiatives.

The study conducted by the research team led by Mr. Rishav Mukherjee deserves all the appreciation. The successful completion of this study would not have been possible without the guidance and support of several individuals and institutions. The encouragement and direction provided by the former Directors of the Centre during different phases of the study are gratefully acknowledged. The sincere efforts of the research, administrative, and supporting staff of the Centre are duly appreciated. We appreciate the important contributions made by the Directors, research teams, and employees of the coordinating centre (ADRTC, ISEC, Bengaluru) in carrying out this study. The efforts of Dr. Achiransu Acharyya, Deputy Director, in reviewing this research report are appreciated.

Our gratitude to Dr. Probir Kumar Ghosh, Hon'ble Vice Chancellor, Visva-Bharati, for his kind guidance and encouragement. We acknowledge the support and valuable guidance of the Adviser (AER Division), Ministry of Agriculture & Farmers Welfare, Government of India, New Delhi, in the completion of the study. The support of other officials in the Ministry is also invaluable to us in undertaking this research.

We express our heartfelt gratitude to all the farmers who participated in the survey and generously shared their time and experiences, without which this study would not have been possible. It is hoped that the findings of this report will make a meaningful contribution to the ongoing discourse on land governance and agricultural development, serving as a useful reference for policymakers, researchers, and practitioners working towards sustainable and inclusive rural development.

(Prof. Souvik Ghosh)
Director (Honorary)

Date: January 2026
Place: Agro-Economic Research Centre, Visva-Bharati, Santiniketan

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Executive Summary

Background

Secure land tenure and clear land titles are widely regarded as key institutional inputs that can strengthen farm-level investment, enhance access to credit and public programs, and thereby increase agricultural productivity and improve rural livelihoods. West Bengal, with a long history of land reforms, tenancy regulation, and more recent digitisation of land records, provides a policy-relevant setting to test whether clearer titles translate into measurable gains in input use, productivity, and incomes across farm sizes and social groups. The study frames land titling as an enabling institutional change whose effects depend on credit markets, market access, extension, and complementary public supports.

Objectives

This study aims to investigate the relationship between land titling and access to credit, insurance, government subsidies, and other benefits, and to determine whether these advantages lead to increased overall land productivity.

The following objectives are addressed in the present study with a primary survey in the State of West Bengal:

i. To study the nature of existing land titling legislation in West Bengal.

ii. How clear land titling improves access to institutional credit

iii. To explore the relationship between clear land ownership and the benefits of access to government subsidy schemes.

iv. To understand whether clear titles help to overcome risk and uncertainty obtained in the family

v. To explore the relationship between land titling, productivity, and net profit in the crop sector.

Study design (data and methods)

In West Bengal, the study was conducted by the Agro-Economic Research Centre (AERC), Santiniketan. Two districts, Birbhum and Uttar Dinajpur, were purposively selected to represent different Agro-Climatic Zones of the state. Within each district, two blocks were chosen: Bolpur from Birbhum and Raiganj from Uttar Dinajpur. From each selected block, 1–2 villages were identified, and a detailed household survey was carried out using a pre-designed questionnaire.

In total, 240 households were surveyed—120 from each district. Within each district, 60 farmers with clear land titles and 60 farmers without clear land titles were selected, ensuring a balanced comparison group. Data collected included information on landholding details, area under cultivation, access to institutional credit, and access to government subsidies.

To meet the study's objectives, various analytical tools are employed, including the Gini coefficient (to measure inequality), Ordinary Least Squares (OLS) regression, the Cobb-Douglas production function (to estimate production relationships), and allocative efficiency analysis

using the Marginal Value Product to Marginal Factor Cost (MVP: MFC) ratio.

Major findings of the study

Title status and household profile: Clear-title households tend to hold more owned land, have higher asset holdings and better access to formal loans and equipment finance; non-clear title households rely more on leased-in land and wage or labour-intensive secondary activities (sample patterns).

Credit and subsidies: Clear title farmers have comparatively better access to institutional credit and to subsidy programmes; lack of formal records was the single most frequently cited reason for non-access among non-clear title households (a substantial share reported ineligibility).

Crop insurance and risk coverage: The overall uptake of crop insurance is very low. Only a small fraction of clear-title farmers reported insurance coverage and virtually no non-clear title farmers were insured; lack of land records and awareness are major barriers.

Productivity and crop-level heterogeneity: The title–productivity relationship is nuanced and context-specific, varying by crop. For paddy (Kharif) clear-title households show slightly higher yields and value per acre, partly linked to better market/procurement access. For potato (Rabi), some non-clear title households (often cultivating leased-in, intensively managed land) recorded higher yields and values. Thus, title status interacts with cropping choice, land quality, and leasing behaviour to shape outcomes.

Net returns and efficiency: Regression and allocative efficiency analysis do not find a consistent, significant direct effect of holding a clear title on net returns per acre for paddy or potatoes. The MVP:MFC ratios reveal widespread misallocation of inputs (overuse of some inputs, underuse of higher-value inputs), indicating scope for gains in input management irrespective of title status. Overall, title clarity enables access to services, but is not, by itself, sufficient to guarantee higher net returns.

Constraints and transaction costs: Non-clear title households face longer, costlier, and more opaque procedures to regularise documents; high documentation costs, agent fees, delays and BLRO non-cooperation were commonly reported constraints to changing title status. These barriers limit the practical reach of formalisation.

Policy recommendations

Based on the evidence, the report recommends a mix of supply-side reforms and complementary measures so that land titling's institutional advantages are converted into productivity and livelihood gains:

Expedite and simplify land titling/record updating: Streamline procedures, reduce documentation burdens and agency fees, expand outreach and digitisation (Banglarbhumi) efforts to reduce time and cost barriers for small and marginal holders.

Improve access to institutional finance for non-titled and lessee farmers: Encourage banks and state programmes to accept alternative proof of use/possession, scale up flexible collateral frameworks, and support SHGs / village credit societies as bridging mechanisms.

Make subsidies and schemes more inclusive: Where feasible, design subsidy eligibility that

recognises cultivator-level criteria (output, cultivation practice) rather than rigid title requirements, or provide simplified verification channels for those without full title.

Expand insurance coverage and awareness: Simplify enrolment procedures, enable alternative proof for smallholders, run targeted insurance literacy campaigns and improve claim transparency to build trust.

Legalise and regulate land leasing to reduce informality: Adopt/facilitate farmer-friendly leasing frameworks (consistent with the Model Agricultural Land Leasing Act recommendations) so that lessees can access credit and invest in productivity-enhancing practices.

Extension, market linkages, and input guidance: Combine titling with intensified extension on input use and resource allocation (to correct identified allocative inefficiencies), improved access to procurement, and market information. These complementarities are essential to translating title advantages into higher yields and net returns.

Conclusion

The study concludes that clear land titles are a crucial institutional enabler, as they reduce exclusion from services, strengthen access to credit and subsidies, and enhance farmers' ability to treat land as an economic asset. However, title clarity alone is not sufficient to generate uniform or automatic gains in productivity or net returns. Crop-level patterns, leasing arrangements, market access, and inefficient input use mediate outcomes. To realise the full productivity and equity benefits of titling, policy must combine faster, cheaper and more inclusive titling with parallel reforms in credit, insurance, leasing law, extension services and market linkages. Implemented together, these complementary actions can convert tenure security into sustained improvements in farm efficiency and rural livelihoods.

Chapter 1
Introduction

1.1 Introduction

Land is central to rural livelihoods, agrarian production, and local economies. The definition, recording, and regulation of access to land, commonly referred to as land governance, shape who can use land, how it is used, and who benefits from agricultural growth (Cruz, 2010). Land governance, therefore, encompasses the rules, procedures, and institutions that allocate rights to land, implement and enforce those rules, and manage competing claims. A clear and secure land title is often argued to reduce uncertainty, lower transaction costs, and strengthen farmers' incentives to invest (Padhee & Joshi, 2019); yet, the relationship between titling, access to finance, and productivity remains context-dependent and empirically contested.

This chapter situates the present study within that broad debate. It briefly reviews how land systems and tenure arrangements in the study region have evolved over time, explains why ownership and documentation of land rights matter for farmers' access to institutional credit, insurance, and government subsidies, and summarises the study's motivation and main research questions.

The remainder of this chapter proceeds as follows. Section 1.2 traces land governance and ownership through ancient, medieval and colonial periods. Section 1.3 presents the post-independence reforms that shaped West Bengal's contemporary legal framework. Section 1.4 summarises the state's land-reform instruments and institutional arrangements for registering and changing land ownership. Section 1.5-1.6 discusses why ownership matters for productivity and access to credit, insurance and subsidies. Finally, Sections 1.7–1.8 set out the study's objectives, data sources and methodology, providing the analytical roadmap for the chapters that follow.

1.2 Land Governance during the Ancient, Medieval and British Periods in the State

How land access defined and managed is often called "land governance" (Palmer et al., 2009), which is categorized as the rules, procedures, and guidelines regarding land access and land use, how decisions are implemented and enforced, and how competing land interests are managed (Tchatchoua-Djomo, 2018). Land governance involves assessing and implementing sustainable land policies, as well as fostering strong interactions between people and land (Enemark et al., 2009). The concept of land ownership, as it is understood today, is the result of a long and complex historical process shaped by various sociopolitical factors over the centuries. Thus, this section presents a comprehensive factual record of land reforms in India, in general, and in West Bengal, in particular.

The remaining portion is organized as follows: The first subsection covers land systems in the early Hindu period and ancient India, followed by a discussion on land systems in the medieval period. Land reforms in the British Period, generally and concerning West Bengal, are covered in subsection three before moving on to post-independence land reforms.

1.2.1 Land Ownership in Ancient India and the Early Hindu Period

Experts generally agree that the issue of land ownership emerged in post-Vedic society because, at some point during the Rig Vedic era, the Aryans were pastoralists, and livestock was the primary measure of wealth (Gopal, 1961). Land ownership was uncommon at that period. Due to the introduction of iron farming tools in the post-Vedic era, people started to cluster in one location. We discover a connection with land possession within the post-Vedic book 'Aitareya Brahman' wherein it is written that once Vishwakarman Bhuvan donated land to the purohits for performing a Yagna, and that was protested by Prithvi (Haug, 1922). This indicates that donating land without the community's permission was not possible. In other words, there has never been a notion of personally owning property; instead, land ownership has historically been predominantly community ownership. The "Mimamsa sutras" by Rishi Jaimini serves as another piece of evidence that land has been previously held in common hands (Sandal, 1999). No king is allowed to give away all his state's territories under this arrangement because everyone owns a piece of the earth. During the Maurya period, the political philosopher Kautilya supported the king's stewardship of all agricultural land, but he did not advocate for the idea that the king should be the sole owner of land. In India, land ownership is determined through various records, including registered revenue deeds, tax documents for assets, and government survey statistics. Ancient India presents a complex set of land relations involving personal possession, royal management, and communal governance of villages. The available evidence on land tenurial conditions dates back to ancient texts, such as Manu Smriti, Kautliya's Artha Shastra, and Buddhist Jatakas (Bühler, 1886; Shamasastry, 1915; Bhikkhu, 2022). These scripts indicate that, until the 15th century AD, the land system prevalent in most of the country was essentially of the Raiyat Wari or landlord type (Appu, PS, 1996).

According to Manu's principle, "land is his who first cleared the jungles, as the deer is his who first brought it down." Thus, in most cases, the cultivators acquired ownership rights as the first to clear the jungle. Therefore, the king did not claim to own all the land in his kingdom. However, the king was entitled to a share of the produce from his subjects, rather than the protection he offered them. According to Sircar (1966), the king was allotted a $1/6^{th}$ share of the produce, a $1/10^{th}$ share of merchandise, and a cash tax. Furthermore, in the post-Vedic period, as referenced in the Vashistha Dharmasutra (Bühler, 1882), there is a mention of taxation on agricultural produce. It states that the incidence of taxation on agricultural produce could be varied from $1/6^{th}$ to 1/10th, according to the fertility of the land. The Sutras also suggest increasing tax rates in the event of emergencies. It also suggests that even during the surplus year, the king's share could be raised to maintain a buffer stock for the lean years (Agrawal, 1993).

However, it was the first time during Kautilya's period that the land systems were quantified. According to Kautilya, "the King should take away fields from those who do not till them and give them to others, as those who do not till make good the loss to the treasury" (Kangle, 1972). He meant that the land was the property of the king, and private persons were not entitled to own it. He further gave the idea of rational settlements of land revenue. The unit of measurement, after defining the village boundary using the river, mountain, forests, and trees, was a pad equivalent to about two feet. Thus, the land details were maintained as 'Nibandh' in a registry, and the village official kept the records by entering all transfers through sales or otherwise. Even

during this period, farmers paid agricultural tax in kind at a rate of 1/6th of their total produce, known as 'Bhaga'.

During periods of financial stringency, the tax could be raised to 1/4 or 1/3 of the value in the case of grains. During Ashoka's reign, the land revenue, especially in Lumbini village, was reduced from $1/4^{th}$ to $1/8^{th}$ of the total produce, as it was the birthplace of Buddha. Furthermore, even during the Gupta period (320-650 AD), the agricultural tax was fixed at one-sixth of the produce. However, different government functionaries, right from provincial headquarters to village officials, were responsible for collecting the king's share. The system of paying land revenue in cash for specific requirements, in addition to kind, was introduced during the Gupta period. The Sena Kings of Bengal introduced payment of revenue in cash in the 12^{th} & 13^{th} centuries. As such, in ancient times, laws on land were primarily derived from the principles enunciated in the Vedas, Upanishads, and Arthashastra of Kautilya, which were followed in the Hindu Land System in India.

1.2.2 Land Ownership in the Medieval Period

The development of intermediaries was significantly influenced by medieval times (Bandyopadhyay, 1993). Bandyopadhyay (1993) argued that the military was employed by Muslim rulers, who provided them with a plot of land in exchange for their services. These free proprietors gradually lost their independence through a process of commendation, and as a result, their allodial tenure evolved into feudal tenure. Early jagirs were neither transferable nor inheritable. But if the intermediary left his service, the sovereign might seize them. As the intermediaries (jaghirdars and zamindars) gained local control, allowing them to maintain their status and pass it on to their sons, these rules were modified over the ensuing centuries. When zamindari rights became transferable, the land owned by a zamindar was divided among his sons after his death. This inheritance process led to the fragmentation and spread of zamindari rights within families. As a result, two distinct types of landowners emerged. Each lineage split into a more powerful branch, typically the one that retained the family fort, and less powerful branches with more limited village-level privileges (Bandyopadhyay, 1993).

The dominant branch became known as intermediary or secondary zamindars. They held fiscal authority over the less affluent members of their lineage, often referred to as village or primary zamindars, and sometimes referred to as *Pattidars*. Intermediary zamindars did not directly own land; rather, their rights were limited to collecting revenue and exercising fiscal overlordship.

In contrast, primary zamindars were the actual landowners with direct proprietary control over the soil. Their rights included placing cultivators, managing wastelands, digging wells, and planting groves. These primary zamindars typically formed dominant lineages spread across clusters of neighbouring villages. Their influence was measured not only by the extent of territory they controlled but also by the depth of their integration into the local agrarian society. Their grip was most tenacious, where the primary owners were identical with the cultivators (Dharmakumar, 1982).

The division of land rights continued further. The small landowners surrendered their rights to the large landowners and became their dependents, on condition that they retained the hereditary use of their land. The continuous extension of land made it impossible for the large landowners to collect revenue without the help of others. Thus, sub-infeudation evolved, creating

differentiation of land control rights over land under direct or indirect supervision. The land cultivated directly by the zamindar was termed "Sir or Khas" land to distinguish it from land that was allotted to sub-intermediaries for cultivation. From the land allotted to him, the zamindar would claim a share of the agricultural produce as his due for exercising overlordship. However, identifying and distinguishing different levels of land rights in India has long been complicated by the inconsistent and overlapping use of terminology. The term *zamindar* gained prominence in the 17th century, replacing or modifying various regional terms that referred to similar landholding roles. For example, terms such as ‘khoti’ and ‘maqqaddam’ in the Doab-Satarabi region, ‘biswi’ in Awadh, ‘bhomi’ in Rajasthan, and ‘bhant’ or ‘vanth’ in Gujarat were once commonly used (Bandyopadhyay, 1993). The Persian term ‘zamindar’ translates to "holder of land," where the suffix ‘dar’ implies control or attachment, though not necessarily ownership (Chatterjee, 2020).

True ownership rights began to emerge during the Mughal period, when ‘zamindar’ came to signify a hereditary claim to a direct share of the produce from land under his control. Peasants cultivating the land were known by various terms such as ‘muzari’, ‘asami’, or ‘raya’ (Bandyopadhyay, 1993). The confusion was further compounded by the use of similar terms to describe different land rights across regions. For instance, the term ‘taluqdar’ in northern India referred to a large zamindar responsible for collecting revenue on behalf of smaller zamindars and paying it to the state. While his rights were hereditary, they were not transferable (Bandyopadhyay, 1993). In Bengal, however, ‘taluqdar’ denoted a person of lower status than a zamindar (Ray, 1979). Ultimately, supreme ownership of land resided with the ruler.

Variations in land relations primarily arose from differences in revenue extraction methods. Land located near the capital was retained under the direct control of the ruler and classified as ‘khas’ land, where cultivators often worked under wage-tenancy arrangements. However, land extending to the furthest corner of the kingdom was difficult to control directly, and representatives were appointed, thus giving rise to a three-tier system of land administration [Irfan Habib 1963].

Revenue rates were also not uniform. Of course, varying revenue rates accounted for various types of land (according to inscriptions in earlier days). During the Nizamsahi period, land was classified into irrigated and unirrigated types, with each further subdivided into four categories. Revenue was assessed with attention to these distinctions, and land revenue formed the major portion of the agricultural surplus.

Under the Mughals, the land tax was effectively a tax on crops rather than a formal rent or fixed land tax (Habib, 1982). While this system simplified the cost and burden of revenue collection, it left peasants unaware of the exact amount they owed. To reduce the potential for their exploitation, annual assessments were introduced based on area statistics. Furthermore, to curb the power of intermediaries, their land holdings were made temporary and subject to periodic transfers, typically every year or every two to three years. Their territorial control could be expanded or reduced as a form of reward or punishment, depending on performance.

To prevent overcharging by intermediaries, a copy of the revenue records was held by the local official (Kanungo). However, the short-term nature of these arrangements often had the opposite effect, encouraging intermediaries to engage in maximum unauthorized exactions. This pressure

stifled agricultural expansion and increasingly drew the Mughal ruling class into conflict with key agrarian groups—the zamindars and the peasantry.

By the early 1850s, official concern grew that land control was shifting into the hands of non-agricultural elites. Many intermediaries, unable to maintain the necessary contingents or meet obligations, subcontracted their roles to absentee landlords—often urban bankers and speculators—who imposed harsh terms. The Board of Revenue noted that such land transfers defied the simple classifications of landlord vs. tenant or agriculturist vs. non-agriculturist (Tomlinson, 1993).

At the time, the "estate" remained the primary unit of account in revenue records. It grouped lands for which a particular person or collective bore revenue responsibility. However, as larger intermediaries gained expanded control and engaged in sub-leasing, a dualism emerged between proprietary rights (which yielded rental income) and cultivation rights (which produced agricultural surplus). This created a growing disconnect between the unit of revenue accounting and the actual unit of cultivation. Nevertheless, the transfer of proprietary rights often left the cultivating peasantry undisturbed, which meant that villages and peasant communities remained largely passive amid agrarian conflicts over land ownership.

1.2.3 Land Ownership in the British Period in India

The British recognized that land was a crucial factor in India's economic development, and they needed to control it to stabilize their rule over the country. But they found the prevailing land systems quite perplexing. Their first effort was to fix the legal owner of the land. In 1769, the company divided parganas into 15 lots each and auctioned them, with revenue to be paid to the company. Till this time, rent had to be negotiated and adjusted to the ability to pay. However, the British emphasis on legality and consistency led to the dispossession of farmers who could not pay fixed amounts of revenue. Again, auction sales placed the ownership of land beyond the reach of the poor farmers who were tied to the soil, creating a new aristocracy that was originally comprised of moneylenders or traders. The new owners squeezed the peasants to pay the speculative land revenue. Widespread famines, land abandonment, and declining revenue eventually forced the government to acknowledge the failure of its land revenue policies. However, the failure was attributed not to structural flaws but to the supposedly short duration of land settlements. Officials believed that extending the lease period would incentivize landlords to invest in land and adopt innovative practices.

In practice, this extension brought no meaningful improvement. Instead, land revenue demands increased nearly fourfold compared to pre-assessment levels. Zamindars, burdened by excessive taxation, responded by shifting the pressure onto the ‘ryots’ (cultivators). Many zamindars faced dispossession due to their inability to meet the high revenue demands. The British East India Company compounded these issues by imposing 18th-century Western notions of private property onto a fundamentally different indigenous land system. They wrongly assumed that revenue farmers were the rightful landowners, even though these intermediaries neither cultivated the land nor made any investments in it.

Ignoring the rights of actual tillers, the 1793 Permanent Settlement in Bengal granted zamindars the authority to set terms with cultivators in exchange for a fixed cash payment to the state. While the zamindar’s dues to the state were fixed in cash, the rents payable by cultivators

remained undefined and variable. This single piece of legislation effectively turned cultivators into tenants and elevated a class of revenue collectors into de facto landowners. Far from strengthening the agrarian economy, the sharp increase in revenue demands only undermined the financial stability of zamindars and disrupted the rural production structure. The appointment of active revenue farmers (*jagirdars*) and collectors (*amils*) disrupted the patron-client relationship between landlords and tenants, which had previously served as a form of insurance against natural calamities. The British government's seizure of estates for non-payment of taxes further disrupted the rural economy. There was a labour shortage because of the dispersed labour force. The capital contributed by the nobility for land improvement was drastically reduced, as the nobility was losing ownership of their land. As a result of all these factors, by the mid-19th century, the entire agrarian sector had fallen into a state of decay. Rural inhabitants dependent on agriculture were emigrating. The villages deteriorated and their revenues declined. The case of Oudh and northern India was quite different. The taluqdars of Oudh were owners of large estates and had complete control over the resources of these areas. The British policy was to curb the strength of the taluqdars. From 1764 to 1801, the British government gradually tightened the noose on Oudh. They installed British troops in Oudh under the pretext of helping the nawab to keep the taluqdars under control. Payment for these troops was made by handing over half of Oudh to the British in 1801 and the other half in 1856. They acquired the adjacent provinces. The British, however, extended the contract of the taluqdars by a period of five years, after which the lease was terminated. The British government faced a dilemma in changing the land relations of Oudh and the northern parts. This region had a tradition of communal village proprietorship, and the taluqdars still had considerable influence over the area. Hence, a system of mahalwari settlement involving mostly the original taluqdars was introduced. But the assessment was quite high. Many properties went into debt. Inexperienced management, depression, and the frequent occurrence of natural disasters made the situation worse. Distress sales increased during the period from 1839 to 1859 [Metcalf 1979]. To ease the situation and prevent a speculative rise in land prices, the government began leasing property in arrears and aimed to restore the original landholder by accepting payment of the arrears through rent. When the owner failed to pay the arrears even after this arrangement, an auction sale was the only option left to the government. As a result, land relations underwent considerable changes, and a shift occurred from the old landholding class to the new commercial class.

The Tanjore Committee criticized the zamindari and ryotwari forms and suggested the introduction of the mahalwari system in Madras. But southern India had a long tradition of ryotwari settlements. The zamindari or mahalwari system was considered unacceptable in this region. The government introduced the mahalwari for a short period, but soon changed to the ryotwari system in Madras. It was considered a success and was subsequently extended to other regions. The changeover from mahalwari to ryotwari was necessitated to eliminate the village officers. These officers were suspected of concealing the exact amount of village resources and thus appropriating part of the revenue. Changeover to the ryotwari system, however, did not solve the problem. Even after the change, revenue gain was negligible. The company-appointed intermediaries quickly recognised the opportunity to advance their social and economic interests under the umbrella of company protection.

Within a short period, they established themselves as a complex layer of adept and influential

manipulators between the company and the ryots [Stein 1969]. By the middle of the 19th century, the land revenue systems and consequent tenurial structures exhibited a pattern of striking provincial variations. The zamindari system in Bengal, ryotwari and peasant proprietorship in Bombay and Madras, and a hybrid system of mahalwari (where effective ownership of most land was vested in cultivators, but revenue was rendered communally by the village) prevailed in Punjab, the North-West Provinces, and Oudh. It appears that ideological aversion to landlordism, rooted in utilitarian philosophy, was a significant factor behind the development of ryotwari and mahalwari settlements [Stokes 1978]. Substantial land transfers and sub-infeudation occurred as creditors, supported by the Westernized legal system, attempted to secure the land of peasant debtors by force, resulting in the loss of mortgages. It led to the creation of a large agrarian proletariat. The beneficiaries of this change were the moneylenders and traders. They had a parasitic attitude to agriculture. They did not typically dispossess peasant debtors of their land; instead, they used land mortgage forms as a method of coercion, thereby exercising substantial control over agricultural activities and production. They occupied the position of the rich peasants, having an established presence in the village, and intensified their wealth and power through more subtle measures of market control. This group appropriated the economic surplus, which was the prerequisite for development.

After 1870, constructive efforts were made to improve agrarian conditions. In the estates under direct government control, new crops and cultivation methods were introduced. To encourage the dissemination of new technologies, the government provided monetary assistance to landowners who demonstrated initiative. Thus, the commercial process was initiated in several pockets but was unable to infiltrate the traditional sector. As a result, dualism evolved in the agrarian sector. The modernized parts were developed on commercial lines, utilizing the latest advanced technology and knowledge. A new type of commodity production was taking shape. The traditional sector, characterised by low income and consequent low rural demand for producer goods, extensive arrears in debt, and subsistence farming, continued to hinder the revolutionary influence created by the modernised sector. Hence, restructuring of the agrarian economy was the essential precondition for the accelerated development of the economy. A built-in depressor characterized by the exploitation of the peasantry, low capital intensity, and traditional methods of production was operating throughout the country, resulting in the virtual stagnation of the economy. After independence, the primary task was to remove the stagnation and provide initiative to the mass of poor cultivators. The need for agrarian reform to change the prevailing structure and build a democratic distribution pattern was earnestly felt. From the modest approach of abolishing intermediaries and providing security of tenure, the program included numerous issues that reduce disparities and contradictions in social and economic spheres, thereby facilitating economic development.

1.3 Land Reforms in Post-Independence in West Bengal

The Land Reform Act (LRA) is the key piece of regulation addressing land reform and land rights in West Bengal[1]. The LRA covers several land-associated topics; however, most importantly, it:

i. defines the rights and responsibilities of landowners and 'Bargadars'.

ii. prohibits fixed-lease leasing of land.

iii. identifies a ceiling on the sizes of landholdings.

iv. defines how land taken through the authorities needs to be distributed; and

v. limits the transferability of land held through Scheduled Tribe members, in addition to a whole lot of the land received through redistribution.

The LRA defines "landowner" as someone or an organization holding land for any motive. In general, landowners can switch their land through revenue, gift, inheritance, change, and a few types of mortgages. The LRA creates the presumption that landowners can interact in any manner except through regulation. Such transfers ought to be in writing and ought to be recorded. The regulation identifies a few limits on landowners' potential to apply on their land and deprives them of their land if those limits are violated. Specifically, landowners:

i. cannot hire out any part of their land.

ii. cannot use their land for any motive but the motive for which the land is held or turned into settled except they get hold of a written permission from the District Collector; and

iii. ought to "individually domesticate" their land.

"Personal cultivation" is described as cultivation through the landowner's personal exertions, the exertions of his or her circle of relatives, or the exertions of any servants or employees paid in money or kind. (The servants-or labourer clause is no longer practised if the landowner is looking to renew ownership of 'Bargadar' land.) Furthermore, to fulfil the definition of private cultivation, the landowner or a member of the landowner's own circle of relatives ought to be living for most of the year within the locality wherein the land is located, and income from the land ought to be the primary source of the landowner's income. If those requirements are not satisfied for three consecutive years, the land vests within the State, and the State will become indebted to compensate the landowner. Compensation is, however, well under the land's market price. Additionally, landowners should preserve and maintain their land to ensure that it is not degraded, its character is not altered, and it is not converted to any use other than the purpose for which it was settled or formerly held, except with the written permission of the Collector. The consequences for violating this requirement, even if serious, no longer include deprivation of the land. Violators of this provision may be placed in custody for up to a few years and/or be ordered to pay a penalty of around 1,000 rupees.

Broad prohibition on the fixed-lease tenancy: The LRA prohibits any fixed-lease tenancy,

[1] West Bengal Legislature. (1955). The West Bengal Land Reforms Act, 1955 (West Bengal Act X of 1956, as modified up to 1 January 1999). Retrieved from https://dllromsd.org/LAW_WEB/act15.pdf

regardless of whether it is seasonal or not. Seasonal fixed-lease leasing is a reality in West Bengal, despite the current legislative prohibition against it. The parliament must reconsider easing this hefty prohibition to permit small landowners, Bargadars, or landless families to hire-in land. Suppose such tenancy preparations are to be legally recognized. In that case, the regulation needs to cover several provisions: First, the regulation should require that this type of rental or hire settlement be in writing and provide a mandatory, standardised form for such agreements. Second, the regulation ought to make clear that such lessees will no longer take delivery of any long-term or hereditary rights to the land beyond that contained within the written settlement. "Principal supply of income" requirement discriminates against small farmers and small landholdings. The LRA calls for the landowner to acquire their main supply of income from the produce on their land. This method involves very small landowners, who earn a majority of their income from agricultural endeavours, technically being in violation of the LRA and potentially losing their land to the State. We endorse that the definition of "non-public cultivation" is modified such that someone's main supply of income may be both the produce on their land or wages they earn through agricultural exertions.

1.3.1 Strict penalties for violating prohibitions on hire, use, and private cultivation

The regulation states that violations of these requirements still result in the forfeiture of the landowner's rights. The parliament may recall changing it with a much less severe penalty, including the compulsory sale of the land, allowing the landowner to retain the proceeds of the sale.

1.3.2 The monetary penalty for violating conservation needs to be increased

Due to inflation, a penalty of around 1,000 rupees is neither substantial nor sufficient. The LRA represents the safety of Bargadars, inclusive of the right to persevered cultivation. These rights, which can be recorded within the report-of-rights (however they may exist and be asserted, although not currently recorded), are heritable; however, there are no other transferable cases. A man or woman lawfully cultivating any land belonging to some other man or woman is presumed to be a Bargadar, except that she or he is a member of the landowner's circle of relatives. This characteristic of the West Bengal LRA is not a gift within the regulation of another state. Where the landowner is a Scheduled Tribe member, the cultivator may also declare Bargadar status most effectively if the cultivator is likewise a Scheduled Tribe member.

The LRA offers that Bargadar sought to flip over half of their produce if the landowner supplies the plough, cattle, manure, and seeds essential for cultivation, and should flip over 25% of the product in all other cases. Upon payment, the landowner should provide the Bargadar with a written receipt. A Bargadar's right to domesticate land can most effectively be terminated under subsequent circumstances: (1) the Bargadar is not cultivating the land or is the use of the land for any motive other than agriculture; (2) the Bargadar is not individually cultivating the land; (3) the Bargadar failed to level the entire volume of the percentage; or the landowner calls for the land for non-public cultivation. Importantly, for this section, the definition of "non-public cultivation" does now no longer encompasses cultivation through servants or employees. Furthermore, a Bargadar's right can most effectively be terminated through an order made through a state-appointed authority.

A landowner can't terminate the Bargadar's cultivation right if the termination would leave the

landowner with more than 41 acres or would leave the Bargadar with much less than 47 acres. If, after termination, the landowner fails to deliver the land under non-public cultivation within the specified years or allows the land to be cultivated by someone else, the land vests in the state. If a landowner illegally terminates a Bargadar's cultivation right, the Bargadar can seek to have his or her right restored. If there are more than one applicant, the Bargadar who has cultivated the land the longest is allowed to renew cultivation. A Bargadar isn't accredited to domesticate more than a total of 9.88 acres, including owned and Bargaland. If a Bargadar cultivates more than this amount, his or her percentage of the produce on the additional land is forfeited to the state. The landowner who owns more land than the Bargadar cultivates ought to flip over the land to some other man or woman inclined to cultivate the land as a Bargadar. Law no longer supplies Bargadars with the unilateral right to claim possession over Barga land. The regulation might have progressed if Bargadars had been given the necessary right to select one of the alternatives for assuming possession of the Barga land. The first choice might be an acquisition option under which the Bargadar should have possession over the entire Barga holding by paying the landowner a sum determined by the authority, approximating 50% of the land's market price. The second choice might be an alternative choice under which the Bargadar should count on possession over one-half of the Barga holding through giving up his Bargadar rights over the final one-half of the land (which might then revert in unencumbered possession to the owner who should both promote or individually domesticate the land difficulty to different current restrictions). Landowners can't promote if a Bargadar's holding exceeds the ceiling or if a Bargadar voluntarily surrenders his rights. The regulation currently requires the landowner to show the land to another Bargadar in such cases. A higher answer is probably a forced revenue in which the landowner ought to promote the land possession rights to a smallholder, landless family, or Bargadar (difficulty of route to the applicable ceilings). This might encourage landlord-operatorship through smallholders, as opposed to developing a perpetual landlord Bargadar agreement. Law does now no longer requires that the call of the Bargadar's partner be entered into the report of rights. In most cases, the male head of the family is considered the Bargadar, and his call is most effectively entered into the report of rights. This happens despite the reality that women seem to adopt all, or perhaps most, of the farming duties on the Barga land. Requiring that a Baradar's spouse additionally be protected within the report-of-rights might include details of gender fairness and assist to guard the rights of such women, particularly upon separation or the husband's death.

Law no longer assigns a market price to the Bargadar's interest in the land. As a result, when Barga land is received under the Land Acquisition Act for any public motive, no repayment is payable to the Bargadar. The law should stipulate that the Bargadar is entitled to a certain percentage of the payment (say 50%), with the remainder payable to the landowner. The LRA offers that Bargadars have the primary protective right to buy land being sold. If the Bargadar no longer buys the land, adjacent landowners have a precautionary right of first refusal, with precedence given to the landowner with the longest customary boundary. This provision no longer allows transfers through change or partition, inheritance, gift, mortgage, transfers for charitable or religious purposes, or transfers in preference of a Bargadar (if, after the switch, the Bargadar no longer maintains multiple acres of land as landlord within the aggregate). The provision also does not apply to transfers concerning attention other than money. The LRA authorizes the state authorities to set up a "state land enterprise" and/or one or more "local land

corporations", which shall increase the price range to Bargadars to buy the land for the use of this protective purchase right. The Bargadar and landowner are not tied to agree on a rate of their personal choice; however, if they can't come to a settlement, the land enterprise sets the rate primarily based on the available market price of the land. These provisions of the Act seem to remain unimplemented. If a Bargadar no longer desires to buy a landlord's land, the state land enterprise, upon the landlord's request, can provide the land to someone eligible to purchase land under section 49, which is commonly a landless or close-to-landless man or woman.

Although Bargadars are granted precedence rights to buy Barga land if the landowner decides to promote the land, the LRA, not like regulations in a few different states together including West Bengal, does now no longer supplies Bargadars the right to emerge as landlords of the Barga land without the landlord's consent. The regulation appears to consider a perpetual agreement between the landowner and the Bargadar, except that the landlord voluntarily agrees to promote the land. No landowner can personally own more than the ceiling, with a few minor exceptions. Significantly, the LRA defines "land" to encompass non-agricultural land. West Bengal is the most effective state in India that offers a broad definition of "land" in its land reform legislation. The motive is to prevent landowners from evading regulations by reclassifying agricultural land as non-agricultural land. Additionally, unlike in most states, the ceiling restriction applies most effectively to owned land, rather than to tenanted (Barga) land. West Bengal is certainly considered one among the Indian states (Tripura is different) wherein the ceiling limit is decreased if the number of own family members is less than five. There are numerous restricted exceptions to the general ceiling restriction. First, if the land is held for charitable or religious purposes, state authorities can increase the existing ceiling. Second, the state can permit landowners to maintain more than the ceiling area if they intend to set up a tea garden, mill, manufacturing facility, workshop, livestock-breeding farm, poultry farm, dairy, or township. Lastly, the ceiling does not apply to land owned by a nearby authority or land within the hills near Darjeeling.

To save landowners from making anticipatory transfers of land to keep away from the ceiling, any land transferred after August 7, 1969, however, earlier than the effective date of the 1971 amendment (decreasing the ceiling) is protected within the calculation of the sizes of the landowner's holding as though the land had now no longer been transferred or partitioned. Transfers to a special circle of relatives' participants are presumed no longer to be bona fide. Landowners with land in more of the ceiling place ought to supply the Revenue Officer with a form containing complete descriptions of each of the lands that they recommend preserving and the land that is in more of the ceiling. Landowners holding land in more of the ceiling land can't switch any of their land through revenue, gift, or in any other manner, or partition the land until the matter has been decided and the state has taken ownership of it, except as accredited in writing by the Revenue Officer.

If a landowner with land in more of the ceiling fails to supply the prescribed form with an affordable purpose or wilfully makes an omission or wrong statement on the form, she or he may be punished with up to 2 years in custody and/or an exceptional fine of 5,000 rupees. After receiving the shape, the Revenue Officer determines what land will vest in the state and takes ownership. All land owned in more of the ceiling place vests within the state, freed from all burdens. If at any time after the graduation of the LRA, a landowner's holding exceeds the

ceiling, the excess land additionally vests within the state. If ceiling surplus land is being cultivated through a Bargadar, the Bargadar's right to cultivation is terminated on any land of more than one acre. The Bargadar will become the landlord of any land measuring less than one acre. The LRA no longer states that the Bargadar is required to pay the landlord or the state any repayment for such land.

1.4 Institutional Arrangements Regarding Changing Land Ownership in West Bengal

The Indian Registration Act, 1908, specifies that it is mandatory to register the transfer of any property with the Registrar. To obtain the rights to the immovable property transferred, it must be registered first. The West Bengal property registration comes under the Department of Revenue. Without registering the property, you have no legal right to it, even if you have cleared all your dues with the builder and there are no encumbrances. The property registration process creates ownership rights over a property. Without proper property registration, a buyer has no legal right over the property, and the seller cannot sell it to anyone under the Transfer of Property Act.

According to an order issued by the Supreme Court of India in 2011, transferring property through a general power of attorney (GPA) is deemed invalid. Moreover, even an irrevocable power of attorney cannot be used for transferring title to the recipient. Therefore, a GPA is not a valid consideration for the sale/purchase of a property. Transactions related to an immovable property can only be done by way of a stamped and registered conveyance deed, as applicable under the West Bengal Transfer of Property Act.

Registration brings legality and authenticity to the entire property transfer transaction. This can be beneficial in the future for inheritance and the use of the property. The benefits of property registration are as follows:

i. To assure genuine documents
ii. Prevent fraud
iii. To ensure proper documentation of the ownership title
iv. Maintains the records of every property that comes under the purview of the state

Land record of any property is a repository of information about the concerned property, including the name of the owner, area of the land, plot number, present owner of the property, and value of the property, among others. Like any other state in India, West Bengal also has an online portal, "Banglarbhumi", through which you can get access to land record details of your property. The portal helps you gather land record details, including the Record of Rights, in a hassle-free manner with a quick turnaround time. Note that land record details serve as important data for both the buyer and seller during a property transaction. Banglabhumi is an online web portal for land records and reforms launched by the Government of West Bengal. Anyone can use this portal to access land and property-related information, including the owner's name, land area, plot number, property value, and the current owner's details. The Banglarbhumi portal provides all the necessary details, along with a land map, for properties located in West Bengal. It also assists entrepreneurs intending to set up new industries in the state by letting them know

the infrastructure available at the proposed location. A user can also retrieve the information about their block by just filling in the district and block details.

1.4.1 Documents required for property registration

i. Identity proof: Aadhaar card, Voter ID, PAN card, passport, driving licence.

ii. Assessment slip, which has the market value, stamp duty, and registration fee applicable to the property.

iii. PAN card or Form 60, along with identity card and address proof of both parties.

iv. Stamp duty and registration fee payment acknowledgement.

v. Permission from the authority, if applicable.

vi. Stamp Duty is a percentage of the transaction value levied by the State Government on every registered property transaction. In contrast, the deed number is the registration number assigned to a document once it has been officially recorded by the relevant authority. Both are crucial components of the property registration process.

Property—whether movable or immovable—can be transferred within blood relations without monetary consideration through either a gift deed or a Will. A key advantage of a gift deed is that it takes effect during the donor's lifetime, whereas a Will only comes into effect after the death of the testator. Therefore, a gift deed is ideal when the donor wishes the recipient(s) to benefit from the property transfer immediately.

1.5 Land Productivity - Why Ownership is Important

Land ownership is broadly determined by access to a land title, which protects the rights of the titleholder and has a significant impact on livelihoods, industrial growth, economic growth, and social development. However, land titles in India are unclear due to various reasons. Land ownership is broadly determined by access to a land title, which protects the rights of the titleholder and has a significant impact on livelihoods, industrial growth, economic growth, and social development. However, land titles in India are unclear due to various reasons. The relationship between ownership (or land rights) and productivity has drawn the attention of many scholars in various disciplines. There is a vast literature asserting that private ownership or secure land rights increase the incentives for individuals/households/enterprises to invest and often lead to higher production efficiency and productivity (Furubotn & Pejovich, 1972; Demsetz & Lehn, 1985; Morck et al., 1988; Boardman & Vining, 1989; McConnell & Servaes, 1990; Short, 1994; Zhang et al., 2001 Jefferson and Su, 2006).

In the field of agriculture, the literature has focused on the impact of land ownership on the intensity of labour input and total output. Contrary to the predominant finding in the business field that private ownership increases efficiency and productivity, the findings of the impact of land ownership on farmers' incentives/productivity in the agricultural literature vary substantially, both theoretically and empirically. For instance, one strand of literature argues that tenancy reduces tenants' incentives to improve their land or to maximize the discounted stream of future income, resulting in low productivity among tenants (Bell, 1977; Shaban, 1987). Some of these scholars highlight the "exploitation" of tenants by landlords through high rent levels and

unfair practices that keep tenants deficient in capital and trapped in perpetual poverty (Huang, 1975). The contrasting strand of literature, the so-called "new school," argues that if the tenant's work effort can be costless monitored and enforced by the landlord, then resource allocation can be as efficient under tenancy as under owner-cultivation (Johnson, 1950; Cheung, 1969; Newbery, 1974, 1975a, b, 1977; Stiglitz, 1974). This literature finds no significant differences empirically in labour input and production between tenants and owner-cultivators (Rao, 1971; Huang, 1975; Nabi, 1986). Furthermore, the debate over the efficiency of alternative land-renting systems is also far from conclusive. Since Smith (1776), Mill (1848) and Marshall (1890), and numerous authors have argued that sharecropping causes more inefficient resource allocation compared to fixed rental and labour hiring because the share tenant receives as marginal revenue only a fraction of the value of his marginal product of labour, thus reducing the tenant's incentive to supply labour or other inputs below the efficient level (Pender & Fafchamps, 2001).

In contrast, others argue that share tenants can be as efficient and productive as fixed rental tenants, given that the tenant's work effort can be costless monitored and enforced by the landlord. In addition, even if labour effort is unobservable and costly to monitor, sharecropping may dominate labour hiring because of its incentive advantages and dominate fixed rental because of its risk pooling advantages (Stiglitz, 1974; Pender & Fafchamps, 2001). Although the debate temporarily ceased due to the lack of new theories or empirical evidence, the question of how land ownership and different land-renting systems affect farmers' productivity becomes increasingly important over time, given its implications for the agricultural policies of developing countries. Agricultural policy decisions in many developing countries are affected by the belief that land must be privatized or that people should have exclusive and secure rights on their lands (Gavian & Ehui, 1999). The hypothesized greater production efficiency of privatized lands, however, may be an illusion if other public policies, such as the provision of rural infrastructure, promotion of market efficiency, dissemination of information about new technologies, and access to credit, are not in place (Gavian & Ehui, 1999). As a result, it would be valuable if we could provide estimates of the relative importance of land ownership and land-renting systems in determining agricultural production (versus infrastructures or institutional factors).

1.6 Land Ownership and Access to Credit

That land titling is needed to facilitate the highest and best use of land resources is hardly a controversial assertion. A strong view is that individual ownership evidenced through a fee-simple title is the ideal institutional vehicle for such security. Empirical evidence shows that having a title is associated with higher investments tied to the land and farm output (Sala et al., 1970; Feder & Onchan, 1987; Feder, 1987). The direct way in which the title can positively affect investment and output is referred to here as the land titling channel. To quote Jeremy Bentham - "command cultivation, you will have done nothing; but secure to the cultivator the fruits of his labour, and you have probably done enough. Binswanger and Rosenzweig (1986) emphasize those attributes of land that make it ideally suited as loan collateral. Access to formal credit may require a title before land can be used as collateral, and empirical evidence suggests a positive association between title and access to credit (Dorner & Saliba, 1981; Seligson, 1982; Feder et al., 1986). In many less-developed countries, however, land titling systems are often deficient. Smallholders may find that the cost of acquiring a title to their land is prohibitive. Land titling programs have been undertaken in several less developed countries on the argument that

having a title can lead to increased investment and output (Stanfield, 1985).

If titles are essential for rural credit markets to operate, increased titling could lead to increased output through the credit access channel. Zhang et al. (2020) showed that China's 2009 land titling reform improved formal credit access for households with above-average landholdings, income, or proximity to banks, largely because titled land could serve as collateral and signaled lower credit risk. At the same time, titling raised household income and wealth, reducing reliance on informal borrowing. These mechanisms demonstrate that secure land titles strengthen rural credit markets, enabling better-off households to expand operations and invest more productively, thereby linking titling directly to increased output via improved credit access. But informal rural credit markets, by definition, operate in the absence of such formalities as titles. In a study using data from Thailand, Feder (1987, p.29) concludes that "access to institutional credit ... appears as the dominant factor underlying the productivity gap between titled and untitled farmers." The positive association between title and output failed to appear, however, in one locale where "the non-institutional credit market, where collaterals and titles are less important, is well developed [p 26]." A study of small coffee producers in Honduras found that titling did not have the intended effect of increasing access to credit and, hence, investment, due to institutional factors (Larson et al., 1999).

1.7 Need for the Study and Objectives

The literature is ambiguous regarding the effectiveness of land titling in promoting productivity and reducing poverty. Research indicates that land titling can serve as a valuable instrument for reducing poverty, not by quickly expanding access to credit, but rather through the gradual accumulation of physical and human capital investments that strengthen households over time and contribute to poverty reduction across future generations (Zhang et al., 2020). On the contrary, it was argued that while land titling is often promoted as a poverty reduction strategy, its actual impact is weak, indirect, and highly context-dependent. Poverty reduction requires broader interventions, such as infrastructure provision, social protection, and inclusive financial systems, rather than relying solely on titling (Payne et al., 2009). However, both existing literature and our previous research provide substantial evidence of a positive association between possession of clear land titles and access to institutional credit (Sakprachawut & Jourdain, 2016; Zhang et al., 2020; Jiang, 2020). Similarly, clear land titles enable farmers to access not only government schemes but also a fair share of various subsidy programmes implemented by both the union and state governments. Clear land titles also benefit farmers, providing them with risk coverage through access to insurance and various other risk management benefits. However, there is a lack of studies on the aspects of land titling that positively affect land productivity. This study aims to investigate the relationship between land titling and access to credit, insurance, government subsidies, and other benefits, and to determine whether these advantages lead to increased overall land productivity.

The following objectives are addressed in the present study with a primary survey in the State of West Bengal:

vi. To study the nature of existing land titling legislation in West Bengal.

vii. How clear land titling improves access to institutional credit

viii. To explore the relationship between clear land ownership and the benefits of access to government subsidy schemes.

ix. To understand whether clear titles help to overcome risk and uncertainty obtained in the family

x. To explore the relationship between land titling, productivity, and net profit in the crop sector.

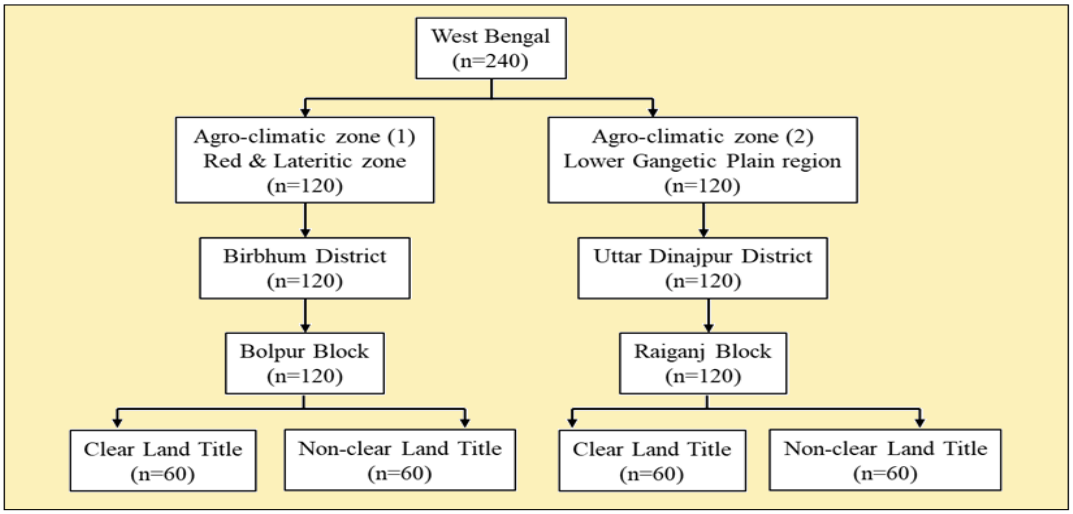
1.8 Database and Methodology

In West Bengal, the study was conducted by the Agro-Economic Research Centre (AERC), Santiniketan. Two districts, Birbhum and Uttar Dinajpur, were purposively selected to represent different Agro-Climatic Zones of the state. Within each district, two blocks were chosen: Bolpur from Birbhum and Raiganj from Uttar Dinajpur. From each selected block, 1–2 villages were identified, and a detailed household survey was carried out using a pre-designed questionnaire.

In total, 240 households were surveyed—120 from each district. Within each district, 60 farmers with clear land titles and 60 farmers without clear land titles were selected, ensuring a balanced comparison group. Data collected included information on landholding details, area under cultivation, access to institutional credit, and access to government subsidies.

To meet the study's objectives, various analytical tools are employed in Chapter 6, including the Gini coefficient (to measure inequality), Ordinary Least Squares (OLS) regression, the Cobb-Douglas production function (to estimate production relationships), and allocative efficiency analysis using the Marginal Value Product to Marginal Factor Cost (MVP: MFC) ratio.

Sampling Design



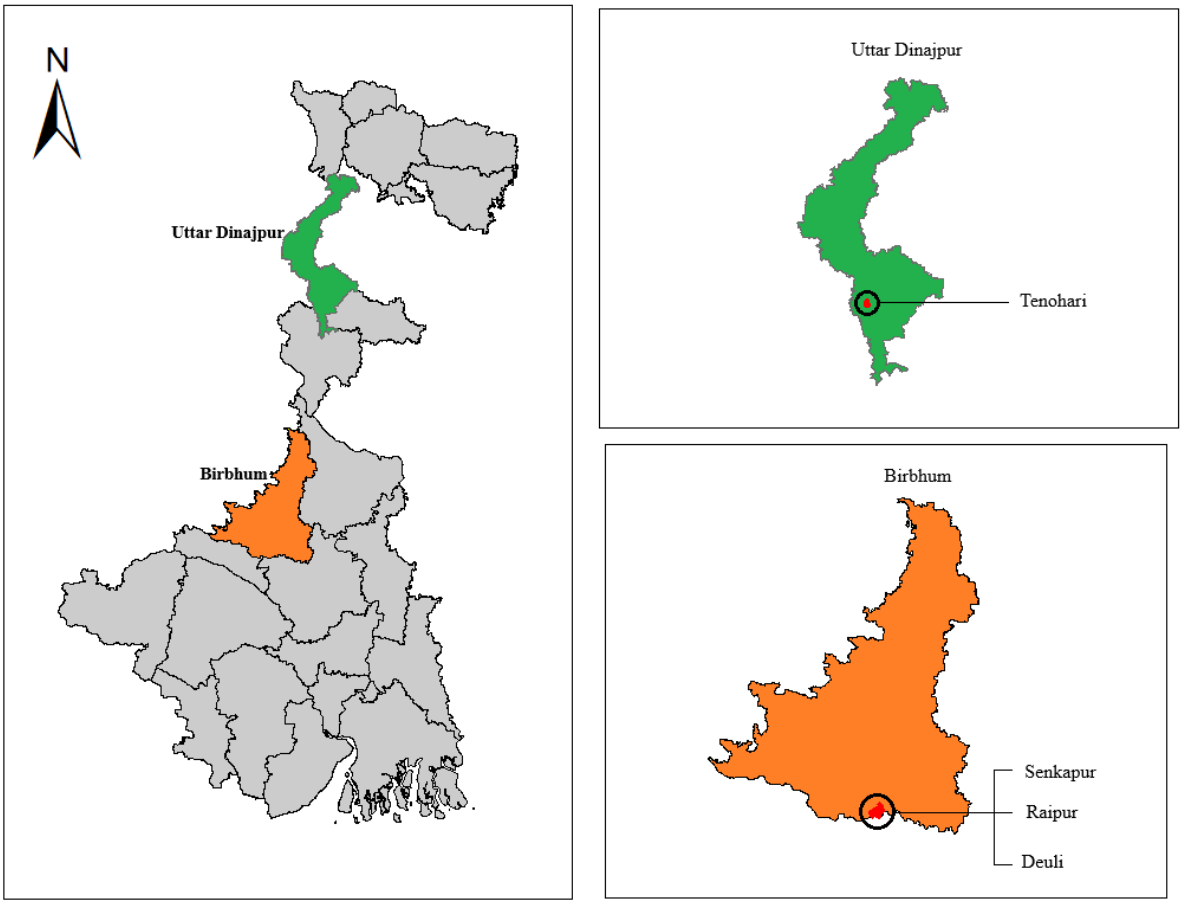


Figure 1.8.1: Survey Region

Chapter 2
Nature of Existing Land Titling Legislation in West Bengal

2.1 Introduction

The Indian Registration Act, 1908, specifies that it is mandatory to register the transfer of any property with the Registrar. To obtain the rights to the immovable property transferred, it must be registered first. The West Bengal property registration comes under the Department of Revenue. Without registering the property, you have no legal right to it, even if you have cleared all your dues with the builder and there are no encumbrances. The property registration process creates ownership rights over a property. Without proper property registration, a buyer has no legal right over the property, and the seller cannot sell it to anyone under the Transfer of Property Act.

2.2 Land and Legislature

According to an order issued by the Supreme Court of India in 2011[2], transferring property through a general power of attorney is deemed invalid. Moreover, even an irrevocable power of attorney cannot be used for transferring title to the recipient. Therefore, a GPA is not a valid consideration for the sale/purchase of a property. Transactions related to an immovable property can only be done by a stamped and registered conveyance deed, as applicable under the West Bengal Transfer of Property Act.

Registration brings legality and authenticity to the entire property transfer transaction. This can be beneficial in the future for inheritance and the use of the property. The benefits of property registration are as follows:

i. To assure genuine documents
ii. Prevent fraud
iii. To ensure proper documentation of the ownership title
iv. Maintains the records of every property that comes under the purview of the state

Land record of any property is a repository of information about the concerned property, including the name of the owner, area of the land, plot number, present owner of the property, and value of the property, among others. Like any other state in India, West Bengal also has an online portal, "Banglarbhumi", through which you can get access to land record details of your property. The portal helps you gather land record details, including the Record of Rights, in a hassle-free manner with a quick turnaround time. Note that land record details serve as important data for both the buyer and seller during a property transaction. Banglabhumi is an online web portal for land records and reforms launched by the Government of West Bengal. Anyone can use this portal to access land and property-related information, including the owner's name, land area, plot number, property value, and the current owner's details. The Banglarbhumi portal provides all the necessary details, along with a land map, for

[2] Judgment titled "Suraj Lamps & Industries Pvt Ltd. v. State of Haryana and another (Special Leave Petition (C) No.13917 of 2009-Decided on 11-10-2011).
https://revenue.delhi.gov.in/sites/default/files/revenue/generic_multiple_files/faq_circular_bm.pdf

properties located in West Bengal. It also assists entrepreneurs intending to set up new industries in the state by letting them know the infrastructure available at the proposed location. A user can also retrieve the information about their block by just filling in the district and block details.

2.3 Documents required for property registration

- Identity proof: Aadhaar card, Voter ID, PAN card, passport, driving license.
- Assessment slip, which has market value, stamp duty, and registration fee applicable on the property.
- PAN card or Form 60, along with identity card and address proof of both parties.
- Stamp duty and registration fee payment acknowledgment.
- Permission from the authority, if applicable.

Stamp Duty is a percentage of the transaction value charged by the West Bengal State Government on every registered property transaction. In contrast, the Deed Number refers to the unique registration number assigned to a document once it has been officially recorded by the relevant authority. Both are essential for the property registration process. Movable or immovable property can be transferred within blood relations without any monetary consideration through a Gift Deed or a Will. A key advantage of a Gift Deed is that it can be executed during the donor's lifetime, whereas a Will becomes effective only after the death of the testator. Therefore, a Gift Deed is an ideal option when the intention is for the recipient(s) to benefit immediately from the property transfer.

2.4 Land Reforms and Relevant Land Laws in West Bengal

Following independence, the land laws in the State of West Bengal have undergone various changes. Land reforms in post-independence West Bengal began with the enactment of *the West Bengal Non-Agricultural Tenancy Act, 1949,* and *the West Bengal Bargadars Act, 1950*. Then came *the West Bengal Estates Acquisition Act, 1953,* which came into force on February 12, 1954, and primarily abolished the Zamindari or intermediary system, as well as all estates and rent-receiving interests in each estate. All the estates in the State of West Bengal were vested in the State free from all encumbrances, and a ceiling was imposed on the holding of land.

The comprehensive measures of land reforms were introduced by the *West Bengal Land Reforms Act, 1955,* which came into force in February 1956. The Act has undergone several significant amendments since its enactment. All kinds of land have been brought within the purview of the said Act, and a family ceiling has been imposed on land holding. Apart from the said Acts and the Central Acts, a few other Acts are relevant land laws in West Bengal, namely:

i. The Urban Land (Ceiling & Regulations) Act, 1976
ii. The West Bengal Land (Requisition and Acquisition) Act, 1948
iii. The West Bengal Inland Fisheries Act, 1984
iv. East Kolkata Wetlands (Conservation and Management) Act, 2006

v. West Bengal Thika Tenancy (Acquisition and Regulation) Act, 2001

vi. The West Bengal Town and Country (Planning & Development) Act, 1979

Therefore, the comprehensive effect of all the aforesaid Acts is as follows:

All lands in the State of whatsoever nature, wherever and howsoever situate, are vested in the State and a raiyat, which means a person (which includes a family) or an institution holding land for any purpose whatsoever, is entitled to hold land, which is transferable and heritable, under the State within the ceiling limit.

A raiyat is entitled to hold land to the extent (ceiling limit) as follows:

Table 2.4.1: Land Ceiling Entitlements for Raiyats

Raiyat	Irrigated area	Non-irrigated area
An adult unmarried person or the sole survivingmember of a family	2.5 standard hectares(6.18 acres)	3.50 standard hectares (8.65acres)
A family consisting of 2 to 5 members	5 standards Hectares (12.35 acres)	7 standard hectares (17.30 acres)
Family of more than five members	5 standard hectares + 0.5 standard hectares(1.24 acres) for each member above five, subject to 7 standard hectares	7 standard hectares + 0.7 standard hectares (1.73 acres) for each member above five, subject to 9.80 standard hectares (24.22 acres)
Family of 9 or more members	7 standard hectares	9.80 standard hectares
Any other rayat (which inter alia includes company)	7 standard hectares	9.80 standard hectares

Source: West Bengal Legislature. (1955)

A raiyat or an intermediary or a lessee holding land in a tea garden, mill, factory, or workshop is entitled to retain so much of such land as, in the opinion of the State Government, is required for the aforesaid purpose, and the same may be more than the above ceiling limit.

A raiyat's land may be subject to further vesting if, by any subsequent acquisition on account of transfer, inheritance, or otherwise, the land exceeds the ceiling area of a raiyat.

Any person holding vacant land in an urban agglomeration shall also be subject to the ceiling limit of five hundred square meters to two thousand square metres, depending upon the location of the land as per the categorization under the applicable Act.

No construction is permitted on any agricultural land.

No conversion is permitted of water areas measuring 5 Cottahs (0.035 hectares) or more.

The area of the wetland is prescribed under the Act. No change of character or mode of use is permitted without the sanction of the prescribed authority.

Broadly speaking, two types of land are available for setting up an industry or for other commercial purposes: government lands and private lands. The government lands are those which are vested in the State under the aforesaid Acts or have been acquired by the government for public purposes through the concerned Acts and the amendments thereto.

Land, one of the most critical resources for Industry, has been a key focus area of the State. The status of land availability, in the industry parks and projects, for setting up industry has been made available in the public domain through the various nodal agencies - West Bengal Industrial Development Corporation (WBIDC), West Bengal Industrial Infrastructure Development Corporation (WBIIDC) and West Bengal Small Industries Development Corporation (WBSIDC).

Generally, the government, through its nodal agencies, offers the vested and/or acquired lands upon identification thereof, to the interested industry houses by:

i. granting long-term leases, or

ii. through auctions to the highest bidder.

The private lands, upon identification thereof, can be directly purchased from the respective individual raiyats/owners at and for the agreed consideration. The interested entrepreneurs shall be required to go through the following process, normally for acquiring the right title and interest in respect of the specific plot or plots of land:

i. Identification of land.

ii. Investigation of the title of land ownership (applicable for private lands). Such investigations are generally required to be done with the offices as follows:

iii. concerned Sub-Registrar, the District Registrar and Registrar of Assurances, Kolkata, who has the power to register any document in any district,

iv. the Land Acquisition Collector,

v. Block Land & Land Reforms Officer,

vi. the courts in the Senior Division and the Junior Division have jurisdiction

vii. the local authority- Municipality or Panchayet;

viii. Public Notification (optional for private lands);

ix. Completion of transaction through registration;

x. Mutation of name;

xi. Conversion or change of character and/or nature of land to the proposed use of land as required;

The following are the historical acts leading to land and property ownership:

i. West Bengal Non-Agricultural Tenancy Act 1949

Primarily deals with the mode of use, leasing, determination of rent, and other aspects of non-agricultural land, as well as the causes of eviction or protection of non-agricultural tenants. The Act guarantees transfer and inheritance rights.

ii. West Bengal Estate Acquisition Act 1953

The rights and interests of the intermediaries vested in the state on 15 April 1955. By it, none of the intermediaries, ryots or under ryots could hold land above the ceiling U/s 6 (1) of the Act. However, tanks, fisheries, religious and charitable trusts, poultry, livestock breeding, and dairy farming are excluded from the ambit of the EA Act 1953. It also failed to check the tactics of large landlords who kept excess land on the books through fictitious transfers and false names.

iii. West Bengal Land Reforms Act, 1955

The land ceiling provisions in this Act have been exhaustively amended to make them industry-friendly, and the State Government, for the first time, has introduced the State Land Policy, 2012.

iv. West Bengal Land Reform (Amendment) Act 1981:

Changed the definition of land, which meant land of every description and classification, also land in mills, factories, workshops, tea gardens, poultry, dairy, livestock etc

U/s 3A of the amended Act, all rights and interests in land came within the purview of the West Bengal Nonagricultural Tenancy Act 1949, and it got vested in the state with effect from 9.9.1980

Determined the ceiling provision of land for tea gardens, mills, factories, workshops, poultry, dairy, and livestock breeding.

2.5 Conclusion

Chapter 2 provides an overview of the nature of existing land titling legislation in West Bengal, outlining both the statutory framework and the institutional mechanisms that govern land rights, registration, and ceiling provisions. The chapter highlights that land governance in the state is shaped by a long history of legislative reforms, beginning with the West Bengal Non-Agricultural Tenancy Act of 1949, followed by major structural changes introduced through the Estate Acquisition Act of 1953 and the West Bengal Land Reforms Act of 1955 (along with its subsequent amendments). These legislations collectively define the rights of ryots, regulate land transfers, impose restrictions on alienation, especially for SC/ST households, and establish ceiling limits for different categories of landholders.

The chapter also explains the multi-layered institutional arrangements involved in changing land ownership, including Sub-Registrars, Revenue Officers, Land Reforms Officers, Collectors, and local bodies such as Municipalities and Panchayats. Each entity plays a distinct role in ensuring legal clarity, documentation, mutation, and conversion of land use. The process is therefore highly procedural, involving registration, public notification, verification of documents, and mutation of names, all of which are essential for establishing clear ownership.

The review highlights that land legislation in West Bengal is comprehensive yet complex, characterized by overlapping acts, amendments, and administrative procedures. The framework is designed to protect cultivators' rights—particularly those of vulnerable groups—while regulating land markets and preventing concentration of ownership. However, the multiplicity of procedures and legal requirements

also makes the process of securing and updating land titles lengthy and often cumbersome for ordinary farmers. Understanding this legislative context is crucial, as it forms the foundation for analyzing issues of land title clarity, ownership security, and their implications for agricultural access, credit, and welfare in subsequent chapters.

Chapter 3
Socio-Economic Characteristics of Respondent Farmers in West Bengal

3.1 Introduction

This chapter provides a detailed profile of the socio-economic and agrarian characteristics of the sample households surveyed in West Bengal. Understanding these characteristics is essential, as land titling does not operate in isolation; its effects are mediated by farmers' demographic attributes, resource base, asset ownership, social participation, and cropping behaviour. This chapter, therefore, establishes the foundational context needed for analysing later chapters on credit access, subsidies, production efficiency, and productivity outcomes.

The chapter begins by describing the key socio-economic traits of the respondents—age structure, educational attainment, caste composition, and occupational patterns—highlighting the differences between farmers with clear land titles and those without them. Since the sample is dominated by marginal farmers in both categories, the analysis also pays particular attention to variations within marginal, small, and semi-medium groups, as these classifications shape resource use and livelihood strategies. Subsequently, the chapter examines landholding patterns, including ownership, leasing behaviour, operated land area, and recent land transactions. These indicators help reveal how secure versus insecure tenure affects land market participation, leasing arrangements, and operational flexibility. Irrigation sources, asset ownership (both household and agricultural), and participation in social or community institutions are also analyzed, as these factors influence both production capacity and access to institutional services. The cropping pattern analysis offers further insight into how title status may be associated with crop choice, diversification, and agricultural intensity.

By presenting these descriptive characteristics systematically, the chapter sets the empirical baseline for the study. This socio-economic and agrarian profile is crucial for evaluating how title clarity influences credit, subsidies, risk exposure, and productivity in the subsequent chapters.

3.2 Socio-Economic profile of the sample respondents

The socio-economic characteristics of the sample respondents are presented in Table 3.2.1. Before proceeding to the analysis, it is important to reiterate the sample categories, namely, clear titled farmers and non-clear titled farmers. Clear Land Title Farmers are those who possess formal land documents registered in their own name and personally cultivate their land. Non-Clear Land Title Farmers are those who own land but do not have clear, formal documents in their own name. In many cases, the land records remain in the name of an ancestor or another family member. These farmers cultivate the land themselves, but without a legally recognized title.

The analysis reveals that the majority of farmers in both clear and non-clear land title categories are marginal farmers. Specifically, there are 100 marginal farmers with clear titles and 107 marginal farmers without clear titles, indicating that marginal landholders form the backbone of the agricultural workforce in the surveyed regions. There were no observations of large farmers in either category. In terms of age distribution, among the marginal farmers with clear land titles, 30.95 % belong to the senior age group (above 60 years), 46.03 % fall in the middle-aged category (36–59 years), and only 2.38 % are in the

younger age group (18–35 years). A similar trend is observed in the non-clear title group, where the majority of marginal farmers (55.83%) fall into the middle-aged category, followed by 20% in the senior group and 13.33% in the younger group. This suggests that most cultivators are in the productive age group, although the low proportion of young farmers indicates limited generational continuity in the agricultural sector.

The caste composition of the farmers reveals notable contrasts between the two groups. Among farmers with clear land titles, the Scheduled Castes (SC) constitute the majority at 72.22 %, followed by General category farmers at 19.84 %, Other Backwards Classes (OBC) at 6.35 %, and Scheduled Tribes (ST) at 1.59 %. In contrast, among the non-clear land title holders, General category farmers are the majority (55.83%), followed by SCs (34.17%), while the proportions of OBC and ST farmers are equal, each constituting 5 % of the group. This distribution highlights the relatively disadvantaged socio-economic position of SC farmers, many of whom hold formal land titles, while a substantial proportion of General category farmers are engaged in cultivation without clear legal ownership.

The average farming experience among clear title holders is slightly higher, recorded at 30.5 years, compared to 25.6 years among the non-clear title farmers. This suggests that those with legal ownership of land tend to have longer-term engagement and investment in agriculture, possibly due to a sense of stability and permanence afforded by secure tenure (Maxwell & Wiebe, 1999; Fraser, 2004).

Education levels among household members present a mixed picture. Illiteracy is significantly higher among non-clear land title farmers (28.33%) compared to those with clear land titles (14.29%). Among those with clear titles, 26.98% have attained primary education, and 54.76% have reached secondary and higher secondary levels. In contrast, 27.5% of family members in non-clear title households have completed primary education, and 41.67% have pursued secondary education. A small percentage in both groups have obtained college-level qualifications (3.97% in clear title, 2.5% in non-clear title), but none have pursued a degree or above. These findings indicate a modest level of educational attainment across the board, with households without a clear title lagging slightly behind.

Family composition also shows subtle differences. On average, clear title farmers have a family size of 4.42 members, whereas non-clear title farmers have an average family size of 4.53 members. Among the clear title households, 46.19% are male members, 38% are female, and 15.81% are children. In the non-clear title households, the share of children is relatively higher at 21.37%, with 42.57% male and 36.06% female members. The higher proportion of children in non-clear title families may imply a higher dependency burden, which could have implications for household consumption and education expenditure.

Occupation-wise, all respondents are primarily engaged in cultivation. However, secondary occupations differ markedly between the two groups. Among clear land title farmers, 10.32% are also engaged as agricultural labourers, 5.56% in non-agricultural labour, 24.6% in self-employment, 13.49% are salaried employees or pensioners, and 1.59% are involved in other occupations. In comparison, a much larger proportion of non-clear title farmers (30.83%) supplement their income through agricultural labour. Additionally, 8.33% are engaged in non-agricultural labour, 11.67% in self-employment, 1.67% are salaried, and 6.67% are employed in other services. This reflects a greater economic diversification and reliance on wage labour among the non-clear land title group, which may stem from their uncertain land tenure and limited access to productive resources.

A key distinction between the two groups lies in land ownership. All farmers with clear land titles are

also owners of the land they cultivate. On the other hand, none of the non-clear title respondents own the land they farm. Moreover, 13.33% of these non-owners reside on the same land that they cultivate, with 12.5% being marginal farmers and 0.83% being small farmers. This indicates a precarious living and working arrangement among non-title holders, exposing them to risks of displacement and limited access to institutional support mechanisms.

Overall, the socio-economic profiling of respondents reveals that land title clarity is associated with longer farming experience, higher educational attainment, greater land ownership security, and diversified livelihood options. In contrast, the absence of legal land titles is correlated with higher dependence on informal occupations, greater illiteracy, and a lack of tenure security, particularly among farmers in the General category and younger households. These differences are crucial for understanding the broader implications of land titling on rural livelihoods and access to agricultural development schemes.

Table 3.2.1: Socio-Economic profile of the sample respondents

Particulars	Unit	Clear title					Non-Clear Land title				
		Marginal	Small	Semi-Medium	Large	Overall	Marginal	Small	Semi-Medium	Large	Overall
Age of Respondent	No and percentage in parentheses.										
Young (18-35 years)		3	2	0	0	5	16	0	0	0	16
		2.50	1.67	0.00	0.00	4.17	13.33	0.00	0.00	0.00	13.33
Middle age (36-59 years)		55	12	3	0	70	67	8	3	0	78
		45.83	10.00	2.50	0.00	58.33	55.83	6.67	2.50	0.00	65.00
Senior (above 60 years)		36	8	1	0	45	24	2	0	0	26
		30.00	6.67	0.83	0.00	37.50	20.00	1.67	0.00	0.00	21.67
Total number of respondents		**94**	**22**	**4**	**0**	**120**	**107**	**10**	**3**	**0**	**120**
		78.33	**18.33**	**3.33**	**0.00**	**100.00**	**89.17**	**8.33**	**2.50**	**0.00**	**100.00**
Caste Category of the respondent	No and percentage in parentheses.										
SC		68	15	2	0	85	36	4	1	0	41
		56.67	12.50	1.67	0.00	70.83	30.00	3.33	0.83	0.00	34.17
ST		2	0	0	0	2	5	0	1	0	6
		1.67	0.00	0.00	0.00	1.67	4.17	0.00	0.83	0.00	5.00
OBC		7	1	0	0	8	4	2	0	0	6
		5.83	0.83	0.00	0.00	6.67	3.33	1.67	0.00	0.00	5.00
General		17	6	2	0	25	62	4	1	0	67
		14.67	5.00	1.67	0.00	20.83	51.67	3.33	0.83	0.00	55.83
Total		**94**	**22**	**4**	**0**	**120**	**107**	**10**	**3**	**0**	**120**
		78.33	**18.33**	**3.33**	**0.00**	**100.00**	**89.17**	**8.33**	**2.50**	**0.00**	**100.00**
Farming experience of the respondent	Years	**30.97**	**31.04545**	**29.5**	**0**	**30.50515**	**25.37383**	**26.7**	**24.66667**	**0**	**25.58017**
Education of family members	%										
Illiterate		9.52	3.17	1.59	0.00	14.29	26.67	1.67	0.00	0.00	28.33
Primary		24.60	2.38	0.00	0.00	26.98	24.17	2.50	0.83	0.00	27.50

Secondary and higher secondary		40.48	12.70	1.59	0.00	54.76	35.00	5.83	0.83	0.00	41.67
College /diploma / ITI		3.97	0.00	0.00	0.00	3.97	2.50	0.00	0.00	0.00	2.50
Degree and above		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**78.57**	**18.25**	**3.17**	**0.00**	**100.00**	**88.33**	**10.00**	**1.67**	**0.00**	**100.00**
Family composition											
Male	%	46.39	47.01	36.67	0.00	46.19	43.17	39.86	26.67	0.00	42.57
Female		37.82	37.55	45.00	0.00	38.00	35.46	41.25	36.67	0.00	36.06
Children		15.80	15.45	18.33	0.00	15.81	21.37	18.89	36.67	0.00	21.37
Total size of the Family (No)		**4.27**	**4.61**	**7.00**	**0.00**	**4.42**	**4.45**	**5.08**	**5.50**	**0.00**	**4.53**
Occupation											
Agriculture/cultivators	%	77.78	18.25	3.17	0.00	100.00	88.33	10.00	1.67	0.00	100.00
Agriculture labour		10.32	0.00	0.00	0.00	10.32	30.00	0.83	0.00	0.00	30.83
Non-agriculture labour		3.97	1.59	0.00	0.00	5.56	8.33	0.00	0.00	0.00	8.33
Self-business		20.63	3.97	0.00	0.00	24.60	10.83	0.83	0.00	0.00	11.67
Salary/pension, etc.		0.00	0.00	0.00	0.00	13.49	0.83	0.83	0.00	0.00	1.67
Others		1.59	0.00	0.00	0.00	1.59	5.00	1.67	0.00	0.00	6.67
% of cultivators are also owners of the land	%	**78.57**	**18.25**	**3.17**	**0.00**	**100.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
% of non-owners sharing the same residence		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.50**	**0.83**	**0.00**	**0.00**	**13.33**

Source: Field Survey

3.3 Land Holding Details

The operational landholding pattern of the sample respondents in the study area is presented in Table 3.4.1 A closer look at the data reveals notable differences in land ownership and use between farmers with clear land titles and those without.

Among the clear title holders, marginal farmers reported an average owned landholding of 1.44 acres and an average leased-in area of 0.14 acres. This brought their net operating area to an average of 1.28 acres, of which 86% was under irrigation. Small farmers with clear titles operated an average of 3.39 acres, which included 3.14 acres of owned land, 0.37 acres of leased-in land, and 0.06 acres of fallow land. Out of this, 2.89 acres (approximately 83.67%) were irrigated. Semi-medium farmers under the clear title category cultivated an average of 6 acres, comprising 4.33 acres of owned land and 2.17 acres of leased-in land. Notably, the entire net-operated area for this group was irrigated (100%).

In contrast, non-clear title farmers had significantly lower owned landholdings: 0.57, 1.29, and 1.67 acres for marginal, small, and semi-medium farmers, respectively. However, these farmers reported higher leased-in land areas, averaging 0.55, 1.92, and 4.83 acres across the same categories to gain economies of scale.

For farmers with clear land titles, marginal households lease out an average of 0.24 acres, while for those with non-clear titles, the figure stands at 0.02 acres. Although the magnitude is small, the very presence of leased-out land among marginal farmers challenges the conventional expectation that only larger farmers lease out land and smaller farmers primarily lease in. Marginal farmers own very small or scattered parcels in the survey area that are not economically viable for them to cultivate. Leasing out these plots becomes a rational choice to reduce cultivation costs or avoid inefficiency.

On average, the total net operated area for clear title farmers was 1.80 acres, with 86.47% of it being irrigated. Non-clear title farmers operated on a slightly smaller average of 1.43 acres, although a higher proportion of it—87.33%—was irrigated.

A notable observation is that farmers with clear land titles tend to own more land, whereas those with non-clear titles rely more heavily on leased-in land. Correspondingly, non-clear title farmers incur higher average rental costs, paying Rs. 13,878.08 per acre, compared to Rs. 13,405.26 per acre paid by their clear title counterparts.

3.4 Irrigation source

The irrigation sources utilized by the sample farmers are detailed in Table 3.4.2. The study considered tube wells, open wells, canals, and other sources, including groundwater and surface water, for assessing irrigation access. However, the findings indicate a clear predominance of tube wells across both groups.

In farms with clear land titles, tube wells accounted for approximately 89.42% of the total cultivated area through irrigation. Similarly, in the case of non-clear title farms, approximately 88.76% of the cultivated land was irrigated using tube wells. Notably, no other sources of irrigation—such as canals, open wells, or surface water—were reported in the surveyed areas.

Table 3.4.1: Land holding details of the household (acres per household)

Particulars	Clear title					Non-Clear Land title				
	Marginal	Small	Semi-Medium	Large	Overall	Marginal	Small	Semi-Medium	Large	Overall
Owned farmland	1.44	3.14	4.33	0.00	1.83	0.57	1.29	1.67	0.00	0.66
Leased-in	0.14	0.37	2.17	0.00	0.24	0.55	1.92	4.83	0.00	0.77
Leased out	0.24	0.06	0.00	0.00	0.20	0.02	0.00	0.00	0.00	0.02
Fallow land	0.05	0.06	0.50	0.00	0.07	0.01	0.00	0.00	0.00	0.01
Net operated area	1.28	3.39	6.00	0.00	1.80	1.12	3.21	6.50	0.00	1.43
Net irrigated area	1.13	2.89	6.00	0.00	1.61	0.93	3.03	6.50	0.00	1.25
Net irrigated area as a % of operated area	86.29	83.67	100.00	0.00	86.47	86.40	93.50	100.00	0.00	87.33
Rent paid for leased-in land (Rs per acre)	15075.00	12720.00	5100.00	0.00	13405.26	13758.09	14723.14	15000.00	0.00	13878.08
Rent received for leased-out land (Rs per acre)	14120.00	18000.00	0.00	0.00	14362.50	11460.00	0.00	0.00	0.00	11460.00

Source: Field survey

Table 3.4.2: Land area under different irrigation sources (% of total irrigated area)

Particulars	Clear title					Non-Clear Land title				
	Marginal	Small	Semi-Medium	Large	Overall	Marginal	Small	Semi-Medium	Large	Overall
Irrigation by tube well/pump set	1.13 (89.11)	2.89 (84.35)	6.00 (100)	0.00	1.61 (89.42)	0.93 (85.17)	3.03 (95.20)	6.50 (100)	0.00	1.25 (88.76)
Irrigation by open well	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Irrigation by canal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Irrigation by combining ground and surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Irrigation by other sources	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dryland	0.14 (10.89)	0.54 (15.65)	0.00	0.00	0.19 (10.58)	0.16 (14.83)	0.15 (4.80)	0.00	0.00	0.16 (11.24)
Total	1.27 (100)	3.43 (100)	6.00 (100)	0.00 (100)	1.80 (100)	1.09 (100)	3.18 (100)	6.50 (100)	0.00 (100)	1.41 (100)
Water charges (Rs per acre)	7000.617	9532.857	8310	0	7513.026	6746.289	7926.666	6225	0	6834.999

Abbreviation: The irrigation source of all the farmers is the tube well/pump

Source: Field survey

3.5 Land transaction

Land transactions undertaken by the sample farmers over the past five years (2015-2020) are summarized in Table 3.5.1. The analysis reveals that land purchase activity was more prevalent among farmers with clear land titles. Among this group, only those who had made purchases reported acquiring an average of 0.239 acres of land, at an average price of ₹7,93,428.60 per acre. From the total land purchased, approximately 0.28 acres were under irrigation, and 0.020 acres were classified as non-agricultural land.

Regarding land sales, farmers with clear titles sold an average of 0.30 acres and received an average price of ₹22,36,875 per acre. A total of 21 farmers reported land sales—16 from the clear title group and 5 from the non-clear title group. Among the clear title farmers who sold their land, 12.50% cited "difficulty in management" as the reason for the sale, while 50% indicated "family needs," and the remaining 37.50% referred to "other reasons," which included repayment of loans or purchasing new land.

In contrast, non-clear title farmers who had engaged in land purchases reported acquiring an average of 0.189 acres at a significantly higher average price of ₹42,10,332 per acre. However, the average land sold by non-clear title farmers (only five individuals) was slightly higher at 0.33 acres, but the sale price was lower, averaging ₹11,10,000 per acre. Among these sellers, 20% reported selling due to "difficulty in management," and the remaining 80% due to "family needs."

The data suggest that farmers holding clear land titles were able to command significantly higher prices while selling land compared to their counterparts with non-clear titles. This price differential likely stems from the greater legal certainty and reduced risk of dispute associated with clear-titled land, making it more attractive to potential buyers.

Table 3.5.1: Land transaction details of the households for past five years

Particular	Clear title					Non-clear title				
	Marginal	**Small**	**Medium**	**Large**	**Overall**	**Marginal**	**Small**	**Medium**	**Large**	**Overall**
Total land purchased (acres per hh)	0.167	0.417	0.00	0.000	0.239	0.117	0.333	0.00	0.000	0.189
Amount paid (Rs per acre)	810800.1	750000	0.00	0.00	793428.6	5360001	1911000	0.00	0.00	4210332
Purchased land Irrigated (acres)	0.20	0.42	0.00	0.00	0.28	0.12	0.33	0.00	0.00	0.19
Purchased land dry land (acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchased land pastureland (acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Purchased land nonagricultural (acres)	0.020	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Land sold (acres)	0.25	0.31	0.83	0.00	0.30	0.33	0.33	0.00	0.00	0.33
Total amount received (Rs per acre)	2612500	1180000	900000	0.00	2236875	1087500	1200000	0.00	0.00	1110000
Reasons for sale -										
Drought (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Health issues (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Difficulty to manage (%)	6.25	6.25	0.00	0.00	12.50	20.00	0.00	0.00	0.00	20.00
Family needs (%)	43.75	0.00	6.25	0.00	50.00	60.00	20.00	0.00	0.00	80.00
Others (%)	25.00	12.50	0.00	0.00	37.50	0.00	0.00	0.00	0.00	0.00
Gift obtained (acres per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gift given (acres per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Mean values are calculated only for those who have done a transaction of land.

Source: Field survey

3.6 Details of land owned by the head of the family

The details regarding land titles, whether owned by the head of the family, other family members, or someone outside the family, are presented in Table 3.6.1. The data reveal that although the head of the family acts as the main cultivator in both clear and non-clear title groups, a key distinction lies in ownership: while clear title farmers often have land registered in the name of the head, in the case of non-clear title farmers, the land is generally not in the cultivator's name.

Among the clear title holders, marginal, small, and semi-medium farmers own 1.45, 3.19, and 4.33 acres of land, respectively. However, the portion of land titled in the name of the head of the household is slightly lower, 1.23, 2.48, and 2.75 acres, respectively, indicating that some of the land is registered in the name of parents (living or deceased) or other family members. In contrast, among non-clear title farmers, marginal, small, and semi-medium farmers own 0.93, 1.85, and 0.5 acres of land, respectively, but none of the land is titled in their own names.

In aggregate, 23.81% of clear title farmers have land registered in the name of other living family members, compared to only 11.67% among non-clear title farmers. Additionally, 14.29% of clear title farmers and 48.33% of non-clear title farmers have land in the names of deceased parents. Notably, 17.46% of clear title farmers and as high as 65% of non-clear title farmers reported that the land title is in the name of individuals outside the family. Both groups, including those with clear and non-clear title farmers, also cultivate leased-in land. On average, clear title farmers pay ₹13,485 per acre per annum for leased land, while non-clear title farmers pay a slightly higher rate of ₹13,898.40 per acre.

The lack of a clear title in the name of the cultivator has tangible implications for access to government schemes and institutional credit. Among non-clear title farmers, 2.50% of marginal and 0.83% of small farmers with land titled in the name of another living family member reported being deprived of government subsidies and credit access. When the title was in the name of a deceased family member, 51.67% of marginal and 3.33% of small farmers faced such deprivation. Similarly, 8.73% of marginal farmers from the clear title group also felt deprived of full benefits from government schemes due to partial ownership. The situation is particularly severe when the land is titled in the name of individuals outside the family. In such cases, 65.83% of non-clear title farmers reported being deprived of government subsidies and institutional credit. Overall, 49.17% of non-clear title farmers reported being unable to access any subsidies, 18.33% were ineligible for institutional credit, 21.67% could not receive government compensation, and 10.83% expressed general constraints and feelings of exclusion from schemes due to a lack of proper title documentation.

These findings underscore the critical importance of land titling in the name of the actual cultivator, not only for legal clarity but also for effective access to government support mechanisms.

Table 3.6.1: Other details of title owned by head of family, other family members, or by somebody else

Particular	Clear title					Non-clear title				
	Marginal	Small	Semi-Medium	Large	Overall	Marginal	Small	Semi-Medium	Large	Overall
The head is also being main cultivator (%)	100	100	100	0.00	100	100	100	100	0.00	100
Size of land owned by head (acres)	1.45	3.19	4.33	0.00	1.85	0.93	1.85	0.5	0.00	1.01
Size of land title on head's name (acres)	1.23	2.48	2.75	0.00	1.5	0.00	0.00	0.00	0.00	0.00
Size of land title not owned by the head (acres)	0.73	1.41	3.17	0.00	0.98	0.95	1.85	0.50	0.00	1.02
% hh, which land title is not owned by the head	0.00	0.00	0.00	0.00	0.00	88.33	10.00	1.67	0.00	100.00
% hh in which it is in the name of some other living family members	15.87	6.35	1.59	0.00	23.81	8.33	3.33	0.00	0.00	11.67
% hh in which it is on the parental name who are no longer alive	10.32	3.97	0.00	0.00	14.29	43.33	5.00	0.00	0.00	48.33
% hh in which it is in the name of someone other than family members	10.32	5.56	1.59	0.00	17.46	55.83	7.50	1.67	0.00	65.00
If the title is with someone else, how much are you paying for the cultivation of land (Rs per acre)	15069.23	12720	5100	0.00	13485	13947.73	14757.75	15000	0.00	14060.68
If the title is with some other family member, not the head, then % hh who are deprived of having access to credit and subsidy	0.00	0.00	0.00	0.00	0.00	2.50	0.83	0.00	0.00	3.33
If the title is with a family member no longer alive, then % hh who are deprived of having access to credit and subsidy	8.73	0.00	0.00	0.00	8.73	51.67	3.33	0.00	0.00	55.00
If the title is not in the name of any family member (living or dead), then % hh who are deprived of having access to credit and subsidy	7.94	0.79	0.00	0.00	8.73	58.33	5.83	1.67	0.00	65.83
Other problems faced if land is not in the name of any family member (%):										
To have the State, Central Scheme, and Institutional Loan	32.54	4.76	0.00	0.00	37.30	0.00	0.00	0.00	0.00	0.00
Deprived of having access to credit and subsidies	0.00	0.00	0.00	0.00	0.00	9.17	0.83	0.83	0.00	10.83
Not Eligible for getting institutional credit	0.00	0.00	0.00	0.00	0.00	15.00	3.33	0.00	0.00	18.33
Not able to get any subsidies	0.00	0.00	0.00	0.00	0.00	45.83	2.50	0.83	0.00	49.17
Not able to get the government. compensation/subsidies	0.00	0.00	0.00	0.00	0.00	18.33	3.33	0.00	0.00	21.67

Source: Field survey

Note: % hh in which it is in the name of some other living family members has been calculated only out of those households that hold lands in the name of other family members.

% hh in which it is on the parental name who are no longer alive has been calculated only out of those households that hold lands in the name of the parental name who are no longer alive.

3.7 Asset value holding details

The types of houses, household assets such as mobile phones, two-wheelers, televisions, and computers, along with agricultural equipment like tractors, tillers, ploughs, and harrows, were considered in this study. Table 3.7.1 presents the average value of these assets, while Table 3.8.1 provides the percentage of households owning them.

An analysis of Table 3.6.1 reveals that 23.81% of marginal, 3.97% of small, and 0.79% of semi-medium farmers in the clear title category live in katcha houses. In contrast, among non-clear title farmers, a significantly higher percentage of marginal farmers (48.33%) and 3.33% of small farmers reside in katcha houses. Regarding better housing conditions, 55.56% of marginal, 13.49% of small, and 2.38% of semi-medium farmers with clear title own pucca or semi-pucca houses. Among non-clear title farmers, the figures are relatively higher in some segments: 71.43% of marginal, 40.83% of small, and 5% of semi-medium farmers have pucca or semi-pucca houses.

Despite a somewhat better housing status in some non-clear title groups, a clear disparity is visible in asset values. The average value of household assets for clear title farmers is ₹4,13,172.65, which is significantly lower than that of non-clear title farmers, who report an average of ₹11,51,029.42. However, this contrast is reversed in the case of agricultural assets. On average, clear title farmers report agricultural asset values of ₹8,08,500.63, compared to ₹4,64,412.76 for non-clear title farmers.

This suggests that while non-clear title farmers may possess more valuable household goods, possibly due to non-agricultural income sources, clear title farmers demonstrate a stronger capacity for investment and asset formation within the agricultural sector. The secure ownership of agricultural land likely contributes to their willingness and ability to invest in long-term productive assets.

Table 3.7.1: Assets holding details of clear and non-clear land title respondents – RS per household

Particulars	Clear title					Non-clear title				
	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
Household Assets										
% HH owning katcha house	23.81	3.97	0.79	0.00	28.57	48.33	3.33	0.00	0.00	51.67
% HH with pucca / semi pucca house	55.56	13.49	2.38	0.00	71.43	40.83	5.00	2.50	0.00	48.33
Mobile with internet (Rs per hh)	12148.37	9701.90	19500.00	0.00	13783.42	9785.26	11189.75	15000.00	0.00	11991.67
Mobile w/o internet (Rs per hh)	1381.92	1400.00	2300.00	0.00	1270.48	1526.27	1500.00	1500.00	0.00	1131.57
Refrigerator (Rs per hh)	8285.71	9000.00	0.00	0.00	8642.86	6500.00	0.00	0.00	0.00	6500.00
Television (Rs per hh)	5117.95	4382.35	6000.00	0.00	5166.77	5076.92	5071.43	3666.67	0.00	4605.01
Computer / laptop (Rs per hh)	20000.00	28333.33	0.00	0.00	24166.67	30000.00	0.00	0.00	0.00	30000.00
Inverter (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LPG (Rs per hh)	1934.84	2621.43	1200.00	0.00	1918.76	1339.47	2206.67	1116.67	0.00	1554.27
Bicycle (Rs per hh)	2097.96	1760.00	1550.00	0.00	1802.65	1887.38	1760.00	2833.33	0.00	2160.24
Bullock cart (Rs per hh)										
2-wheeler (Rs per hh)	49500.00	52263.16	67500.00	0.00	56421.05	47500.00	42500.00	42500.00	0.00	44166.67
3-wheeler (Rs per hh)	0.00	0.00	0.00	0.00	0.00	13000.00	0.00	0.00	0.00	13000.00
Personal 4-wheeler (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lorry / Truck (Rs per hh)	0.00	300000.00	0.00	0.00	300000.00	0.00	0.00	0.00	0.00	0.00
Sum (Rs per hh)	100466.75	409462.17	98050.00	0.00	413172.65	116615.31	64227.85	66616.67	0.00	115109.42
Agricultural Equipment/Machinery										
Tractor (Rs per hh)	500000.00	560000.00	1300000.00	0.00	786666.67	450000.00	0.00	0.00	0.00	450000.00
Tiller (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Harrow (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pump set (Rs per hh)	7476.47	8538.89	19000.00	0.00	11671.79	6766.67	7000.00	6250.00	0.00	6672.22
Harvester (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chaff cutter (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plough (Rs per hh)	500.00	0.00	0.00	0.00	500.00	940.00	0.00	0.00	0.00	940.00
Power tiller (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tarpaulin (Rs per hh)	614.94	1055.00	912.50	0.00	860.81	728.98	670.00	550.00	0.00	649.66
Weeder (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sprayer (Rs per hh)	745.00	1459.09	2300.00	0.00	1501.36	902.07	1845.00	2700.00	0.00	1815.69
Thresher (Rs per hh)	7200.00	7700.00	7000.00	0.00	7300.00	4255.56	3500.00	5250.00	0.00	4335.19
Bullock cart (Rs per hh)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sum (Rs per hh)	516536.41	578752.98	1329212.50	0.00	808500.63	463593.27	13015.00	14750.00	0.00	464412.76
Gross total (Rs per hh)	617003.16	988215.15	1427262.50	0.00	1221673.29	580208.58	77242.85	81366.67	0.00	579522.17

Source: Field survey

3.8 Asset possession details

The distribution of household and agricultural assets among respondents across different farm size classes is presented in Table 3.8.1. A review of the data reveals notable differences in asset possession between farmers with clear land titles and those without.

Among households with clear titles, 84.92% own mobile phones with internet connectivity, while 73.81% possess basic mobile phones without internet access. In terms of durable household assets, 7.14% own refrigerators, 77.78% have televisions, and 3.17% possess laptops or computers. A large majority of these households use LPG for cooking (95.24%) and own bicycles (96.83%). Additionally, 52.38% of households own two-wheelers, while only 0.79% own trucks.

In contrast, among households without clear land titles, 80.83% reported having internet-enabled mobile phones, and 55.83% possessed non-internet mobile phones. Ownership of other household assets was considerably lower: only 1.67% had refrigerators, 51.67% owned televisions, and just 0.83% had laptops or computers. LPG usage was reported by 88.33% of these households, while bicycle ownership was slightly higher than that of their counterparts with clear titles at 97.50%. However, two-wheeler ownership stood at only 31.67%, and a mere 0.83% owned a three-wheeler.

Agricultural asset ownership also displayed clear disparities. Among clear title farmers, 3.97% owned tractors, 57.14% had pump sets, 22.50% used ploughs, 84.92% owned tarpaulins, 78.57% had sprayers, and 14.29% possessed threshers (either pedal or motor-driven). In comparison, non-clear title farmers reported much lower ownership: 0.83% owned tractors, 33.33% had pump sets, 5.83% used ploughs, 84.17% had tarpaulins, 68.33% had sprayers, and only 12.50% owned threshers.

These findings indicate that clear title farmers possess more household and agricultural assets overall. This pattern reflects not only a greater degree of financial capacity and investment in agricultural operations but also the greater security and access to credit often afforded by holding a legally recognized title to land.

Table 3.8.1: Assets holding details of clear and non-clear land title respondents – Percentage of respective category households owning

Particulars	Clear title					Non-clear title				
	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
Household Assets										
Mobile with internet	65.87	15.87	3.17	0.00	84.92	72.50	6.67	1.67	0.00	80.83
Mobile w/o internet	57.14	13.49	3.17	0.00	73.81	50.00	4.17	1.67	0.00	55.83
Refrigerator	5.56	1.59	0.00	0.00	7.14	1.67	0.00	0.00	0.00	1.67
Television	61.90	13.49	2.38	0.00	77.78	43.33	5.83	2.50	0.00	51.67
Computer/laptop	0.79	2.38	0.00	0.00	3.17	0.83	0.00	0.00	0.00	0.83
Inverter	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LPG	75.40	16.67	3.17	0.00	95.24	78.33	7.50	2.50	0.00	88.33
Bicycle	77.78	15.87	3.17	0.00	96.83	86.67	8.33	2.50	0.00	97.50
Bullock cart	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-wheeler	34.13	15.08	3.17	0.00	52.38	25.00	5.00	1.67	0.00	31.67
3-wheeler	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.83
Personal 4-wheeler	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lorry / Truck	0.00	0.79	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.00
Agricultural Equipment/Machinery										
Tractor	0.79	2.38	0.79	0.00	3.97	0.00	0.00	0.83	0.00	0.83
Tiller	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Harrow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pump set	40.48	14.29	2.38	0.00	57.14	25.00	6.67	1.67	0.00	33.33
Harvester	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chaff cutter	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plough	5.56	0.00	0.00	0.00	5.56	5.83	0.00	0.00	0.00	5.83
Power tiller	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tarpaulin	65.87	15.87	3.17	0.00	84.92	73.33	8.33	2.50	0.00	84.17
Weeder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sprayer	57.94	17.46	3.17	0.00	78.57	58.33	8.33	1.67	0.00	68.33
Thresher	7.94	4.76	1.59	0.00	14.29	7.50	3.33	1.67	0.00	12.50
Bullock cart	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Field survey

3.9 Social participation details

Table 3.9.1 presents the participation of sample farmers in various social organizations, including cooperative societies, self-help groups (SHGs), farmer producer organizations (FPOs), milk cooperatives, and gram panchayats. The data indicate that farmers, in general, show limited engagement with these institutions. Among farmers with clear land titles, 44.44% reported no participation in any form of social organization. The most common form of association for these farmers was with self-help groups, where 53.17% reported membership. A smaller proportion, 5.56%, was associated with co-operative societies, while only 0.79% reported any link with the gram panchayat.

In comparison, non-clear title farmers exhibited a slightly higher rate of engagement in social organizations. While 35.83% of them were not affiliated with any group, a majority (60.00%) participated in self-help groups. A small percentage were members of co-operatives (3.33%) and local informal loan societies (2.50%).

A notable observation from the data is that non-clear title farmers appear to be more actively involved in social organizations than their counterparts with clear title. One possible explanation for this trend is that non-clear title farmers, who typically face barriers to accessing formal credit due to a lack of land documentation, may rely more heavily on SHGs as an alternative source of financial support. Additionally, the study reveals that awareness of other types of groups and the effective functioning of such social organizations is generally low in the study area, which further limits farmer participation across both groups.

Table 3.9.1: Social Participation – Membership of any NGO and other organizations (percentage of respective category households)

		Clear title					Non-clear title				
Sl.No	Entity Type	Marginal	Small	Semi-medium	Large	Overall	Marginal	Small	Semi-medium	Large	Overall
1	None	37.30	5.56	1.59	0.00	44.44	29.17	5.00	1.67	0.00	35.83
2	Co-operative	3.97	1.59	0.00	0.00	5.56	3.33	0.00	0.00	0.00	3.33
3	Self-Help Group	40.48	11.11	1.59	0.00	53.17	56.67	2.50	0.83	0.00	60.00
4	FPO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Milk Cooperative Society	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Gram Panchayat	0.79	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.00
6	Yuvaka Mandal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Worker's Association	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Local Informal Loan Society	0.00	0.00	0.00	0.00	0.00	1.67	0.83	0.00	0.00	2.50

Source: Field survey

3.10 Cropping pattern

The cropping patterns among clear-title and non-clear-title farmers across different landholding categories in the study area are examined and summarized in Table 3.10.1. A considerable diversity of crops was observed among the farmers, particularly in horticultural crops, although the area under individual horticultural crops remained relatively small. Nonetheless, across locations and farmer groups, a wide range of vegetables were cultivated.

The gross cropped area (GCA) recorded in the study was 539.39 acres, of which 57.18% was cultivated

by clear title farmers and 42.82% by non-clear title farmers. A seasonal breakdown of cropping patterns reveals that in the Kharif, clear title farmers accounted for 32.35% of the total GCA, while non-clear title farmers cultivated 23.27%. During the Rabi season, 12.29% of GCA was under cultivation by clear title farmers, compared to 8.01% by non-clear title farmers. In the summer season, clear title farmers cultivated 12.54% of GCA, while non-clear title farmers cultivated 11.54%.

During the Kharif season, farmers predominantly cultivated bitter gourd, bottle gourd, brinjal, chilli, drumstick, green cowpea, jute, paddy, pointed gourd, radish, and ridge gourd. Non-clear title farmers cultivated a similar range, including bitter gourd, bottle gourd, brinjal, jute, paddy, pointed gourd, ridge gourd, spiny gourd, and wax gourd. Among these, paddy emerged as the major crop for both groups, contributing 30.03% and 21.40% of the total GCA for clear title and non-clear title farmers, respectively, during the Kharif season.

During the Rabi season, clear title farmers cultivated a variety of crops, including bottle gourd, brinjal, broad beans, cabbage, cauliflower, drumstick, green cowpea, maize, mustard, potato, radish, spiny gourd, taro, tomato, wax gourd, and a range of winter vegetables. Non-clear title farmers cultivated a similar set of crops, including bottle gourd, brinjal, cabbage, cauliflower, drumstick, green cowpea, maize, mustard, okra, potato, pumpkin, tomato, and wheat. For both groups, potatoes and mustard emerged as the primary crops in the Rabi season.

During the summer season, clear title farmers cultivated bitter gourd, bottle gourd, brinjal, chilli, cucumber, jute, ladies' finger, maize, paddy, ridge gourd, and wax gourd. Non-clear title farmers, on the other hand, grew bitter gourd, chilli, cucumber, jute, maize, okra, paddy, pointed gourd, ridge gourd, and spiny gourd. In this season, cucumber, maize, and summer paddy were identified as the major crops for both groups. The data reflect a rich diversity in cropping patterns across seasons and title types, with paddy, maize, mustard, potato, and various vegetables forming the dominant share of cultivated area.

Table 3.10.1: Cropping Pattern of the farm household (area under a crop as a percentage of gross cropped area)

Sl. No	Crop Name	Clear title					Non-clear title				
		Marginal	Small	Semi-medium	Large	Overall	Marginal	Small	Semi-medium	Large	Overall
I.	***Kharif***										
1	Bitter Gourd	1.17	0.09	0.00	0.00	1.27	0.70	0.00	0.00	0.00	0.70
2	Bottle Gourd	0.03	0.00	0.00	0.00	0.03	0.06	0.00	0.00	0.00	0.06
3	Brinjal	0.36	0.11	0.05	0.00	0.52	0.27	0.09	0.00	0.00	0.36
4	Chilly	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
5	Drumstick	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
6	Green Cowpea	0.05	0.03	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
7	Jute	0.06	0.22	0.00	0.00	0.28	0.53	0.00	0.00	0.00	0.53
8	Paddy	16.84	10.17	3.03	0.00	30.03	15.07	4.79	1.54	0.00	21.40
9	Pointed Gourd	0.00	0.03	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.03
10	Radish	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
11	Ridge Gourd	0.03	0.00	0.00	0.00	0.03	0.06	0.00	0.00	0.00	0.06
12	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09
13	Wax Gourd	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03
	Sub total	18.63	10.64	3.08	0.00	32.35	16.72	5.01	1.54	0.00	23.27
II.	***Rabi***										
14	Bottle Gourd	0.29	0.37	0.00	0.00	0.66	0.20	0.00	0.00	0.00	0.20
15	Brinjal	0.08	0.06	0.00	0.00	0.14	0.15	0.00	0.00	0.00	0.15
16	Broad Beans	0.08	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
17	Cabbage	0.40	0.00	0.19	0.00	0.59	0.17	0.22	0.00	0.00	0.39
18	Cauliflower	1.25	0.28	0.00	0.00	1.53	0.68	0.31	0.00	0.00	0.99
19	Drumstick	0.11	0.19	0.00	0.00	0.30	0.03	0.00	0.00	0.00	0.03
20	Green Cowpea	0.03	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.03
21	Maize	0.68	0.00	0.00	0.00	0.68	0.03	0.00	0.00	0.00	0.03
22	Mustard	2.98	1.19	0.15	0.00	4.33	1.33	0.28	0.00	0.00	1.60
23	Okra	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
24	Potato	1.32	0.76	1.21	0.00	3.28	1.08	1.92	0.37	0.00	3.36
25	Pumkin	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.03
26	Radish	0.03	0.03	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
27	Spiny Gourd	0.00	0.06	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
28	Taro	0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
29	Tomato	0.28	0.00	0.09	0.00	0.37	0.75	0.25	0.00	0.00	1.00
30	Wax Gourd	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
31	Wheat	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.15
32	Winter Vegetables	0.08	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
	Sub total	7.71	2.94	1.64	0.00	12.29	4.67	2.97	0.37	0.00	8.01
III.	***Summer***										

33	Bitter Gourd	0.28	0.00	0.00	0.00	0.28	0.09	0.00	0.00	0.00	0.09
34	Bottle Gourd	0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
35	Brinjal	0.05	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
36	Chilly	0.00	0.12	0.00	0.00	0.12	0.06	0.31	0.25	0.00	0.62
37	Cucumber	2.66	0.72	0.31	0.00	3.68	2.94	0.34	0.00	0.00	3.28
38	Jute	0.44	0.28	0.25	0.00	0.96	0.33	0.00	0.00	0.00	0.33
39	Ladies' Finger	0.03	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00
40	Maize	2.30	2.16	0.00	0.00	4.47	2.23	0.43	0.25	0.00	2.91
41	Okra	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.00	0.00	0.10
42	Paddy	1.00	1.24	0.49	0.00	2.73	2.88	1.11	0.00	0.00	3.99
43	Pointed Gourd	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00	0.09
44	Ridge Gourd	0.08	0.00	0.00	0.00	0.08	0.05	0.00	0.00	0.00	0.05
45	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.09
46	Wax Gourd	0.08	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
	Sub total	6.97	4.52	1.05	0.00	12.54	8.70	2.35	0.49	0.00	11.54
	Grand total	33.32	18.10	5.77	0.00	57.18	30.09	10.32	2.41	0.00	42.82

Source: Field survey

3.11 Conclusion

This chapter presented the socio-economic characteristics of the sample respondents in the study area and revealed several noteworthy distinctions between clear-title and non-clear-title farmers.

The demographic profile shows that a majority of both clear and non-clear title farmers are middle-aged. Interestingly, most of the clear title farmers belong to the Scheduled Caste (SC) category, whereas a higher proportion of non-clear title farmers belong to the General category. This variation likely reflects the demographic composition of the two selected districts.

Clear title farmers have on average, more farming experience and a better educational profile than non-clear title farmers. The average family size remains consistent across both groups. In terms of secondary occupation, clear title cultivators predominantly engage in business, while non-clear title farmers more frequently take up agricultural labour.

Irrigation coverage as a proportion of net operated area is comparable across both groups, with tube wells/pump sets being the exclusive source of irrigation in the study area. However, in land leasing, farmers with clear title are relatively better off. Both categories of farmers lease land and pay annual rent—Rs. 13,485 for clear title farmers and Rs. 13,898.40 for non-clear title farmers per acre. A notable number of non-clear title farmers cultivate only leased-in land and, lacking ownership documents, face exclusion from institutional agricultural loans and government subsidies. Even landowners without title in their own name expressed similar concerns about being deprived of access to government schemes and formal credit.

Land transactions also reflect the importance of titling. Farmers with clear titles secured significantly higher prices when selling land compared to their counterparts without clear titles, largely due to proper documentation and the absence of ownership disputes. All land cultivated by clear title farmers is in the name of the cultivator, while none of the non-clear title farmers have land registered in their own name.

In terms of household and agricultural assets, clear title farmers are visibly better off. They possess a greater number and value of both household and farm-related assets. This advantage is partly due to their better access to institutional credit, including agricultural equipment loans available at subsidized rates.

Cropping patterns indicate considerable crop diversity among farmers in the area. Although the area under individual horticultural crops is relatively small, a wide range of vegetables is cultivated. Out of the gross cropped area (539.39 acres), clear title farmers cultivated 57.18%, while non-clear title farmers accounted for 42.82%.

Overall, the evidence suggests that the socio-economic status of farmers with clear titles is significantly better than that of farmers without clear titles. Clear land ownership not only facilitates access to formal credit and government support but also enhances land value, asset accumulation, and overall livelihood security.

Chapter 4
Access to institutional credit

4.1 Introduction

Access to adequate institutional credit at affordable interest rates holds critical importance for the Indian farming sector, particularly for small and marginal farmers. Institutional credit serves as a crucial instrument to free farmers from the exploitative practices of informal moneylenders who often charge exorbitant interest rates. Moreover, given that small and marginal farmers typically lack investible surplus, the availability of institutional credit becomes essential for timely input procurement, on-farm investment, and, ultimately, agricultural productivity growth.

While there has been a significant increase in the overall flow of institutional credit to agriculture and allied activities in recent years, numerous studies have consistently highlighted the persistence of regional disparities and unequal access to credit among different categories of farmers (Chavan, 2005; Haque & Verma, 1988; Mohan, 2004; Ministry of Agriculture, 2010; RBI, 2004; Subbarao, 2012). The Vyas Committee (RBI, 2004) noted that not only is the share of agricultural credit in total bank credit in decline, but also the growth of credit, particularly term loans, crucial for long-term investments, is decelerating. Furthermore, the Committee raised concerns about increasing regional imbalances and the declining share of small and marginal farmers in the total agricultural credit disbursed.

These challenges are especially pronounced in Eastern India, a region that remains economically and agriculturally underdeveloped. Despite its high potential for agricultural growth, the region continues to suffer from inadequate access to formal credit institutions, thereby reinforcing rural inequality and slowing down agricultural transformation.

4.2 Loan Accessibility of sample respondents in the study area

Loan accessibility across farm size and land title categories is presented in Table 4.2.1. The data reveal that access to institutional credit is relatively limited, even among farmers with clear land titles. Among clear title farmers, only 2.38% of semi-medium, 11.90% of small, and 34.13% of marginal farmers accessed institutional loans backed by land as collateral. A comparable trend is observed among non-clear title farmers: 0.83% of semi-medium, 3.33% of small, and 43.33% of marginal farmers reported receiving institutional credit.

Interestingly, some non-clear title farmers have managed to access institutional loans, often through land ownership in the name of other family members. This workaround highlights the flexible strategies adopted by households to navigate formal lending criteria. Overall, 48.41 % of clear title farmers accessed institutional loans, with average loan amounts of ₹50,309.52 for crop loans, ₹40,000 for land development, and ₹64,070.18 for consumption purposes. In contrast, 47.50 % of non-clear title farmers accessed institutional loans, receiving average amounts of ₹42,281.25 (crop), ₹50,000 (land development), and ₹59,814.81 (consumption). The average outstanding institutional loan amount was higher for clear title farmers (₹48,066.67) compared to non-clear title farmers (₹41,471.77), suggesting slightly better credit absorption capacity among the former.

A comparison between clear and non-clear title households highlights the stark influence of land tenure security on farmers' access to institutional credit. Farmers with clear land titles experience fewer

structural barriers, and many, particularly marginal farmers, do not seek loans simply because they feel no immediate need for credit. Their main challenges relate to procedural inefficiencies such as lengthy processing times and extensive documentation requirements, which, though significant, do not prevent them from being eligible for formal credit. In contrast, households with non-clear land titles face deeper and more exclusionary constraints. The absence of proper land records emerges as the dominant barrier, rendering a large proportion of these farmers, especially marginal ones, ineligible to apply for institutional loans altogether. As a result, need-based motives play a smaller role, while constraints rooted in land documentation, eligibility, and fear of loan burden become more pronounced. Moreover, even when non-clear title households attempt to access loans, they encounter higher levels of exclusion due to rigid documentation requirements and verification procedures. Overall, clear-title households are constrained primarily by bureaucratic hurdles, whereas non-clear title households are constrained by structural ineligibility, making land record clarity a decisive factor in determining access to formal credit.

Historically, Indian farmers have relied heavily on non-institutional sources of credit, including moneylenders, landlords, and relatives. However, in the present study area, only a negligible proportion of farmers reported accessing non-institutional credit, with 3.97 % among farmers holding clear titles and 7.50% among those holding non-clear titles. Interestingly, the average loan size from non-institutional sources was significantly larger for non-clear title farmers (₹2,68,772.08) compared to clear title farmers (₹28,800), which may reflect a greater dependence on informal arrangements in the absence of formal eligibility.

The limited uptake of non-institutional credit across both groups is attributed to the availability of alternative credit through Self-Help Groups (SHGs) and village credit societies, which provide accessible and relatively inclusive lending options. However, land titling remains a critical barrier. Approximately 65% of non-clear title farmers reported that the lack of proper land documentation hindered their access to institutional credit. Even among clear title farmers, 46.83 % noted that incomplete or partial titling constrained their ability to obtain adequate loan amounts. Larger landholdings typically enable access to higher loan limits; however, without formal records, these entitlements are often curtailed.

When asked about reasons for not availing themselves of loans, 39.68% of clear title farmers indicated that they simply did not need loans. On the other hand, 22.50% of non-clear title farmers cited ineligibility due to a lack of land records as the primary reason for not participating in institutional credit markets.

These findings highlight the persistent challenges in rural credit delivery systems, particularly the significance of formal land tenure in determining farmers' access to institutional finance.

Table 4.2.1: Loan accessibility in the past five years from banks on land security and non-institutional sources for different purposes (Amount Rs per household)

Sl. no.	Particulars	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	**% HH taken institutional credit with land security**	34.13	11.90	2.38	0.00	48.41	43.33	3.33	0.83	0.00	47.50
2	**Loan Amount - Institutional sources**										
	Crop loan	35333.33	34428.57	81166.67	0	50309.52	29562.50	55000.00	0.00	0.00	42281.25
	Agriculture machinery loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Agriculture equipment loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Land development (fencing, land levelling, bunds formation, farm building, etc.)	40000	0.00	0.00	0.00	40000	50000	0.00	0.00	0.00	50000
	Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Animal husbandry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Consumption purpose	64473.68	63666.67	0	0	64070.18	59444.44	80000	40000	0	59814.81
	Other purposes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sum total	139807.01	98095.24	81166.67	0	154379.7	139006.94	135000	40000	0	152096.06
	Total outstanding amount	41300	42900	60000	0	48066.67	35665.31	68750	20000	0	41471.77
	% HH taken non-institutional credit	2.38	1.59	0.00	0.00	3.97	6.67	0.83	0.00	0.00	7.50
3	**Loan amount - Non-institutional sources**										
	Crop loan	49600	8000	0	0	28800	13877.5	5000	0	0	9438.75
	Agriculture machinery loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Agriculture equipment loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Land development (fencing, land levelling, bund formation, farm building, etc.)	0.00	0.00	0.00	0.00	0.00	0.00	200000	0.00	0.00	200000
	Irrigation										
	Animal husbandry										

	Consumption purpose	0.00	0.00	0.00	0.00	0.00	59333.33	0.00	0.00	0.00	59333.33
	Other purposes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sum total	49600	8000	0	0	28800	73210.83	205000	0	0	268772.08
	Total outstanding amount	54500	12000	0	0	33250	15854.55	155000.00	0.00	0.00	85427.28
4	**Reasons for not availing institutional loan**										
	Applied but did not get.	2.38	0.79	0.00	0.00	3.17	0.83	0.83	0.00	0.00	1.67
	High rate of interest	1.59	0.00	0.00	0.00	1.59	0.83	0.00	0.00	0.00	0.83
	Lack of knowledge	1.59	0.00	0.00	0.00	1.59	0.83	0.00	0.00	0.00	0.83
	Loan Burden Fear	2.38	0.00	0.00	0.00	2.38	3.33	0.00	0.00	0.00	3.33
	No land record, so not eligible for loan	2.38	0.79	0.00	0.00	3.17	20.83	1.67	0.00	0.00	22.50
	Not interested	1.59	0.00	0.00	0.00	1.59	2.50	0.00	0.00	0.00	2.50
	Not needed	34.92	3.97	0.79	0.00	39.68	17.50	2.50	1.67	0.00	21.67
	Time taking process	0.79	0.00	0.00	0.00	0.79	0.83	0.00	0.00	0.00	0.83
5	**What problem faced in availing institutional loans**										
	Not Eligible for getting institutional credit without land record	36.51	7.94	2.38	0.00	46.83	56.67	6.67	1.67	0.00	65.00
	Time taking process	54	12	1	00.0	67	32.50	1.67	0.83	0.00	35.00
	Too much documentation	36.51	7.94	2.38	0.00	46.83	56.67	6.67	1.67	0.00	65.00

Source: Field survey

4.3 Households' access to crop insurance in the study area details

This section discusses the status of crop insurance among farmers in the study area, based on data presented in Table 4.3.1. The findings reveal a strikingly low uptake of crop insurance. Only 4.47 % of clear title farmers reported having enrolled in any crop insurance scheme, while not a single non-clear title farmer had availed of crop insurance. The predominant reason cited by non-clear title farmers for non-participation was the lack of formal land records, which rendered them ineligible for insurance schemes that require documented land ownership.

However, beyond issues of eligibility, a major barrier cutting across both groups was the lack of awareness. A significant share of respondents, 26.02 % of clear title and 22.36 % of non-clear title farmers, reported that they had no knowledge of crop insurance. This widespread information gap highlights a major shortcoming in agricultural extension and awareness programs in the study area.

Among the few clear title farmers who had opted for crop insurance, none were able to specify the premium amount paid. They believed it was deducted automatically at the time of crop loan disbursal. The average compensation received in case of crop failure was ₹8,200. All insured farmers in this group had filed claims, but many reported their claims were either declined or inadequately settled. Some respondents attributed the rejection or shortfall to corruption within the agricultural department, while others were unaware of the reasons behind the claim denial.

The study also explored land-related financial transactions. Only 0.41 % of clear title farmers had pledged their land, securing an average amount of ₹4,50,000. The average value of land sold per household was also higher among clear title farmers (₹3,58,333.35) compared to non-clear title farmers (₹3,00,000), although the latter pledged land for a significantly lower average amount of ₹50,000. These figures further underscore the relative economic advantage that legal land title confers in enabling farmers to leverage land as a financial asset.

Notably, *none of the surveyed farmers were engaged in contract farming*, indicating either a lack of awareness or the absence of institutional support for such arrangements. The complete absence of contract farming, combined with low insurance coverage and minimal land pledging, points to a weak integration of farmers into formal risk management and agribusiness structures.

In summary, the findings highlight a significant gap in both access to and awareness of institutional risk mitigation instruments—most notably crop insurance—especially among farmers who lack clear land titles. There is an urgent need for targeted policy interventions to raise awareness, simplify procedures, and expand eligibility criteria, ensuring more inclusive coverage and resilience in the agricultural sector.

Table 4.3.1: Crop Insurance status (percentage of total households)

Sl. no.	Sudden shocks	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	**Percentage of households having taken crop insurance**	3.25	1.22	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00
2	**If yes**										
	Average premium paid (Rs per acre)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	The percentage of those who took insurance had crop failure	87.5	100	0.00	0.00	90.9	0.00	0.00	0.00	0.00	0.00
	The percentage of them who applied to claim the insurance amount	100	100	0.00	0.00	100	0.00	0.00	0.00	0.00	0.00
	The percentage of them who received the Insurance amount	14.29	0.00	0.00	0.00	14.29	0.00	0.00	0.00	0.00	0.00
	Average insurance amount received (Rs per acre)	8200	0.00	0.00	0.00	8200	0.00	0.00	0.00	0.00	0.00
3	**The percentage of them having declined the claim**	85.71	100	0.00	0.00	90	0.00	0.00	0.00	0.00	0.00
	Reason for decline										
	Corruption at the Agriculture Department	33.333	33.333	0.00	0.00	66.67	0.00	0.00	0.00	0.00	0.00
	They did not know the reason why they had not received any money	33.333	0.00	0.00	0.00	33.33	0.00	0.00	0.00	0.00	0.00
4	**The percentage of households that did not take insurance**	37.40	7.72	1.63	0.00	46.75	43.50	4.07	1.22	0.00	48.78
	Reasons for the same										
	Have not received the claimed money after the crop failure in the past	14.23	1.22	0.41	0.00	15.85	2.03	0.00	0.00	0.00	2.03
	Lack of Communication	0.81	0.00	0.00	0.00	0.81	0.81	0.00	0.00	0.00	0.81
	Lack of knowledge	18.70	6.10	1.22	0.00	26.02	20.73	1.63	0.00	0.00	22.36
	Negligence	0.41	0.00	0.00	0.00	0.41	0.81	0.00	0.00	0.00	0.81
	Not Interested	0.41	0.41	0.00	0.00	0.81	0.41	0.00	0.00	0.00	0.41
	Not needed	0.81	0.00	0.00	0.00	0.81	0.00	0.00	0.00	0.00	0.00
	Too Much documentation	2.03	0.00	0.00	0.00	2.03	0.00	0.00	0.00	0.00	0.00
	Has no land record	0.00	0.00	0.00	0.00	0.00	17.89	2.44	0.81	0.00	21.14
	Information gap	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.41
	No own land, so the claimed money will be credited to the owner's account	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.41
	Premium is costly	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.00	0.41
5	Households that have engaged in contract farming	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

6	Is a land title necessary for engaging in contract farming	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7.1	Percentage of households that pledged their land	0.41	0.00	0.00	0.00	0.41	0.81	0.00	0.00	0.00	0.81
7.2	Pledged amount in Rs per household	450000	0.00	0.00	0.00	450000	50000	0.00	0.00	0.00	50000
8.1	Percentage of households that sold their land	0.41	0.00	0.41	0.00	0.81	0.41	0.41	0.00	0.00	0.81
8.2	Sale amount in Rs per household	416666.7	0.00	300000	0.00	358333.35	300000	0.00	0.00	0.00	300000
9.1	Percentage of households that leased out their land	2.44	0.41	0.00	0.00	2.85	1.63	0.00	0.00	0.00	1.63
9.2	Leased-out amount in Rs per household	5403.143	6000	0	0	5701.5715	3000.25	0	0	0	3000.25
9.3	Leasing-out period (no of years)	2.43	3.00	0.00	0.00	2.71	1.5	0.00	0.00	0.00	1.5
10.1	Percentage of households that leased-in land	6.91	2.44	1.22	0.00	10.57	27.64	3.25	0.81	0.00	31.71
10.2	Percentage of those who have formal lease agreement	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.81	0.00	1.22
10.3	Leasing-in period (no of years)	1.55	1.67	1.00	0.00	1.40	2.88	1.57	35.00	0.00	13.15
10.4	Percentage of leasing-in hh who also obtained subsidy of leased land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Field survey

4.4 Conclusion

This chapter examines how land title clarity effects households' access to financial services, their exposure to shocks, and their broader economic resilience. The findings reveal clear and consistent differences between households with clear titles and those without. Farmers with clear land titles have better access to institutional credit, face fewer eligibility constraints, and rely less on informal sources. Their ability to provide documented land records enables smoother loan processing, and although bureaucratic hurdles, such as excessive documentation and time-consuming procedures, remain, these do not fundamentally restrict their access to credit.

In contrast, non-clear-title households experience structural exclusion from institutional finance. The absence of proper land records is the single most important barrier preventing them from applying for and obtaining formal loans. These constraints force them to depend more heavily on informal credit networks, often at higher interest rates. The analysis also shows that non-clear-title households encounter greater financial vulnerability, as a larger proportion of them report facing sudden shocks, such as crop failure, income shortages, livestock illness, or health emergencies. Their coping responses, which include drawing on savings, borrowing from informal lenders, or reducing essential expenditures, reflect their limited access to formal risk-mitigation instruments.

Insurance participation further illustrates the divide. Clear-title households are more likely to access crop insurance and government backstopping schemes, whereas non-clear-title households remain largely excluded due to documentation gaps and verification difficulties. Even in government support programmes such as PM-KISAN or Krishak Bandhu, non-clear-title cultivators must depend on documents belonging to other household members, reflecting the broader disconnect between de facto cultivators and de jure landholders.

Chapter 5
Accessibility to Subsidies and Land Titles

5.1 Introduction

This chapter examines farmers' accessibility to various subsidy schemes introduced by the State and Central Governments, with a particular focus on the role of clear land title ownership. It examines how secure land tenure enhances farmers' ability to benefit from institutional support mechanisms and reduces their exposure to agrarian risks.

Clear title ownership of land serves not only as a prerequisite for accessing government subsidies and institutional credit but also functions as a critical asset in managing risk and uncertainty in agriculture. In economic terms, *risk* refers to decision-making situations where all possible outcomes and their associated probabilities are known to the decision-maker. *Uncertainty*, on the other hand, characterizes scenarios in which either the outcomes, their probabilities, or both are unknown. The presence of a clear land title enables farmers to make more informed decisions, access formal risk mitigation tools (such as crop insurance and credit), and better navigate the risks and uncertainties inherent in agricultural production.

5.2 Govt. Schemes availed by households

The Government of India, through both Central and State initiatives, has introduced a range of agricultural subsidy schemes aimed at enhancing farmers' welfare and improving agricultural productivity. Based on primary survey data, Table 5.2.1 presents the extent to which sample farmers, segmented by clear and non-clear land title, were able to access these schemes and the corresponding average financial benefits per household.

A total of 37 farmers in the study area reported receiving benefits under the *Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)* scheme. Among them, 33 were clear title farmers, while only 4 were from the non-clear title category. The latter group accessed the scheme using land records in the names of elderly parents or other family members, despite not being the principal cultivators themselves. The average benefit amount per household was computed based only on the recipients.

A total of 91 farmers benefited from the *Chief Minister Krishak Bandhu* scheme. Of these, 80 were clear title holders, and only 11 had non-clear titles. As with the PM-KISAN scheme, non-clear title beneficiaries typically accessed the scheme through documentation belonging to other household members. In many cases, the actual cultivator does not possess the land title in his or her own name. For example, the father may legally own the land but is no longer engaged in farming due to age, while the son undertakes all cultivation-related activities. Since the land title remains in the father's name, it is the father who receives the Krishak Bandhu or PM-KISAN benefits, even though the support is ultimately utilized by the son for cultivation. For this reason, we have categorized such cases as non-clear title farmers accessing the scheme through the documentation of other household members.

Seed subsidies, administered by local agricultural extension officers, reached only a marginal proportion of farmers (13 households). In these cases, personal proximity to local officials rather than formal eligibility criteria (such as land records) seemed to determine access. The monetary value of distributed seeds was generally low, and the average per household benefit was calculated based on actual recipients.

Only 10 farmers in the sample accessed equipment or machinery subsidies from the agriculture department. Again, access appeared to be contingent on political alignment or close ties with extension officials. The benefits in this category were also limited, and average per-household values were estimated accordingly.

Several State Government schemes, such as *Laxmi Bhandar* (for married women) and scholarships like *OASIS* and *Swami Vivekananda Merit-cum-Means (SVMCM)*, are not dependent on land ownership or occupational status. A total of 37 households (17 with a clear title and 22 with a non-clear title) reported receiving such benefits. These were excluded from the agricultural scheme calculations but are discussed to highlight overall welfare access.

Under Gram Panchayat-administered old-age pension schemes, 10 clear-title and 7 non-clear-title farmer households received benefits. The average subsidy per household was calculated based on actual recipients over age 60 and below the poverty line (BPL).

Two non-clear title farmer households received electricity bill subsidies averaging ₹1,000 per quarter. This support was provided directly by the local electricity department.

Chicks distributed by the Veterinary Department (through the Gram Panchayat) were received by 8 households—2 with clear titles and 6 with non-clear titles. The value of the chicks was converted into monetary terms to calculate the average benefit per household.

Across all schemes, clear-title farmers consistently had greater access to institutional subsidies than non-clear-title farmers. Central and state government subsidies related to agriculture (e.g., crop support, input distribution, and equipment subsidies) were largely inaccessible to non-clear title holders due to the absence of official land documentation in their names.

While some non-agricultural schemes were accessed by both groups, the overall evidence suggests that a clear land title significantly enhances farmers' ability to benefit from formal government programs. This underscores the structural disadvantage faced by non-clear title farmers, particularly in the context of risk mitigation and economic support.

Notably, as shown in Table 5.1.2, neither group in the study area reported any subsidies related to animal husbandry, reflecting both limited outreach and a possible lack of awareness or eligibility.

Table 5.2.1: Govt. Schemes benefits availed by households – Rs per household

Sl. no.	Particulars	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)	6104.76	6363.64	4000.00	0.00	5489.47	5000	0.00	0.00	0.00	5000
2	Chief Minister Krishak Bandhu	4789.75	7321.88	5166.67	0.00	5759.43	3800	8000	0.00	0.00	5900
3	Organic Farming and Millet Promotional Programs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	IFS replication and popularization under RKVY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Krushi Bhagya	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Seed Distribution Under Subsidy	658.33	750.00	0.00	0.00	704.17	780	0.00	0.00	0.00	780
7	Farm Mechanization and Micro Irrigation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Atal bhoojal Yojana	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Soil Health Card (SHC) and Soil Health Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Krishi Abhiyaana programme	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	National Food Security Mission (NFSM)										
1	ATMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Plant Protection Quality Control	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Compensation for farmer's suicide	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Accidental death compensation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Discount of 1 % in crop insurance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Raita siri	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Financial Assistance to Maize Growers of 2019-20 (DBT)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	**National Mission For Sustainable Agriculture (NMSA)**	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Other Schemes or Benefits Department-wise										
1	Agri. Dept. (Equipment, machinery subsidy etc.)	5200	12000	0.00	0.00	8600	7075	0.00	0.00	0.00	7075
2	State Govt. (Laxmi Bhandar, OASIS & SVMCM Scholarships, etc.)	8115.39	6000	0.00	0.00	7057.69	6247.06	7200	0.00	0.00	6723.53
3	Gram Panchayat (Oldage pension for BPL)	12000	12000	12000	0.00	12000	12600	36000	0.00	0.00	24300
4	Electric Department (Subsidy in electric bill)	0.00	0.00	0.00	0.00	0.00	1000	0.00	0.00	0.00	1000
5	Vet. Department (Chicks distribution)	450	0.00	0.00	0.00	450	404	0.00	400	0.00	402

Source: Field survey

5.3 Subsidy as a percentage share of purchase value by households

Input subsidies constitute the most expensive component of India's food and agricultural policy framework, requiring an ever-increasing share of the government budget (United States International Trade Commission, 2010). To minimize farmers' costs while maintaining high productivity, the Government of India (GOI) subsidizes various agricultural inputs. The intended outcome is for farmers to benefit from reduced expenses, which, in turn, should allow them to offer food at lower prices to consumers. For example, the GOI directly compensates fertilizer producers to enable the sale of fertilizer below market rates. Similarly, irrigation and energy are provided to farmers at costs lower than the actual production expenses (Nick & Dylan, 2011).

In this context, the percentage share of subsidies availed by farmers was evaluated and is presented in Table 5.3.1. The data reveals that the highest proportion of subsidies went to farmers with clear land titles for agricultural equipment. Although only a small number of farmers (less than 10%) benefited from subsidies on agricultural equipment, those who did mainly obtained the equipment through the agriculture department, thereby receiving subsidies that covered nearly the full market value of the assets. Consequently, farmers without clear land titles tend to purchase agricultural inputs and equipment at higher prices than their clear title counterparts.

Table 5.3.1: Subsidy as a percentage share of purchase value of agricultural assets purchased by selected households (%)

Particular	Clear title					Non-clear title				
	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
Tractor	-	-	-	-	-	-	-	-	-	-
Tiller	-	-	-	-	-	-	-	-	-	-
Harrow	-	-	-	-	-	-	-	-	-	-
Pump set	100	90	0	0	95	0	0	0	0	0
Harvester	-	-	-	-	-	-	-	-	-	-
Chaff cutter	-	-	-	-	-	-	-	-	-	-
Brush cutter	-	-	-	-	-	-	-	-	-	-
Plough	-	-	-	-	-	-	-	-	-	-
Power tiller	-	-	-	-	-	-	-	-	-	-
Tarpaulin	100	0	0	0	100	100	0	0	0	100
Weeder	-	-	-	-	-	-	-	-	-	-
Sprayer	100	100	0	0	100	0	0	0	0	0
Thresher	95	0	0	0	95	0	0	0	0	0
Sickle	-	-	-	-	-	-	-	-	-	-
Scraper	-	-	-	-	-	-	-	-	-	-
Spade	-	-	-	-	-	-	-	-	-	-
Aggregate	-	-	-	-	-	-	-	-	-	-

Note: The subsidy as a percentage share of the purchase value of agricultural assets was calculated only for those farmers who received the subsidy. However, this number is negligible, as it did not exceed a single-digit count of households.
Source: Field survey

5.4 Sudden shock faced by sample households

In rural households, “sudden shocks” refer to unexpected adverse events that disrupt the family's economic stability and security of livelihood. These shocks can arise from both agricultural risks, such as crop failure, livestock disease, or abrupt income shortages, and household-level contingencies, including illness, death of a family member, or unforeseen financial obligations like loan instalments. Such shocks are critical to examine because farming households, particularly marginal and small farmers, operate with thin financial buffers and are extremely vulnerable to even short-term disruptions. A single shock can reduce their capacity to invest in agriculture, increase dependence on informal credit, intensify indebtedness, or force them to adopt distress coping strategies, such as selling assets, cutting consumption. Moreover, the ability to withstand shocks often differs sharply between clear-title and non-clear-title households. Against this backdrop, the following data present the types and frequency of sudden shocks reported by households across different land title categories.

Table 5.4.1 presents the incidence of sudden shocks experienced by the surveyed households. Among the clear title farmers, 96.03 % reported facing at least one form of sudden shock. Within this group, marginal farmers constituted the majority (75.40%), followed by small (17.46%) and semi-medium farmers (3.17%). In comparison, 99.17 % of non-clear title farmers encountered sudden shocks, with marginal farmers forming the bulk (88.33%), followed by small (8.33%) and semi-medium (2.50%) farmers.

The types of sudden shocks reported by clear title farmers included crop failure (92.86%), a decline in annual income (23.02%), illness of a family member (57.14%), death of a family member (11.11%), illness or death of livestock (39.68%), burden of loan repayment (3.97%), and the adverse effects of the COVID-19 pandemic (17.46%). Similarly, non-clear title farmers reported crop failure (97.50%), decline in annual income (29.17%), family illness (53.33%), death of a family member (9.17%), illness or death of livestock (34.17%), loan repayment burden (7.50%), and COVID-19-related challenges (14.17%).

Among the 120 clear title farmers, only 2.38 % reported that having a clear land title directly helped them cope with these shocks. These respondents noted that access to government subsidies was instrumental in their ability to manage such adversities. It is also worth noting that non-institutional loans, sourced from friends, relatives, and others, were often used to cope with shocks, despite carrying higher interest rates compared to institutional credit.

Table 5.4.1: Sudden shock faced by the households in the past five years (percentage of total households)

Sl. no.	Sudden shocks	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	**Households saying, they faced a sudden shock**	75.40	17.46	3.17	0.00	96.03	88.33	8.33	2.50	0.00	99.17
2	**What kind of sudden shock faced**										
	Crop failure	72.22	17.46	3.17	0.00	92.86	86.67	8.33	2.50	0.00	97.50
	Annual income shortage	18.25	3.17	1.59	0.00	23.02	25.00	3.33	0.83	0.00	29.17
	Family member sick	45.24	9.52	2.38	0.00	57.14	46.67	6.67	0.00	0.00	53.33
	The death of any family member	8.73	1.59	0.79	0.00	11.11	9.17	0.00	0.00	0.00	9.17
	Livestock illness or death	30.95	7.14	1.59	0.00	39.68	30.00	3.33	0.83	0.00	34.17
	Loan instalment burden	2.38	0.00	1.59	0.00	3.97	7.50	0.00	0.00	0.00	7.50
	Covid-19	12.70	3.97	0.79	0.00	17.46	12.50	0.83	0.83	0.00	14.17
	Any other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	**Did land title help overcome shock (% saying yes)**	2.38	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00	0.00
4	**If yes, how?**										
	a. Pledged the land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	b. Sold the land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	c. Helped to claim crop insurance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	d. Helped in availing government subsidies	2.38	0.00	0.00	0.00	2.38	0.00	0.00	0.00	0.00	0.00
	e. Helped in leasing out land	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	f. Others_	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	g.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	h.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	i.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Field survey

5.5 Constraints faced by households in availing of the government. subsidies without clear land title

As discussed earlier, secure land titling provides several tangible advantages to landholders that are not available to farmers lacking a clear title. Table 5.5.1 highlights the constraints faced by households with a non-clear title in accessing government benefits and subsidies.

According to the findings, 49.14% of non-clear title farmers reported that they are unable to access input subsidies, such as seeds, machinery, and micro-nutrients, due to the absence of land records in their names. As a result, they are compelled to purchase these inputs at full market prices, despite their availability at subsidized rates through the agriculture department. Additionally, 18.33% of respondents stated that they were ineligible for institutional credit offered under government schemes due to a lack of proper land documentation.

Furthermore, 21.67% of non-clear title farmers reported being excluded from receiving government compensation or subsidies in the event of crop failure or natural calamities. For instance, during a recent compensation drive by the state government following widespread crop loss, only farmers with clear land titles received assistance. Similarly, financial support under the state-sponsored 'Krishak Bandhu' scheme was accessible exclusively to clear title farmers, thereby excluding a substantial number of non-clear title cultivators from the benefits.

Table 5.5.1: Constraints faced by households in availing government benefits/subsidies if land is not in their name – percentage of HH not having a clear title

Sl. no.	List the constraints	Non-Clear title				
		Marginal	Small	Medium	Large	Over all
1	Not able to get any subsidies without a land record	45.83	2.50	0.83	0.00	49.17
2	Not Eligible for getting institutional credit without a land record	15.00	2.50	0.83	0.00	18.33
3	Not able to get the government. compensation/subsidies without a land record	19.17	2.50	0.00	0.00	21.67
4	Deprived of having access to credit and subsidy without land record	9.17	0.83	0.83	0.00	10.83

Source: Field survey

5.6 Changing Land Ownership

Throughout the preceding sections, the comparative advantages of clear land title ownership over non-clear title arrangements have been thoroughly examined. Land remains the most critical productive asset for farming households, and securing formal ownership, whether through inheritance, gifting, or market purchase, requires navigating a series of administrative and legal procedures to update land entitlements. In this context, Table 5.7.1 documents the extent, nature, and associated costs of changes in land entitlement among both clear and non-clear title farmers.

The findings indicate that 6.10% of clear title farmers updated their land entitlements during the last five years, whereas only 2.03% of non-clear title farmers applied for formal land titling over the same period, reflecting the greater institutional engagement of households with secure tenure. On average, clear title

farmers updated entitlements for 0.68 acres, while non-clear title farmers applied for slightly larger parcels **(**0.82 acres), possibly reflecting attempts to regularise more fragmented or contested holdings.

The process of updating land records imposed substantial financial costs on both groups. Clear title farmers incurred an average expenditure of Rs.7,710, while non-clear title farmers spent Rs.8,450, indicating higher procedural burdens for the latter. These expenses typically covered the procurement of essential documents such as Aadhaar cards, land deeds, death certificates (in inheritance cases), no-objection certificates, and family tree verification records. Notably, 40 % of clear title farmers reported paying informal costs during the process, with an average unofficial payment of Rs.60,000, highlighting the persistence of non-transparent practices even within formal land administration systems.

In addition to direct monetary costs, entitlement changes resulted in significant losses of productive labour time. Clear title farmers lost an average of 12.99 workdays, while non-clear title farmers lost 23.5 workdays, reflecting the longer and more uncertain administrative process faced by households without clear documentation. This translated into average wage losses of Rs.7,870.83 for clear title farmers and Rs.11,953 for non-clear title farmers, with the higher losses among non-clear title households partly attributable to their greater dependence on wage labour for income.

Furthermore, the absence of documentation offices at the local level imposed additional travel costs. Clear title farmers incurred an average travel expenditure of Rs.542.22, compared to Rs.466.67 for non-clear title farmers. When standardised on a per-acre basis, the overall expenditure on documentation amounted to Rs.115.93 **per acre** for clear title farmers and Rs.137 per acre for non-clear title farmers. Collectively, these findings underscore that while clear title ownership facilitates engagement with formal land administration, the process of updating land entitlements remains costly, time-intensive, and administratively burdensome—particularly for farmers without secure land titles.

5.7 Constraints faced by households in changing land title

Land titling changes must be processed through government offices, and households often encounter multiple constraints during this administrative process. Table 5.7.2 summarizes the major constraints faced by farmers during the land titling process. Among clear title farmers, 42 multiple responses were recorded, and percentages were calculated accordingly. In the case of non-clear title farmers, a total of 165 multiple responses were documented.

One of the most prominent issues cited by both groups was the *high charges demanded by agents* who assist in navigating the bureaucratic procedures. These agents, often perceived as indispensable due to the procedural complexities, pose a significant financial burden, particularly for small and marginal farmers. This constraint was reported by 42.86% of farmers with a clear title and 46.67% of farmers without a clear title.

Difficulty in understanding the process was another constraint, particularly affecting non-clear title farmers. While only 2.38% of clear title farmers reported this issue, it was a significant problem for 20.61% of non-clear title farmers, indicating a knowledge and information gap that was more pronounced among the latter group.

Furthermore, the time-consuming nature of the process was highlighted by 26.19% of clear title farmers, many of whom reported losing workdays and income due to repeated visits to government offices. On the other hand, 16.97% of non-clear title farmers reported non-cooperation from Block Land and Revenue Office (BLRO) officials, a constraint that often forces them to rely on intermediaries, thereby

increasing their costs and dependency.

Finally, *excessive documentation requirements* and the challenges in preparing these documents were also commonly cited. This issue was reported by 19.05% of farmers with a clear title and 9.09% of farmers without a clear title.

Overall, the findings indicate that while both groups face substantial hurdles in the land titling process, the burden is particularly heavy for non-clear title farmers, who are more dependent on agents, less informed, and less supported by institutional channels.

Table 5.7.1: Factors involved in land document changing in the past five years

Sl. no.	Particular	Clear title					Non-clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1.	Percentage of households that changed the title recently	4.07	1.63	0.41	0.00	6.10	1.22	0.81	0.00	0.00	2.03
2	Acres per household for which changed the title	0.37	0.83	0.83	0.00	0.68	0.34	1.29	0.00	0.00	0.82
3	Amount (Rs per acre) paid for changing the document's name	4380.00	750.00	18000.00	0.00	7710.00	6400.00	10500.00	0.00	0.00	8450.00
4	Documents required for changing the title										
	Aadhar Card	10	4	1	0	15	3	1	0	0	4
	Land Deed	10	4	1	0	15	3	1	0	0	4
	Photo	10	4	1	0	15	3	1	0	0	4
	Voter Card	10	4	1	0	15	3	1	0	0	4
5.	Percentage of households that paid a bribe for the purpose	30	75	0	0	40	0	0	0	0	0
	Amount of informal costs (Rs per acre)	32000.01	87999.99	0	0	60000	NA	NA	NA	NA	NA
6	Working days lost (number of days per acre)	8.22	20.75	10.00	0.00	12.99	45	2	0	0	23.5
	Loss of money in terms of wage loss (Rs per acre)	6550.00	12562.50	4500.00	0.00	7870.83	23000.00	906.00	0.00	0.00	11953.00
6	Transportation cost born (Rs per acre)	496.67	630.00	500.00	0.00	542.22	733.33	200.00	0.00	0.00	466.67
7	Documentation cost (Rs per acre)	97.78	150.00	100.00	0.00	115.93	175	100	0.00	0.00	137.5

Source: Field survey

Table 5.7.2: Constraints faced by the households in changing the documents in their own name (percentage of households)

Sl. no.	List the constraints	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	Complexity in understanding the process	0.00	2.38	0.00	0.00	2.38	18.18	1.82	0.61	0.00	20.61
2	High Charges by the agents	35.71	4.76	2.38	0.00	42.86	41.21	4.24	1.21	0.00	46.67
3	More Transparency is needed	4.76	0.00	0.00	0.00	4.76	0.61	0.00	0.00	0.00	0.61
4	Non-cooperation of BLRO	4.76	0.00	0.00	0.00	4.76	13.94	3.03	0.00	0.00	16.97
5	Time Taking	16.67	9.52	0.00	0.00	26.19	5.45	0.61	0.00	0.00	6.06
6	Too much documentation	14.29	2.38	2.38	0.00	19.05	8.48	0.00	0.61	0.00	9.09

Source: Field survey

5.8 Constraints faced by households if land is not in the name of any family member (living or dead) or not in the name of the cultivator

Numerous studies have established a direct relationship between tenure security and income security. When land leasing is backed by a legal framework, tenant cultivators are more inclined to invest in and sustainably manage agricultural land, resulting in enhanced land productivity and profitability. Recognizing this, NITI Aayog has emphasized that land leasing should be viewed as an *"economic necessity"* rather than as a remnant of a *"feudal agrarian structure."*

In this context, enacting appropriate land leasing laws should be considered a *top priority for state governments.* Such farmer-centric policy measures are likely to make a significant contribution to the revitalization of Indian agriculture and to the overarching objective of increasing farmers' incomes. The Committee on Doubling Farmers' Income (DFI) has echoed this sentiment, recommending the legislation of the Model Agricultural Land Leasing Act, 2016[3], developed by NITI Aayog, to facilitate private sector investment in the agriculture sector. Legalizing land leasing can also address the persistent bottleneck in credit access for lessee farmers, sharecroppers, and tenants, as land often serves as collateral for institutional credit. However, existing land revenue laws vary significantly across states and remain complex and fragmented.

The Model Land Leasing Act is deliberately non-prescriptive concerning the rent and duration of the lease, leaving these details to be negotiated between the lessor (landowner) and lessee (tenant cultivator). This market-driven approach avoids unnecessary government intervention. Nevertheless, in many parts of India, restrictive leasing laws have fostered a proliferation of informal and concealed tenancy arrangements, undermining tenure security and, in turn, discouraging long-term agricultural investment and productivity growth (Padhee & Joshi, 2019).

Against this backdrop, this study presents the *constraints faced by households lacking formal ownership of agricultural land,* where the land is not registered in the name of any family member—either living or deceased. In the study area, there are 43 such households, and Table 5.8.1 highlights the specific challenges they face. Percentages were calculated based on this total of 43 households.

i. 55.81% of these households reported being unable to access any form of government subsidy, such as for seeds, machinery, or micro-nutrients.

ii. 18.60% stated that they were ineligible for institutional credit, with many of them being marginal farmers.

iii. 20.93% reported that they did not receive any compensation for crop failure.

iv. An additional 4.65% expressed that they felt completely deprived of both credit and subsidies.

These findings reaffirm the critical importance of land ownership or clear title as a fundamental criterion for accessing government support in agriculture. In the absence of a formal land title, households are systematically excluded from institutional benefits that are essential for improving agricultural resilience and income security.

- [3] The Model Agricultural Land Leasing Act, 2016 is a model law to legalize and facilitate the leasing of agricultural land in India, to improve the access of landless and marginal farmers to land, and to provide them with various benefits and protections, while safeguarding the rights and interests of the landowners. (Source: NITI Aayog, GoI. Model Agricultural Land Leasing Act, 2016 | NFS)

Table 5.8.1: Constraints faced by the household if land is not in the name of any family member (living or dead) or not in the name of the cultivator (% of household)

Particular	Non-clear title				
	Marginal	Small	Medium	Large	Overall
Not able to get any subsidies	51.16	2.33	2.33	0.00	55.81
Not Eligible for getting institutional credit	16.28	2.33	0.00	0.00	18.60
Not able to get the government. compensation/subsidies	18.60	2.33	0.00	0.00	20.93
Unable to sell the land	0.00	0.00	0.00	0.00	0.00
Not able to pledge the land	0.00	0.00	0.00	0.00	0.00
Deprived of having access to credit and subsidies	2.33	0.00	2.33	0.00	4.65
Others (specify)	0.00	0.00	0.00	0.00	0.00

Source: Field survey

5.9 Conclusion

This chapter demonstrates that clear land titles significantly enhance access for households to government subsidies and associated institutional support, whereas the absence of documented land rights creates systematic exclusion. Over half of the households without clear title reported that they could not access subsidies 55.81%; and large portions were prevented from accessing institutional credit 18.60% or receiving compensation for crop failure 20.93%, which suggests that a lack of documentation is one of the principal reasons for low take-up of safety-nets and subsidies.

The chapter also points out important process failures: even when programmes exist, procedural requirements-verification of land records, rigid eligibility rules, and the need for formal documentation-frequently prevent the de facto cultivator from receiving benefits if the legal title is in another household member's name. This encourages informal workarounds-benefits accessed through relatives' documents-that undermine targeting, reduce transparency, and leave vulnerable cultivators without secure entitlements. Sudden shocks-crop failure, income shortfalls, illness-are frequent in the sample and, absent timely subsidy or compensation, push households into distress coping-reduced consumption, borrowing.

Taken all together, the evidence in Chapter 5 suggests that policy reforms are needed that a) simplify documentary and verification requirements for delivering the subsidy, b) recognize and protect de facto cultivators in the design of the scheme, not only de jure titleholders, and c) strengthen mechanisms for rapid compensation in case of shocks. These initiatives will contribute to a reduction in the extent of exclusion, enhanced effectiveness of public support, and increased resilience among marginal and non-titled farming households.

Chapter 6
Relationship between Land Title, Agricultural Productivity and Net Profit

6.1 Introduction

The existing body of literature provides substantial evidence of a positive association between the possession of clear land titles and access to institutional credit. Clear land titles not only facilitate farmers' eligibility for formal credit but also enhance their ability to participate in a wide range of government welfare and subsidy programs, implemented by both the Union and State governments. Furthermore, legal ownership of land enhances farmers' capacity to secure risk coverage mechanisms, including agricultural insurance and compensation schemes for losses resulting from crop failure or natural disasters.

In this chapter, the study aims to examine the relationship between land titling and the array of associated benefits, including access to subsidies, institutional credit, and risk mitigation instruments. It also attempts to assess whether these advantages contribute to improvements in overall land productivity. By analysing this association, the study aims to provide insights into the broader implications of secure land tenure for enhancing agricultural development and farmer welfare.

6.2 Productivity and value of major crops grown in the study area

The major crops cultivated in the study area, along with their productivity and value, are presented in Table 6.2.1 and Table 6.2.2. The data reveal a noticeable distinction in crop performance based on land title status.

During the Kharif season, the primary crop, paddy (based on Gross Cropped Area), yields 16.28 quintals per acre among clear title farmers, generating an average value of ₹27,954 per acre. In contrast, non-clear title farmers report a slightly lower productivity of 15.57 quintals per acre, with an associated value of ₹26,211 per acre. A key reason behind this disparity lies in the market access differences: clear title farmers are eligible to sell their paddy at government procurement centres, allowing them to fetch better prices at the Minimum Support Price (MSP). Non-clear title farmers, however, are compelled to sell their produce in the open market, where private traders offer significantly lower prices, thereby affecting their overall returns.

In the Rabi season, however, the scenario is reversed for the major crop potato (again based on GCA). The productivity for clear title farmers is 119.97 quintals per acre, with a value of ₹89,003 per acre. Meanwhile, non-clear title farmers demonstrate higher productivity at 139.75 quintals per acre, with a higher corresponding value of ₹95,564 per acre. This anomaly is attributed to two key factors. First, non-clear title farmers timed their market sales to take advantage of higher prevailing market prices. Second, in Birbhum district, many non-clear title farmers cultivate potatoes along riverbanks, which provide ideal agro-climatic conditions for potato farming. Additionally, in Uttar Dinajpur, non-clear title farmers often lease highly fertile land specifically for potato cultivation, enhancing their productivity.

These findings underscore that while clear land titles confer market and institutional advantages, farmers with non-clear titles often adopt adaptive strategies, such as strategic leasing and timing of sales, to remain competitive in specific contexts.

Table 6.2.1: Productivity of major crops grown by the selected households – Quintals per acre

Sl. No	Crop Name	Clear title					Non-clear title				
		Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
I.	***Kharif***										
1	Bitter Gourd	30.17	60.00	0.00	0.00	31.92	45.74	0.00	0.00	0.00	45.74
2	Bottle Gourd	78.00	0.00	0.00	0.00	78.00	0.00	0.00	0.00	0.00	0.00
3	Brinjal	144.10	176.09	150.00	0.00	149.48	95.10	130.50	0.00	0.00	105.21
4	Chilly	45.71	0.00	0.00	0.00	45.71	0.00	0.00	0.00	0.00	0.00
5	Drumstick	13.71	0.00	0.00	0.00	13.71	0.00	0.00	0.00	0.00	0.00
6	Green Cowpea	18.00	40.00	0.00	0.00	29.00	0.00	0.00	0.00	0.00	0.00
7	Jute	10.50	9.75	0.00	0.00	10.00	10.81	0.00	0.00	0.00	10.81
8	Paddy	16.32	15.43	20.10	0.00	16.28	15.53	15.68	16.80	0.00	15.57
9	Pointed Gourd	0.00	60.00	0.00	0.00	60.00	90.00	0.00	0.00	0.00	90.00
10	Radish	15.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00
11	Ridge Gourd	18.00	0.00	0.00	0.00	18.00	108.00	0.00	0.00	0.00	108.00
12	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	21.60	0.00	0.00	21.60
13	Wax Gourd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
II.	***Rabi***										
14	Bottle Gourd	74.44	78.46	0.00	0.00	76.16	25.75	0.00	0.00	0.00	25.75
15	Brinjal	96.00	180.00	0.00	0.00	124.00	90.00	0.00	0.00	0.00	90.00
16	Broad Beans	37.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00	0.00	0.00
17	Cabbage	122.73	0.00	40.00	0.00	115.83	120.00	295.00	0.00	0.00	190.00
18	Cauliflower	107.80	113.33	0.00	0.00	108.63	142.50	207.50	0.00	0.00	153.33
19	Drumstick	13.59	12.21	0.00	0.00	13.13	12.00	0.00	0.00	0.00	12.00
20	Green Cowpea	48.00	0.00	0.00	0.00	48.00	0.00	0.00	0.00	0.00	0.00
21	Maize	20.48	0.00	0.00	0.00	20.48	12.00	0.00	0.00	0.00	12.00
22	Mustard	4.56	4.67	3.00	0.00	4.56	4.48	5.67	0.00	0.00	4.63
23	Okra	0.00	0.00	0.00	0.00	0.00	117.00	0.00	0.00	0.00	117.00
24	Potato	118.53	119.14	130.42	0.00	119.97	141.45	134.14	150.00	0.00	139.75
25	Pumkin	0.00	0.00	0.00	0.00	0.00	18.00	0.00	0.00	0.00	18.00
26	Radish	60.00	30.00	0.00	0.00	45.00	0.00	0.00	0.00	0.00	0.00
27	Spiny Gourd	0.00	180.00	0.00	0.00	180.00	0.00	0.00	0.00	0.00	0.00
28	Taro	36.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00	0.00	0.00
29	Tomato	86.29	0.00	150.00	0.00	94.25	105.54	240.00	0.00	0.00	115.14
30	Wax Gourd	25.50	0.00	0.00	0.00	25.50	0.00	0.00	0.00	0.00	0.00
31	Wheat	0.00	0.00	0.00	0.00	0.00	9.60	0.00	0.00	0.00	9.60
32	Winter Vegetables	35.46	0.00	0.00	0.00	35.46	0.00	0.00	0.00	0.00	0.00
III.	***Summer***										

33	Bitter Gourd	36.98	0.00	0.00	0.00	36.98	20.18	0.00	0.00	0.00	20.18
34	Bottle Gourd	96.00	0.00	0.00	0.00	96.00	0.00	0.00	0.00	0.00	0.00
35	Brinjal	240.00	0.00	0.00	0.00	240.00	0.00	0.00	0.00	0.00	0.00
36	Chilly	0.00	24.00	0.00	0.00	24.00	21.00	28.50	48.00	0.00	31.50
37	Cucumber	100.01	118.29	72.00	0.00	101.69	98.02	115.00	0.00	0.00	99.21
38	Jute	9.76	7.60	9.00	0.00	9.30	8.68	0.00	0.00	0.00	8.68
39	Ladies' Finger	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	Maize	31.83	32.75	0.00	0.00	32.11	31.60	33.20	18.00	0.00	31.25
41	Okra	0.00	0.00	0.00	0.00	0.00	42.86	90.00	0.00	0.00	66.43
42	Paddy	19.79	21.58	27.00	0.00	21.07	18.74	21.33	0.00	0.00	19.04
43	Pointed Gourd	0.00	0.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00	56.00
44	Ridge Gourd	33.60	0.00	0.00	0.00	33.60	48.00	0.00	0.00	0.00	48.00
45	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	21.60	0.00	0.00	21.60
46	Wax Gourd	12.50	0.00	0.00	0.00	12.50	0.00	0.00	0.00	0.00	0.00

Source: Field survey

Table 6.2.2: Value of productivity of selected households – Main product + By-product (Rs per acre)

Sl.No	Crop Name	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
I.	***Kharif***										
1	Bitter Gourd	55117	60000	0.00	0.00	55404	85444	0.00	0.00	0.00	85444
2	Bottle Gourd	93600	0.00	0.00	0.00	93600	0.00	0.00	0.00	0.00	0.00
3	Brinjal	252000	256304	180000	0.00	247124	99225	165600	0.00	0.00	118189
4	Chilly	160000	0	0.00	0.00	160000	0.00	0.00	0.00	0.00	0.00
5	Drumstick	48000	0	0.00	0.00	48000	0.00	0.00	0.00	0.00	0.00
6	Green Cowpea	27000	120000	0.00	0.00	73500	0.00	0.00	0.00	0.00	0.00
7	Jute	68250	65625	0.00	0.00	66500	71513	0.00	0.00	0.00	71513
8	Paddy	28117	26276	33451	0.00	27954	26119	26501	28745	0.00	26211
9	Pointed Gourd	0.00	108000	0.00	0.00	108000	108000	0.00	0.00	0.00	108000
10	Radish	30000	0.00	0.00	0.00	30000	0.00	0.00	0.00	0.00	0.00
11	Ridge Gourd	36000	0.00	0.00	0.00	36000	216000	0.00	0.00	0.00	216000
12	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	118800	0.00	0.00	118800
13	Wax Gourd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Sub total	**49858**	**51207**	**62761**	**0.00**	**50364**	**40038**	**46736**	**28745**	**0.00**	**40716**
II.	***Rabi***										
14	Bottle Gourd	72225	90667	0.00	0.00	80129	55250	0.00	0.00	0.00	55250
15	Brinjal	163200	450000	0.00	0.00	258800	207600	0.00	0.00	0.00	207600
16	Broad Beans	54000	0.00	0.00	0.00	54000	0.00	0.00	0.00	0.00	0.00
17	Cabbage	49636	0.00	12000	0.00	46500	60000	64500	0.00	0.00	61800
18	Cauliflower	48753	45667	0.00	0.00	48290	58650	50571	0.00	0.00	57304

19	Drumstick	50571	42750	0.00	0.00	47964	90000	0.00	0.00	0.00	90000
20	Green Cowpea	144000	0.00	0.00	0.00	144000	0.00	0.00	0.00	0.00	0.00
21	Maize	26960	0.00	0.00	0.00	26960	16800	0.00	0.00	0.00	16800
22	Mustard	26658	26193	19500	0.00	26409	25492	31286	0.00	0.00	26240
23	Okra	0.00	0.00	0.00	0.00	0.00	210600	0.00	0.00	0.00	210600
24	Potato	92047	89993	68250	0.00	89003	100662	86979	69000	0.00	95564
25	Pumkin	0.00	0.00	0.00	0.00	0.00	18000	0.00	0.00	0.00	18000
26	Radish	18000	60000	0.00	0.00	39000	0.00	0.00	0.00	0.00	0.00
27	Spiny Gourd	0.00	360000	0.00	0.00	360000	0.00	0.00	0.00	0.00	0.00
28	Taro	6480	0.00	0.00	0.00	6480	0.00	0.00	0.00	0.00	0.00
29	Tomato	74429	0.00	150000	0.00	83875	98338	144000	0.00	0.00	101600
30	Wax Gourd	102000	0.00	0.00	0.00	102000	0.00	0.00	0.00	0.00	0.00
31	Wheat	0.00	0.00	0.00	0.00	0.00	16512	0.00	0.00	0.00	16512
32	Winter Vegetables	78000	0.00	0.00	0.00	78000	0.00	0.00	0.00	0.00	0.00
	Sub total	**55654**	**76675**	**64929**	**0.00**	**58871**	**66387**	**69259**	**69000**	**0.00**	**66859**
III.	***Summer***										
33	Bitter Gourd	51375	0.00	0.00	0.00	51375	30000	0.00	0.00	0.00	30000
34	Bottle Gourd	96000	0.00	0.00	0.00	96000	0.00	0.00	0.00	0.00	0.00
35	Brinjal	360000	0.00	0.00	0.00	360000	0.00	0.00	0.00	0.00	0.00
36	Chilly	0.00	52800	0.00	0.00	52800	33600	118800	201600	0.00	118200
37	Cucumber	157487	197162	86400	0.00	160483	161945	200000	0.00	0.00	164600
38	Jute	54459	44000	19500	0.00	49379	57065	0.00	0.00	0.00	57065
39	Ladies' Finger	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	Maize	40865	41686	0.00	0.00	41119	41517	44720	25200	0.00	41249
41	Okra	0.00	0.00	0.00	0.00	0.00	60000	108000	0.00	0.00	84000
42	Paddy	31815	35682	38100	0.00	33702	28705	30827	0.00	0.00	28950
43	Pointed Gourd	0.00	0.00	0.00	0.00	0.00	91700	0.00	0.00	0.00	91700
44	Ridge Gourd	67200	0.00	0.00	0.00	67200	80000	0.00	0.00	0.00	80000
45	Spiny Gourd	0.00	0.00	0.00	0.00	0.00	0.00	118800	0.00	0.00	118800
46	Wax Gourd	50000	0.00	0.00	0.00	50000	0.00	0.00	0.00	0.00	0.00
	Sub total	**95077**	**90721**	**59150**	**0.00**	**93581**	**90762**	**99311**	**113400**	**0.00**	**92530**
	Grand total	**200589**	**218603**	**186839**	**0.00**	**202817**	**197187**	**215305**	**211145**	**0.00**	**200105**

Source: Field survey

6.3 Cost of cultivation of major crops in the study area of West Bengal

Paddy and potato have been identified as the two major crops in the study area of West Bengal. The study undertakes a detailed analysis of their cost of cultivation, the findings of which are presented in Tables 6.3 and 6.4.

6.3.1 Cost and return structure of Paddy (Rs. Per acre)

The cost and returns structure of paddy cultivation has been analysed and presented in Table 6.3.1. The data reveal that the total cost of cultivation for farmers with clear land titles is ₹26,086 per acre, which is comparatively higher than that of farmers with non-clear titles at ₹24,518 per acre. This cost differential is primarily attributed to the fact that clear titleholders are generally more invested in the maintenance and sustainability of their land. These farmers tend to use a higher quantity of manure and organic fertilizers to maintain soil fertility, thereby increasing their overall input costs. The expenditure pattern on manures and fertilizers reveals clear differences across farmer categories and title status. Among clear-title farmers, average spending is highest for marginal farmers (Rs. 5756), followed by medium farmers (Rs. 5346) and small farmers (Rs. 4965), indicating relatively consistent input use across farm sizes, with marginal farmers spending slightly more on a per household basis. The overall average (Rs. 5,599) for clear-title households suggests a comparatively higher investment in chemical and organic nutrients.

In contrast, non-clear-title farmers exhibit a different cost distribution. Their spending is highest among medium farmers (Rs. 5,873), with smaller outlays among small farmers (Rs. 5,250) and marginal farmers (Rs. 4,350). The lower overall average of Rs. 4,495 among non-clear-title households suggests that they spend substantially less on fertilizers and manures than clear-title farmers.

This pattern suggests that title status influences investment behavior: farmers with clear titles are able and willing to allocate more resources towards soil nutrients and greater confidence in long-term land security.

Among clear titleholders, the highest cost of cultivation is borne by marginal farmers (₹26,541/acre), followed by small farmers (₹24,686/acre) and semi-medium farmers (₹22,881/acre). This pattern reflects economies of scale—larger landholders are typically more financially stable and can purchase inputs like fertilizers in bulk, which reduces their average costs. Additionally, semi-medium farmers can hire labour at lower rates due to upfront cash payments, a benefit not typically available to marginal farmers who often rely on credit-based transactions for both fertilizers and labour, incurring higher costs.

For non-clear title farmers, the highest costs were incurred by semi-medium farmers (₹30,848/acre), followed by small farmers (₹24,970/acre) and marginal farmers (₹24,304/acre). The elevated cost for semi-medium non-clear title farmers is largely due to a greater reliance on leased-in land, which increases total cultivation expenses. Unlike owner-cultivators, farmers who operate on leased-in land must pay a fixed rent—often at rates that do not vary with actual yields or farm income. This lease payment becomes an additional, unavoidable cost of cultivation. In the case of semi-medium non-clear title farmers, the proportion of leased-in land is much higher, meaning that a substantial share of their operational area is cultivated on rented plots. As a result, their total cost of cultivation includes not only input costs such as seeds, fertilisers, labour, and irrigation but also the lease rent paid per acre. This added financial burden directly inflates their cost structure compared to households that primarily cultivate owned land.

In terms of returns, clear titleholders achieved an average yield of 16.59 quintals per acre,

compared to 15.78 quintals per acre for non-clear title farmers. Consequently, gross returns for clear title farmers stood at ₹28,356 per acre, which is higher than the ₹26,351 per acre reported by non-clear title farmers. The returns per rupee of investment were also superior for clear title farmers (₹0.11) compared to non-clear title farmers (₹0.09), indicating a more efficient cost-to-return ratio associated with land tenure security.

Table 6.3.1: Cost and return Structure of Paddy (Rs. per acre)

Sl. no.	Particulars	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Over all	Marginal	Small	Medium	Large	Over all
1	**Labour cost**										
	Human labour	13767	12160	9975	0	13353	12740	12508	16125	0	12776
	Machine labour	4048	4057	4800	0	4074	4264	4062	6150	0	4275
	Bullock pair	6	0	0	0	5	0	0	0	0	0
	Total Labour cost	17821	16216	14775	0	17432	17003	16569	22275	0	17051
2	Seeds	1101	1107	1365	0	1111	1069	1055	1335	0	1072
3	Seed treatment	73	0	0	0	57	0	0	0	0	0
4	Manures and Fertilizers	5756	4965	5346	0	5599	4350	5250	5873	0	4495
5	**Plant Protection Chemicals**										
	Bio-agents/ Botanicals	0	0	0	0	0	0	0	0	0	0
	Chemicals	1422	1740	1395	0	1479	1117	1482	1365	0	1168
6	Miscellaneous expenses (Mulching)	30	0	0	0	24	34	0	0	0	29
7	Depreciation on machineries	0	0	0	0	0	0	0	0	0	0
8	Irrigation charges	338	657	0	0	385	731	614	0	0	701
9	Interest on working capital (@ 7 %)	0	0	0	0	0	0	0	0	0	0
10	**Total Cost**	26541	24686	22881	0	26086	24304	24970	30848	0	24518
11	Total main produce yield (qtls)	16.72	15.43	20.10	0.00	16.59	15.77	15.68	16.80	0.00	15.78
12	Value of output (Rs per acre)	24678	22436	29832	0	24432	22919	23239	25200	0	23005
13	Value of by-product (Rs per acre)	3943	3840	3619	0	3914	3354	3262	3545	0	3346
14	Quantity sold (qtls per acre)	15.06	14.71	20.10	0.00	15.15	12.71	14.75	16.80	0.00	13.05
15	**Gross revenue (Rs per acre)**	28621	26276	33451	0	28346	26273	26501	28745	0	26351
16	**Net returns (Rs per acre)**	2080	1590	10570	0	2260	1969	1531	-2102	0	1833
17	Returns per Rupee of Investment	0.11	0.08	0.47	0.00	0.11	0.10	0.06	-0.06	0.00	0.09
18	**Subsidy Rs per acre on -**										
	Seed	0	0	0	0	0	0	0	0	0	0
	Manure and Fertilizer	0	0	0	0	0	0	0	0	0	0
	Pesticides	0	0	0	0	0	0	0	0	0	0
	Irrigation	0	0	0	0	0	0	0	0	0	0
	Others	0	0	0	0	0	0	0	0	0	0
	Total Subsidy Rs per acre	0	0	0	0	0	0	0	0	0	0

Source: Field survey

6.3.2 Cost and return structure of Potato (Rs. per acre)

The cost and return structure of potato cultivation has been analysed and presented in Table 6.3.2. The analysis reveals that the total cost of cultivation for non-clear title farmers is ₹39,450 per acre, which is higher than the cost incurred by clear title farmers at ₹38,218 per acre. This difference is primarily driven by greater expenditure among non-clear title farmers on key input categories: irrigation charges (₹3,000/acre for non-clear vs. ₹2,685/acre for clear title farmers), chemical usage (₹1,716/acre vs. ₹1,690/acre), and manure and fertilizer costs (₹11,142/acre vs. ₹9,040/acre, respectively).

Among clear titleholders, marginal farmers incurred the highest cultivation cost (₹39,295/acre), followed by small farmers (₹35,504/acre) and semi-medium farmers (₹34,305/acre). In contrast, non-clear title farmers displayed the opposite trend, where higher costs were generally associated with farmers cultivating larger areas or leasing more land.

In terms of productivity, non-clear title farmers outperformed clear title farmers significantly, achieving a yield of 139.75 quintals per acre, compared to 119.97 quintals per acre for clear titleholders. This trend aligns with the findings from paddy cultivation, where higher input investment is correlated with higher yields.

As a result, the gross return from potato cultivation was also higher for non-clear title farmers at ₹95,564 per acre, compared to ₹89,003 per acre for clear title farmers. The returns per rupee of investment stood at 1.49 for non-clear title farmers, indicating a better financial outcome than clear title farmers, whose return per rupee invested was 1.40. This suggests that despite having unclear land titles, non-clear title farmers, in this case, exhibited greater financial feasibility and efficiency in potato cultivation, largely attributed to specific locational advantages and optimal market timing, as previously discussed.

Table 6.3.2: Cost and return Structure of Potato (irrigated area - Rs. per acre)

Sl. no.	Particulars	Clear Title					Non-Clear title				
		Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
1	**Labour cost**										
	Human labour	13326	11829	13500	0	13054	12335	13500	14100	0	12732
	Machine labour	4023	4029	5025	0	4136	3088	3814	4500	0	3348
	Bullock pair	0	0	0	0	0	0	0	0	0	0
	Total Labour cost	17350	15857	18525	0	17190	15424	17314	18600	0	16080
2	Seeds	7399	8657	6375	0	7530	7482	7629	7200	0	7512
3	Seed treatment	119	0	0	0	83	0	0	0	0	0
4	Manures and Fertilizers	9919	7984	5393	0	9040	10447	12493	13500	0	11142
5	**Plant Protection Chemicals**										
	Bio-agents/ Botanicals	0	0	0	0	0	0	0	0	0	0
	Chemicals	1753	1680	1313	0	1690	1650	1821	2100	0	1716
6	Miscellaneous expenses (Mulching)	0	0	0	0	0	0	0	0	0	0
7	Depreciation on machineries	0	0	0	0	0	0	0	0	0	0
8	Irrigation charges	2755	2426	2700	0	2685	3000	3086	2400	0	3000
9	Interest on working capital (@ 7 %)	0	0	0	0	0	0	0	0	0	0
10	**Total Cost**	39295	36604	34305	0	38218	38003	42343	43800	0	39450
11	Total main produce yield (qtls)	118.53	119.14	130.42	0.00	119.97	141.45	134.14	150.00	0.00	139.75
12	Value of output (Rs per acre)	92047	89993	68250	0	89003	100662	86979	69000	0	95564
13	Value of by-product (Rs per acre)	0	0	0	0	0	0	0	0	0	0
14	Quantity sold (qtls per acre)	118.53	119.14	130.42	0.00	119.97	141.45	134.14	150.00	0.00	139.75
15	**Gross revenue (Rs per acre)**	92047	89993	68250	0	89003	100662	86979	69000	0	95564
16	**Net returns (Rs per acre)**	52752	53389	33945	0	50786	62659	44636	25200	0	56114
17	Returns per Rupee of Investment	1.44	1.47	0.98	0.00	1.40	1.71	1.08	0.58	0.00	1.49
18	**Subsidy Rs per acre on -**										
	Seed	0	0	0	0	0	0	0	0	0	0
	Manure and Fertilizer	0	0	0	0	0	0	0	0	0	0
	Pesticides	0	0	0	0	0	0	0	0	0	0
	Irrigation	0	0	0	0	0	0	0	0	0	0
	Others	0	0	0	0	0	0	0	0	0	0
	Total Subsidy Rs per acre	0	0	0	0	0	0	0	0	0	0

Source: Field survey

6.4 Income details of the households in the study area of West Bengal

Household income increased with land size for both clear title and non-clear title households, with semi-medium households earning the highest incomes, followed by small and marginal households. These income estimates were calculated by aggregating the earnings of all household members involved in various occupations. It is important to note that the number of semi-medium and small households in both categories is relatively low, and members of these households tend to be engaged in higher-income occupations, which results in elevated average incomes for these groups.

Table 6.5.1 shows that clear title households earn average annual incomes of Rs. 115,709 from cultivation, Rs. 37,397 from agricultural labour, Rs. 123,571 from salary or pension, Rs. 73,544 from self-employment, Rs. 71,333 from non-farm labour, and Rs. 78,092 from other sources. In contrast, non-clear title households earn lower average incomes in all occupational categories: Rs. 99,095 from cultivation, Rs. 37,069 from agricultural labour, Rs. 115,733 from salary or pension, Rs. 71,549 from self-employment, Rs. 70,047 from non-farm labour, and Rs. 59,096 from other sources.

Overall, the average annual income of clear title households is Rs. 92,874, substantially higher than the Rs. 75,800 average incomes of non-clear title households.

6.5 Distribution of total household income of clear and non-clear land title households

Table 6.5.2 presents the distribution of total household income among clear-title and non-clear-title landholding households. The data reveal that many households in both categories fall within the income group exceeding Rs. 120,000. Specifically, 92 clear title households, representing 73.02% of the clear title group, earn above this threshold. Similarly, 76 non-clear title households, accounting for 63.33% of that group, are in the same income category.

Income inequality, measured by the Gini coefficient, shows a slight difference between the two groups: 0.36121 for households with clear titles and 0.34064 for those without clear titles. Since a lower Gini coefficient, closer to zero, indicates a more equitable income distribution, these figures suggest that income inequality is comparable between the two groups.

Figure 6.5.1 illustrates the distribution of total household income for both clear and non-clear title households. Ideally, the income distribution curves should lie close to the line of equality; however, in this study, both curves deviate significantly from this line, indicating persistent income inequality within both groups.

Table 6.5.1: Income from different sources per household- Rs. per annum

Particular	Clear title					Non-clear title				
	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
Cultivation	87533	194394	360623	NA	115709	77815	247589	336000	NA	99095
Agricultural labour (on and off farm)	34735	72000	NA	NA	37397	37069	NA	NA	NA	37069
Salary/Pension	110364	78000	360000	NA	123571	115733	NA	NA	NA	115733
Self-Employment	72772	81200	60000	NA	73544	71549	NA	NA	NA	71549
Nonfarm labour	77556	52667	NA	NA	71333	65787	102000	NA	NA	70047
Other:	72239	85541	167863	NA	78092	53648	106911	NA	NA	59096
Sum total	78356	131711	253394	NA	92874	64844	179881	336000	NA	75800

Source: Field survey

Table 6.5.2: Distribution of total household income of clear and non-clear land title households

Income group (`)	Clear title				Non-clear title			
	Number of households	% of population	Average income (Rs per hh per annum)	% of income	Number of households	% of population	Average income (Rs per hh per annum)	% of income
Less than 15,000	0	0.00	0		0	0.00	0	
15,000-30,000	0	0.00	0		1	0.83	23100	
30,000-45,000	3	2.38	39273		3	2.50	33857	
45,000-60,000	7	5.56	52180		5	4.17	50855	
60,000-75,000	6	4.76	66718		4	3.33	67125	
75,000-90,000	4	3.17	82025		10	8.33	83324	
90,000-1,05,000	8	6.35	97609		11	9.17	97535	
1,05,000-1,20,000	6	4.76	115003		10	8.33	114502	
More than1,20,000	92	73.02	281768		76	63.33	241569	
Overall	126	100	227024		120	100	183815	
Gini-Concentration Ratio	0.36121				0.34064			

Source: Field survey

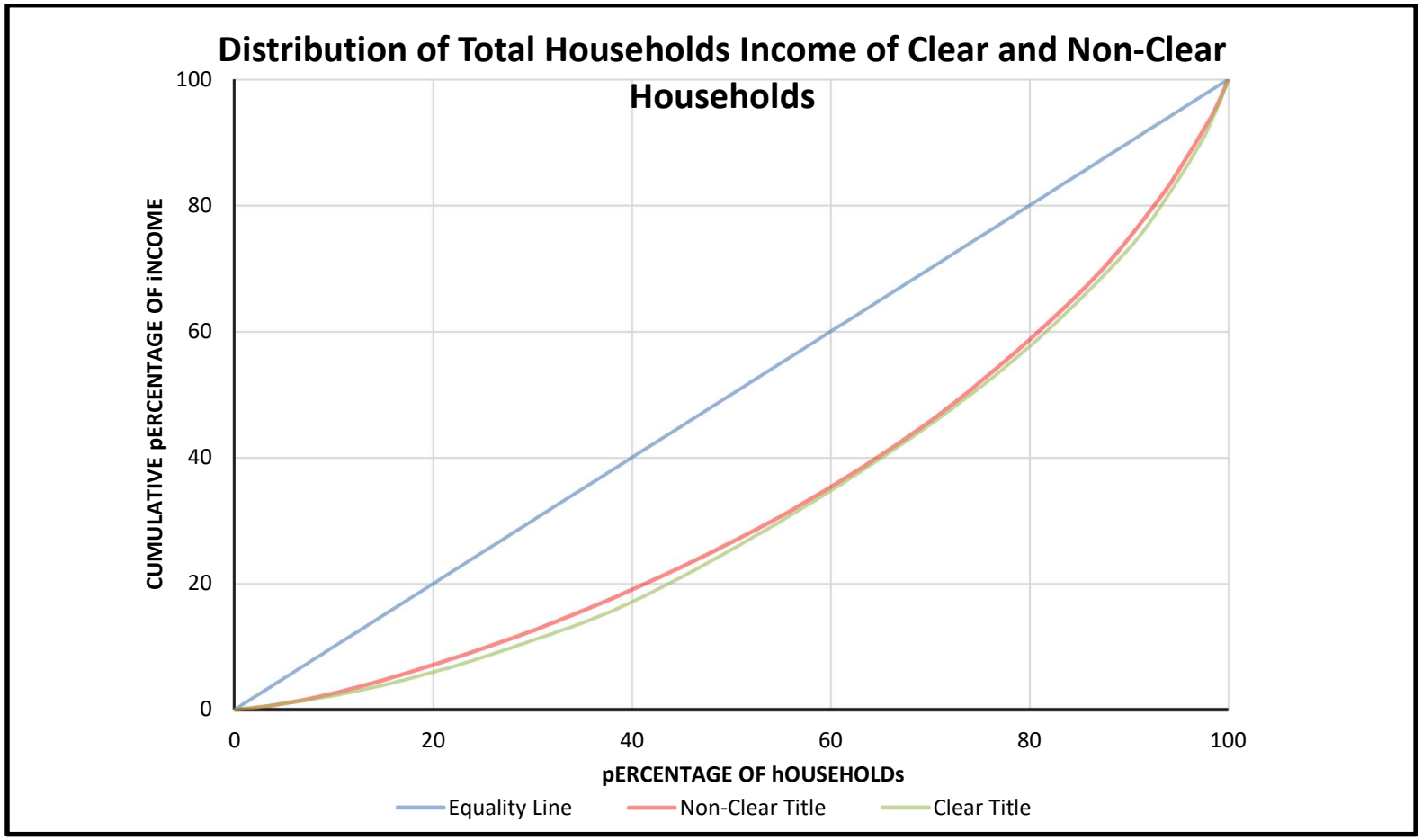


Figure 6.5.1: Distribution of Total Household Income of Clear and Non-Clear Households

6.6 Resource–use efficiency of the Paddy crop

As discussed earlier, the cost and return structure of the paddy crop revealed that households with clear land titles achieved higher yields and, consequently, higher gross returns. Their net returns were also higher, largely due to lower per-unit cultivation costs. In this section, an econometric analysis has been undertaken to examine the determinants of net returns from paddy cultivation, with particular attention to the role of land title ownership.

A Cobb–Douglas production function was estimated, with net returns per acre of paddy as the dependent variable. The explanatory variables included human labour, machine power, seed cost, plant protection chemicals, irrigation cost, and land ownership status (captured through a dummy variable indicating clear title ownership). The results are presented in Table 6.7.1.

The estimated model yielded an R^2 value of 0.19, indicating that the explanatory variables accounted for only 19% of the variation in net returns. Among the variables, human labour exhibited a statistically significant and negative impact on net returns. Similarly, the costs associated with seed, machine power, and fertilizers were found to have a negative and significant influence. On the other hand, the cost of manure had a comparatively weaker and statistically insignificant effect on returns.

Notably, the regression analysis indicated that land title ownership, despite its association with better access to subsidies and institutional benefits, does not exert a statistically significant influence on the net return from paddy cultivation in the study area. This result suggests that while secure land tenure may enhance input access and reduce transaction costs, its direct impact on productivity-related returns is limited under existing conditions in West Bengal.

6.7 Resource–use efficiency of the Potato crop

As discussed earlier, both the yield and net returns from potato cultivation were observed to be higher among non-clear title farmers compared to those with clear titles. The underlying reasons, such as strategic leasing of fertile riverbank land and market-timing advantages, have already been elaborated in previous sections.

To further examine the productivity and efficiency of resource use in potato cultivation, a regression model was estimated using selected explanatory variables. The objective was to assess their contribution to net returns, with land title ownership included as a dummy variable. The results of this analysis are presented in Table 6.7.2.

The estimated model for the full sample yielded an R^2 value of 0.12, indicating that only 12% of the variation in net returns from potato cultivation is explained by the included variables. Notably, the regression coefficient for land size is negative, indicating that a one percent increase in cultivated land area results in a decrease in net returns. This suggests potential inefficiencies or diminishing returns to scale in potato cultivation in the study area.

Like the findings for paddy, land title ownership was found to have no statistically significant effect on net returns from potato cultivation. This indicates that, despite its advantages in institutional access, secure land title does not directly translate into higher profitability for this crop under current agronomic and market conditions in West Bengal.

Table 6.7.1: Resource use Efficiency of major crop1 (Paddy) – Dependent variable: net returns per acre

Sl. No.	Explanatory variables	Regression coefficients and t	
		Coefficient	't' value
1	Intercept	14040.48	3.53***
2	Human labour	-0.61	-3.19***
3	Bullock labour	6.954	0.58
4	Machine power	-1.16	-2.22**
5	Seed	4.51	2.3**
6	Fertilizer	-1.25	-2.53**
7	Manure	-0.49	-1.87*
8	Plant protection chemicals	-0.09	-0.11
9	Land (acre)	-28.12	-0.06
10,	Dummy land title (with title with owner =1, otherwise =0)	1366.98	1.37
11	R_2	0.19	
12	F(9,218)	5.72	
13	Prob > F	0.00	
*** p<.01, ** p<.05, * p<.1			

Source: Authors' calculation based on field data

Table 6.7.2: Resource use Efficiency of major crop 2 (Potato) - Dependent variable: net returns per acre

Sl. No.	Explanatory variables	Regression coefficients and t	
		Coefficient	't' value
1	Intercept	90893.13	2.09**
2	Human labour	-5.14	-1.39
3	Bullock labour	NA	NA
4	Machine power	2.65	0.48
5	Seed	-2.34	-1.17
6	Fertilizer	0.55	0.35
7	Manure	4.13	0.99
8	Plant protection chemicals	19.43	1.6
9	Land (acre)	-12081.45	-1.71*
10,	Dummy land title (with title with owner =1 otherwise =0)	-5175.87	-0.47
11	R_2	0.12	
12	F(8,52)	0.91	
13	Prob > F	0.51	
*** p<.01, ** p<.05, * p<.1			

Source: Authors' calculation based on field data

6.8 Allocative Efficiency

Given the existing technology, allocative efficiency in agriculture implies that farm resources are utilized in a manner consistent with their marginal value and prevailing market prices. In other words, inputs should be applied at levels where the marginal value product (MVP) equals the marginal factor cost (MFC). An analysis of resource use efficiency becomes essential in identifying whether reallocation of inputs could enhance profitability at the farm or regional level. This aspect has been examined through allocative efficiency analysis and is presented in Tables 6.8.1 and 6.8.2.

Table 6.10 provides estimates for input allocation in paddy cultivation. Among clear title farmers, several inputs were found to be excessively utilized, as indicated by an MVP: MFC ratio of less than one. These include human labour (0.06), machine power (-0.85), fertilizer (-1.12), and plant protection chemicals (0.70). This suggests that reducing the use of these inputs could improve cost efficiency. On the other hand, seed cost (1.94) and manure cost (12.5) showed an MVP:MFC ratio greater than one, indicating underutilization and potential for productivity improvement through increased application.

For non-clear title farmers, a similar pattern was observed. All inputs except seed (5.83) and manure (8.81) were found to be overused. These results reflect sub-optimal input allocation and indicate potential gains in efficiency and profitability through better resource management, especially for underutilized but high-value inputs.

Table 6.11 reports allocative efficiency in potato cultivation. In this case, almost all inputs—except for manure cost (2.80 for clear and 24.50 for non-clear) and plant protection chemicals (9.41 for clear and 3.34 for non-clear)—were overutilized by both clear and non-clear title farmers. The pervasive overuse of inputs, with MVP: MFC ratios less than one, signals inefficient cost management and points to opportunities for optimizing input levels, particularly in high-cost components such as irrigation, fertilizers, and seed.

These findings suggest that, irrespective of land title status, there is considerable scope for improving allocative efficiency in both paddy and potato cultivation in the study area of West Bengal through targeted resource reallocation and cost optimization strategies.

Table 6.8.1: Allocative efficiency of Paddy

Sl. No.	Explanatory variables	Parameters	MVP: MFC	
			Clear Title	Non-Clear title
1	Human labour cost	b1	0.06	0.06
2	Bullock labour cost	b2	NA	NA
3	Machine power cost	b3	-0.85	0.02
4	Seed cost	b4	1.94	5.83
5	Fertilizer cost	b5	-1.12	0.77
6	Manure cost	b6	12.5	8.81
7	Plant protection chemicals	b7	0.7	0

Source: Authors' calculation based on field data

Table 6.8.2: Allocative efficiency of Potato

Sl. No.	Explanatory variables	Parameters	MVP: MFC	
			Clear Title	Non-Clear title
1	Human labour cost	b1	-0.26	-0.52
2	Bullock labour cost	b2	NA	NA
3	Machine power cost	b3	0.72	0.27
4	Seed cost	b4	-0.15	-0.22
5	Fertilizer cost	b5	0.36	0.58
6	Manure cost	b6	2.80	24.50
7	Plant protection chemicals	b7	9.41	3.34

Source: Authors' calculation based on field data

6.9 Conclusion

This chapter explores whether the advantages associated with a clear land title translate into higher agricultural productivity and net returns. The results are nuanced: title status is not a uniform determinant of productivity in and of itself. For paddy (Kharif), clear-title farmers record a little higher yields and value per acre, in part because clear-title cultivators have better access to procurement channels and institutional support, while for potato (Rabi) non-clear-title farmers in the sample often record higher yields and values, likely reflecting their heavier use of leased-in land cultivated intensively. Such mixed patterns suggest that market access, cropping choice, and land use intensity interact with title status to shape outcomes.

The cost and efficiency analysis reveals significant constraints to productivity improvement for the two title groups. The cultivation costs for semi-medium and non-clear title farmers are higher in cases when a large share of their operational area is leased-in because rent is an additional fixed input. Their allocative-efficiency metrics-the MVP:MFC ratios-indicate widespread misallocation (overuse of many inputs and underuse of high-value inputs like seed and manure in some cases), pointing to clear opportunities for improving input use and lowering cost per unit.

Chapter 6 concludes that secure title is an enabling but not sufficient condition for higher productivity. Title clarity reduces exclusion from services and improves market and credit access, but real gains in productivity require complementary interventions: better market linkages, including procurement access; affordable, timely credit; appropriate extension and input-use guidance; and targeted support to reduce the cost burden on leased-in land users. Dealing with these complementarities would facilitate turning the institutional advantages of titling into measurable improvements in farm efficiency and net returns.

Chapter 7
Summary, Conclusion and Policy Recommendations

7.1 Summary and Conclusion

It is observed that most farmers in both categories are middle-aged; however, there are significant differences in their caste, education, and secondary occupations. Farmers having the clear title of their land generally belong to the SC category and have better educational qualifications and business as a secondary occupation, while farmers having a non-clear title mostly belong to the General caste and their secondary occupation is agricultural labour, corresponding to the sample.

Farmers with a clear title to their land have higher land ownership, but those with non-clear titles have higher leased-in land holdings and pay higher rent per acre. Farmers with clear titles also have better access to credit and agricultural equipment loans, leading to more asset holding, including agricultural assets.

The study also found a variety of cropping patterns in the study area, with clear title farmers cultivating a larger proportion of the gross cropped area than non-clear title farmers.

Only a small percentage of semi-medium, small, and marginal farmers, both clear- and non-titled, accessed institutional credit sources for loans with land security. Non-clear-titled farmers who owned land were able to access institutional loans by using the name of another family member who owned the land. However, overall, clearly titled farmers had better accessibility to institutional loans than the non-clearly titled farmers.

A significant number of non-clear-titled farmers reported that they had not accessed institutional loans because they were ineligible due to a lack of land records. Overall, 65% of non-clear-titled farmers recorded this as a problem. Clear-titled farmers also faced a similar issue, with 46.83% reporting that they could not obtain sufficient loans because the land record for the total land was not in their name. Many clear-titled farmers reported that they did not need a loan, while non-clear-titled farmers reported not having land records as the reason for not taking loans.

It is noteworthy that a negligible number of farmers in the study area accessed non-institutional credit from sources such as friends, relatives, or landlords. Both clear- and non-clear-titled farmers were able to obtain their required credit through Self-Help Groups (SHGs) and village credit societies.

In conclusion, the study reveals that access to institutional credit poses a challenge for both clear- and non-clear-titled farmers in the study area. While clearly titled farmers have slightly better access to institutional credit, both groups lack knowledge about crop insurance and face challenges in accessing it. Non-clear-titled farmers are particularly disadvantaged in accessing institutional credit due to the lack of land records, which makes them ineligible for loans. Moreover, many farmers in the study area have limited knowledge about alternative financing options such as contract farming. Therefore, there is a need for greater awareness and education programs for farmers, especially those without clear title, to help them access institutional credit and other financing options that support their agricultural activities. Additionally, measures need to be taken to address corruption and ensure the prompt payment of insurance claims, thereby improving the effectiveness of crop insurance schemes.

Overall, the socio-economic status of clear-titled farmers was found to be comparatively better than that

of non-clear-titled farmers in the study area, which reflects the importance of land titling, access to credit, and subsidies for agricultural development.

The study highlights a significant disparity in access to government schemes and benefits between farmers with clear titles and those without clear titles in the study area. Clear title farmers have better accessibility to subsidies and benefits provided by the government than non-clear title farmers. A negligible number of farmers have taken crop insurance and have access to seed distribution under a subsidy. Many farmers from both groups lack knowledge about crop insurance in the study area. Some farmers have availed themselves of benefits such as PM-KISAN, Chief Minister Krishak Bandhu, Laxmi Bhandar, OASIS, or SVMCM scholarships, old-age pensions, electric subsidies, and the distribution of free chicks. Therefore, the study suggests that ownership of land with a clear title is necessary to access different state and central government subsidy schemes.

The maximum percentage of subsidies for agricultural equipment is received by farmers with clear titles. However, only a small number of farmers have been able to take advantage of these subsidies. Those who have received subsidies obtained the equipment through the agriculture department and were able to receive the full amount of the asset market value. This has resulted in farmers without clear titles having to purchase agricultural inputs and equipment at higher prices than those with clear titles.

Most households, both clear-titled and non-clear-titled, faced sudden shocks, with crop failure being the most common issue. Clearly titled farmers were more likely to benefit much from government subsidies, and only a small percentage of them reported that land titling helped them overcome these shocks. Marginal farmers were the most affected by these sudden shocks in both groups. Additionally, non-clear-titled farmers were more likely to rely on non-institutional loans with higher interest rates from sources such as friends and relatives to overcome those sudden shocks.

Land titling is crucial for farmers to access various government benefits and subsidies. It is observed that a significant percentage of farmers without clear titles are unable to access subsidies for inputs such as seeds, machinery, and micro-nutrients, and are therefore forced to purchase them at full price. Additionally, they are not eligible for government-subsidized institutional credit, and they may not receive compensation or subsidies in the event of crop failure or natural calamities. As a result, non-clear-titled farmers miss out on government schemes like 'Krishakbandhu,' which provide income to clear-titled farmers. The state government has recently provided compensation for crop failure, but non-clear-titled farmers have been unable to receive it. Therefore, land titling is essential for farmers to access government benefits and improve their livelihoods.

The findings of this study have significant implications for policymakers and stakeholders in the agricultural sector. The high costs and time required for changing land entitlement documents can act as a deterrent for farmers, especially those with non-clear titles. This can lead to an inequitable distribution of land and create obstacles for small and marginal farmers in accessing credit and other government schemes. Furthermore, the prevalence of informal costs, such as agent costs, in the process highlights the need for reforms in the governance and functioning of land registration offices. Policymakers must consider implementing measures to simplify the process of changing land entitlement documents, reduce associated costs and time, and ensure transparency and accountability in the functioning of land registration offices. Such reforms can facilitate efficient land use, ensure equitable distribution of land, and promote sustainable agricultural development.

The process of changing land entitlement documents can be complex and daunting for many households,

as highlighted in Table 5.6 of the study. While only 2.38% of clear title farmers faced constraints due to complexity in understanding the process, a much larger proportion of non-clear title farmers (20.61%) faced similar constraints. Among farmers who recently changed their land titles, a significant percentage of both groups reported high charges by agents as a major constraint. This burden is particularly heavy for small and marginal farmers. The percentage of clear title farmers reporting this constraint was 42.86%, while for non-clear title farmers it was 46.67%. Clear title farmers also reported losing workdays due to the time-consuming process of changing land entitlement documents (26.19%). In contrast, non-clear title farmers reported non-cooperation by BLRO officials (16.97%) as a major constraint, which creates opportunities for agents to charge high rates for their services. The preparation of extensive documentation was also identified as a significant problem for both clear (19.05%) and non-clear (9.09%) title farmers. These constraints highlight the need for policymakers to streamline the land entitlement change process and ensure transparency and accountability in the functioning of land registration offices.

The study highlights the importance of land tenure security and its direct linkages with income security. It emphasizes the need for enacting appropriate land leasing laws as a priority for state governments. The legal framework for land leasing incentivizes tenant cultivators to invest in agricultural land resources, leading to increased land productivity and profitability. The model Agricultural Land Leasing Act, 2016, recommended by the NITI Aayog on Doubling Farmers' Income, should be legislated to ensure private sector investments in agriculture. Legalizing land leasing can address the bottleneck of credit flow to lessee farmers/sharecroppers/tenants, as land is often used as collateral for farm loans. Restrictive land leasing legislation has led to informal and concealed tenancies without security of tenure, ultimately impeding investment in the agricultural sector and impacting agricultural productivity. The study also highlights the constraints faced by households if land is not in the name of any family member, including problems in accessing subsidies, institutional credit, and compensation on crop failure. Overall, land tenure security is crucial for agricultural growth and the welfare of farmers.

In the case of paddy, farmers with clear titles have higher productivity and value due to their ability to sell their produce at procurement centres. Non-clear title farmers, on the other hand, have lower productivity and value because they are forced to sell their produce in the open market, where they receive lower prices from private dealers.

However, in the case of potatoes, farmers with non-clear titles have higher productivity and value compared to those with a clear title. This is likely due to their ability to sell their produce in the market when prices are high, as well as their strategic cultivation in areas with high fertility.

It appears that land titling and leasing laws have a significant impact on the productivity and profitability of farmers. Legalizing land leasing can provide tenant cultivators with tenure security, which incentivizes them to invest in and conserve agricultural land resources, leading to increased land productivity and profitability. It can also address the bottleneck of credit flow to lessee farmers/sharecroppers/tenants by allowing land to be used as collateral for farm loans.

Based on the study, it appears that clear-title farmers generally have higher productivity and returns compared to non-clear-title farmers. This is mainly because clear title farmers have access to government procurement centres where they can sell their produce at a better price, whereas non-clear title farmers must sell in the open market, where prices are typically lower. Additionally, clear title farmers tend to invest more in maintaining the fertility of their land with manure and organic fertilizers,

which can lead to higher yields.

However, there are some exceptions to this pattern. For example, non-clear title farmers in the study area were found to have higher productivity and returns for potato cultivation, partly due to their ability to sell their produce in the market when prices were high. Additionally, some non-clear title farmers were able to access particularly fertile land for potato cultivation, which further contributed to their higher yields.

Overall, the study suggests that land ownership status can have a significant impact on agricultural productivity and profitability. Clear title farmers generally have advantages in terms of market access and investment in land maintenance, but non-clear title farmers may be able to take advantage of specific market conditions or land opportunities to achieve higher returns in certain crops.

In terms of income sources, clear title households earn more from all types of occupations compared to non-clear title households. The most significant difference is in income from cultivation, where households with a clear title earn an average of Rs. 16,614 more than those without a clear title.

The income inequality, as measured by the Gini coefficient, is also observed to be relatively high for both clear and non-clear title households. While the Gini coefficient is slightly higher for households with clear titles, the overall income distribution for both groups remains unequal. This suggests that there is a need for policies and interventions to reduce income inequality and promote more equitable income distribution among farmers, regardless of land title status.

Based on the regression analysis, it appears that human labour has a negative impact on net returns per acre for the paddy crop. Additionally, the cost of seed, machine power, and fertilizer has a significant negative impact on net returns from paddy, while the cost of manure has a lesser impact. However, the study found no significant effect of land titling on net returns for either paddy or potato crops in West Bengal.

For the potato crop, the regression analysis indicated that an increase in land size may lead to a decrease in net returns. Again, the study found no significant effect of land titling on net returns for the potato crop.

The study suggests that there is a need for better resource management practices to improve net returns for farmers in West Bengal. Additionally, while land titling may not have a significant impact on net returns, it remains a crucial issue for ensuring land tenure security and promoting the equitable distribution of land resources.

It is evident from the study and the results of the analysis suggest that clear title farmers may have more flexibility in reallocating their resources compared to non-clear title farmers. This is because clear title farmers have more secure land tenure and are more likely to invest in their land and use it to its full potential. On the other hand, non-clear title farmers may be hesitant to invest in their land because they lack a clear legal right to it, which could limit their ability to maximize productivity and profitability.

7.2 Policy Recommendations

Based on the issues identified in the study, the following policy recommendations can be made to improve the situation for farmers, especially those with non-clear titles:

Land Titling: The government should implement policies to expedite the land titling process and

streamline the updating of land records. This will help farmers, especially those with non-clear titles, to access institutional credit and government subsidies.

Access to Credit: The government should make efforts to increase awareness among farmers, especially those with non-clear titles, about the availability of institutional credit and how to access it. This can be done through education and outreach programs that target farmers in rural areas.

Crop Insurance: The government should simplify the process of accessing crop insurance and make it more accessible to farmers, including those with non-clear titles. This can be achieved by providing farmers with education and training on the benefits of crop insurance and how to access it.

Alternative Financing Options: The government should also promote alternative financing options, such as contract farming, and encourage farmers to form Self-Help Groups (SHGs) and village credit societies to improve access to credit and financing options.

Government Subsidies: The government should ensure that government subsidies and benefits are accessible to all farmers, irrespective of land titles. This can be done by ensuring that subsidies and benefits are disbursed based on other criteria, such as income or agricultural output, rather than land titles.

Sudden Shocks: The government should provide support to farmers, particularly marginal and small-scale farmers, to help them cope with sudden shocks, such as crop failures. This can be achieved through the provision of financial support, access to credit, and other forms of assistance.

Overall, these policy recommendations can help to improve the situation of farmers, especially those with non-clear titles, by providing them with better access to credit, subsidies, and other forms of assistance through proper means.

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