

Agro-Economic Alerts

Aiding the future of India's farmers and agriculture



(Photo Source: Dr. Chetti Praveen Kumar, AERC Vishakapatnam)



For kind attention of:

The Hon'ble Prime Minister's Office,
the Ministry of Agriculture and Farmers' Welfare,
and all others interested

Emerging Critical Situations and Threats in India's Agricultural Economy

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Land Titling and Agricultural Productivity: A Study of West Bengal

Key Highlights

- Land ownership and secure land titles play a crucial role in getting higher productivity and fostering socio-economic growth in the agricultural sector. However, in India, land titles are often unclear, presenting significant obstacles in maximizing the agricultural potential.
- This study aims to examine the association between clear land titling and other factors such as access to credit, government subsidies, insurance, and overall land productivity. By exploring these relationships, our aim is to provide insights to the policymakers which can help them understand how land titling can enhance agricultural productivity in India.
- The AERC (Agro-Economic Research Centre) Santiniketan conducted study across two districts, Birbhum and Uttar Dinajpur, representing distinct Agro Climatic Zones in West Bengal. From these two districts, Raiganj and Bolpur blocks were chosen based on the level of irrigation. Subsequently, 2-3 villages were selected from these blocks, resulting in a comprehensive survey of 120 households per block, totaling 240 households across the state. Within each district, an equal number of 120 farmers with clear land titles and farmers with non-clear land titles were surveyed.



Source: Rishav Mukherjee, AERC Visva Bharti

Observations

- The study shows that access to institutional credit is a challenge for both clear and non-clear land titled farmers in the study area. While clearly titled farmers have slightly better access to institutional credit, both groups have insufficient 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, the majority of farmers in the study area have limited knowledge about alternative production arrangements such as contract farming.
- The study highlights a significant disparity in access to government schemes and benefits between clear title farmers and non-clear title farmers in the study area. Clear title farmers

have better accessibility to subsidies and benefits provided by the government than non-clear title farmers.

- The majority of households, both clearly titled and non-clear titled, faced sudden shocks, with crop failure which is a very common issue. Clear titled farmers are more likely to benefit from government subsidies and only a small percentage of them reported that land titling helped them overcome these shocks. Marginal farmers are mostly 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.
- The high costs and time required for changing land entitlement documents can act as a deterrent for land registration. This creates obstacles for small and marginal farmers in accessing credit and other government schemes. Furthermore, the prevalence of bribery in the process highlights the need for reforms in the governance and functioning of land registration offices.
- The process of changing land entitlement documents can be complex and daunting for many households, as highlighted in Table 1. While only 2.38% out of 120 clear title farmers faced

constraints due to complexity in understanding the process, a much larger proportion of non-clear title farmers (20.61% out of 120 non-clear title farmers) 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 Block Land Records Office (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.

Table 1: Constraints faced by the households (HH) in land titling (% of HH)

Sr. No.	Clear Title					Non-Clear title				
	Marginal	Small	Medium	Large	Overall	Marginal	Small	Medium	Large	Overall
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
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
More Transparency should be Needed	4.76	0.00	0.00	0.00	4.76	0.61	0.00	0.00	0.00	0.61
Non-cooperation of BLRO	4.76	0.00	0.00	0.00	4.76	13.94	3.03	0.00	0.00	16.97
Time Taking	16.67	9.52	0.00	0.00	26.19	5.45	0.61	0.00	0.00	6.06
Too much documentation	14.29	2.38	2.38	0.00	19.05	8.48	0.00	0.61	0.00	9.09

Source: Primary data collected through field survey

- The Model Agriculture 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's have led to informal and concealed tenancies without security of tenure, ultimately impeding investments in agri-productivity.

Actions Suggested

- The government should promote alternative resource management strategies 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.
- The government should ensure that subsidies and benefits are accessible to all farmers, irrespective of land titles. Along with land criteria, there is a

need to devise a mechanism for ensuring access of government schemes such as crop insurance, credit subsidy, etc. to the person who tills the land.

- Policymakers must consider implementing measures to simplify the process of changing land registration document process, reduce associated costs and time, and ensure transparency and accountability in the functioning of land registration offices. Such reforms can facilitate efficient land use and promote sustainable agricultural development.
- The farmers should be trained to access digital land records under the Digital India Land Record Modernization Programme (DILRMP) which can help farmers provide a proof of ownership of land and can reduce the frequency of land-related disputes and fraud.

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Challenges and Opportunities in Urad and Moong Beans Production in Andhra Pradesh: A Comprehensive Analysis of Factors and Interventions

Key highlights

- Pulses play a vital role in the Indian diet as a source of protein and other nutrients, particularly for the poorest populations. Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh, Andhra Pradesh, and Karnataka are the major pulse-producing states in India, accounting for 80 percent of pulse production and 79 percent of the land used for cultivation.
- In order to fully understand the factors affecting the production of pulses and farmers' reactions to market pricing and government policies, the study conducted a thorough household-level investigation. The study focused on the production of urad (black gram) and moong (green gram) in Andhra Pradesh. A household survey was

collected using the multi-stage sampling method to collect the primary data for the study.

- The primary data was collected through a comprehensive household-level survey using a multi-stage random sampling technique. Districts, mandals, and villages that have the highest production of pulses were selected for the study. A total sample of 200 households consisting of 100 urad and moong farmers each were selected from the Gara and Narasannapeta mandals of the Srikakulam district and Pedakakani and Amruthaluru mandals of the Guntur district. The study provides qualitative insights regarding sequential cropping, rainfed cultivation, economics of pulses cultivation, role of family labour and disparity in agrochemicals use.



Source: Dr. Chetti Praveen Kumar, AERC Vishakapatnam

Observations

- In Andhra Pradesh, a sequential cropping system is practiced, where paddy is grown during the long rains of the kharif season, followed by pulses during the short rains of the rabi season. This system allows for better land utilization and improves soil health benefits.
- Pulses are predominantly grown in rainfed areas in Andhra Pradesh, where irrigation facilities are limited. Farmers rely on rainwater for pulse cultivation, and they use borewell system for subsequent irrigation (1 or 2 rounds at specific intervals).
- There is a disparity in fertilizer and pesticide usage between different districts of Andhra Pradesh. For example, in Guntur district, the pulses farmer substantially used fertilizer and insecticides during cultivation. While the use among farmers of Srikakulam district was very low or completely absent.
- Labour and Technology: In Srikakulam district, family labour is primarily used for agricultural operations, with occasional hiring of daily-wage agricultural labourers during the harvest period. In contrast, Guntur district employs both hired labour and technology for harvesting and threshing operations.
- Seed selection in farmers: In Srikakulam district farmers often use their own seeds or purchase them from government seed distribution centers. In Guntur district, farmers mostly rely on seeds from the government distribution centers.
- Farmers in Andhra Pradesh frequently sell their pulse output immediately after harvest rather than wait for better market opportunity. Farmers are discouraged from selling their produce at procurement centers primarily due to delayed payments.
- Overall, the production of moong and urad beans in Andhra Pradesh is hindered by scarcity of high-quality seed supply, difficulty in crop protection from pests and diseases, lack of secure

market and inadequate support from agriculture extension agency.

Actions Suggested

- Crop Diversification and Effective Irrigation Technology: Educate farmers to diversify their cropping pattern and promote awareness about benefits of pulses cultivation. This can be done through training programs, workshops, and farmers field schools. Prioritize investment in improving irrigation facilities in rainfed areas to provide reliable water sources for pulse cultivation.
- Effective procurement process: Streamline the procurement process and ensure effective implementation of Minimum Support Price (MSP) for pulses production in Andhra Pradesh.

- Market-based measures: Establish efficient market linkages for pulses farmers in Andhra Pradesh, providing them with timely information on market demand, price, and procurement centers. Foster collaboration between government agencies, research institutions, farmer organizations, and private stakeholders to collectively address the challenges in pulse production.

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Status of Paddy Cultivation in the Climate-vulnerable Zone of West Bengal

Key Highlights

- Climate change makes zones vulnerable to the increased soil and groundwater salinity¹ which affects local agriculture and jeopardizes the local food security of the coastal population².
- In India, the median location of cyclone landfall has shifted from west to north and eastward over time. Currently, the highly impacted zones are found in Odisha and West Bengal region³. The majority of the farmers in the state are marginal or small landholders and rely significantly on the rainfed production of food grains, which does not generate enough agricultural revenue for them⁴.
- The state's diverse agro-climatic zones (i.e., Northern Hill Zone, Terai-Teesta Alluvial Zone, Vindhyan Alluvial Zone, Gangetic Alluvial Zone,

Undulating Red and Laterite Zone, and Coastal Saline Zone) further influence paddy production, contributing to the overall agricultural output of the region. Among all these agro-climatic zones, the Coastal Saline Zone is more susceptible to climate change and has been facing extreme weather events.

- This study was conducted to assess the status of paddy production in the Coastal Saline Zone of West Bengal compared to other agro-climatic zones using the ten years (2011-12 to 2020-21) plot level improved variety paddy production data of Kharif season⁵. This study excludes Northern Hill Zone due to its very low contribution (i.e., 0.56 per cent of the total area and 0.46 per cent of the total production in 2020-2021) to the total paddy production of West Bengal.



Source: Rishav Mukherjee, AERC Visva Bharti

Observations

- Gangetic Alluvial Zone shows the highest average paddy productivity (46.47 Qtl/Ha) during 2011-2012 to 2020-2021, followed by Vindhyan Alluvial Zone (41.80 Qtl/Ha), Undulating Red and Laterite Zone (38.79 Qtl/Ha), Terai-Teesta Alluvial Zone (38.10 Qtl/Ha). During the same time period, the average paddy productivity of the Coastal Saline Zone is lowest, i.e., 35.42 Qtl/Ha.
- The compound annual growth rate (CAGR) of average paddy productivity for the year 2020-2021 compared to 2011-2012 is the highest for Vindhyan Alluvial Zone as well as Undulating Red and Laterite Zone (1.46%), followed by Terai-Teesta Alluvial Zone (0.61%) and Gangetic Alluvial Zone (0.12%).
- However, the CAGR of average paddy productivity for the year 2020-2021 compared to 2011-2012 is negative for Coastal Saline Zone (-0.23%).
- The average intra-zonal variability (i.e., Coefficient of Variation=Standard Deviation/Mean×100) of the yield rate of paddy for 2011-2012 to 2020-2021 shows an increasing trend as we move from

the northern to southern agro-climatic zones of West Bengal.

- The average intra-zonal variability of the yield rate of paddy is lowest for Terai-Teesta Alluvial Zone (0.16), followed by Vindhyan Alluvial Zone (0.17), Gangetic Alluvial Zone (0.20), Undulating Red and Laterite Zone (0.24). And it is highest for Coastal Saline Zone, i.e., 0.26.

Actions Suggested

- Increase farmer enrollment in crop insurance schemes in order to mitigate loss in farm income due to climate variability.
- Promote adoption of Climate Smart Agricultural practices in the Coastal Saline Zone through financial incentives, subsidies, or grants and policies that provide information and support for water conservation and soil health improvement.
- Prioritize the promotion of salt-tolerant paddy varieties that are well-suited to the Coastal Saline Zone, ensuring higher yields and reduced crop losses.
- Promote agroforestry practices in these zones to improve soil fertility and reduce soil salinity.

- To meet the high irrigation needs for paddy cultivation, prioritize investment in drainage systems to manage saltwater and flooding in the Coastal Saline Zone. This will reclaim additional land for agriculture and minimize the impact of salinity on existing farmland.

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