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DEBT-LOCKED SURVIVAL UNDER COST–PRICE SQUEEZE: THE REPRODUCTIVE CIRCUIT OF AGRARIAN STRAIN IN KUTTANAD, KERALA

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ABSTRACT

Kuttanad, the main rice-growing area of Kerala is an example of paradoxes of modern agrarian change where farmers are kept in unprofitable practice by institutionalized relations and new cycles of debt. In this paper, a grounded theory discussion of the structural economic forces involved in this restructuring will include increased costs of inputs, price stagnation, institutional delays in payment and labour shortage, which have transformed farming as an income earner into a debt-based survival mechanism. Hypothetical speculations show that in cases where cultivation costs are above the price, farmers change their income-based approach to debt based; institutional procrastination transforms the liquidity gap into interest expenses; and state interventions stabilize short term survival but increase long term dependency. The paper is relevant to agrarian sociology as it illustrates the effects of individual adaptive responses, which are rational at the household scale, but which upon a regional economy scale reproduce systemic vulnerability.

Keywords: agrarian transformation, kuttanad, debt, cost–price imbalance, grounded theory, rural livelihoods, institutional delays, mechanization, Kerala

1. INTRODUCTION

The largest rice producing region in Kerala is Kuttanad, which is a very striking paradox. Although the economic reforms, mechanization, and government assistance in the form of minimum support prices (MSP) and subsidies lasted decades, farmers experience an increased debt, reasoned financial difficulties, and gradual departure of the farming industry. Kuttanad, once referred to as the rice bowl in the state, is now demonstrating how farmers do not stop their productivity due to the profitability of the activity, but due to the ownership of land, the pressure of institutions, and the absence of alternative source of livelihood to them- trapping them into a cycle of borrowing and part time farming.

Based on Charmaz constructivist grounded theory, the study builds a concept of the debt-locked survival, which explains how the production is compelled to enter into an indefinite cycle of poverty by structural pressures. It finds, based on interviews and institutional records, five major concepts concerning how costprice gaps, administrative inefficiencies, and coping strategies like mechanization and subsidies and migrant labour contribute to, as opposed to eliminating, vulnerability. The paper is valuable in connecting household-level choices with institutional frameworks at the

regional level, demonstrating how individual decisions, based on rationality, create combined instability, and questioning the conventional policy analyses that MSP or subsidies can resolve structural issues on their own, without broader institutional change.

2. LITERATURE REVIEW

2.1 Agrarian Distress and Cost–Price Imbalance in India

India Agrarian distress has been of particular interest since the 1990s, particularly following the outbreak of farmer suicides in some states such as Maharashtra, Andhra Pradesh and Punjab. Scholars describe this crisis in two broad terms; the first one is based on the global market conditions such as changes in prices and opening up of markets whereas the second one considers the institutional factors such as asymmetries of input-output prices and ineffective agricultural systems. Research by Rammohan and Hazell demonstrates that increasing prices of seeds, fertilizers and the price of labor among a host of others have been increasing at a rate far higher than crop prices over the last 30 years establishing an imbalance that is long-term. In Kerala, an example is that the cost of paddy production increased by approximately 340 percent between 2000 and 2022, yet the prices of paddy remained virtually unchanged since the government introduced minimum prices and the open market competition. This underscores the characteristics of agrarian capitalism whereby firms that provide inputs have the major share of profit with farmers having to face price risks and losses. Utsa Patnaik suggests that the policies such as trade liberalization and government purchasing have brought about a situation where the cost of production will never be below the earnings of farmers, and they end up in debt. She does not view this debt as a temporary situation but as an inherent part of the system with farmers accidentally finding themselves subsidizing consumers and input suppliers.

2.2 Debt, Credit, and Agricultural Livelihoods

Agrarian debt has become a significant issue in the Indian economy as researchers have established that debt in the rural sector tends to entrap the farmers instead of assisting them to develop. According to the study by Banerjee and Duflo, short-term loans to be used in consumption or investments may become poverty traps making households trapped in interest payments and unable to make savings or even develop capital. But their model does not acknowledge the role played by institutional problems such as payment delays and poor procurement in converting productive loans into consumption debt. The survey conducted by the Kerala State Planning Board in 2023 showed an average debt of the farm household to be 2.3 lakh, approximately 1.5 times the annual income of the household, with 35 to 40 percent of the annual income being spent on interest. Interestingly, the medium and the large landholders bear the majority of this debt due to years of land occupation by the family. Other experiments on Punjab like those by Chakraborty and Gajwani demonstrate that mechanization loans tend to aggravate the situation: they raise prices, cause a cash crunch and lead farmers into further debts during the off-harvest periods.

2.3 Labour Scarcity and Mechanization in Kerala Agriculture

The labour market in the agricultural sector in Kerala is unique, as the wages paid to agricultural labourers are the highest in the country and the agricultural employment is the least. Ethnographic observations like those of Mencher of Kuttanad demonstrate that labour shortages are not due to demographic developments alone, but rather a resultant consequence of land reforms and educational growth, which lifted peasant families out of the farm economy to seek other non-farm

jobs. According to studies conducted by Ramachandran on the mechanization in Kerala, it was found that in many cases, machines have been embraced despite not necessarily enhancing productivity since the prime reason is to offset the non-availability of labour. Mechanization is, however, privately or contractor-based rented instead of sharing with others, thus structurally dependent on machinery contractors, making a profit of equipment ownership, and leaving the cultivators to shoulder the operating expense, financial risks and decreasing income.

2.4 State Intervention and Subsidy Dependency

Numerous investigations indicate how the dependence of farmers can occasionally increase in lieu of diminishing their susceptibility due to government assistance to agriculture in the form of minimum support prices (MSP), subsidies, and credit systems. Harriss-White suggests that this type of interventions that are based on welfare assistance can alleviate the situation of farmers on short-term basis, but it does not consider the more structural issues. By making the assumption that farmers are going to make good profits at fixed prices and neglect increasing the cost of production, the state benefits the suppliers of inputs and the employers more than the cultivators themselves. In Kerala, e.g. fertilizer subsidies the state spends approximately 800 crore annually to guarantee the fertilizer corporations a steady demand, do not offset the escalating inputs (relative to undifferentiated output prices). Consequently, state assistance is a matter of survival but is too little to ensure that farming is actually sustainable.

3. METHODOLOGY

3.1 Research Design and Data Collection

This paper uses Charmaz grounded theory approach of constructivism that focuses on a repetitive approach to data collection and analysis to formulate ideas and theoretical hypotheses based on empirical research, as opposed to formulating them based on existing theory. The study was carried out in three rounds of fieldwork in Kuttanad in 2022-2025 and involved 45 semi-structured interviews with families that engaged in agricultural activities, in-person field observations of farming activities, and a review of institutional documents.

Selection of participants: Purposive sampling was used to provide the variation of farm size (marginal 0.51 ha, small 12 ha, medium 25 ha), tenancy status (owners, share-croppers, agricultural labourers), and age groups. In the lowlands of Kuttanad (block of Kuttanad, Alappuzha district), 45 agricultural households were sampled, which take up about 3 percent of the agricultural households in the sample frame.

Data Collection Techniques: The semi-structured interviews (60-90 minutes) were carried out using Malayalam, audio-recorded, and transcribed. Interview schedules started with the open narrative questions (Explain your farming situation in recent years) and then proceeded with some searching questions regarding the cost of production, purchase of inputs, sales of crops, the borrowing habits, and sources of household income. Observations made in the field recorded cultivation diaries, labour operations and communication with the input suppliers, millers and purchasing officials. The PRS payment records, fertilizer delivery records, loan records, and government agricultural statistics were sources of institutional records that supplied Temporal data on input prices, procurement prices and payment delays.

3.2 Data Analysis Process

Data were analyzed in cyclic coding in line with the grounded theory:

Open Coding: The coded open interview segments and field notes were coded with descriptive labels such as the experiences of farmers due to their exposure to "exploding input costs," delay like payments and debt dependency. At this point, a total of about 120 codes were produced as a result of the continuous comparison of transcripts of interviews.

Focused Coding: Codes were clustered into larger conceptual groups (costprice imbalance, debt-driven cultivation, institutional friction, adaptive mechanization, socioeconomic exit) that are recurring patterns and relationships.

Axial Coding: The categories were connected by causal frameworks that investigated a question of what causes what, and how are actors responding. This step produced the paradigmatic model as shown below.

Theoretical Coding: Categories with each other were coded into higher-level theoretical frameworks, producing propositions and the substantive theory addressed below.

NVivo qualitative analysis software was used in all coding, and notes on emerging concepts and theoretical insights were periodically written down in memos. The validation of the participating participants was performed at the last stage with the presentation of preliminary findings to the groups of farmers to confirm and refine.

4. FINDINGS: THE REPRODUCTIVE CIRCUIT OF AGRARIAN STRAIN

4.1 Open and Focused Coding: Emergent Categories

Five fundamental groups of experiences of farmers were identified in the course of analysis as defining the experiences under cost price imbalance:

Cost Price Imbalance: the cost of production (labor, fertilizer, lease, machinery) increases at a steadily accelerated pace than the prices of paddy. During 2012-22 fertilizer prices went up 34 times; labour wages doubled over the same time; but paddy prices stayed within a 2,100-2,400 per quintal band, even with MSP announcements.

Debt-Driven Cultivation: Cultivation becomes not based on the savings it owns but on borrowed funds. Farm households take out an average of 3-4 sources of credit every year (bank loans, informal moneylenders, input-dealer credit, pawned gold), and pay back using 35-40 per cent of annual income.

Institutional Friction: PRS payments require 2-4 months to get paid, subsidy bottlenecks, and mill deductions are responsible of creating chronic liquidity crises. Farmers complain that it takes 3-6 months to collect the paddy whereas input suppliers are demanding cash or instant credit.

Adaptive Mechanization: Machines partly replace unavailable family labour, employed labour, but augment cash dependency in rental fees (800-1200 per hectare harvesting by itself). Most of the time, mechanization is privately rented with extraction being concentrated with contractor-capitalists.

Socio-economic Exit: The youths and women give up cultivation to education, migration, and non-farm jobs. The share of agriculture in Kerala employment has dropped to less than 10 per cent although landholding has been extensive to establish a dichotomous system of absentee landholders and wage labourers.

4.2 Axial Coding: The Causal Model

These categories were combined by using the axial coding that analyzed causal sequences:

Causal Conditions	Intervening Contexts	Adaptive Strategies	Consequences
Rising input costs	Weak MSP; increasing standards of living; education inflation	Less hired labour; more self/family labour; more mechanization wanted	Reduced productivity; diminished fatigue; debts.
Delay in institutional payment (2-4 months)	Bureaucracy in banking; failure of coordination of treasury	Borrow the cash of moneylenders; pledge gold; borrow consumption loans.	Building debt; psychological stress; shrine of assets.
Labour scarcity & youth exit	Migration; education; non-farm job; job mobility.	Reliable on migrant labor; use machines; abandon land.	Skills loss; increasing costs; desertion of land.
Market manipulation & mill deductions	Lax quality control; information asymmetry; monopsonistic situation.	Sell to independent mills even as it is cut down; deal with cooperatives; cut down in marketable surplus.	Declining net income; lack of confidence in system; lack of motivation to produce more.
Disagreement in policies (hiking wages and not prices)	Slack time of the MSP systems; insufficiency of subsidies; regulatory capture.	Reliant on state subsidies; go into debt to buy inputs; take prices that are below-MSP.	Systemic addiction; disappointment; institutional weakness.

4.3 Theoretical Coding: The Core Category

The combination of these causes a condition of Debt-Locked Survival under a Cost-Price Squeeze.The reason why farmers continue to farm is not because it provides sufficient income to survive, but because the land, family relationships, and absence of alternative employment make them end up in debt cycles. Their coping strategies such as borrowing, machine use, reliance on subsidies, etc. enable them to survive but also increase their reliance on loans, contractors and government assistance.

4.4 Theoretical Propositions

Five grounded propositions are produced by analysis:

P1: Structural Cost price Shift Proposal.

In cases where the cost of farming increases faster than the price of crops, farmers will begin borrowing money to meet the daily household needs. They are no longer relying on the farm income to survive but borrowing. This is not simply an adjustment to the short term fluctuations in prices but

rather a change that families undertake when farming ceases to bring sufficient income to maintain them.

P2: Reproduction Institutional Friction Proposition.

The late payments by procurement agencies make farmers accumulate debts every other month as they have no money to cope with even after selling crops. They have to borrow money at exorbitant interest rates (18-36% per annum) with the informal lenders to meet daily expenses in this gap. These delays in payments are a kind of reverse taxes as the farmers would pay interests due to inefficiencies in the procurement system.

P3: Dependency proposal Labour Substitution.

The farmers employ machines and migrant workers to address labour shortages. However, they cause them to become increasingly reliant on contractors and credit, rather than minimizing their issues. The farmers require extra cash to run their business whereas the owners of machinery and contractors make more profits leaving the farmers with larger financial risk.

P4: State Intervention Paradoxie Postulation.

Interventions by the state (MSP, subsidies, credit guarantees) stabilize short-term household survival but strengthen long-term structural dependency through treating symptom (price volatility, input affordability) and not the underlying cause (cost structures above viable price levels). Subsidies are no longer avenues to sustainability but structural elements and they establish constituencies, which rely on them.

P5: Redefining the Generational Exit and Remittance Redefining Proposition.

Agriculture has become a demonstration of identity and heritage than a livelihood.Farming is an activity that is supported not by its economic effectiveness but by its social signification as non-farming income (remittances, pensions, wages) comes to fund consumption and farm expenses.

5. THEORETICAL SYNTHESIS: THE REPRODUCTIVE CIRCUIT

These propositions are incorporated into an agrarian strain theory of reproductive circuit in Kuttanad. The paddy farming system remains self-perpetrating in Kuttanad with the cycle of debt and dependency due to high costs, poor institutions, and social transformation. Farmers respond in three dimensions; firstly, by hiring machines to save labor expenses, Secondly, by taking up loans at various sources so as to meet the supply of daily requirements and Thirdly, by obtaining state subsidies to pay a portion of the input expenses. Nevertheless, these only serve to keep the system moving rather than address its issues- machines are adding cash costs, loans are putting more debt on future seasons and subsidies are insufficient to cover the rising costs. Consequently, the Kuttanad farming economy relies on debt, subsidies and remittances but remains mostly because of cultural identity and family requirements as opposed to profit. Even in cases where farming is no longer viable, farmers remain in the sector due to land holdings and lack of alternatives available to them.

6. CONCLUSION

The agrarian Kuttanad economy is an indication of a massive crisis in post-liberalization India where agriculture is still done although it is unprofitable. Such perseverance is not motivated by economic rationale or tradition but by structural issues such as the increase in costs, poor payment, labour shortage and conflicting policies that leave farmers in debt related cultivation. As demonstrated in the case, the rationality of the household decisions can lead to the formation of regional economic

vulnerability. These structural problems cannot be addressed by short-term solutions like MSP raises, subsidies or lower credit conditions. Reforms in the institution such as faster payment systems, common use of machines and encouraging other livelihoods are necessary to bring the actual change and decrease the reliance of farmers on debt and agricultural practice.

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