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A STUDY ON DISTRESS AMONG SMALL AND MARGINAL FARMERS IN THE THOOTHUKUDI DISTRICT OF TAMILNADU STATE

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Abstract
One of India's most important economic sectors is the agriculture sector. Approximately two-thirds of India's working class depend solely on agriculture for their livelihood. Nearly 43% of India's land area is dedicated to the agricultural sector. An important factor in the expansion of India's socioeconomic sector is agriculture. A person's emotions, actions, cognitive abilities, and physical health can all be impacted by stress. The body is not immune in any part. "Agrarian anguish" refers to the challenges faced by farmers who rely on rainfall for their farming activities in rainfed areas. The hardship faced by small and marginal farmers in Tamilnadu's Thoothukudi district who grow black matpe beans and millets are examined in this research. One hundred fifty-eight farmers were selected from the total number; 99 of them were small-scale farmers, and 59 of them were marginal farmers. Appropriate statistical techniques are used to calculate the agrarian distress factors among small and marginal farmers. Small and marginal farmers in the study area varied greatly in terms of production as well as how they used other input variables like pesticides and fertilisers.
Regarding the following variables, there was no statistically significant difference between small and marginal farmers: seeds, bullock labour, and human labour. This research suggests that marginal farmers have outperformed small farmers in terms of yields per acre and that small farmers were more efficient with inputs like fertilisers and pesticides when cultivating black matpe beans or pulses. Major yield distresses for farmers include institutional, resource, and economic stressors. The study suggested addressing the limitations faced by small and marginal farmers and enhancing basic infrastructure facilities like irrigation supply, market facilities, job opportunities, cold storage, warehouses, etc., in order to raise the degree of livelihood security for these farmers.
Keywords: Agrarian distress, infrastructural facilities, irrigation supply, market facilities, employment opportunities.

INTRODUCTION

The Indian economy's most significant sector is agriculture, which is essentially an energy conversion industry. Crops use energy differently depending on the agroclimatic zone. Farmers' ability and the availability of energy sources determine how much energy is used in crop production. Improved seeds, fertilisers, chemicals, irrigation, mechanisation, and management techniques are examples of energy inputs that increase agricultural output (Amutha D, 2011).
However, agriculture continues to be a significant source of their jobs, wages, and means of subsistence. However, the agricultural sector is vulnerable to a variety of natural hazards, such as droughts, floods, insect and disease infestations, and changes in input and output prices because

of its intrinsic reliance on nature (Amutha D, 2012). Farmers across India are experiencing serious crises, as is the country's agricultural economy.

People's lives and organisations are considered to be greatly impacted by distress, which is a natural aspect of human existence. According to Akkad Adnan (1990), the current era has been dubbed the "Age of Anxiety, Distress, and Depression" due to the extreme and erratic nature of distress. Increased cultivation costs, growing debt (from crop losses and price declines), and the incapacity to provide for family needs were highlighted by the media, social activists, and civil society organisations as the main causes of farmers' financial difficulties and ensuing distress (Amutha D, 2014). However, the majority of these likewise emphasised feelings and preconceived ideas, ignoring socioeconomic and other aspects that contribute to suicides (Deshpande et al., 2008).

Following public pressure, the numerous investigative panels established by the Union government and several States ascribed the suicide rate to technological failure, debt, and agricultural failure (GoI 2007). At the same time, numerous scholars investigated the various aspects of farmer suicides and agrarian distress at the macro, regional, and household levels (Behere and Behere, 2008). The liberalisation of agricultural trade and neo-liberal economic policies are frequently recognised as contributing factors to the current agrarian crisis in India, and they rank second in importance after debt (Mitra and Shroff 2007).

The USA's dumping of cotton on the international market, low import tariffs, the failure of the Monopoly Cotton Procurement Scheme, and the removal of supporting state investment and subsidies have all contributed to the declining profitability of the rain-dependent cotton-growing farmers in Vidarbha, Maharashtra. The liberal importation of edible oil, exposure to volatile agricultural commodity markets, and the reduction in governmental support systems and public investment in agriculture are the main causes of suicides in drought-prone Karnataka (Reddy and Mishra 2008).

According to Reddy and Galab (2006), agriculture has turned into a high-risk, high-stakes game of chance in the absence of established technologies, which is generating much pain among farmers. Furthermore, only a small number of crops can be produced using the new gene technologies, and they are biased against the poor and vulnerable (drought-prone) areas (Pingali and Raney 2005).

According to Reddy and Galab (2006), these discussions suggest that the current agrarian crisis in India has multiple dimensions and is caused by the cumulative effects of several interrelated factors, including technological, ecological, socio-cultural, and policy-related factors.

Over the years, farmers have adopted traditional methods for risk mitigation and adaptation, such as borrowing between households, sharing resources and assets, sharing and exchanging food grains, and soil and water conservation measures like building check dams, mixed or relay cropping, silvi-pasture, and raising livestock, among others. As modern technology, monocropping, and agricultural commercialisation have emerged, the use of these traditional risk reduction and adaptation techniques has decreased over time (Amutha D, 2013).

The government now must provide a macro-policy climate that allows farmers to embrace alternative risk mitigation techniques (Amutha D, 2014). In many nations, the government offers

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aid to the agricultural industry in the event of natural disasters, including debt relief and compensation for crop losses (Amutha D, 2012). Despite being effective short-term solutions to alleviate farmers' suffering, crop loss compensation and debt relief have a negative impact on farmers' incentives to participate in crop insurance programs (Amutha D, 2013). Due to the broader perception that the government will provide compensation and announce debt reduction in the event of crop loss, farmers will not pay crop insurance premiums (Amutha D, 2015).

According to Ahlawat, I. P. S., and Shivakumar, G. B. (2005), black matpe beans are extremely responsive to fertiliser application, and the amount of fertiliser used is determined by the original soil fertility and moisture availability. In the Thoothukudi district of Tamilnadu, a sample of small and marginal farmers who grow black matpe beans and millets are the subjects of this paper's attempt to investigate their hardship.

OBJECTIVES OF STUDY

The current study's objectives are:

1. To research the input-output structure per acre for small and marginal farmers in Tamilnadu's Thoothukudi district who grow millets and black matpe beans.
2. To examine the institutional, resource, and economic hardships faced by small and marginal farmers who grow millets and black matpe beans.

RESEARCH METHODOLOGY

In the study, both primary and secondary data were employed. With a pre-tested timetable, the personal interview method was used. A systematic questionnaire was utilised to gather the primary data. From five villages in the district of Thoothukudi, 77 farmers who cultivate black matpe beans and 81 farmers who grow millet were selected using the proportionate random selection technique. A total of 158 farmers have been chosen, comprising 59 marginal and 99 small farmers based on household size. Numerous sources, including books, journals, articles, periodicals, newspapers, and websites, provided the secondary data. Several statistical methods, such as the Z-test and Garrett's ranking system, were used to analyse the data collected from the source. The year 2022 was when the data was gathered.

Input-Output Structure:

Under pulses and millets, Table 1 displays the input-output structure of small and marginal farmers' cultivation of black matpe beans and millets. To determine if farmers growing black matpe beans and pulse millets had different mean input-output structures, the following Z-test was used.

TABLE 1

INPUT-OUTPUT STRUCTURE PER ACRE FOR SMALL AND MARGINAL FARMERS CULTIVATING BLACK MATPE BEANS AND MILLETS

Sl. No.	Particulars	Black Matpe Beans			Millets		
		Small farmers	Marginal farmers	Z-test	Small farmers	Marginal farmers	Z-test
1.	Human Labour (in person-days)	9.30	9.47	2.65	10.37	10.01	2.13

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2.	Bullock labour (in pairs)	3.21	3.19	2.09	3.18	3.88	2.54
3.	Fertilisers (in Rs)	431.30	415.21	4.24*	495.88	456.27	4.31*
4.	Pesticides (in Rs)	262.12	252.03	6.15*	306.36	296.87	5.21*
5.	Seeds (in Rs.)	241.24	246.84	2.06	226.65	232.09	2.01
6.	Yield (in kg)	281.61	294.12	4.99*	282.31	296.12	6.43*
7.	Sample size	45	32		54	27	

Source: Survey data.

* Indicates significance at 5 per cent level.

Table 1 shows that the yield of black matpe beans per acre for small farmers was 281.61 kg, while for marginal farmers, it was 294.12 kg. This demonstrates that the yields of small and marginal farmers differ significantly. The difference in yield equals 22.51 kilogrammes. The amount of labour needed in the case of human labour was 9.30 person-days for small farmers and 9.47 person-days for marginal farmers. In comparison to marginal farmers, who applied 415.21 kg of fertiliser, small farmers applied 431.30 kg. Small farmers utilised 262.12 kg of pesticides, whereas marginal farmers used 252.03 kg. Small and marginal farmers in the study area were found to differ significantly in their use of other input factors, such as pesticides and fertilisers, in addition to yield. It was determined that there were no significant differences between small and marginal farmers in the usage of other variables, such as seeds, human work, and bullock labour. In contrast, the yield per acre for millets was 296.12 kg for small farmers and 282.31 kg for large farmers. It has been noted that small and marginal farmers that grow millets also produce significantly different yields. 23.81 kg is the difference in yield. The amount of human work needed for small and marginal farmers was 10.37 and 10.01 person-days, respectively. In comparison, small farmers applied 456.27 kg of fertiliser, whereas they used 495.88 kg. Small and marginal farmers, respectively, utilised 306.36 kg and 296.87 kg of insecticides. Small and marginal farmers in the study area were found to differ significantly in their use of other input factors, such as pesticides and fertilisers, in addition to yield. Between small and marginal farmers, there were no discernible changes in the use of the variables—human work, bullock labour, and seeds. Thus, the aforementioned study suggests that similar to the case of black matpe beans of pulses, marginal farmers have produced higher yields per acre than small farmers, and small farmers were effective in their use of inputs like fertilisers and pesticides.

YIELD DISTRESS

Under farmers' conditions, economic, resource, and institutional factors are the main causes of yield distress. The primary source of disturbance to prospective yield in the research area was determined using Garrett's ranking technique. The sample farmers were asked to rank their level of discomfort according to priority. Small and marginal farmers' yield distress is highlighted in Table 2. Three types of distress—economic, resource, and institutional—were identified among the farmer respondents.

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TABLE 2
ECONOMIC DISTRESS OF SMALL AND MARGINAL FARMERS

SI. No.	Distress	Mean Score	Rank
1.	Low land ownership	65.96	I
2.	Limited access to credit	59.72	II
3.	High input costs	50.28	III
4.	Unstable market prices	41.09	IV
5.	Low bargaining power	35.36	V

Table 1 presents data indicating the respondents' rank pattern and five indicators of economic distress.

Table 1 indicates that small and marginal farmers typically hold relatively small land parcels, which limits their production potential. Low access to bank loans, which impacts their ability to invest in necessary inputs, came in second. Third place went to high input costs brought on by growing prices for seeds, fertiliser, and insecticides, while fourth place went to market prices that vary according to shifts in the pricing of their produce. The inability to negotiate higher rates due to little bargaining power was placed fifth, respectively. Table 3 shows the rankings of the five elements that have been found to contribute to small and marginal farmers' resource hardship.

TABLE 3
RESOURCE DISTRESS OF SMALL AND MARGINAL FARMERS

SI. No.	Distress	Mean Score	Rank
1.	Water scarcity	61.24	I
2.	Labour shortage	52.63	II
3.	Poor infrastructure	43.44	III
4.	Outdated technology	41.15	IV
5.	Low literacy levels	36.24	V

Table 3 reveals that the primary reasons for water scarcity are a lack of irrigation infrastructure and reliance on unpredictable monsoon rainfall. This is followed by a labour shortage, which makes it difficult to find workers at a reasonable wage, especially during the busiest harvest occasions. Inadequate infrastructure came in third, followed by outmoded technology due to budgetary constraints and the lack of widespread adoption of modern farming techniques and equipment, which came in fourth. Poor literacy, including a lack of knowledge about crop diversity, pest management, and improved farming practices, came in fifth and sixth place. Table 4 lists the average score and rankings for the four characteristics that have been linked to institutional distress among small and marginal farmers.

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TABLE 4
INSTITUTIONAL DISTRESS OF SMALL AND MARGINAL FARMERS

SI. No.	Distress	Mean Score	Rank
1.	Intricate administrative procedures	59.35	I
2.	Poor cooperatives of farmers	46.08	II
3.	Insufficient insurance protection	36.47	III
4.	Restricted availability of extension services	32.59	IV

Table 4 indicates that accessing government programs and subsidies might be challenging because of intricate administrative procedures. The next sign of weak farmer cooperatives is the lack of powerful farmer associations to work together to solve their issues. The lack of crop insurance to guard against natural disasters came in third on the list, and access to extension services was restricted because agricultural extension agents could not adequately support the provision of the required skills and knowledge, ranking fourth.

POLICY RECOMMENDATIONS

- The cropping pattern ought to be controlled according to the region's resource availability, particularly with regard to irrigation.
- Regulating the dishonest actions of individual traders in the seed market is necessary.
- Setting fair prices for output may be challenging, but it is not impossible, given that local markets are interconnected with international markets. However, the state is able to control and supply high-quality inputs at fair costs.
- In addition to regulating the operations of private moneylenders, the state should guarantee the availability of less expensive credit from institutional sources. It is advisable to discourage input-credit tie-ups.
- Encourage watershed development by allocating public funds for the construction of new structures with the help of citizens.

CONCLUSION

The state of farmers today is really dire, particularly for small and marginal farmers. We urgently need to take this issue more seriously and carefully. Based on the aforementioned results, the study ultimately concluded that the main obstacles respondents faced in achieving livelihood security were complex administrative processes, restricted credit availability, low market prices for the products, a lack of knowledge about the product's marketing, and recurring crop failures. The majority of respondents also lacked technical knowledge and awareness of the proper technologies to increase crop productivity.

In order to increase the overall income safety level of farmers, the study recommended that basic infrastructure, such as irrigation supply, market facilities, employment opportunities, cold storage, warehouse, etc., be improved. It also recommended that the limitations faced by small and

marginal farmers be addressed. As per the study, it is imperative to guarantee fair prices for agricultural goods and offer farmers sufficient and high-quality inputs, such as electricity and extension services.

Conflicts of Interest

The author does not have any conflict of interest.

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