Review Article
Agrarian Distress in Indian Agriculture: causes, socio-economic consequences and coping strategies

ABSTRACT

Agrarian distress is the economic, political and social challenges faced by the farmers and rural communities due to factors such as low crop yields, fluctuating prices of agricultural produce, high input costs, indebtedness, and lack of access to credit, markets, and infrastructure. Over 8,00,000 individuals are dies by suicide each year because of various reasons. More over the suicides are happening in the families whose own land is less than 1-2 hectares, who are in debt, have been identified the most at risk for suicide. The present article aims at better understanding of the causes, consequences and possible coping strategies for the agrarian distress in India. Causes such as fluctuations in crop sales, weather and climate conditions, dependent on natural resources, etc. are discussed in detail. Consequences of agrarian stress are suicides of farmers, rural migration, food insecurity, environmental impacts and so on. Solutions such as strengthening the forward markets, comprehensive crop insurance schemes for the framers where the non-MSP (Minimum Support Price) crops also may be covered, assured price to the farmers are discussed. Many researchers argued that farmers suicides are increasing but the research is limited in the specialised area of interest. In addition to that, researchers are focussing only on the socio-economic variables rather than the psychological variables. In order to mitigate the risks out of agrarian distress, farmers should be encouraged by the government and extension service providers to take up the subsidiary occupations and secondary agricultural occupations which helps them in getting profits in the situations where the crop damages due to the extreme weather patterns. As rightly pointed out by National Bank for Agriculture and Rural Development (NABARD), distress of the framers should have a long-term potential solution such as major reforms in the existing agricultural laws rather than farm loan waivers which acts as the short-term relief to the farmers.

Key words: farmers, suicides, distress, agriculture.

1. Introduction

"Agrarian distress is the economic, political and social challenges faced by the farmers and rural communities due to factors such as low crop yields, fluctuating prices of agricultural produce, high input costs, indebtedness, and lack of access to credit, markets, and infrastructure" (Southard, 2022). It gained its prominence in 1990s when there was a huge number of farmers suicides took place because of various factors that affected agricultural output and livelihood of the farmers in India. As the suicides did not come to an end, it gained renewed attention due to the farmers protests. Many protests right from the 1960s to 2020 continuously highlighted the long-standing issues faced by the farmers such as minimum support price (MSP), subsidies for agricultural inputs, three farm laws, easy access to credit, etc…. there is no doubt that large farmers bias is there at national level at all stages of development because of which small and marginal farmers are facing the challenges such as lack of access to credit, distress sales, hampered livelihood security, exploitation by land lords, etc. according to World Health Organisation (WHO, 2018), more than 8,00,000 individuals are dies by suicide each year because of various reasons. For over a decade, it is clearly indicated that farmers are at high risk for suicide (Behere and Bhise, 2009; Behere et al., 2020). The situation in India is even more pathetic which can be noticed by consistently vulnerable to death by suicide with over 1,12,000 farmers in the past decade (National Crime Records Bureau, 2022). More over the suicides are happening in the families whose own land is less than 1-2 hectares, who are in debt, have been identified the most at risk for suicide (Kennedy and King, 2014). All-India Survey of Rural Debt and Investment (NSSO, 2014) revealed that, the number of indebted farmers had been increased from 25% of the total rural households in 1992 to approximately 46% in 2013. Tenant farmers are more sensitive to income shocks and agricultural distress suicides which constitutes 80% of farmers' suicides in the country, although they account

to only 10.4% of the total farmers in India. The constant output prices, ever increasing cost of cultivation especially labour, reduced size of operational holdings and increasing share of tenant farmers who rely mostly on informal sources of credit access are some of the reasons for the farm distress (Chand *et al.*, 2015).

A total of 11,290 persons involved in farming sector (consisting of 5,207 farmers/cultivators and 6,083 agricultural labourers) have committed suicides during 2022, accounting for 6.6% of total suicides victims (1,70,924) in the country. Out of 5,207 farmer/cultivator suicides, a total of 4,999 were male and 208 were female. Out of 6,083 suicides committed by agricultural labourers during 2022, 5,472 were male and 611 were female.

Figure. 1 Suicides in farming sector across major states in India during 2022-23

The aforementioned graph clearly showing that Maharashtra state recording highest ever suicides in the farming sector followed by Karnataka, Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Telangana and Punjab. These are the major states where the suicides are prevalent due to various reasons. In Maharashtra a greater number of suicides are occurring in the rainfed regions, and same situation is prevailing in Karnataka too. Likewise, every state has its own shortcomings because of which these suicides are taking place every year.

2. Causes of agrarian distress in India

2.1 Fluctuations in crop sales:

One of the prominent risks in agricultural markets is price volatility. Volatility of commodity prices may lead to policy uncertainty, expose small and marginal farmers to higher risks, alter land use, hamper the forecast accuracy of future supply and demand of agricultural commodities. Most of the farmers in India are unable to sell their commodities at MSP decided by the government and as a result of which they are forced to sell to the private traders at the price very less than the recommended MSP.

2.2 Weather and climatic conditions:

Extreme weather and climatic events will result in detrimental effects on crop yield, and there by, agricultural production too. Most of the crops are highly sensitive to effects of extreme temperatures, decreased precipitation, excessive rainfall &flooding, and unexpected freezes during critical growth phases. These events can result in yield losses of varying magnitude based on the timing, severity, and duration of the event. Moreover, extreme weather also led to indirect effects on crop yield, such as decreased soil moisture, increased pest and disease incidence, and damage to infrastructure.

2.3 Government policy implementations:

Government now implementing many programmes to assist farmers financially to get profitable returns in the agriculture sector. The assistance in the form of money is directly reaching farmers bank accounts without any middlemen is highly appreciated. But direct benefit transfer has a negative impact on tenant farmers who took land for lease from the land owners. As the land records don't have the name of tenant, they are not benefitting out of the government schemes such as Pradhan Mantri Kisan Samman Nidhi Yojana (PM-Kisan). These reasons lead to distress sales and suicides in the agricultural sector.

2.4 Dependent on the natural resources:

The concentration of farmers' suicides in the rainfed regions of states like Maharashtra, Karnataka is a manifestation of how the water crisis and thereby failure to meet production demands have intensified the menace. This is particularly true in the backdrop of continued failed monsoons. Farmers who are continuously dependent on the natural resources are ultimately left behind the increases returns because of climate change too. Unexpected extreme temperatures result in the severe drought.

2.5 Rural Indebtedness:

National Crime Reports Bureau (NRCB) data reported that 2,474 suicides out of the studied 3,000 farmers suicides in 2015 the victims had the unpaid loans from the local banks. This is a clear indication for drawing correlations between two. Whether or not

banks were harassing them, it is a debate and needs more empirical evidence. Another point of strong linkages between farmer suicides and indebtedness is reflected where Maharashtra had 1293 suicides for indebtedness, Karnataka had 946. both these states saw one of the highest incidences of farmer suicides as well as indebtedness.

2.6 Lack of effective agricultural extension services:

Farmers are constantly struggling to get access to the most recent market trends data, technical breakthroughs, and better agricultural practises. This impedes their ability to utilise productive and creative techniques in farming. The adoption of more effective farming methods is affected negatively by reduced funding for agricultural research, farmer training programmes, and extension services in India.

2.7 Land fragmentation:

Dispersed and small landholdings are the result of the distributing the agricultural land among succeeding generations. Land fragmentation renders contemporary farming techniques and economically unviable economies of scale for farmers and farming community. Though there are Attempts to establish relatively larger and highly productive farms but they are eventually hampered by the absence of regulations encouraging land leasing and land consolidation.

2.8 lack of irrigation infrastructure:

A sizable amount of India's agricultural area depends on the rain fed agriculture, making farmers highly susceptible to weather changes. Capacity of farmers to irrigate their farming lands is impeded by badly maintained and inadequate infrastructure in irrigation sector. Sometimes there are inequities in the allocating the facilities of irrigation, with some regions having more and easy access than others. In scarce water resources or scarce rainfall regions, this imbalance exacerbates agrarian hardship.

3. Arguments over agrarian distress in India

"Research on farmers' suicide, analysing the different perspectives and causes, objectively and concurrently were clearly lacking, especially from India though the suicides are increasing day by day. There were no studies from India about interventions

or their impact on farmers' suicide". (Ramadas, S., & Kuttichira, P. 2017).

"After the country's liberalization, government regulations have been more relaxed, and more participation by private entities is also restricted. Thus, the rainfed farmers are becoming further exposed to price risks as they heavily depend on markets for purchasing inputs and selling outputs" (Whitlock *et al.,* 2017). "Together, these stressors have the immense potential to threaten the sustainability of the livelihoods of a large number of agricultural households" (Lawrence *et al.*, 2018). "The high exposure to natural hazards and low accumulated capital coupled with the small land-holding size of the majority of the rainfed farmers have led to low and fluctuating farm incomes in most developing countries of Asia and Africa" (Sathyan *et al.,* 2018). These farmers in tropical countries, including India, have limited resources and capacity to cope with these shocks (Rao *et al.*, 2019) and are experiencing severe hardship due to their low adaptive capacity (Burnham, 2017). "Likewise, they cannot make appropriate decisions as they face multiple constraints while adjusting to these shocks. Furthermore, agricultural insurance that depends on government subsidies eases the burden on farmers who experience crop failure" (Suryanto& Rahman, 2019). "The agricultural sector in India exposes to many obstacles, such as increasing demands, uncertainties related to climatic changes, and natural disasters" (Kantamaneni *et al.,* 2020). Exposure to natural calamities and hazards such as droughts has different impacts on vulnerability based on the severity of the hazard and the adaptive and coping capacity and livelihood options of the households (Madhuri *et al.*, 2014). There exists no standard index for farmers' distress measurement by taking the multidimensionality of farmers and sub-district levels into consideration. Very few studies are available for Mozambique, Bangladesh, and Trinidad and Tobago, while a study was produced for the Himachal region of India, but they quantified a general vulnerability index for a particular context and lack scalability (Reddy *et al.*, 2021). Many studies on agrarian distress are taking socio economic variables in to account while undergoing a study while neglecting the psychological variables such as mental health (Ramadas, S., & Kuttichira, P. 2017).

4. Socio-economic consequences of agrarian distress

4.1 Farmer Suicides:

Because of various reasons such as low crop prices, crop failures, and reduced access to credit, agrarian misery continuously results in a cycle of mounting debt for farming community. A great number of farmers resort to extreme methods, including suicide, due to the financial pressure and lack of ability to clear off the debts. A serious mental health crisis is taking place in rural communities as a result of the growing circumstances that farmers must tackle with, including financial strain, social stigma, and crop losses. These high rates of suicides in farming sector have a serious effect on society as a whole and in turn destroys their whole families. In addition to the farmers who owned the land, tenant farmers are also committing suicides because of the exploitation of land lords who acts as the informal source of credit for them.

4.2 Food security issues:

Decreasing agricultural production is an outcome of agrarian distress and its tailored causes, such as fragmentation of landholdings, insufficient irrigation infrastructure, and weather, climate change effects. This ultimately leads to our nation's food security at high risk because crop yields reduction may mean less food will be available and it will demand more money. Rural communities that are dependent on activities related to agriculture will have to face many challenges to their way of life due to reduced agricultural productivity and farmer distress. The economic health of these concerned areas is impacted by this.

4.3 Migration of rural farmers:

Because of the agrarian distress, farmers along with their families are forced to migrate from rural to urban regions in search of alternative livelihoods. Due to the minimum of scope for creating, generating revenue in rural areas and the appeal of urban jobs, cities may become overcrowded, placing a potential strain on their resources and infrastructure. When young and physically fit people migrate, the social fabric of rural communities is distorted, left behind ageing populations and a shortage of skilled labour. Moreover, individuals who work in agriculture still highly prone to these difficulties.

4.4 Economic Insecurity:

As a result of the decreased agricultural production, farmers are facing severe financial

losses. So, the livelihood of farmers is affecting badly in turn results in suicides. Farmers are not in a position to educate their children because of the ever-increasing school fees. Because of the low financial status farmers cannot stay healthy either mentally or physically.

4.5 Impact on environment:

Agrarian distress may lead to agricultural practises which are unsustainable, such as excessive water consumption, deforestation, and rapid use of chemical inputs, Depletion of natural resources harming environment, which leads to soil erosion, loss of biodiversity, and water pollution. Farmers' susceptibility to the effects of climate change is exacerbated by agrarian distress. Extremities in weather, lack of water, and altered crop cycles are all effects of climate change that are increasing agrarian misery.

5. Potential solutions

5.1 Comprehensive crop insurance scheme:

Pradhan Mantri Fasal Bima Yojana (PMFBY) is one of the good initiatives of Indian Government to introduce crop insurance as a support system to reduce farmers' burden in case of crop failures. Framers has to pay only little portion of the premium of 2% for Kharif, 1.5% for Rabi and 5% for commercial and horticulture crops. It is yet to be implemented throughout the country as whole. Farm loan waiver acts as an incentive and by which farmers do not go in for crop insurance in a big way. However, market risks are not covered under PMFBY. It is therefore advised that composite crop insurance scheme should be introduced so that the distress sale of farm products below MPS may be covered and farmers need not seek loan waiver when there is a market failure. The composite insurance can be extended to non-MSP crops too. The premium of the composite insurance may be distributed between farmers and the government in the same proportion as in case of the existing PMFBY. If it demands, state governments may be made mandatory to give a portion of the government share in the composite insurance

premium.

5.2 Diversification of Agriculture:

"In some parts of the country, mono crop system has made agriculture a highly risky occupation. There has to been little diversification of agriculture in India in the last one decade. Nevertheless, among all countries, per capita water availability in India is one of the lowest. due to lack of irrigation, not more than 40 per cent of India's farm land is double cropped. Inadequate share of mixed farming has also caused high volatility in agricultural sector" (Dalwai, 2017). "Diversification of agriculture will go a long way in smoothening and augmenting agricultural income" (Chand, 2017).

5.3 Promoting Smart farming:

The major problems in Indian agriculture are low productivity, climate change risks and side effects of excess use of chemical fertilizers and pesticides. Improving farm productivity and reducing the weather/market risks are the ultimate solutions to combat with the agrarian distress. It demands large investment in agriculture by the government because farmers are not be in position to do so due to their poor financial status. Indian Government has an ambitious programme of interlinking rivers in India, which can improve water harvesting and farm productivity in a big way. Infrastructure in rural areas may also undergo rapid change by this project together with Prime Minister's Gram Sadak Yojana (PMGSY). Smart farming will contribute significantly to the farm productivity improvement. Science and technology, especially use of digital technology will play a major role in the efficient use of resources, linking of rural supply to urban demand, soil testing, forecasting of weather, crop planning and marketing of farm produce (Dadhich, 2017).

5.4 Strengthen Forward Markets:

At present, there are forward trading for a few agricultural commodities available. Commodity futures are also being introduced. Derivatives are cash settled, speculators and traders dominating the market. Forward marketing in India has not been highly successful in hedging price risks of farm produce due to several reasons such as lack of widening and

deepening of markets resulting speculations, lack of standardisation of products and bad warehousing facilities. However, forward trading in all farm products may be difficult to introduce. Moreover, farmers in India are not smart enough to take resources to forward trading in commodities for the hedging purpose.

5.5 Assured Price to the framers:

Assured Price to Framers (APF) system which includes both the MSP component and profit margin component. It can be achieved by setting MSP equal to cost C2 to ensure the net return to the farmers. In addition to that an additional margin along with the C2 also should be decided by the expert body like CACP every year and this margin should be variable unlike consistent rise in MSP every year. Extending Fair Remunerative Price (FRP) model is also another stand of farmers in which they are demanding to extend this model in all the MSP covered crops.

6. Coping strategies:

"Coping is defined as what people do to try to minimize stress and is commonly seen in health psychology as problem-focused, that is, directed at reducing the threats and losses of the illness, or emotion-focused, namely directed at reducing the negative emotional consequences. Coping strategies are behavioural and cognitive tactics used to manage crises, conditions, and demands that are appraised as distressing. New methodologies incorporating various perspectives is much needed from India for better knowing of the enigma of farmers' suicide, so that steps can be taken to address such a public health and social issues. There are few distress indicators and action plans recommended" by Reddy *et al.,* (2021) as given below.

Table 1. Various distress indicators and action plans

S. no	Distress Indicators	Area of intervention	Action plan

1	Lack of non-farm employment	Strengthening and training of small enterprises	Encouragement of women/youth in engaging in cottage industry with farm waste materials
2	High indebtedness	Credit support	Easy and smooth access of formal credit institution
3	High farm expenses	Cost effective technology, subsidies, improving yields	Proactiveness of government with agricultural subsidy schemes to reach vulnerable farmers, Farm mechanization
4	Low agricultural land holding	Mapping of local resources and their management, development of land lease markets	Adoption of integrated farming system, credit facilities to tenant farming
5	Failure of borewell	Watershed development	Practice of water harvesting and conservation
6	Low educational status	Capacity building	Provision of extension services and special training to farmers
7	Crop failures	Promotion of involvement in the mitigation program	Identification of drought-prone area, Selection of proper crop varieties

(Source: Reddy et al., 2021)

7. Conclusion:

The ultimate solution of the agrarian distress lies in improving farm productivity and reducing the weather and market risks. Indian Government has an ambitious program of interlinking rivers in India, which can strengthen water harvesting and improve farm productivity in a big way. Linking of rural supply to urban demand, forecasting of weather, soil testing, and marketing of farm products. Excess labourer in farm sector shall be engaged in non-farm activities in rural areas. It is important to address agrarian distress in totality (NABARD, 2015) rather than looking for a short-term solution like farm loan waiver.

Disclaimer (Artificial intelligence)

Option 1: No AI Used

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

Option 2: No AI Used

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc have been used during writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1. Nil

2. Nil

3. Nil

References:

- Burnham, M., & Ma, Z. (2017). Climate change adaptation: factors influencing Chinese smallholder farmers perceived self-efficacy and adaptation intent. *Regional environmental change*, *17*, 171-186.
- Chand, R., Saxena, R., & Rana, S. (2015). Estimates and analysis of farm income

in India, 1983–84 to 2011–12. *Economic and Political Weekly*, 139-145.

- Chand, R. (2017). Presidential Address: Doubling farmers' income: Strategy and prospects. *Indian Journal of Agricultural Economics*, *71*(1), 1-23.
- Dadhich, C. L. (2017). Time to Push Credit for Smart Farming. *The Hindu Business line, March*, *25*.
- Dalwai, A. (2017). Doubling of Farmers' Income: Agricultural growth and farmers welfare. *Kurukshetra, A journal of rural development*, *65*(8), 5-14.
- Gardebroek, C., & Hernandez, M. A. (2013). Do energy prices stimulate food price volatility? Examining volatility transmission between US oil, ethanol and corn markets. *Energy economics*, *40*, 119-129.
- Kandlur, R., Sardana, S., & Richardson-Vejlgaard, R. (2022). The Agrarian distress: factors explaining the will to live among rural and distressed family farmers. *Psychiatry research communications*, *2*(1), 100019.
- Kantamaneni, K., Rice, L., Yenneti, K., & Campos, L. C. (2020). Assessing the vulnerability of agriculture systems to climate change in coastal areas: A novel index. *Sustainability*, *12*(11), 4771.
- Lawrence, P. G., Maxwell, B. D., Rew, L. J., Ellis, C., & Bekkerman, A. (2018). Vulnerability of dryland agricultural regimes to economic and climatic change. *Ecology and Society*, *23*(1).
- National Bank for Agriculture and Rural Development (2015), Annual Reports.
- National Crime Reports Bureau (2022-23), Annual Reports.
- National Intelligence Council. Impact of Climate Change to 2030—A Commissioned Research Report. Office of the Director of National Intelligence: New Delhi, India, 2009.
- Ramadas, S., & Kuttichira, P. (2017). Farmers' suicide and mental disorders perspectives in research approaches: comparison between India and

Australia. *International Journal of Community Medicine and Public Health*, *4*(2), 300-306.

- Rao, C. S., Kareemulla, K., Krishnan, P., Murthy, G. R. K., Ramesh, P., Ananthan, P. S., & Joshi, P. K. (2019). Agro-ecosystem based sustainability indicators for climate resilient agriculture in India: A conceptual framework. *Ecological Indicators*, *105*, 621-633.
- Reddy, A. A., Bhattacharya, A., Reddy, S. V., & Ricart, S. (2021). Farmers' distress index: An approach for an action plan to reduce vulnerability in the drylands of India. *Land*, *10*(11), 1236.
- Sathyan, A. R., Funk, C., Aenis, T., & Breuer, L. (2018). Climate vulnerability in rainfed farming: Analysis from Indian watersheds. *Sustainability*, *10*(9), 3357.
- Southard, E. M., & Randell, H. (2022). Climate Change, Agrarian Distress, and the Feminization of Agriculture in South Asia. *Rural sociology*, *87*(3), 873-900.
- Suryanto, S., & Rahman, A. (2019). Application of livelihood vulnerability index to assess risks for farmers in the Sukoharjo Regency and Klaten Regency, Indonesia. *Jàmbá: Journal of Disaster Risk Studies*, *11*(1), 1-9.
- Vakulabharanam, V., & Motiram, S. (2011). Political economy of agrarian distress in India since the 1990s 1. In *Understanding India's New Political Economy* (pp. 101-126). Routledge.
- Whitlock, C., Cross, W., Maxwell, B., Silverman, N., & Wade, A. A. (2017). Montana climate assessment. *Bozeman and Missoula MT: Montana State University and University of Montana, Montana Institute on Ecosystems*, *318*, 10-15788.