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**UNDERSTANDING THE LINK BETWEEN WEATHER, CLIMATE VARIABILITY, AND FARMER'S FINANCIAL PLANNING: A STUDY OF KHAMGAON REGION**Shambala Rameshwar Mahokar <sup>\*1</sup>, Prof. Vishal V. Patil <sup>2</sup><sup>1</sup>Student, Department of Business Administration and Research, Shri Sant Gajanan Maharaj College of Engineering, Shegaon<sup>2</sup>Assistant Professor, Department of Business Administration and Research, Shri Sant Gajanan Maharaj College of Engineering, Shegaon

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DOI: <https://doi.org/10.59415/mjacs.v2i2.188>**Abstract**

The purpose of this study is to look at how weather and climate variability affect farmer's financial planning and decision-making processes, the study aims to analyze the relationship between unanticipated in weather patterns and their financial stability. Farmer's financial planning decision-making process is influenced by a number of factors, including socioeconomic traits, risk attitudes, income level, and access to financial services. This research has been carried out using a descriptive research design. Question are employed in primary data collection. According to the study's findings, a farmer's decision-making process is influenced by variables such as income level, financing availability, and risk perception. This study highlights farmer's preferences for various investment options by looking at their unique saving and investing behaviors.

**Keywords:** Weather and climate variability, financial planning, Decision-making processes, Risk management, Saving and investment pattern

**1. Introduction**

Due to its heavy reliance on natural resources, agriculture is susceptible to the effects of weather and climatic fluctuations. This research aims to conduct a comprehensive longitudinal study to understand the nuanced effects of weather and climate variability on farmers' financial planning in Khamgaon. As climate patterns shift and extreme weather events become more frequent, farmers face uncertainties that can disrupt their financial stability. Extreme weather events have become more frequent and intense in recent years, which presents major problems to farmers globally. Even Khamgaon, a place well-known for its agricultural pursuits, faces these difficulties. In order to comprehend the complex impacts of weather and climatic fluctuation on farmer's financial planning in Khamgaon, this research attempts to carry out an extensive study. Farmer's face uncertainty that could jeopardize their capacity to make ends meet as climate patterns change and extreme weather events increase in frequency. Unpredictable temperature swings, protracted droughts, strong rainfall that occurs out of season, and erratic rainfall are some examples of how these uncertainties can materialize and have a substantial effect on crop yields and quality. For farmers to reduce risks and adjust to shifting environmental conditions, financial planning is essential. Developing successful strategies and policies to improve agricultural resilience requires an understanding of how this weather and climate variations affect farmer's long-term financial decisions. This long-term research will shed important light on the dynamic interaction between financial planning techniques and climate fluctuations. We hope to capture the temporal dimensions of the impact by using a longitudinal approach, which will enable a more thorough examination of the changing difficulties that farmers face. Data from several agricultural seasons will be gathered and analyzed for this study, which will take into account variables like crop output. Revenue volatility, resource allocation, and farmers-implemented adaptation methods. In addition, this research will investigate the coping strategies that farmers use to deal with weather and climate related uncertainty. These strategies include investing in sustainable agricultural methods, using insurance, and interacting with technological advancements. The result of this study can aid in the creation of focused interventions, regulations, and infrastructure that will enable farmers in Khamgaon to manage the challenges posed by climate change and protect their financial security. The ultimate goal of this research is to increase the agricultural community's resilience in the face of persistent problems.

## 2. Literature Review

### **Banarjee, R. R. (2015)**

This study uses a qualitative approach to find out how farmers in four Andhra Pradesh and Maharashtra communities interpret variations in temperature and rainfall. The paper examines how farmers have responded to these perceived changes in agriculture and looks at their adaptive tactics. The correctness of these perceptions is also evaluated in the paper through a comparison with actual climatic data. Additionally, the study broadens its scope to comprehend the factors that influence farmer's ability to adapt. It accomplishes this by looking at a particular instance of better water management used as a mechanism for adaptability. The research essentially examines farmer's subjective experiences with climate change while also assessing the validity of their judgements by contrasting them with factual meteorological data.

### **Mirajkumar and Pol (2021)**

In the western Maharashtra Plain Zone, investigate the investment and savings habits of semi-medium and medium-sized farmers. This study explores the financial habits of this group, provided insight into how they accumulate and distribute wealth. Through a review of the literature, the authors place their findings in the context of current understanding, highlighting the need of comprehending agricultural economics in particular geographic situations. This review provides insights into the socio-economic aspects that influence farmer's saving and investment patterns, laying the groundwork for understanding the intricacies of financial decision-making within the agriculture sector.

### **Nwibo, S. U., & Mbam, B, N, (2013)**

The study focuses on capacities, agricultural households, savings, investments, and determinants. The factors influencing the ability of agricultural households in the 120 respondent's udi local government region to save and invest. Structured questionnaires were used to gather data, and descriptive and inferential statistics were used to analyze the results. Excessive spending, inadequate bank branches, risk of capital loss, and insufficient returns. The main obstacles to savings and investments were found to be high administrative costs, insufficient information, low literacy rates, an unsatisfactory market structure, and the highly perishable character of agricultural products. The study came to the conclusions that farming households has a high propensity to save and invest based on its findings.

### **Praveen, B., & Sharma, P. (2019)**

This study thoroughly examines a wide range of studies, articles, documents, and other literature pertaining to the evaluation of the effects of climate change on crop productivity is the main area of study. Since agriculture is dependent on the climate by nature, alterations in the climate directly affect agricultural methods. By examining a variety of previous research and literature, the study seeks to highlight the crucial relationship between crop yield and climatic changes and to illuminate the ways in which agricultural practices are directly impacted by climate change.

### **Senthilkumar P., (2017)**

The research study demonstrates that the amount of saving was crucial in determining the farmer's income, it is believed that farmers have a strong desire to save and invest, and that factors such as household income, age, education level, and the number of family members with agriculture experience all positively influence the amount of money that is saved and invested. Appropriate awareness campaigns should be started to educate farmers about investments and savings, as well as the timely expansion of microcredit options that can support their increased output and, in turn, raise their surplus.

### **Singh, R, K., Kumar, S., Sheoran, P., Sharma, D.K., Stringer, L.C, (2020)**

This study aims to investigate how different stressors and climate variability affect smallholder farmer's livelihoods. According to the research, farmers are facing difficulties as a result of erratic rainfall patterns and a decline in the length and frequency of rainy days. According to the study, it could be necessary to reevaluate the conventional definitions of normal rainfall and drought. The farmers believe that a fair distribution of rainfall during the growing season is equally as important as the quantity of rainfall. Crop yield calculations depend heavily on this. Essentially, the study highlights how crucial it is to match farmer's needs and real-world experiences with definitions of

meteorological conditions, especially in light of shifting climatic patterns.

**Surendra Singh (2020)**

The primary goal of this study is to identify the key motivators for farmers to embrace realistic, affordable climate-smart adaptation techniques. The study found that the livelihoods of farmers had been negatively impacted by variations in rainfall and temperature. Nonetheless, the results show that two important variables-credit and insurance have a major positive impact on farmer's motivation to modify their farming methods. In essence, finance and insurance availability act as a powerful motivator for farmers to adopt practices that are more resilient to the difficulties presented by erratic weather.

**Surendra Babu K L, Jasdev Singh and Sanjay Kumar (2019)**

The study looked at marginal, major, and farm investment and expenditure. Using a multi-state random selection technique, a sample of 120 marginal and small farmers 60 from each of the study states were chosen with a reference period spanning 2017-18. According to the study, agricultural, dairy, and household investments made up the investment pattern used to guarantee the livelihood security of marginal and small farmers. The value of the entire output for the year is referred to as the gross farm revenue.

**Yadav, N., Tripathi, R., & Shastri, R. K. (2017)**

The study focusses on price discovery, farmer's investments, commodities, and derivatives. Commodity derivatives are becoming a more popular platform for stakeholders, including farmers. India is rapidly transitioning to a knowledge economy, and as part of this, Indian farmer's institutional financial planning system must be included. Both primary and secondary sources of information have been gathered. The nature of research design is analytical. The major of the tabulated data is based on interview questions and answers.

**3. Research methodology****Objectives**

- 1.To learn what farmers think of the investment.
- 2.To comprehend the several elements that influence farmer's choices.
- 3.To be aware of the several investment options that farmers favor the most.
- 4.To comprehend how institutions and social networks affect saving and investing choices

**4. Hypothesis****Null Hypothesis(H<sub>0</sub>):**

H<sub>0</sub>: There is no significant impact of weather and climate volatility on farmer's financial planning.

**Alternate hypothesis(H<sub>1</sub>):**

H<sub>1</sub>: There is a significant impact of weather and climate volatility on farmer's financial planning.

**5. Sampling Size and technique**

Using a basic random sampling technique, the impact of weather and climatic instability on farmer's financial planning will be examined. To do this, a sample of farmers from the population of interest is chosen at random. Every farmer in the population has an equal chance of being chosen when basic random sampling is used, guaranteeing a representative sample for precise results.

**6. Scope of the Study**

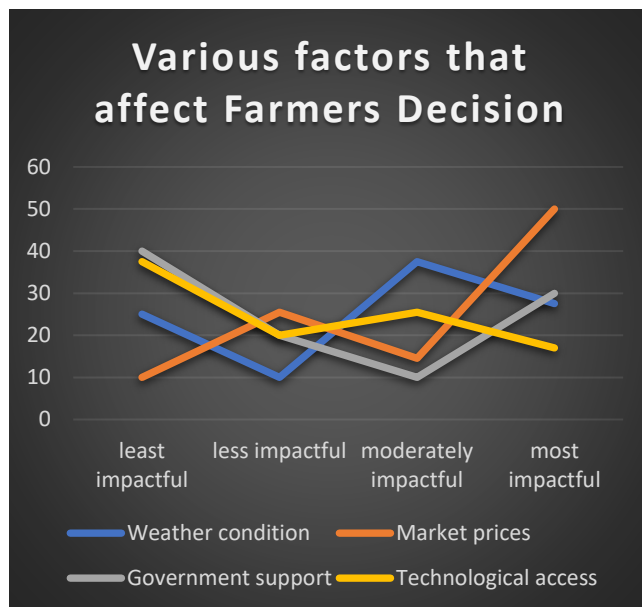
The purpose of this study, conducted in the Khamgaon region, is to look into how farmer's financial planning is

directed impacted by weather and climate unpredictability. The research will examine past climatic data, financial documentation, and farmer-implemented adaption tactics to comprehend the workings of their economic decision-making processes. It will also investigate how famer’s reactions to climate variability are shaped by institutional support and local socioeconomic conditions. In order to help farmer’s in the Khamgaon region become more resilient to the difficulties presented by weather and climate unpredictability, the research aims to offer specific insights.

**7. Analysis and Interpretation**

Various factors that affect farmers decisions					
Counts in %					
	Lea st	Less	Moder ately	Mo st	Tot al
Weather condition	25	10	37.5	27.5	100
Market prices	10	25.5	14.5	50	100
Government Support	40	20	10	30	100
Technological access	37.5	20	25.5	17	100

**Table: 1**



**Fig.1**

The research data suggest that farmers consider various factors when making decisions. Market prices were perceived as the most impactful factor, with 50% of respondents stating this. This indicates that farmers Weather conditions were moderately impactful for 37.5 respondents, highlighting the recognition of its influence on crop yields and farming operations. Government support was moderately for 30% of respondents, indicating the perceived importance of subsidies and incentives. Technological access was perceived as least impactful by 37.5 of respondents, suggesting that farmers may not prioritize or have access to advanced farming techniques or machinery. Overall, this data highlights the significance of market prices and weather conditions in farmer's decision-making process.

## **8. Conclusion**

The Khamgaon region study demonstrate the significant impact of weather and climatic fluctuation on farmer's financial planning. Over the course of investigation, it becomes clear that erratic weather patterns seriously interfered with agricultural operations, which in turn caused variations in farmer's income and expenses. Farming communities face significant obstacles to their long-term resilience and financial stability as a result of this fluctuation. Farmers are still at the mercy of the natural world despite their best efforts to reduce risks through a variety of tactics, such as investments and savings. This study emphasizes how important it is for financial institutions, governments, and other agricultural stakeholders to create strong systems to help farmers deal with weather-related uncertainty. Policies like weather-indexed insurance, finance availability, and locally-specific agricultural advice services can improve farmer's resilience to shocks strategies that incorporate financial planning instruments, community-based resilience-building initiatives, and meteorological data. We can enable farmers to make educated decisions and their overall financial well-being in the face of weather and climate uncertainty by encouraging collaboration among varied stakeholders and utilizing technical breakthroughs, such as remote sensing and climate forecasting.

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