**Understanding Stress in Farm Women: An Analysis of Contributing Factors**

**Abstract**

According to the 2021-2022, Periodic Labour Force Survey (PLFS), women make up 62.9% of the agricultural workforce. In rural India, about 80% of women work in agriculture. Women make up about 33% of cultivators and 47% of agricultural labourers. With increasing rural-to-urban migration by men, Indian agriculture is experiencing "feminization," where women take on key roles as cultivators, labourers, and entrepreneurs. They often face a heavy workload and significant stress due to the demanding nature of farm work combined with their domestic responsibilities, including childcare and household chores, with limited access to resources and support, leading to physical and mental stress or health concerns. The physical and mental stress experienced by farm women can significantly impact sustainable agriculture by leading to decreased productivity, poor decision-making, reduced resilience to environmental challenges, and potentially neglecting important farm practices that contribute to long-term sustainability. The number of studies related to the stress and well-being of women in farming are still relatively small thus, research has been conducted in Coochbehar and Alipurduar districts of West Bengal, to study the level of stress of the farm women as well as the factors contributing to it. The study has also generated measures to reduce the stress level among the farm women. The study employed a ex post facto research design and a mix method approach in collecting data. A stratified simple random sampling technique was used for the study. The state, district and blocks were selected purposively whereas, the villages and respondents were selected randomly. Data from 100 women, having atleast five years of involvement in agriculture was taken through personal interview method using a structured interview schedule.This study highlights the significant stress experienced by farm women in the Coochbehar and Alipurduar districts of West Bengal, India. The majority of respondents reported medium levels of stress, with environmental concerns, time pressure/workload, and lack of rural amenities being the major contributing factors. External stressors and interpersonal relationships also play a role, albeit to a lesser extent. The findings underscore the need for targeted interventions to address these specific stressors and improve the overall well-being of women in agriculture.

**Key words: farm women, stress, stressors, rural amenities, environmental concern**

**Introduction**

Women form a significant portion of the agricultural workforce in India, with data from the 2021-2022 Periodic Labour Force Survey (PLFS) indicating that they constitute 62.9% of this sector. In rural India, approximately 80% of women are engaged in agriculture, working as cultivators and agricultural labourers, representing about 33% and 47% respectively. Due to increased rural-to-urban migration by men, Indian agriculture is undergoing feminization, where women are taking on more prominent roles as cultivators, labourers, and entrepreneurs.

However, women farmers often face a heavy workload and significant stress due to the demanding nature of farm work, combined with domestic responsibilities. This can lead to physical and mental stress, and other health concerns, which can significantly impact sustainable agriculture, potentially leading to decreased productivity, poor decision-making, reduced resilience to environmental challenges, and neglect of important farm practices that contribute to long-term sustainability. There is a need for more research focused on the origins and effects of stress and quality of life among women farmers. This study aims to address this gap by analysing the level of stress among farm women and identifying the factors that contribute to their stress.

**Methodology**

This ex post facto study, conducted from January 2024 to August 2024 as part of a Master's degree program, employed a mixed-methods approach to investigate [**Understanding Stress in Farm Women: An Analysis of Contributing Factors]**. The research was carried out in the Coochbehar and Alipurduar districts of West Bengal, India. These districts, along with the selection of Coochbehar I & II and Alipurduar I & II blocks, were chosen purposively due to the high concentration of farm women in the area and the researcher's familiarity with the local context, dialect, and culture, facilitating ease of data collection.

A simple random sampling technique was used to select four villages, one from each of the aforementioned blocks. From each village, 25 farm women were randomly selected based on their having a minimum of five years of farming experience, resulting in a total sample size of 100 respondents.

Prior to commencing the primary data collection, a pilot study was conducted to refine the research instruments and methodology. A preliminary interview schedule was developed based on a review of existing literature, research papers, and guidance from the Advisory Committee. This schedule was then pre-tested with a group of non-sample respondents to identify areas for improvement and ensure the clarity and relevance of the questions. Necessary modifications were made to the schedule based on the feedback received.

Data was collected through face-to-face interviews with the selected farm women using the structured interview schedule. The collected data was then organized, tabulated, and analyzed systematically using Microsoft Excel and SPSS (Statistical Package for the Social Sciences) software. Statistical tools such as frequency distribution, percentages, standard deviation, mean, weighted mean, weighted mean score, and equidistance method were employed to analyze the data and draw conclusions in relation to the study objectives.

**Results and discussion**

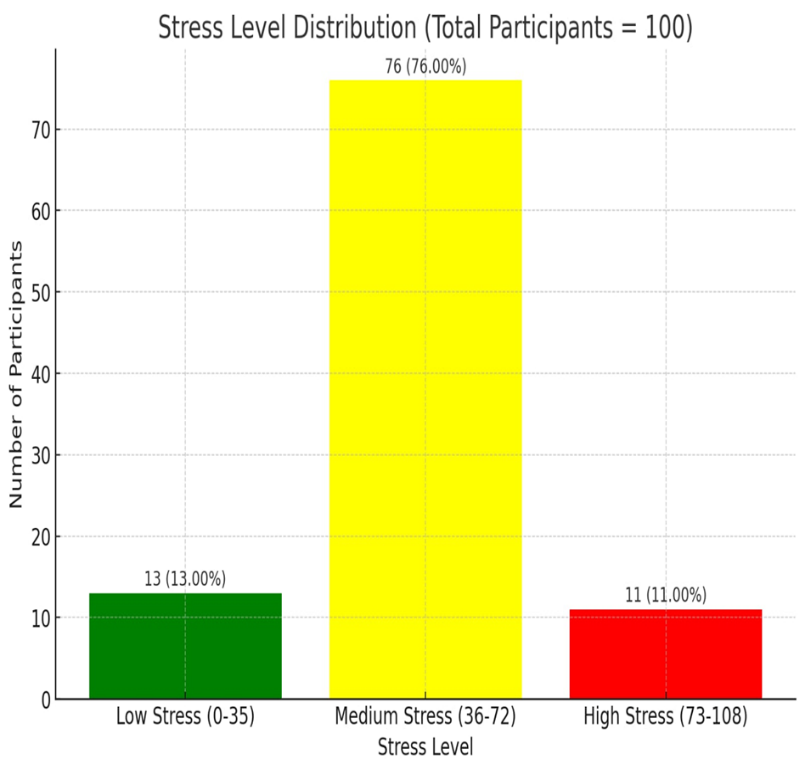


Fig .1 Stress level distribution

Farm women experience stress across five key domains: Time Pressure/Workload, Environmental Concerns, External Stressors, Interpersonal Relationships, and Rural Amenities. A scale consisting of 36 statements was used to measure the stress levels of respondents. Answers were collected using a four-point continuum: Always (3), Sometimes (2), Rarely (1), and Never (0). The possible score ranged from 0 to 108. Based on their scores, respondents were categorized into three stress levels using the equidistance method: High (73-108), Medium (36-72), and Low (0-35). The study revealed that a significant majority (76%) of the respondents reported medium levels of stress.

**Table 1: Domains Contributing to Farm Women Stress**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No** | **Stressors** | **Mean Score** | **Ranking** |
| **1** | **Time pressure** | **1.88** | **II** |
| **2** | **Environmental Concerns** | **2.09** | **I** |
| 3 | External Stressors | 1.56 | III |
| 4 | Interpersonal Relationship | 1.35 | IV |
| **5** | **Rural Amenities** | **1.88** | **II** |

The data in Table 1 ranks the stressors affecting farm women based on their mean scores. A higher mean score indicates a greater level of stress associated with that domain.

The table identifies five domains contributing to stress among farm women. Environmental concerns are the most significant stressor for farm women, followed by time pressure and rural amenities. External stressors and interpersonal relationships also contribute to their stress levels, albeit to a lesser extent.

**Table 2. Factors under Time pressure/ Workload domain contributing to the stress of farm women**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Time pressure/ Workload** | | **n=100** | | | | |
| **Always (3)** | **Sometimes (2)** | **Rarely (1)** | **Never (0)** | **Mean Score** |
| **1** | **Having to juggle too many activities** | **40** | **58** | **2** | **0** | **2.38** |
| **2** | **Lack of time to complete regular tasks** | **19** | **75** | **6** | **0** | **2.13** |
| 3 | Lack of time spend with loved ones | 4 | 55 | 40 | 1 | 1.62 |
| **4** | **Having too much workload** | **21** | **72** | **7** | **0** | **2.14** |
| 5 | Lack of time to take care health of self and dependent | 11 | 68 | 21 | 0 | 1.99 |
| 6 | Problems with farm equipment functioning | 0 | 43 | 54 | 3 | 1.4 |
| 7 | Fear of getting injured by machinery or livestock | 0 | 44 | 53 | 3 | 1.41 |
| 8 | Concern about health of myself or family | 17 | 69 | 13 | 1 | 2.03 |

The table presents the results of a survey (n=100) examining the frequency with which farm women experience various stressors related to time pressure and workload. The frequency is broken down into "Always," "Sometimes," "Rarely," and "Never," with corresponding numerical values (3, 2, 1, and 0) used to calculate a mean score for each stressor.

Time pressure and heavy workloads are significant contributors to stress among farm women. The data indicates that juggling multiple activities and the inability to complete regular tasks due to time constraints are major issues. While concerns about equipment, injury, and health are factors, they appear to be less frequent stressors compared to the demands of daily tasks and responsibilities.

**Table 3.** **Factors under Environmental Concerns domain contributing to the stress of farm women**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Environmental Concerns** | | **n=100** | | | | |
| **Always (3)** | **Sometimes (2)** | **Rarely (1)** | **Never (0)** | **Mean Score** |
| 1 | Water pollution | 0 | 51 | 49 | 0 | 1.51 |
| 2 | Soil fertility decline | 9 | 69 | 22 | 0 | 1.87 |
| **3** | **Increased droughts** | **38** | **62** | **0** | **0** | **2.38** |
| 4 | Pesticide exposure | 4 | 66 | 30 | 0 | 1.74 |
| **5** | **Weather unpredictability** | **44** | **56** | **0** | **0** | **2.44** |
| **6** | **Increased flooding** | **38** | **58** | **4** | **0** | **2.34** |
| **7** | **climate change** | **45** | **51** | **4** | **0** | **2.41** |

The table presents data (n=100) on environmental concerns and how frequently farm women experience them. The frequency is categorized into "Always," "Sometimes," "Rarely," and "Never," with corresponding numerical values (3, 2, 1, and 0) to calculate a mean score. The mean score indicates the average frequency of each environmental concern.

The data suggests that farm women frequently experience several environmental concerns. Weather unpredictability has the highest mean score (2.44), closely followed by climate change (2.41) and increased droughts (2.38). Increased flooding also poses a significant concern (2.34). Soil fertility decline and pesticide exposure are moderate concerns, while water pollution appears to be the least frequent concern among the listed factors.

Environmental stressors significantly impact the lives of farm women. The high mean scores for weather unpredictability, climate change, increased droughts, and flooding indicate these are major, frequently experienced issues. These environmental factors can affect crop yields, water availability, and overall agricultural stability, which in turn can affect the well-being and livelihoods of farm women.

**Table 4. Factors under External Stressors domain contributing to the stress of farm women**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **External Stressors** | | **n=100** | | | | |
| **Always(3)** | **Some- times(2)** | **Rarely(1)** | **Never(0)** | **Mean Score** |
| 1 | Market instability | 12 | 56 | 32 | 0 | 1.81 |
| 2 | Marketing decision | 0 | 18 | 70 | 12 | 1.06 |
| 3 | Environmental regulation | 7 | 41 | 40 | 12 | 1.42 |
| 4 | Farm policy | 0 | 18 | 69 | 13 | 1.06 |
| 5 | Environmental activists | 0 | 4 | 63 | 33 | 0.71 |
| **6** | **Difficulty making a profit** | **43** | **53** | **4** | **0** | **2.36** |
| 7 | Control everything for fear | 2 | 43 | 55 | 0 | 1.47 |
| 8 | **Fragmented land** | **23** | **57** | **20** | **0** | **2.03** |
| **9** | **Unaffordable health insurance** | **30** | **59** | **11** | **0** | **2.19** |

Table 4 presents data on various external stressors and their impact on the stress levels of 100 farm women. The table shows the frequency with which these women experience each stressor ("Always," "Sometimes," "Rarely," or "Never") and calculates a mean score to indicate the relative importance of each stressor. A higher mean score suggests that the stressor is more frequently experienced and thus contributes more to overall stress.

Financial issues, specifically the difficulty of making a profit and the burden of unaffordable health insurance, are the primary external stressors affecting farm women.Market instability and fragmented land holdings also significantly contribute to stress, reflecting challenges related to the economic viability and practical management of farming operations.Environmental regulations, farm policies, and environmental activists have a less pronounced but still noticeable impact on stress levels.

**Table 5. Factors under Interpersonal Relationship domain contributing to the stress of farm women**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Interpersonal Relationship** | | | **n=100** | | | | |
| **Always (3)** | **Sometimes (2)** | **Rarely (1)** | **Never (0)** | **Mean Score** |
| **1** | | **Difficulty in conversation with relatives over farm issues** | **4** | **52** | **44** | **0** | **1.60** |
| 2 | Legal aspects of farm transition | | 0 | 27 | 69 | 0 | 1.31 |
| **3** | **Conflicts with neighbor /extended family** | | **0** | **44** | **56** | **0** | **1.44** |
| 4 | Responsibility to continue family farm | | 0 | 27 | 73 | 0 | 1.18 |
| 5 | Immediate family members interference in farm decision | | 0 | 27 | 73 | 0 | 1.27 |
| 6 | Conflicts with tenant farmer/farm employee | | 0 | 38 | 62 | 0 | 1.31 |

Table 5 presents data from a survey of 100 farm women (n=100) regarding interpersonal relationship factors contributing to their stress. The table shows the frequency with which respondents experience certain issues (Always, Sometimes, Rarely, Never) and provides a mean score for each factor. The mean score is calculated based on a scale where Always = 3, Sometimes = 2, Rarely = 1, and Never = 0.

The data indicates that several interpersonal relationship factors contribute to the stress experienced by farm women. The most significant factor appears to be "Difficulty in conversation with relatives over farm issues," which has the highest mean score of 1.60. This suggests that a considerable number of respondents "Sometimes" experience this issue. Other factors, such as "Conflicts with neighbor/extended family," "Legal aspects of farm transition," "Responsibility to continue family farm," "Immediate family members interference in farm decision," and "Conflicts with tenant farmer/farm employee," also contribute to stress, though to a lesser extent, with mean scores ranging from 1.18 to 1.44. Most respondents reported experiencing these issues "Sometimes" or "Rarely."

Based on the data, interpersonal relationship issues significantly contribute to the stress levels of farm women. The primary source of stress in this domain is the difficulty in having conversations with relatives about farm issues. Other factors, including legal aspects of farm transition, conflicts, family interference, and responsibilities related to continuing the family farm, also play a role in increasing stress.

**Table 6. Factors under Rural Amenities domain contributing to the stress of farm women**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Rural Amenities** | | **n=100** | | | | |
| **Always (3)** | **Sometimes (2)** | **Rarely (1)** | **Never (0)** | **Mean Score** |
| **1** | **Nearby market unavailability** | **24** | **58** | **18** | **0** | **2.60** |
| 2 | Lack of community in immediate vicinity | 9 | 29 | 62 | 0 | 1.47 |
| **3** | **Unavailability of good schools/childcare** | **47** | **43** | **10** | **0** | **2.37** |
| **4** | **Lack of health care services** | **30** | **66** | **4** | **0** | **2.26** |
| 5 | Conflict with professional associates | 0 | 26 | 67 | 7 | 1.19 |
| 6 | Concern about judgment from neighbor | 0 | 43 | 57 | 0 | 1.43 |

Table 6 presents data (n=100) on several factors related to rural amenities and their contribution to the stress levels of farm women. The table uses a scoring system to reflect how frequently these factors cause stress: Always (3), Sometimes (2), Rarely (1), and Never (0). The mean score is calculated for each factor.

The table highlights that the unavailability of nearby markets, lack of good schools/childcare, and lack of healthcare services are the most significant stressors related to rural amenities for farm women. In contrast, conflict with professional associates and concern about judgment from neighbors appear to be less significant stressors.

Based on the data, rural amenities significantly impact the stress levels of farm women. The primary stressors are related to the availability and accessibility of essential services such as markets, schools/childcare, and healthcare.

**Conclusion and Recommendations**

This study highlights the significant stress experienced by farm women in the Coochbehar and Alipurduar districts of West Bengal, India. The majority of respondents reported medium levels of stress, with environmental concerns, time pressure/workload, and lack of rural amenities being the major contributing factors. External stressors and interpersonal relationships also play a role, albeit to a lesser extent. The findings underscore the need for targeted interventions to address these specific stressors and improve the overall well-being of women in agriculture.

Based on the findings of this study, the following recommendations are suggested:

* Address Environmental Concerns:

Implement training programs and provide resources to help farm women adopt sustainable farming techniques that can mitigate the impact of climate change, such as drought-resistant crops, water conservation methods, and soil fertility management.

timely and accurate weather forecasts through accessible channels (e.g., mobile apps, community radio) to help farm women make informed decisions about planting, irrigation, and harvesting.

* Reduce Time Pressure and Workload:

Provide subsidies and training for the adoption of appropriate farm machinery and tools that can reduce the physical burden of farm work and improve efficiency.

Encourage the formation of women's self-help groups (SHGs) to facilitate the sharing of labor, equipment, and knowledge, thereby reducing individual workload and increasing productivity.

* Improve Rural Amenities:

Enhance access to markets: Establish or improve local market infrastructure to ensure farm women have easy access to sell their produce at fair prices.

Improve access to healthcare and childcare: Establish mobile health clinics and childcare centers in rural areas to address the health and childcare needs of farm women, reducing their stress related to family well-being.

Ensure access to quality education: Advocate for better educational facilities in rural areas to support the educational needs of the children in farming families.

* Address External Stressors:

Implement policies and support systems to ensure fair prices for agricultural produce, reducing the economic stress on farm women.

Increase health insurance coverage and accessibility for farm women and their families.

* Strengthen Interpersonal Relationships:

workshops and training programs to improve communication and conflict resolution skills among family members and within the community.

Address gender inequalities in agriculture and household responsibilities through awareness campaigns and policy interventions, ensuring that women's contributions are recognized and valued.

By implementing these recommendations, policymakers, researchers, and community organizations can work together to alleviate stress among farm women, improve their quality of life, and promote sustainable agricultural development. Further research should focus on evaluating the effectiveness of these interventions and exploring additional strategies to support the well-being of women in agriculture.

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