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SUSTAINABLE FARMING PRACTICES AMONG SMALL FARMERS- AN EMPIRICAL STUDY BASED ON PRIMARY SURVEY DATA

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ABSTRACT

Sustainable farming has emerged as a crucial approach to address environmental degradation, declining soil fertility, and socio-economic challenges faced by small farmers. Smallholder farmers play a significant role in global food security, yet their adoption of sustainable practices remains uneven due to financial, technological, and institutional constraints. This study examines the awareness, adoption level, and challenges related to sustainable farming practices among small farmers using primary data collected through a structured questionnaire survey of 20 farmers. The study employs descriptive statistical analysis to assess practices such as organic inputs, crop rotation, water conservation, and integrated pest management. The findings reveal moderate awareness but limited adoption due to high initial costs, lack of training, and inadequate institutional support. The study highlights the need for policy intervention, capacity building, and localized extension services to promote sustainable agriculture among small farmers.

KEYWORDS: Sustainable farming, Small farmers, Agriculture sustainability, Organic farming, pest management.

INTRODUCTION

Agriculture remains the backbone of rural livelihoods in many developing countries, particularly for small and marginal farmers. However, conventional farming practices characterized by excessive chemical inputs, mono-cropping, and over-exploitation of natural resources have resulted in soil degradation, water scarcity, and declining farm productivity

(1). Sustainable farming practices aim to balance economic viability, environmental protection, and social equity (2).

Small farmers, defined as those owning or cultivating limited land holdings, are both vulnerable to climate change and critical to sustainable food systems (3). Despite the proven long-term benefits of sustainable agriculture, adoption among small farmers remains limited. Understanding farmers' perceptions, practices, and constraints is essential for designing effective interventions. This study contributes empirical evidence by analysing sustainable farming practices among small farmers using primary survey data.

Review of Literature

Sustainable agriculture emphasizes ecological balance, conservation of biodiversity, and efficient use of natural resources (4). Studies have shown that practices such as crop diversification, organic manure application, and water-efficient irrigation improve soil health and farm resilience (5).

Research indicates that small farmers often face barriers such as lack of awareness, financial limitations, and inadequate access to extension services, which hinder the adoption of sustainable practices (6). Education, institutional support, and government incentives play a significant role in influencing adoption behaviour (7). However, region-specific empirical studies using primary data remain limited, especially at the micro level, justifying the present study.

Objectives of the Study

1. To assess the level of awareness of sustainable farming practices among small farmers.
2. To examine the extent of adoption of sustainable farming practices.
3. To identify major challenges faced by small farmers in adopting sustainable agriculture.
4. To suggest policy and practical measures to enhance sustainable farming adoption.

Research Methodology

The study follows a descriptive and empirical research design based on primary data.A total of 20 small farmers were selected using purposive sampling. Farmers were classified as small farmers based on landholding size and dependency on agriculture for livelihood.

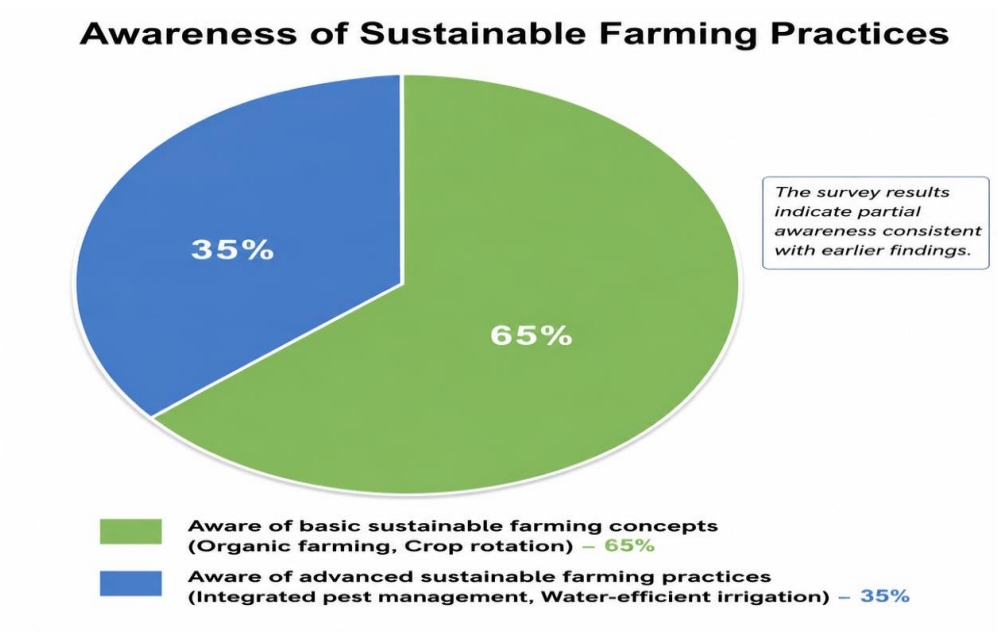
Primary data were collected using a structured questionnaire.

Data were analysed using percentage analysis and descriptive statistics, suitable for small-sample exploratory studies.

RESULTS AND DISCUSSION

1. Awareness of Sustainable Farming Practices

The survey results indicate that 65% of respondents were aware of sustainable farming concepts such as organic farming and crop rotation, while only 35% had knowledge of advanced practices like integrated pest management and water-efficient irrigation systems. This reflects partial awareness consistent with earlier findings (8).



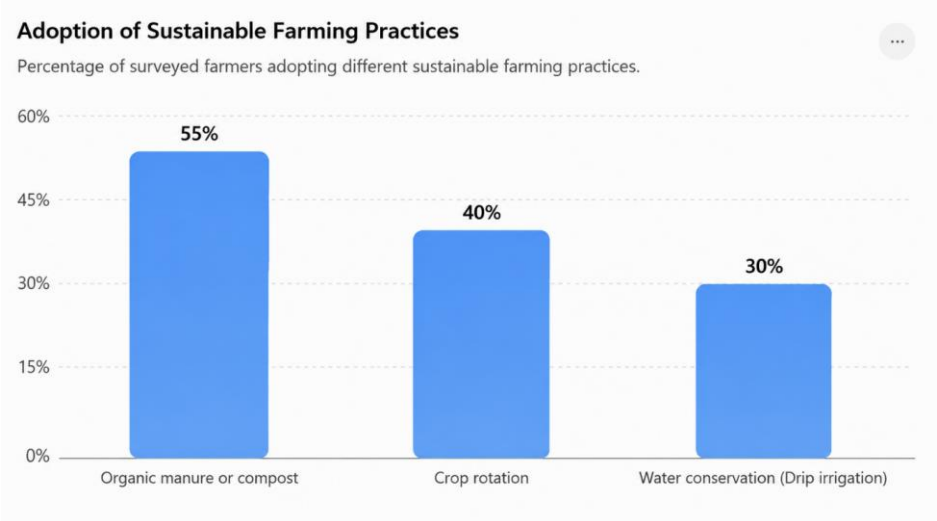
2. Adoption of Sustainable Practices

Among the surveyed farmers:

55% reported using organic manure or compost.

40% practiced crop rotation or mixed cropping.

Only 30% adopted water conservation techniques such as drip irrigation.



The adoption level remains moderate, suggesting a gap between awareness and actual practice (9).

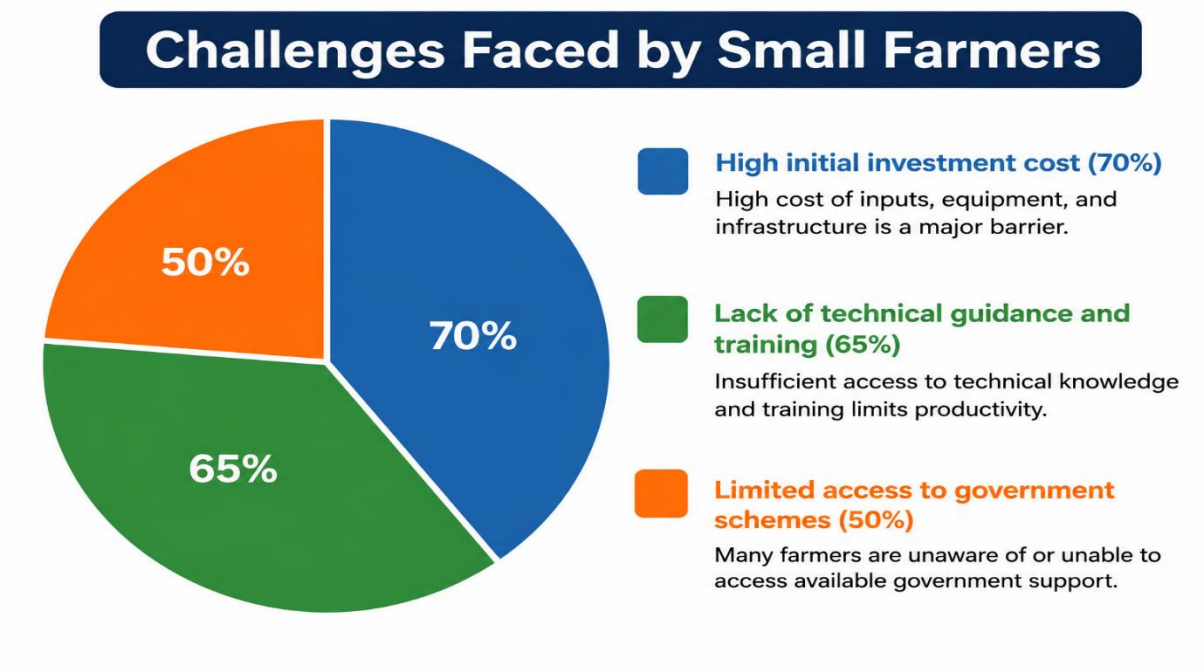
3. Challenges Faced by Small Farmers

The major challenges identified include:

High initial investment cost (70%)

Lack of technical guidance and training (65%)

Limited access to government schemes (50%)



These findings support previous research highlighting institutional and economic barriers to sustainable agriculture (10).

Recommendations

1.Government agencies should enhance training and capacity-building programs for small farmers.

2.Financial support and subsidies should be provided to reduce initial investment barriers.

3.Agricultural extension services should focus on region-specific sustainable practices. Farmer cooperatives can play a vital role in knowledge sharing and collective adoption.

CONCLUSION

The study concludes that while small farmers show growing awareness of sustainable farming practices, actual adoption remains limited due to economic, technical, and

institutional constraints. Sustainable agriculture among small farmers cannot be achieved without targeted policy support, localized training programs, and financial incentives. Strengthening agricultural extension services and promoting farmer-friendly sustainable technologies are crucial for long-term agricultural sustainability.

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