

NURTURING RESILIENCE: MILLETS AND SUSTAINABLE FARMING IN TAMIL NADU

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ABSTRACT

Jowar, bajra and ragi are the considered to be the important millets grown in India. These are known as coarse grains, as they have very high nutritional. For example, ragi is very rich in iron, calcium, other micro nutrients and roughage. As there are changes in food patterns and the domination of rice and wheat, millet cultivation declined significantly in the past few decades. Nevertheless, recent years have observed a revival of interest in millets as Tamil Nadu strives to clinch sustainable agriculture and discourse issues related to food security, soil health, and climate resilience. Millets such as finger millet (ragi), pearl millet (kambu), and little millet (samai) are suitable for the local prevailing agro-climatic conditions. The cultivation of millets in Tamil Nadu is more significant in the semi-arid regions of Salem, Dharmapuri, Madurai, and Coimbatore, where traditional knowledge meets modern agricultural practices to enhance better yields.

Awareness campaigns intending the nutritional and health benefits of millets, fueling a growing consumer demand for these traditional grains. The government of Tamil Nadu has actively promoted millet cultivation through various initiatives like the Millet Mission, offering subsidies, technical support, guidance, and training for millet-based awareness. An enhanced focus on millets is nurturing a greener, more self-reliant, and healthy food system across the state. As Tamil Nadu looks to a future marked by climate uncertainty, millets stand as a symbol of resilience and sustainability, providing farmers with a viable livelihood and consumers with a healthier dietary choice which may stabilize in improving the life expectancy.

Keywords: Nutri-cereals, Resilience, Nutritional, Cultivation, Climate uncertainty.

1. INTRODUCTION

Millets are ancient grains that have been a staple crop in India for centuries, known for their resilience to drought and adaptability to semi-arid conditions. Tamil Nadu, facing frequent droughts and erratic monsoons, offers a fertile ground to study the resilience-building potential of millet farming. This paper investigates the benefits of promoting millet-based sustainable agriculture in Tamil Nadu, aligning it with global and regional food security agendas and sustainable development goals (SDGs).

Importance of Millets and Sustainable Farming in Tamil Nadu

Millets are highly nutritious, rich in fiber, protein, vitamins, and minerals, making them a key crop for combating malnutrition. Given their low water requirement, millet cultivation is especially viable in the arid and semi-arid zones of Tamil Nadu. Sustainable millet farming can address issues such as soil erosion, water scarcity, and biodiversity loss while preserving traditional agricultural knowledge.

Scope of the Study

The study focuses on small and marginal farmers in Tamil Nadu's semi-arid regions. By examining the cultivation, economic value, and sustainability of millets, it aims to provide insights for policymakers, agricultural researchers, and practitioners. It addresses the potential for millet-based farming systems to enhance rural livelihoods and promote sustainable practices in the face of climate challenges.

Statement of the Problem

Despite the ecological and economic benefits of millet farming, there is a declining trend in millet cultivation due to the shift towards water-intensive crops like rice and sugarcane. This shift has led to reduced biodiversity, increased dependency on water resources, and heightened vulnerability to climate change.

2. OBJECTIVES

1. To analyse the environmental and economic benefits of millet cultivation in Tamil Nadu.
2. To assess the challenges faced by farmers in adopting millet-based sustainable farming.
3. To identify strategies for promoting millet cultivation to support sustainable agriculture and climate resilience.

4. To recommend policy interventions that could facilitate the growth and adoption of millet farming.

Methodology

The study is based on primary and secondary sources namely Government reports, agricultural statistics, and publications on millet cultivation and sustainable farming practices in India.

3. LITERATURE REVIEW

Rao et al. (2017) highlights that millets can thrive in marginal soils where other crops fail, providing a reliable harvest in unfavourable conditions. Millets are known for their resilience to extreme weather conditions, including drought and high temperatures. Studies show that their short growing season and minimal water requirements make them suitable for cultivation in regions facing water scarcity and erratic rainfall patterns.

Singh and Reddy (2019) demonstrated that integrating millets into cropping systems significantly reduces the carbon footprint of farming, contributing to sustainable practices. Compared to rice and wheat, millets require fewer inputs such as chemical fertilizers, pesticides, and irrigation.

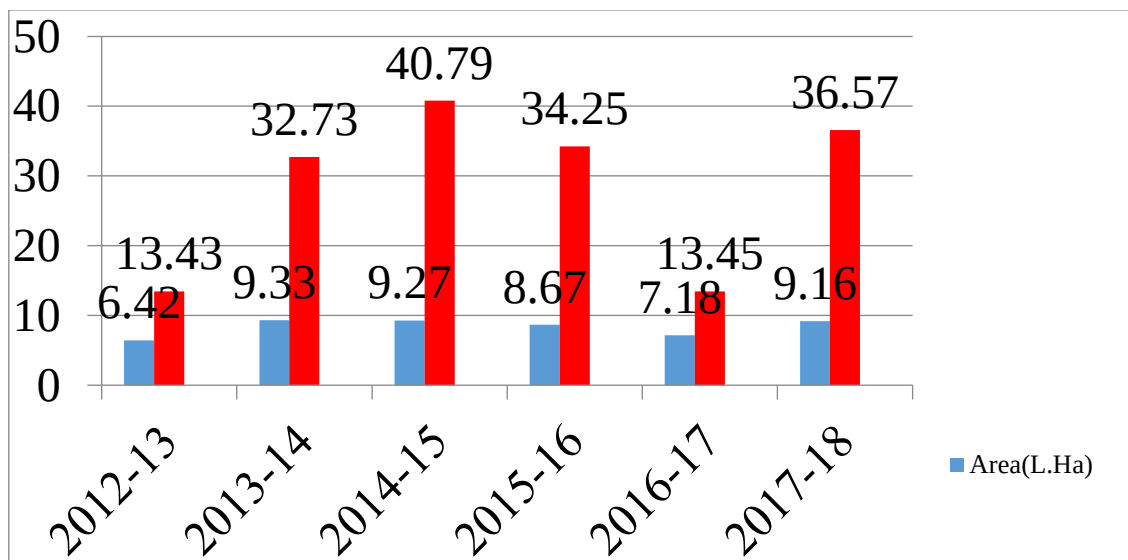
In Tamil Nadu, the area under millet cultivation has come down by 71.17 per cent since 1980s and production has come down by 67.91 per cent. But, productivity has increased by 29.2 per cent.

TAMIL NADU POSITION AT ALL INDIA LEVEL

Crop	All India Average Yield (Kg/ha)	Yield in Tamil Nadu (Kg/ha)	Position of Tamil Nadu at National Level
Maize	2,557	5,360	1
Bajra	1,272	2,881	1
Groundnut	1,400	2,699	1
Total Oilseeds	1,037	2,294	1
Cotton	461	718	1
Rice	2,390	3,191	2
Sugarcane(MT)	70	93	3
Sunflower	753	1,625	3
Jowar	953	1,485	3
Coarse cereals	1,729	3,066	4
Food grains	2,070	2,529	5
Total Pulses	744	698	8

Source: Government of Tamil Nadu, Department of Agriculture. 2019. Report on Millet Cultivation in Tamil Nadu.

Area and Production of Millets in Tamil Nadu



Area Coverage and Production Programme 2018-19

Crop	Area (Lakh. Ha)			Production (Lakh Mt)		
	Kharif	Rabi	Total	Kharif	Rabi	Total
Jowar	2.303	1.787	4.090	4.535	3.339	7.874
Bajra	0.320	0.411	0.731	0.759	0.880	1.640
Ragi	0.777	0.243	1.020	2.233	0.754	2.987
Maize	1.929	1.900	3.829	16.238	12.909	29.147
Minor Millet	0.265	0.065	0.330	0.306	0.047	0.353
Total Millet	5.594	4.406	10.00	24.071	17.929	42.00

Source: Government of Tamil Nadu, Department of Agriculture. 2019. Report on Millet Cultivation in Tamil Nadu.

4. FINDINGS

- Economic Viability:** Millet farming provides a comparable or higher income than other crops, especially under water-limited conditions.
- Environmental Benefits:** Fields under millet cultivation showed improved soil quality and required less irrigation.
- Adoption Challenges:** Lack of awareness, poor market access, and limited government support were significant barriers to millet adoption.
- Potential for Resilience:** Millet-based farming demonstrated resilience in drought years, offering a reliable food source and income for farmers.

5. CONCLUSION

Millet holds substantial promise for sustainable agriculture in Tamil Nadu, particularly under the pressure of climate change. The findings suggest that millet farming can play a crucial role in sustainable food systems, improving soil health, and reducing water usage. However, to fully realize its potential, targeted policies, market support, and awareness programs are essential. Promoting millet cultivation could contribute to Tamil Nadu's food security and resilience against climate impacts.

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