

Global Millet (Shree Anna): Value Chain Analysis of Millet production and processing

Babita Bardhan*

Department of Botany, Jaiprakash Mahila College, Chapra, Jaiprakash University, Chapra, Bihar, India

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ABSTRACT

Millets are ancient grains that have gained renewed attention due to their nutritional benefit environmental sustainability, and resilience to climate change. This paper provides an in-depth analysis of the global millets value chain, focusing on production and processing, with a special emphasis on the Shree Anna variety. Through a comprehensive review of literature and data, this research aims to elucidate the key actors, activities, challenges, opportunities in the millet value chain. The findings underscore the importance of enhancing millet production efficiency, improving processing technologies, and strengthening market linkages to promote the sustainable growth of millet-based agriculture.

Key Words - Millets, Shree Anna variety, nutritional richness, Environmental Impact

***Corresponding author** : babita.bardhan@gmail.com

INTRODUCTION

Millets often referred to as “Nutri-cereals” have been staple foods for millions of people across the world for centuries. Despite their historical significance, these small seeded grains were overshadowed by major cereals like rice, wheat, and maize in the global food system. However, in recent years, there has been a resurgence of interest in millets due to their nutritional richness, climate resilience, and potential to address food security challenges. This paper investigates the value chain of millet production and processing, with a focus on the Shree Anna variety, aiming to provide insights into the dynamics of millet-based agriculture in the global context.

Global Millet Production: -

Millet production is distributed across various regions worldwide, with India, Nigeria, Niger, China and Mali being among the leading producers. The Shree Anna variety, a type of finger millet (*Eleusine coracana*) holds significant importance in the Indian

subcontinent, particularly in the regions like Karnataka, Tamilnadu, and Andhra Pradesh. Factors influencing millet production include agro-climatic conditions, soil fertility, water availability, and agronomic practices. Sustainable farming techniques such as intercropping, organic farming and agroforestry have been increasingly adopted to enhance millet yields while preserving environmental integrity.

Millet Processing Technique

Processing millets involves several steps aimed at removing impurities, extending shelf life, and enhancing palatability. Traditional processing methods include de-husking, milling, polishing and sieving, which are often labour-intensive and time-consuming. However, modern processing technologies such as mechanical dehullers, abrasive milling, and micronization have streamlined the processing of millets, resulting in higher efficiency and product quality. Furthermore, value added millet products

like flour, puffed grains and ready to eat snacks have gained popularity in both domestic and international markets, catering to diverse consumer preferences.

Socio-economic and Environmental Impact: - Analysing the socio-economic and environmental impact of millet production and processing involves considering various factors: -

- **Socio-economic Impact:** -
 1. **Employment Opportunities:** -Millet production and processing provide employment opportunities, particularly in rural areas where agriculture is a primary source of livelihood.
 2. **Income Generation:** - Smallholder farmers and local processors earn income through millet cultivation and processing, contributing to poverty alleviation and economic development.
 3. **Food Security:** - Millets are staple foods for millions of people, especially a developing country. A well-functioning millet value chain ensure food security and nutrition for these populations.
 4. **Community Development:** - Successful millet value chains can stimulate community development by fostering entrepreneurship and investment in local infrastructure
- **Environmental Impact:** -
 1. **Water Conservation:** - Millet cultivation typically requires less water compared to other cereal crops, contributing to water conservation and sustainable agriculture practices.
 2. **Biodiversity:** - Millet cultivation promotes biodiversity by providing habitat for various plant and animal species, especially in agroecological systems.
 3. **Soil Health:** - Millets have deep root systems that help improve soil structure and fertility, reducing the need for chemical fertilizers and promoting soil health.

4. **Climate Resilience:** - Millets are known for their resilience to adverse weather conditions such as drought and heat, making them suitable for cultivation in regions vulnerable to climate change impacts.

Value chain Analysis

The millets chain comprises various actors and activities, including farmers, input suppliers, processors, traders, retailers, and consumers. Each stage of the value chain presents specific challenges and opportunities. For instance, farmers face constraints such as limited access to quality seeds, inadequate credit facilities, erratic weather patterns, and low market prices. Processors encounter challenges related to technology adoption, infrastructure development, quality control, and market demand fluctuations. Additionally, market linkages between producers and consumers need to be strengthened to ensure fair prices, market access and value addition along the supply chain.

Policy and Institutional support: -

Policy and Institutional support for value chain analysis of millet production and processing on a global scale involves several key components: -

- **Government Policies:** - Governments can implement policies that support millet production and processing, such as providing subsidies for inputs like seeds and fertilizers, establishing price support mechanisms, and promoting research and development in millet farming technique.
- **International Organizations:** - Institutions like the Food and Agriculture Organization (FAO), World Bank, and International Fund for Agricultural Development (IFAD) can provide technical assistance, funding, and capacity building programs to support millet value chains in different countries.
- **Research and Development:** - Investment in research to improve millet varieties, farming techniques, and processing methods can enhance productivity and quality throughout the value chain.

- **Market Access and Infrastructure:** - Improving infrastructure such as roads, storage facilities, and market access can help farmers access inputs and sell their produce at fair prices, thus strengthening the value chain.
 - **Capacity Building:** - Training programs for farmers, processors, and other stakeholders along the millet value chain can improve their skills and knowledge, leading to better production and processing practices.
 - **Private Sector Engagement:** - Encouraging private sector involvement in millet production and processing through partnerships, investments, and market linkages can stimulate innovation and efficiency in the value chain.
 - **Regulatory Frameworks:** - Establishing regulations and standards for millet production and processing, including quality control measures, food safety standards, and environmental regulations, can ensure the sustainability and safety of the value chain
- Enhancing research and extension services to improve agronomic practices and develop climate resilient millet varieties.
 - Investing in infrastructure development, including storage facilities, processing units, and market linkages.
 - Promoting millet-based nutrition programs and public awareness campaign to increase consumer demand.
 - Facilitating policy interventions such as price support mechanisms, subsidies, and incentives for millet production and processing.
 - Fostering partnerships between public and private sectors, civil society organisations, and research institutions to strengthen the millet value chain.

Challenges and Opportunities: -

Despite the growing interest in millets, several challenges persist in their production and processing. These includes: -

- Limited awareness and promotion of millet-based diets.
- Inadequate research and development support for millet cultivation and processing technologies.
- Fragmented value chains and lack of coordination among stakeholders.
- Insufficient infrastructure for storage, transportation, and market access.
- Price volatility and market uncertainties affecting farmer income.

However, there are numerous opportunities to address these challenges and promote the sustainable growth of the millet sector.

CONCLUSION

In conclusion, the global millet value chain presents significant opportunities for enhancing food security, nutrition, and sustainable agriculture, the Shree Anna, along with other millet varieties, plays a crucial role in diversifying food systems and building resilience against climate change. However, realizing the full potential of millets requires concerted efforts from various stakeholders across the value chain, encompassing production, processing, marketing, and policy support. By addressing the challenges and leveraging the opportunities inherent in the millet sector, we can contribute to achieving the Sustainable Development Goal related to food security, health and environmental sustainability on a global scale.

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