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Consumer demand, export and entrepreneurial opportunities of millets: An overview

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Abstract

Millets are grown in India suiting to different agro-climatic conditions, including Sorghum, Pearl millet, Finger millet and small millets like Barnyard millet, Porso millet, Kodo millet, Little millet (Kutki) and Foxtail millet. Millets were produced and consumed extensively in the country since ancient times and had almost equal area coverage to rice and wheat. However, the post- green revolution period witnessed a drastic decline in the area under cultivation of nutri-cereals by 41.65 percent between 1950–51 and 2018–19.

Jowar, Bajra and Ragi are the most popular millets across India. They constitute nearly 90% of total millet production and around 60% of the millets produced in India is Bajra. Millets are highly adaptive to different ecological conditions and bloom well in rain-fed and arid climate. Millets have superior micronutrient profile and bioactive flavonoids with low Glycaemic Index as compared to cereal crops like wheat and rice.

Millets are consumed in India as food for human as well as feed for livestock and as raw materials in industries for ethanol blending in distilleries etc. Due to extensive campaigning and initiatives taken up by government, the consumer demand and Start UPS of millets are expected to increase by 2030.

India has nearly 40% share of global millet production but it exported 1% of its millet production in 2021-22, earning \$64.28 million (over \$59.75 million in 2020-21), according to APEDA. On the other hand, Canada, Russia, Ukraine and the US are importing millets and exporting value-added products. Thus, wider prospect lies in millet export and millet entrepreneurship.

This paper will review the trends of consumer demand, export scenario and entrepreneurial opportunities centric to millets. India may increase exporting millets and value added products of millets. Besides, millets have good nutritive value. There is a need to create awareness amongst people about the benefits of millets. Appropriate processing technologies of millets are need of hour which may increase entrepreneurial opportunities of millets.

Keywords: Demand, entrepreneurial, millets, overview, Sorghum, Porso millet

Introduction

India is one amongst the largest producers of millets in the world. Millets are cultivated in various agro-climatic zones of India which includes Sorghum (*Sorghum bicolor*), Pearl millet (*Pennisetum glaucum* L.), Finger millet (*Eleusine coracana* L.), and Small millets like Barnyard millet (*Echinochloa frumentacea* L.), Porso millet (*Panicum miliaceum* L.), Kodo millet (*Paspalum scrobiculate* L.), Little (Kutki) millet (*Panicum sumatrense*) and Foxtail millet (*Setaria italica* L.). Millets were produced and consumed extensively in the country since ancient times and had almost equal area coverage to wheat and rice. However, the post- green revolution period witnessed a drastic decline in the area under cultivation of nutri-cereals by 41.65 percent between 1950–51 and 2018–19. Jowar, Bajra and Ragi are the most popular millets across India. They constitute nearly 90% of total millet production and around 60% of the millets produced in India is bajra, according to APEDA. Millet production has remained comparatively steady over the past few years, with an estimated production of 28 million metric tons in 2020 (apeda.gov.in).

Benefits of Millets

- Millets are cultivated in different climatic conditions

including rain fed and arid climate.

- Millets have more micronutrients and bioactive flavonoids than the cereals.
- Glycaemic Index (GI) of millets is lower than the cereals so good for diabetic patients.
- Millets are good source of minerals like iron, zinc and calcium.
- Millets are gluten-free and can be consumed by celiac disease patients.
- Millets are good for reducing weight and high blood pressure.
- Millets are consumed with pulses in India which increases the amino acid content and enhances the overall digestibility of protein.
- Millet cultivation helps to reduce the carbon footprint and thereby eco-friendly.

Consumption pattern of millets in India

The per capita consumption of millets in India has dropped from 30.94 kg/annum in the year 1960 to 3.87 kg/annum in 2022. Production has mostly remained static while the domestic population kept on increasing, which may explain the decline in per capita consumption.

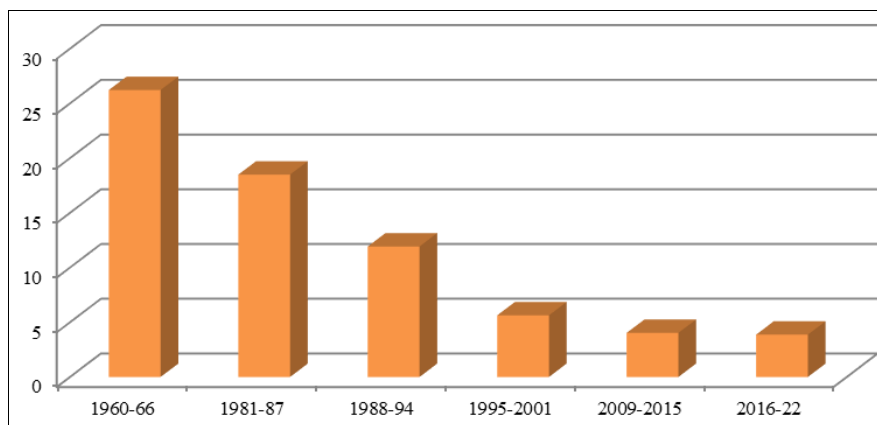


Fig 1: Annual Per Capita Consumption of Millets in India (Kg)

Millets are consumed in India as food for human and feed for livestock. Millets are used as raw materials in industries,

for ethanol blending in distilleries etc.
Millet consumption



- 1. Direct consumption by human:** ASSOCHAM (2022) reported direct consumption of sorghum by people is almost three fourth of the total production while 8 percent sorghum is processed and value added products are formulated. Sixty nine percent of pearl millet is also consumed by people and five percent of its production is converted into value added products. As far as Ragi is concerned, three-fourth of its total production is used for direct consumption by people and ten percent Ragi is utilized for preparation of value added products.
- 2. Animal feed:** Nearly 15 percent of bajra, 12 percent of sorghum and 13 percent of ragi are used for animal feed.
- 3. At Industry Level:** Jowar is utilized for the manufacturing of liquor in distilleries. Over 50% of millet consumption in urban India is done in the form of value-added goods, with e commerce/online retailers serving as the primary distribution route. More than 500 startups in India are working on millet based products. Food products prepared by millets may draw attention of more people in the coming year after the awareness campaign of millets.
- 4. Ethanol Blending:** As per ASSOCHAM reports, distilleries may increase the use of millets by a compound annual growth rate of 7.05% between 2019-

20 to 2029-30. The target can be achieved by using excess food grains that will include millets also.

Conducted a large survey on consumption pattern of millets in urban areas and found that Bengaluru was the only city where all the respondents consumed these crops at least once a month. Approximately 71.2% of the respondents in Bengaluru consumed millets at least once a week. This was followed by 57.6 and 56.1% of the respondents being frequent consumers in Chennai and Hyderabad, respectively. Mumbai and Kolkata ranked next with 52.9 and 52.3% being frequent consumers. Delhi and Ahmedabad had the lowest frequency of consumption with 41.9 and 37.7% consuming frequently and 47.1 and 55.5% never/rarely consuming millets, respectively. Major reasons for consuming millets were cited as health benefits followed by weight loss and taste preference.

Unit level NSSO data on consumption pattern of small millets was compiled that has been taken from the 68th round on 'Household Consumer Expenditure' and 'Employment and Unemployment' for urban, rural and all India. Assam (18.82 kg/hsh/m) and Bihar (18.69 kg/hsh/m) states were found having highest consumption of small millets. Other states were consuming less than the 10 kg/household/month.

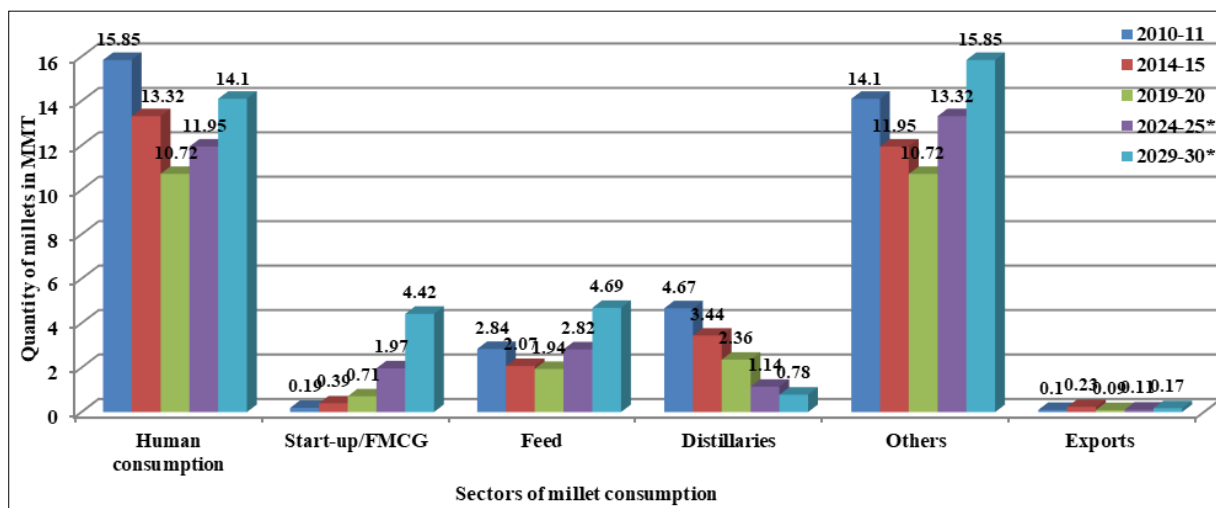


Fig 2: Millet Consumption in different sectors

Export of Millets: Current scenario

India stands among the top five exporters of millets in world. World export of millet has augmented from \$400 million in 2020 to \$470 million in 2021. The export of millets from India was worth \$64.28 million in the year 2021-22 while it was \$59.75 million in the year 2020-21.

Looking to Indian millet exports, sorghum is exported to 55 countries and bajra is exported to 60 countries. It is estimated that the market of millets will grow from its present value of more than \$9 billion to over \$12 billion by 2025, based on recent trends. Though, the exports of Indian Jowar and Bajra showed a steady decrease with an overall negative growth rate of -8.18% in 2010-11 and -4.93% in 2019-20. On the contrary, the export of Ragi has increased steadily at an average rate of 5.78%. Destinations for sorghum export from India are usually Philippines, Kuwait, Japan, United

Arab Emirates, Saudi Arabia, and Taiwan. Bajra was exported mainly to Saudi Arabia, UAE, Namibia, Tunisia and Yemen in 2019-20. As far as export of Ragi is concerned, Nepal, Sri Lanka, Malaysia, United Arab Emirates and USA are key destinations.

India has nearly 40% share of global millet production but it exported 1% of its millet production in 2021-22, earning \$64.28 million (over \$59.75 million in 2020-21), according to APEDA. Nonetheless, Canada, Russia, Ukraine and the US are importing millets and exporting value-added products. India's share of millets based value-added products is almost negligible. India has now begun to conduct better research to increase shelf life of millet products and to manufacture more efficient processing machines.

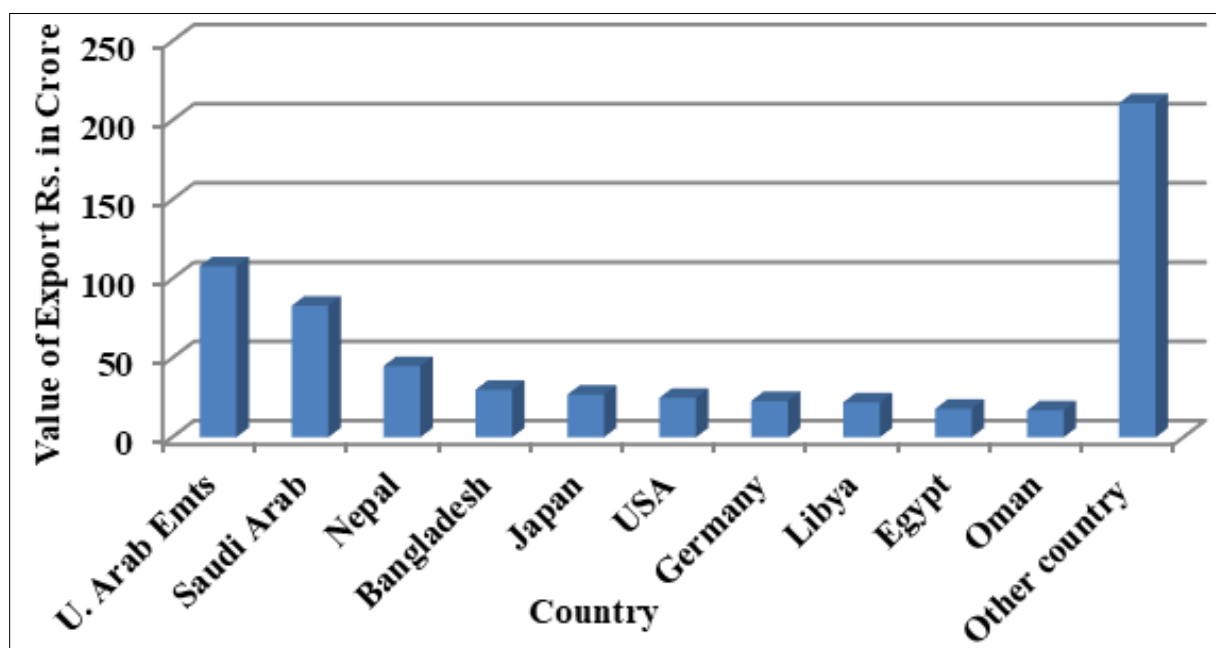


Fig 3: Millet Export (In Rs) in 2022-23

As depicted in Fig.3 and 4, India exported maximum millets to UAE (Rs 108.00 crore) followed by Saudi Arab (Rs 83.00 crore) in 2022-23. The total amount of millets

exported to UAE was 34017 MT and to Saudi Arab was 24519 in 2022-23.

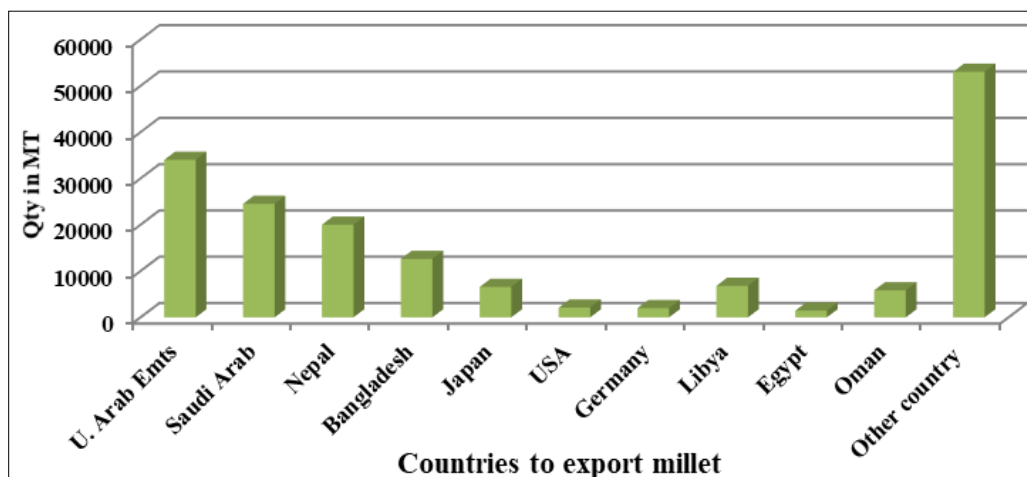


Fig 4: Millet Exoport from India (In Quantity) in 2022-23

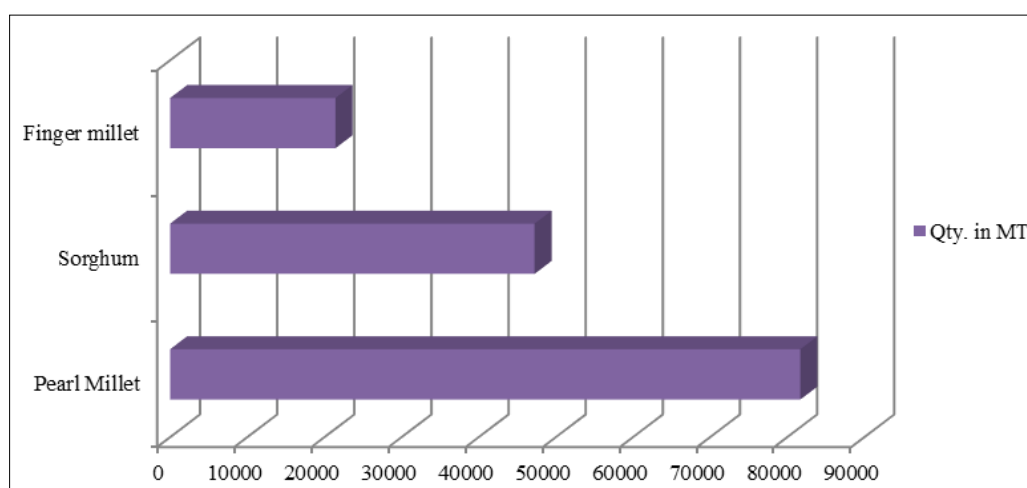


Fig 5: Export of Top Three Millets in 2022-23

Top three millets of India which are exported to other countries are pearl millet, sorghum and finger millet. Maximum 81709 MT pearl millet was exported to foreign

countries followed by Sorghum (47249 MT) and Finger millet (21439 MT) in the year 2022-23.

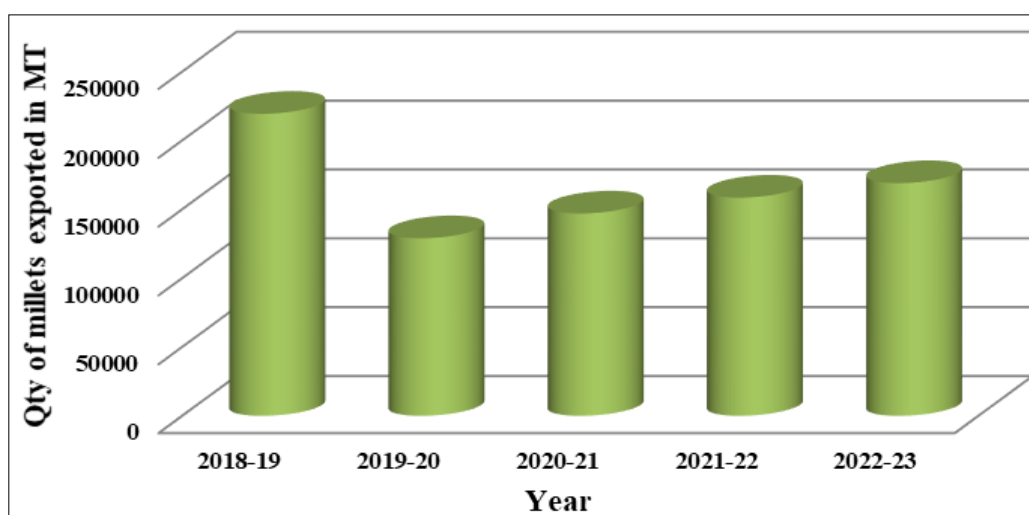


Fig 6: Export of millets from India

It can be seen in the Fig. 6 that India's export of millets was maximum in 2018-19 in the last five years. It decreased drastically in 2019-20 and again increasing at a steady rate.

The total export of millets from India was 169049.25 MT in 2022-23.

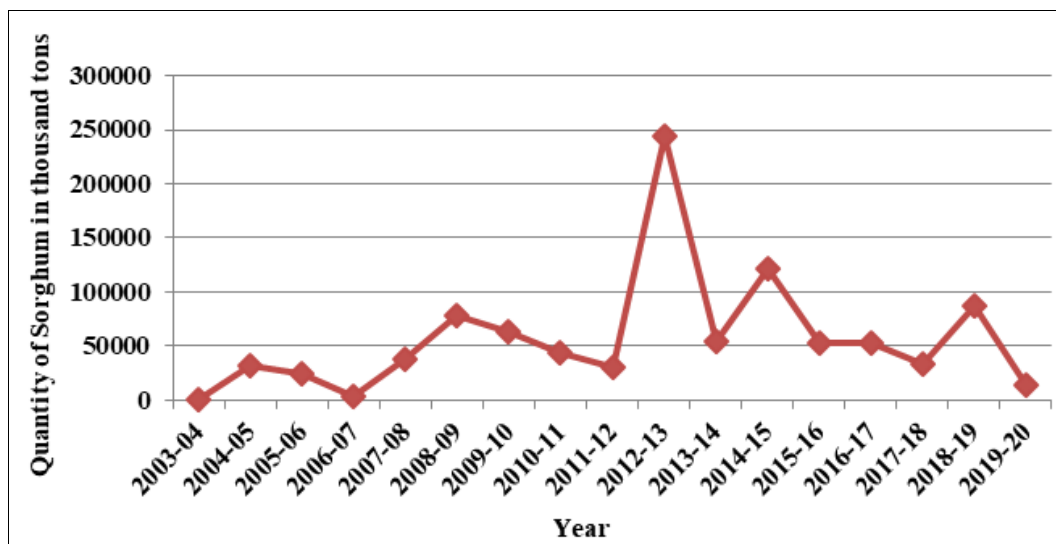


Fig 7: Export of Sorghum (in thousand tons)

The trend of sorghum export shows irregular increase and decrease in the export amount in almost two decades from 2003-04 to 2019-20. It was all time high in 2012-13 in these years.

Marketing Aspects

- Building consumer focussed “Millet based Products” is important. Demand generation should be major area of focus for the companies.
- Existing mega trends in food industry such as convenience, snacking space and traditional foods should be targeted to develop and market millet based products.
- Customer’s focus on health & well-being should be correctly captured and the demand for super foods and functional foods should be fulfilled with millet based products.
- Companies should start developing and selling millet based products based on the needs of the consumer.
- Value chain of millets from seeds and cultivation to palatable nutritious recipes and value added products need to be strengthened for increasing India’s market share size in international markets.

Entrepreneurial opportunities

India has more than 500 millet based start-ups and government is stressing on funding of millet based start ups. Various start-ups are incubated by government organizations which are millet based. The number start-ups based on millets may increase in the coming years. Numerous entrepreneurial opportunities exist utilizing millets, few are listed below-

- Processing units of millets
- Millet value addition industries
- Millet seed enterprises
- Millets packaging for Supermarkets and the Retail Industry
- Millets Aggregators
- Millets packaging for Supermarkets and the Retail Industry
- Millet based bakery products
- Millet based hotel industry

- Millet export industry
- Online platform for millet products
- Millet based beverages
- Handicraft enterprises using millet wastes

Conclusion

Even though India produces the largest amount of millets, it exports only 1% millets of its production. Value added millet products export from India is in negligible quantity. Declaration of International year of millets 2023 and organization of various programs throughout the year in India will increase awareness regarding benefits of millets. It may increase per capita utilization of millets owing to its health benefits. Start ups and entrepreneurs have numerous opportunities in millet based businesses. Production of value added products formed using millets should be increased and exported at a larger scale. Establishment of millet clusters, modernization of existing processing units, establishing automated processed units, establishment of export promotion forums constituting industries are needed for the uptake of millets export.

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