Agro-Economic Policy Briefs

Aiding the Future of India's Farmers and Agriculture

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For kind attention of:

The Hon'ble Prime Minister's Office,
the Ministry of Agriculture and Farmers' Welfare,
and all others interested

On Critical Policy Issues in India's Agricultural Economy

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Contents

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of rearing smaller herds of cattle, lack of proper management, and menace of stray cattle causing damage to the crops. With eroding profitability in crop cultivation and increasing demand for milk and milk products, there is a need to strengthen the dairy enterprise in the rural areas. Necessary steps must be taken by the government in this direction.

- A major problem cited by the villagers was the prevalence of drug menace and alcoholism, especially among the youth. Despite the concerted efforts that are being taken up by the state government to eradicate this issue, there is a need to strengthen awareness and rehabilitation efforts in the region on the village level by increasing the number of de-addiction and rehabilitation centers, and establishing appropriate linkages between health workers, community leaders, teachers and other stakeholders to ensure that prevention measures and rehabilitation strategies are based on the local context.

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Promotion of Nutri-Cereals: Need of the Hour

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Introduction

- The United Nations General Assembly recently adopted a resolution declaring 2023 as the 'International Year of Millets' in order to increase awareness about the health benefits of millets and highlighted their suitability for cultivation under changing climatic conditions. India is one of the important consumers and producer of millets in the world. Millets in India constitute a group of crops such as (a) Sorghum (Jowar), (b) Pearl Millet (Bajra), (c) Finger Millet (Ragi/ Mandua), and (d) Small Millets including Little Millet (Kutki), Kodo Millet (Kodo), Barnyard Millet (Sawa/Jhangora), Foxtail Millet (Kangni/ Kakun), and Proso Millet (Cheena).

- Millets are also called 'Nutri-cereals' due to their high nutritive value. Nutri-cereals are gluten-free, highly nutritious, and rich in dietary fiber and micronutrients including calcium, iron, phosphorus, etc. They are also low in Glycemic Index (GI), and the dietary fiber in millets acts as a detoxifying agent in the body. Nutri-cereals also have characteristics like drought tolerance, photo-insensitivity, and resilience to climate change.

- Nutri-cereals were extensively grown in India prior to Green Revolution with a higher area coverage and production than crops such as wheat and rice. With the Green Revolution, there was a focus on food security and high yielding varieties of rice and wheat; as a consequence, there was an increase in irrigated area and production of rice and wheat. This has been illustrated in Table 1.

- As per data from the Directorate of Economics and Statistics, in the period 1966-2020, the area and production of Nutri-cereals decreased by 177.41 percent and 13.68 percent respectively, with an increase in area and production of rice and wheat by 17.43 & 69.03 and 51.52 percent & 85.04 percent respectively (see Table 1). However, the yield of Nutri-cereals, rice, and wheat witnessed an increase of more than 50 percent after the Green Revolution.

Table1: Change in Area, Production, and Yield of Nutri-Cereals as Compared to Rice and Wheat in India (1966-2020)

Nutri-Cereals	India		
	Area ('000 ha)	Production ('000 tonnes)	Yield (kg/ha)
Before Green Revaluation (TE* Average up to 1965-66)			
Sorghum (Jowar)	18403	9692	527
Pearl millet (Bajra)	12146	4485	369
Small Millets	4729	1733	366
Finger millet (Ragi/Mandua)	2282	2054	900
Total Nutri-cereals	**37559**	**17964**	**478**
Rice	36218	35937	992
Wheat	14598	15528	1064
After Green Revaluation (TE Average up to 2019-20)			
Sorghum (Jowar)	4647	4350	936
Pearl millet (Bajra)	7376	9412	1276
Small Millets	486	381	784
Finger millet (Ragi/Mandua)	1030	1660	1611
Total Nutri-cereals	**13539**	**15803**	**1167**
Rice	43864	116035	2645
Wheat	30109	103775	3447
Relative Change (%)			
Sorghum (Jowar)	-296.00	-122.79	43.74
Pearl millet (Bajra),	-64.66	52.35	71.06
Small Millets	-872.82	-354.97	53.23
Finger millet (Ragi/Mandua)	-121.54	-23.78	44.13
Total Nutri-cereals	**-177.41**	**-13.68**	**59.02**
Rice	17.43	69.03	62.49
Wheat	51.52	85.04	69.14

Source: Directorate of Economics &Statistics
*TE=Triennium Ending

- At present, Nutri-cereals are grown in resource poor agro-climatic regions, hilly, and tribal areas of the country in rain-fed conditions. They are grown in arid and semi-arid tracts characterized by low rainfall (200-600 mm) conditions, in areas wherein fine cereals like wheat and rice cannot be grown profitably (Ministry of Agriculture and Farmers Welfare, 2021[1]).

Findings

- A study was undertaken by AERC, Jabalpur to specifically examine the prospects of small millets and analyze the issues associated with their cultivation in Chhindwara, Mandala and Dindori districts of Madhya Pradesh. The study focused on small millets such as 'Kodo' & 'Kutki'.

- The study found that a majority (95%) of farmers were growing Kodo and Kutki. Some of the farmers were also growing small millets like Sama, Kangna, and Jagni. These crops were grown in marginal land using traditional methods of cultivation. The farmers had not adopted improved crop production practices due to a lack of knowledge about Recommended Packages and Practices (RPP) in cultivation of these crops.

[1]https://nutricereals.dac.gov.in/

- The study documented a number of issues in cultivation of small millets; unavailability of high yielding variety seeds, lack of suitable extension and development support for production, paucity of research on genetic improvement in comparison to other crops. Furthermore, the absence of a minimum support price for small millets led to farmers' distress selling at low prices. All these factors had contributed to a wide yield gap (a difference of more than 50 percent between potential and actual yield) and resultant low incomes for the farmers.
- The value addition of small millets was not found to take place on a commercial scale. A majority of the tribal population in the selected regions were preparing products associated with small millets only for their home consumption. Very few of them were observed to be selling the value added products in the weekly (haat) bajar.

Conclusion and Recommendations

- Given that 90 percent of small millets are grown under rain-fed conditions, the conservation of rain water to raise productivity can be promoted. In this context, compartmental bunding and in-situ moisture conservation technologies that harvest rain water are a prerequisite for millets production. A pre-season tillage can greatly help in conserving the early showers, thereby ensuring timely sowing and the quick establishment of millets crop. Such technologies should also be extended to other millet crops for sustaining the yield under rain-fed conditions.
- Small millets have been found to be respond better to small doses of fertilizers and crop management practices such as optimum spacing and improved cultivation technologies. These can be promoted to ensure that the large yield gap is reduced.
- The value addition in small millets needs to be upscaled by establishing micro/small level industries and promoting entrepreneurship development in food processing and product development. Geographical indicator based small millet products may be prepared in alignment with international norms/ standards to popularize their uptake at a global level.
- There can be concentrated efforts and collaborative endeavors taken by the private and public sector to incentivize production, improve market linkages, and raise farmer awareness for RPP, and consumer awareness for consumption of small millets.
- The government has already initiated schemes to increase the area, production and yield of Nutri-cereals and align the cultivation with the local topography and natural resources. It can further ensure a rational fixation of minimum support price for the small millets to ensure that farmers growing these crops can get a fair price for their produce.

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Direct Benefit Transfer (DBT) in Fertilizer at Retail Points in Gujarat

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Introduction

- India is one of the major producers as well as consumers of chemical fertilizers in the world. In 2017, India held the second rank in the production of Nitrogen and Phosphorus (P_2O_5) fertilizers production globally (18.16 million tonnes) and accounted for 10.35 percent of the world's production. In terms of total fertilizer consumption, India also held the second rank with an amount of 26.59 million tonnes, accounting for 13.8 percent of the total fertilizer consumption in the world.
- In comparison to other countries, the average