Millets in the Indian Plate: A Policy Perspective

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Millets can play a role in providing nutrition security as they are rich in various macro and micronutrients, and can help to fight various non-communicable diseases. Hence, a suggestion was made to include them in the basket of goods provided through the public distribution system. The findings of this article suggest that, with the present level of production, millets can be provided in some states of India which have culturally grown as well as consumed them. However, scaling this policy to the national level may not be possible unless rigorous measures are undertaken to improve production as well as consumer acceptability. Authors:

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Table 1: Nutrient Composition per 100 gm

Nutrients	Ragi	Jowar	Bajra	Rice	Wheat
Energy (kcal)	321	334	348	356	320
Protein (gm)	7.16	9.97	10.96	7.94	10.57
Lysine (gm)	0.20	0.23	0.35	0.29	0.26
Tryptophan (gm)	0.07	0.10	0.15	0.10	0.10
Methionine (gm)	0.20	0.15	0.23	0.21	0.19
Fibre (gm)	11.18	10.22	11.49	2.81	11.36
Calcium (mg)	364	27.60	27.35	7.49	30.94
Iron (mg)	4.62	3.95	6.42	0.65	4.10
Zinc (mg)	2.53	1.96	2.76	1.21	2.85
Thiamine (mg)	0.37	0.35	0.25	0.05	0.42
Riboflavin (mg)	0.17	0.14	0.20	0.05	0.15
Niacin (mg)	1.34	2.10	0.86	1.69	2.37
Total Folates (µg)	34.7	39.4	36.1	9.3	29.2

Recommended dietary allowances for adult men and women having a body weight of 60 kilograms (kg) and 55 kg respectively and category is sedentary work.
Kcal—kilocalorie; gm—grams; mg—milligrams; µg—micrograms.
Source: Longvah et al (2017).

Conclusion

The PDS is one of the major safety net programmes in India, which has evolved and matured over time. The need for food security was acutely felt during famine and drought conditions. The PDS was introduced during the time of the World War II (in the 1940s) with the objective of providing food in urban areas, and was later extended to rural areas in late 1970s (Das 2016; Pingali et al 2019). Due to the inefficiencies caused by leakages and corruption in the system, it was revamped in 1997 to target poor households alone, as TPDS. For the TDPS, the biggest challenge lay in identifying poor households, and the system was criticised for failures in this area. The basis for classifying beneficiaries is unclear and information on these variables is not easy to collect (Hirway 2003). Political favouritism also hit the poor substantially at the lowest levels in villages and excluded the entitlement of those most in need (Panda 2015). A few states like Tamil Nadu, Himachal Pradesh, Chhattisgarh and parts of Odisha countered this problem by adopting universal entitlements, which led to better performance and increased the uptake of the PDS (Drèze et al 2015). A further evolution was the introduction of the NFSA, in which the new phase of PDS aimed to target up to 75% and 50% of rural and urban population respectively. In this, priority households are entitled to receive 5 kg/month of foodgrains at a subsidised price of■3, ■2 and ■1 per kg for rice, wheat and coarse grains. The AAY households, that is, the poorest of the poor, will continue to receive 35 kg of foodgrains per month. With changes in coverage, eligibility and identification, the foremost objective of the NFSA is, "to provide for food and nutritional security in human life cycle approach by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity" (Rajya Sabha 2014: vii). Nutritional security also covers good health, and coarse cereals, which are mainly comprised of millets, have traditionally been a part of the household food basket in India. Given their nutritional and health benefits, the present study explored the production, procurement and consumption of millets. The findings suggest that millets are in a situation of crisis; this is true both in terms of their consumption and production. Though the inclusion of millets in the PDS is a welcome step, there are several challenges in successfully implementing this step. One of the many challenges is that of production, discussed extensively in this article. If the provision of adequate amount of millets through the PDS has to be realised at a national level, extensive efforts are required to increase the production. Clearly, a revival in agricultural policies is required, especially focused on the research and development of yield improvement technologies. Market-oriented reforms such as pricing and procurement policies may also be useful interventions, given the fact that many other crops already have such policy support. On the other hand, at the present level of production, it might be feasible to scale this policy in some states or by targeting the poorest. Nevertheless, millets have a potential role in resolving nutrition-related problems of the country though there are challenges from the demand side. Consumers will not incorporate millets in their diets even if they are available at a low cost, unless they are made aware about their nutritional and health benefits. Millets fulfil about 30% of fibre and zinc, 40% of iron and 60% of calcium daily requirements through a single staple diet. As such, economic demand models based on secondary level analysis of food expenditure and consumption patterns in India predict negative income elasticity and a declining intake of coarse grains (Minocha et al 2019; Mittal 2010). This is not surprising given the historical notion of millets as a poor man's food. On the other hand, they have potential as a value-added product, when consumed along with rice and wheat. Health-conscious consumers residing in metropolitan cities have accepted millets in mixed forms such as "multi-grain atta," "ragi-based **dosa** batter,"[3] etc.

This is probably the start of a new trend and could possibly lead to a reversal in demand, not just in urban areas but also rural areas; where the rural populace often aspires to adapt to the food habits of its urban counterparts. More such innovative recipes are required, as well as the introduction of millet-based complementary foods such as khichri, **upma**,[4] roti, etc, in feeding programmes. In addition, investment in appropriate modern processing methods and clinical studies for millets are required, preferably in those states which have a cultural habit of eating it. This can help in improving the bioavailability and functionality of nutrients, as well as save people from the drudgery of processing and cooking millet by traditional methods. Though millets are rich in a variety of nutrients, the presence of some anti-nutrient phytochemicals like phytates, phenols and tannins interfere with the bioavailability, and hence, millets must be processed, either through modern or traditional methods, before they are consumed (National Academy of Agricultural Sciences 2013). At present, there is very limited research on the impact of different types of processing and preparation methods on bioavailability and functionality, and more needs to be done on this front. These integrated efforts, both from the consumption and the production side, will go a long way in contributing towards food security and the health of the population in a sustainable manner.