



World Food Programme

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Landscaping Analysis of Pradhan Mantri Poshan Shakti Nirman (PM POSHAN) Menu – a Policy Brief

KEY HIGHLIGHTS

- ❖ School meal programmes, such as the PM POSHAN scheme, hold immense potential to impact children's nutritional status and reduce malnutrition through improved intake of essential macro- and micronutrients.
- ❖ The landscape study assesses the implementation of the PM POSHAN menus across 36 States and UTs from a nutrition lens.
- ❖ Main findings inform that there exists opportunity to revisit the food norms and PM POSHAN menus in alignment with the revision of the nutritional standards for food-based safety nets.

CONTEXT

The Comprehensive National Nutrition Survey (CNNS 2016-2018) highlighted significant micronutrient deficiencies among school children, with 23.5% of children aged 5-9 and 28.4% of those aged 10-19 being anaemic, and 18.2% and 23.9% in the respective age groups showing Vitamin D deficiency. School feeding programmes such as **PM POSHAN**, erstwhile Mid-Day Meal Scheme, devised by Government of India, play a vital role in **addressing the multifaceted issues of hunger, nutrition and education during the school years**. The programme supports children's education and nutrition by improving access and retention, as well as enhancing learning capabilities through improved intake of essential macro- and micronutrients.

About PM POSHAN scheme

The **PM-POSHAN scheme** provides **hot cooked meals** on all school days to children in pre-primary sections and primary and upper primary classes (I to VIII) across government, government-aided schools and special training centres (STCs). It benefits about **118 million children in 1.12 million schools** across India.

Implementation of PM POSHAN scheme

The PM POSHAN scheme is a centrally sponsored scheme of Government of India, wherein the cost of implementation is shared between central and state governments.

Menus are designed at the state level in consultation with experts, considering nutritional norms, local preferences and availability.

PM POSHAN guidelines and revision of nutritional norms under NFSA

The PM-POSHAN guidelines prescribe a set of food norms for preparing hot cooked meal at the school level. These norms suggest appropriate quantities of **cereals, pulses, vegetables, fats, and oils** to meet the recommended nutritional requirements as indicated by the National Food Security Act (NFSA), 2013.

However, with the recent **revision of nutritional norms** under Schedule II of NFSA in the **year 2023**, it is important to assess the adequacy of these food norms.

RATIONALE & OBJECTIVE

World Food Programme (WFP) undertook a comprehensive **pan-India study to map the menus offered across the country under the PM-POSHAN scheme and analysed them through a rigorous nutritional lens**. A detailed framework was developed to ensure robustness in the data collection and analysis. The overarching **objectives** of the study were to:

- 1 Compare the PM-POSHAN nutritional and food norms with school-age children's nutritional and dietary requirements.
- 2 Map the hot-cooked meal menus served in the States and UTs under the PM POSHAN scheme
- 3 Review and compare the menus and the scheme implementation by States and UTs vis-à-vis the GoI norms.
- 4 Explore and assess innovative and best practices related to PM-POSHAN

I. PM POSHAN Norms and recommended nutritional norms:

- **PM POSHAN scheme** provides **specific nutritional and food norms for primary and upper-primary school children** to provide the required energy and protein through hot-cooked meals every school day. These norms were based on the Schedule II of the NFSA, 2013.
- Nutritional norms under NFSA were revised in 2023 under food-based safety net schemes including PM POSHAN, wherein **the proportion of protein has increased while laying down fat, carbohydrate, and cereal-pulse ratio norms and included 7 micronutrients namely Calcium, Zinc, Iron, Dietary Folate, Vitamin A, Vitamin B6, and Vitamin B₁₂.**
- Following table compares the food norms as per the Estimated Average Requirement (EAR) as per ICMR-NIN with the prescribed norm under PM POSHAN as per NFSA 2013

	Primary Children (Grade 1 - 5)			Upper Primary (Grade 6 - 8)		
	Food norms as per adjusted EAR	PM POSHAN Norms	Difference	Food norms as per adjusted EAR	PM POSHAN Norms	Difference
Nutrients						
Energy (Kcal)	453 to 566	450	-3 to -116	686 to 953	700	+14 to -253
Proteins (g)	6.5	12	+5.5	12.7	20	+7.3
Iron (mg)	3.5**	3.52*	+0.02	5.5**	5.28*	-0.22
Folate (µg)	50**	17*	-33	75**	25.5*	-49.5
Vit B₁₂ (µg)	0.66**	0.1*	-0.56	0.66**	0.15*	-0.51
Food Groups						
Cereals (g)	60	100	+40	103	150	+47
Vegetables (all types) (g)	92	50	-42	133	75	-58
Fruits (g)	19.1	0	-19.1	33.3	0	-33.3
Fats and oils	7.5	5	-2.5	11.6	7.5	-4.1

Adjusted EAR/ RDA: To allow for a meaningful comparison of the nutritional and food standards within the PM-POSHAN scheme, it is assumed that the RDA/ EAR (Energy) of nutrients for the day is met through three meals. Therefore, the requirements (EAR/RDA) of all nutrients are divided into three and considered per meal and is referred to as Adjusted EAR/ RDA ;

**Norms as per NFSA norms (2023); *Provided via fortified rice

- **Protein norms in PM POSHAN and NFSA 2023 exceed adjusted EAR:** The present norms provide an additional 5.5g protein against an EAR of 6.5g per meal for Primary and 7.3g protein against an EAR of 12.7 g per meal for Upper Primary. The **revised norms under NFSA 2023 would provide around 11g additional protein** per meal for EAR for both primary and upper primary children.
- **Contribution of fortified rice:** Fortified rice in the prescribed quantity can **meet almost 100% requirement for Iron** by the new standards and contribute 34% to Dietary Folate and 15%-22% to Vitamin B12 requirements for both primary and upper primary school children.
- **Cereals are the main contributors for proteins:** Indicating **poor quality of protein** as meals lack some essential amino acids.
- **Fats and Oils:** PM POSHAN food norm for Primary and Upper Primary children is 2.5g to 3.83g **less than the average EAR.**
- **PM POSHAN norms doesn't differentiate vegetables into different categories, unlike NIN norms:** In majority of cases, **potato** is used as a **vegetable substitute.**
- **Current norms do not include fruits:** Very few States provide **fruits occasionally.**

II. Insights from the implementation of PM POSHAN menu across States and UTs in India

Menu planning for PM POSHAN meals: centralized vs. district-level engagement

- **75 percent** of States/UTs have the menu for PM POSHAN meals planned at State/UT level. Remaining **25 percent** have menu decisions made at district level, involving greater participation from blocks and schools.
- Emphasis is placed on including local foods and dietary habits in the finalized menu.

Diverse strategies for menu revision: from weekly rotations to district-based plans

- **33** out of total 36 States/UTs have weekly menus.
- Menus often remain fixed for extended periods, with no consistent pattern for updates.
- **Haryana** provides a list of 20 recipes from which schools can select dishes every two weeks.
- **Himachal Pradesh** implements a district-wise menu plan, with each district following a monthly menu.

Adherence and variations to the standard nutritional norms by States/ UTs

- Most States/UTs **follow the guidelines set by the GoI** on nutritional norms on calories and protein **for menu planning**.
- **Few States/UTs** (Andhra Pradesh, Dadra & Nagar Haveli and Daman & Diu, Gujarat, Odisha and, Tamil Nadu) have **revised nutritional norms** and **provide additional calories and proteins beyond standard criteria**.
- Additionally, **Andhra Pradesh, Gujarat, Kerala, and Odisha** have modified the per-child PM-POSHAN food norms, increasing the quantities of pulses, vegetables and fats.

Fortified rice dominates as preferred cereal, while wheat flour in some States

- Choice of cereals varies from only rice or only wheat to a combination of rice and wheat.
- **86%** of States/UTs **opt for fortified rice** as the **main cereal** in the PM POSHAN meal.
- In 5 States - Goa, Madhya Pradesh, Punjab, Rajasthan, and Uttar Pradesh, wheat flour is the primary cereal.

Pulses: key protein source

- PM POSHAN guidelines recommend use of pulses as the key source of protein.
- All States/UTs **offer different types of pulses**, that are locally available, frequency ranging from thrice a week to all school days.

Limited variety of cooking oils used

- **Seed oils** - mustard, soya bean, and rice bran - are the **primary source of fat** used for cooking.
- Few States and UTs namely Chandigarh, Chhattisgarh, Himachal Pradesh, Telangana, Goa and Odisha use 2-3 variants of cooking oil.

Initiatives for inclusion of fortified foods

- **Fortified rice** has been **mainstreamed** in the PM POSHAN scheme **since April 2021**.
- 14 States / UTs offer iodised salt. States like Delhi, Gujarat, Himachal Pradesh, Odisha, and Tamil Nadu provide **double-fortified salt** (iodine and iron).
- Only 6 States / UTs (Dadra & Nagar Haveli & Daman & Diu, Himachal Pradesh, Karnataka, Rajasthan, Tamil Nadu, and Uttar Pradesh) use **fortified oils**.



III. Inclusion of additional meals / food items in the PM POSHAN scheme across States and UTs



Additional Meals: Seven States and UTs provide additional meals especially breakfast with frequency ranging from 3 days / week in Andhra Pradesh and Telangana to 6 days / week in Gujarat and Tripura. Tamil Nadu has a scheme called the Chief Minister Breakfast Scheme for primary children.



Milk: Milk is supplied as an additional food item by nearly 30% (11) of States and UTs, with variations such as skimmed milk powder, freshly boiled milk, flavoured milk and dairy whitener. The type of milk has health implications as some States add high amounts of sugar, and milk substitutes vary in composition.



Eggs: A total of 17 States and UTs offer eggs as an additional protein source in school meals, with frequency ranging from once to six times per week. Four states provide bananas as an alternative to eggs.



Millets: Some States, such as Andhra Pradesh, Chhattisgarh, Haryana, and Telangana, provide millet-based foods across their regions, while six others offer millets in specific areas.



Sweet recipes: Eight states have included traditional sweet dishes in the PM POSHAN scheme, with some are offering them up to three times a week.

Concerns related to additional foods: While some States/UTs have introduced additional food options to boost meal nutrition for school children, however, without clear central guidelines, these efforts often result in the inclusion of processed foods with high fat, salt and sugar content.

KEY RECOMMENDATIONS

- 1. Enhance the focus of PM POSHAN on nutrition:** While the PM POSHAN scheme already has nutrition as an objective, there is more required in terms of the schemes' nutrition/ food norms and its on-ground implementation for full realization of this objective.
- 2. Improve the quality and diversity of school meals:** Food norms must be revised to reduce cereal dominance, avoid processed foods, and diversify diets – to include fruits, leafy green vegetables, and better-quality fats and proteins. The addition of fortified foods beyond rice, and nutritious grains such as millets may be considered to fulfil micronutrient norms laid out in the NFSA Gazette. Periodic revision of menus is advised to avoid monotony, and guidance may be issued to States on foods that can be introduced as nutritional supplements including millet-based recipes.
- 3. Increase cost norms per child:** There exists enough evidence to suggest that school feeding programmes have a high return on investment, therefore, it is recommended that the per child cost norms under the PM POSHAN scheme may be increased to provide a diverse and more nutritious meal to the children.
- 4. Regularly assess students' nutritional status:** To align with the objective of the scheme and measure the nutritional impact of the school meals being provided to school children, it is imperative to make assessment of nutritional and health status a periodic activity to be repeated every 3 years. The department can consider anthropometric assessment using body mass index alongside some biomarkers such as Hb level, serum retinol, vitamin B12, and Vitamin D levels to assess the prevalence of micronutrient deficiencies. The assessments would also be helpful for the policymakers to make necessary adjustments in the scheme for optimising the benefits for school children.
- 5. Share best practices on healthy school meals:** Considering that the implementation of the PM POSHAN Scheme is decentralised, and different states attempt to provide the best possible nutrition solution within the limited resources with the support of technology and innovation, it is crucial that the unique, yet successful practices of the states is documented as best practices on healthy school meals and are widely disseminated to other States/UTs for replication.