

Telangana Foods: A State Enterprise Model

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Key messages

- In Telangana, one in every three children suffers from stunting and underweight, and one in every five children suffers from wasting.
- Telangana Foods, a centralized production facility, supplies the Take-Home Ration products, *Balamrutham*, to over 5 million children.
- A survey by Global Alliance for Improved Nutrition shows comparatively high coverage of Take-Home Ration in Telangana.
- Standardized production processes, economies of scale and better quality control ensured financial sustainability in less than three years.

Introduction

Telangana, a new state formed after the bifurcation of Andhra Pradesh in 2014, has 32 lakh children under 5 years of age.¹ One in every three children suffers from stunting and underweight, and one in every five children suffers from wasting.² To address malnutrition, Integrated Child Development Services (ICDS) launched the Supplementary Nutrition Programme (SNP) through 35,700 Anganwadi Centers (AWC), covering 2.8 million children.^{3,4}

SNP in Telangana includes freshly cooked meals and fortified food products such as Take-Home Ration (THR). On the first day of every month, 2.5 kg of fortified blended food called *Balamrutham* is given to mothers of children aged below three years as THR. Children are also spot fed extruded foods called Nutri Snacks in addition to the freshly cooked meal before they leave AWCs. Both *Balamrutham* and Nutri Snacks are manufactured by Telangana Foods, a public sector enterprise.

Telangana Foods: An overview

Telangana Foods (previously AP Foods) is a state government-run centralized facility. It was established in the year 1974 with support from CARE, UNICEF and GoI. The single production facility supplies THR to 400 ICDS projects, covering 5.3 million children in both Andhra Pradesh and Telangana.⁴ THR is produced within the ICDS budgetary norms, and any remaining funds are used to improve the facility and production practices. A variety of THR and instant mixes, such as upma, halwa, khichdi and sweet porridge, can be produced at the facility.

In 2013, the state government stopped the production of these instant mixes due to the directive from the Supreme Court that prevented for-profit food manufacturers from participating in the ICDS scheme. Despite being a government enterprise, Telangana Foods's operations were affected due to this directive and resulted in less than 50 per cent utilization of the production capacity.

The unit is governed by the Essential Services Maintenance Act (ESMA) and there is no labor union. With reduced production, the staff strength had to be substantially lowered. The company, however, had already made investments in expanding its production capacity in anticipation of enhanced future demand. This expansion exercise had commenced before the bifurcation of the state. For the next four years, the facility was left in a limbo. Finally, in 2017, Telangana Foods entered into an agreement with the government of Andhra Pradesh and started supplying THR to a larger beneficiary base. Its sales have been growing and recently another factory was constructed.

THR Production

Product

Balamrutham is made with roasted wheat, chickpea, milk powder, oil and sugar. It is fortified with eight micronutrients – calcium, iron, vitamins A, B₁, B₂, C, folic acid, and niacin. A serving size of 100g of *Balamrutham* meets 50% of a child's Recommended Dietary Intake

(RDI). (Table 1.)

TABLE 1: Nutritional composition per 100g of *Balamrutham*⁵

	Nutrients	Total
1.	Energy (kcal)	414
2.	Protein (g)	11
3.	Calcium (mg)	367
4.	Iron (mg)	9
5.	Vitamin A (µg)	202
6.	Vitamin B1 (µg)	0.6
7.	Vitamin B2 (mg)	0.55
8.	Vitamin C (mg)	15.5
9.	Folic Acid (µg)	22
10.	Niacin (mg)	6.3

Raw material procurement

All ingredients are procured in bulk: while wheat is obtained from the Food Corporation of India, there is a tender process for all other raw materials. Telangana Foods screens potential vendors on criteria such as reputation, standards, and product quality. It leverages its scale to purchase raw materials in bulk at favorable prices from established vendors who pass the screening process.⁶

Packaging

The packaging materials and standards such as labeling are as per parameters recommended by the Indian Institute of Packaging. Any residual or unused packing material is sold by Telangana Foods.

Processing

With its fully automatic production system, Telangana Foods manufactures and supplies 2,500 MT of THR every month. It starts with cleaning and preparation of

cereals and pulses for roasting. After roasting, they are milled and mixed through intermediary silos as a batch mixing process. The finished product is packed in 2.5 kg bags.

Quality control

An on-site laboratory tests the quality of raw materials, packaging, and the finished THR. They also have the capacity to test vitamin and mineral composition. Any complaints received on THR quality received are addressed through the laboratory.

THR delivery and distribution process

The annual forecasted supply is given by ICDS at the beginning of each financial year. Details on the number and types of schemes for THR, number and location of AWCs, ration size for each category of beneficiaries and any other norms are also provided to help plan production and delivery for the year. Transportation arrangements are made through annual tenders. THR from this facility is then distributed to ICDS projects, and they are responsible for delivering it to AWCs. After the delivery is made, an onward claim is raised from the relevant beneficiary department.

Monitoring and feedback

Telangana Foods has a Nutrition Council that meets twice a year. It is headed by the Chief Secretary to the Government of Telangana and includes a member from the National Institute for Nutrition for oversight of the nutritional quality of THR. An executive committee, that convenes every quarter, oversees regular operations.

Partnership with Global Alliance for Improved Nutrition

In 2010, Global Alliance for Improved Nutrition (GAIN) partnered with Telangana Foods (then AP Foods) to support an increase in their capacity and improve the quality of the supplementary foods across several dimensions.

First, the nutritional quality and packaging of the THR were significantly enhanced. For example, milk powder was added to improve the protein content as soon as GoI increased the budget for THR. Hydrogenated oil, that contains unhealthy trans-fatty acids was replaced

TABLE 2: Plant payback calculations⁷

	Amount	Unit
Capital cost	40	Crore in INR
Surplus per MT	1000	INR
Capacity (annual)	144,500	MT
Annual surplus	14.5	Crore in INR
Payback*	2.8	Years

*Calculated according to the Telangana Foods guidelines.⁸ Does not include time value of money or cost of financing. Capital cost includes related investments by GAIN.

with palm oil. Packaging was changed from woven sacks to high density polyethylene material to increase shelf life.

"Milk powder was added to improve the protein content as soon as Government of India increased the budget for Take-Home Ration."

Second, setting up a new production facility instead of upgrading the existing unit allowed for a safer, fully automated and greater manufacturing capacity. This helped meet the demand of all community centers in Telangana and Andhra Pradesh. The initial catalytic investment by GAIN led to a three-fold increase in investment from the government, resulting in a best-in-class facility.

Third, adopting a market-based mindset ensured financial sustainability. All raw materials are procured in bulk, including the wheat from FCI, which allows for better control on cost of goods. The facility had an estimated payback period of less than three years (Table 2).

Challenges and Opportunities

A two-stage stratified cross-sectional cluster survey was conducted in 2016 to estimate the coverage and utilization of *Balamrutham* and to identify THR's barriers and drivers.⁸ The coverage of the fortified THR was found to be high among the target population.⁸ Nearly

all caregivers (93.7%) had heard of *Balamrutham* and 86.8% had already received the product.⁸ Among the children surveyed, 57.2% consumed the product regularly.⁸ The ICDS program was found to be widely available, accessible, accepted, and utilized by the population in both urban and rural catchment areas, as well as among poor and non-poor households.⁸ However, two barriers to optimal coverage were identified: (a) irregular supply of the product to the beneficiaries and (b) intra-household sharing of the product.⁸ We identify two policy measures below that can mitigate the challenges.

1. Effective deployment of technology to boost distribution and promotion:

Telangana Foods utilizes an integrated web-based supply chain management tool called '*mFoods*' to project demand. Anganwadi Workers (AWWs) at the community centers enter product requests through mobile phones, which are tracked by a centralized system along with timestamps. Relevant stakeholders are alerted and can dynamically adjust their supply schedules to meet the demand better. Inefficiencies can thus be minimized, resulting in timely production, less waste and proper accounting.

This technology can be further utilized by AWWs to gain better understanding of consumer behavior. AWWs can raise awareness around the product and its benefits, and the importance of appropriate use (use by the intended target groups and not shared with the rest of the family, safe preparation, serving size, consistency, meal frequency and density).

2. Low attendance:

Poor households are less likely visit an AWC compared to non-poor households. This is because of familial duties and restrictions placed on the caregiver, and costs involved (both opportunity and travel) in accessing an AWC. Empowering AWWs to travel to farther households, reimbursing caregivers' travel and opportunity costs, and educating households on the importance of THR can enable improved reach.

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Conclusion

A centralized production facility can be an effective strategy to improve nutritive value of THR products and to ensure adherence to high quality standards. There are, of course, numerous challenges, such as high start-up capital requirements, long ramp-up period, high concentration of risk, lack of local economic empowerment, and lack of link with end beneficiaries.⁸ However, this model has several advantages, including standardized production, stronger quality control standards, and the possibility of using advanced micronutrient formulations and production processes, as well as economies of scale.⁸ These advantages likely favored the high coverage achieved in this project and should be examined closely by states looking to strengthen their centralized production facilities.⁸

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