

The Banswara Model: An Experience from Rajasthan

This is an abridged article based on Global Alliance for Improved Nutrition (GAIN)'s reports. Reproduced with permission.

Key messages

- A factory with a capacity of producing 1 metric tonne of Take-Home Ration per day has been proven on a pilot scale to be the minimum viable unit for the Self-Help Group model.
- The impact of this model has been threefold. It empowered rural women, boosted their livelihoods, and improved the health and nutritional status of beneficiaries of Take-Home Ration.
- This model highlights 3 key factors for a single factory run by a Self-Help Group to be scaled up at the state or the national level: 1) an enabling environment for the formation and operation of Self-Help Groups, 2) access to low-cost capital for land and factory infrastructure and most importantly 3) technical assistance and capacity building of Self-Help Groups to handle food processing operations and factory management.

Introduction

Every morning after completing household chores, Shakuntala walks to the factory where she works. A proud member of the Shitalamata Self-Help Group (SHG), she begins her work by moving and emptying heavy bags of wheat into a cleaning machine. Shitalamata SHG is a 10-member women group, all of whom belong to a marginalized tribal community. They own and operate this nine-year-old factory in Baridaylab, a village located about six kilometers from the Banswara district headquarters in Rajasthan. The team works six days a week, producing a fortified blended food, *Raj Nutrimix*, which is distributed throughout the region as a Take-Home Ration (THR).¹

Before working at the factory, Shakuntala was a community volunteer and her husband was a driver. The factory has given her family a steady and significantly higher stream of income that supports a steady purchase of basic food and amenities as well as her children's education. This has been possible because of the central and state government's initiative driven by the Supreme Court directives: The ruling emphasized on decentralization of supplementary nutrition production, and adherence to industrial quality standards for THR. Therefore, Government of India (GoI), in collaboration with Global Alliance for Improved Alliance (GAIN) and the World Food Programme (WFP), launched a decentralized model for THR production. This model is worth examining critically to identify insights regarding its successes, challenges, and sustainability.

The Banswara Model

This model is centered on developing small-scale production facilities run by a SHG whose members are both owners and workers in the factories. The Government of Rajasthan, through its social welfare program, acts as both a buyer and distributor of the THR product to pregnant and lactating women (PLW) and to children under three years of age.¹

Three principles are at the core of the Banswara model:

1. Invest in women entrepreneurs and local production facilities – role of GAIN
2. Explore the small-scale production model by concentrating on one pilot project – role of the Shitalamata unit and WFP
3. Connect with an existing supplier and distribution network – role of state's Integrated Child Development Services (ICDS)

THR Production

WFP, in partnership with the Department of Women and Child Development, Government of Rajasthan, selected the Shitalamata SHG to run the first factory in Banswara. The objective in setting up a pilot was to

TABLE 1: Nutritive value of 100g of *Raj Nutrimix*²

Nutrients	ICDS requirement	Raj NutriMix
Energy(kcal)	500	501.4
Protein(g)	12-15	21.4
Iron(mg)	6	14.1
Vitamin A(µg)	200	227.7
Calcium (mg)	200	296.8
Thiamin (mg)	0.3	0.9
Riboflavin (mg)	0.35	0.6
Niacin (mg)	4	8.8
Vitamin C (mg)	15	15.1
Free Folic Acid (µg)	15	29.5
Zinc (mg)	N/A	5.8
Vitamin B ₆ (mg)	N/A	0.4
Vitamin B ₁₂ (µg)	N/A	0.3

Note: ICDS requirement and *Raj Nutrimix* contents are shown for 6-36 months children here; weekly ration of 822g was divided by 7 days to reach daily ration, which was pro-rated according to nutrition content per 100g. Government 2009 guidelines, WCD ministry website; *Raj Nutrimix* packet

help the state government support small-scale production and improve the quality of supplementary fortified food rations. Therefore, GAIN and WFP designed a mechanized process that could produce quality THR in an operationally feasible, easily replicable and economically viable manner.

The production facility was completed in June 2011.¹ Women members were given 10 days of comprehensive training in topics such as procurement, production management, processing, hygiene, accounting, quality management and record keeping.¹ After a five-day trial run, the production facility was fully operational and two months later, received its first order.¹

Product

Raj Nutrimix is a weekly THR meant for children aged 6 months to 3 years and PLWs. It is a mix of wheat flour, chickpea, soybean, oil and sugar, fortified with necessary micronutrients (Table 1).

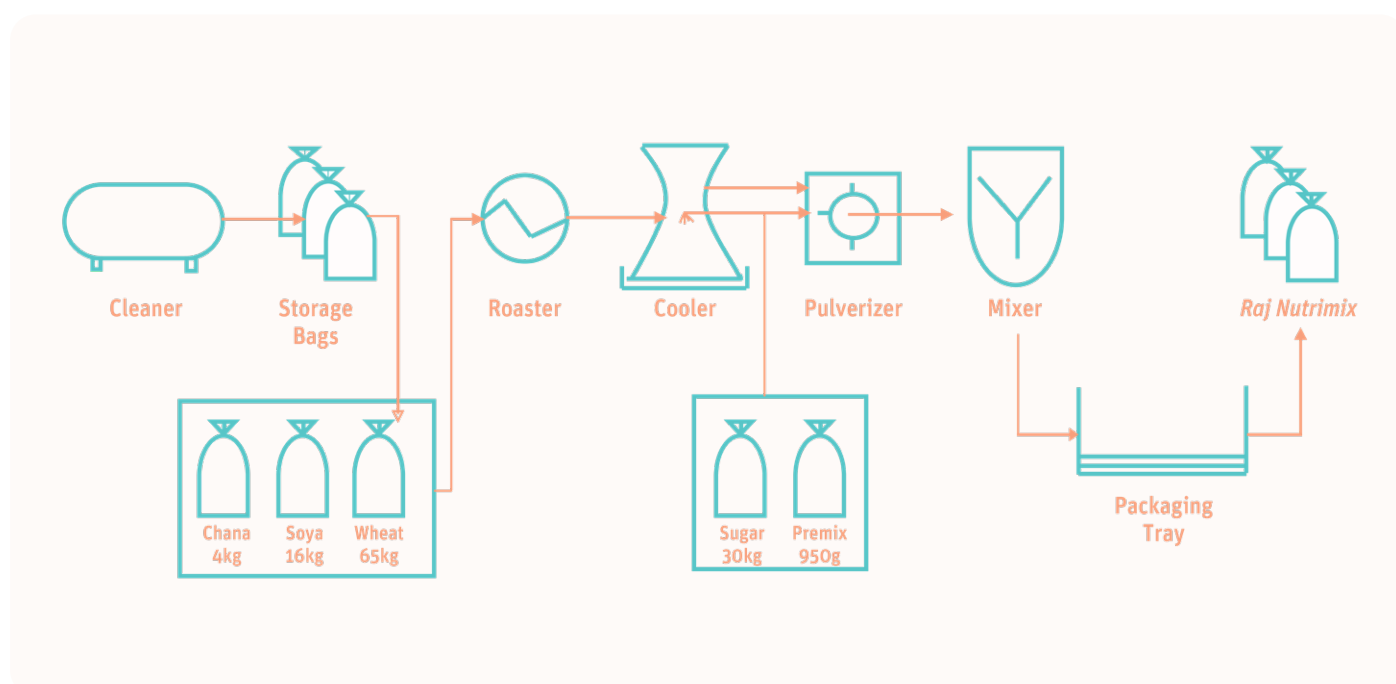
Processing

The unit comprises of a single production line (Figure 1) that manufactures THR complying with the guidelines from GoI.

Procurement

Prior to November 2013, subsidized wheat grains were obtained from the State Food Corporation of India (FCI) of Rajasthan. Owing to this, Banswara factory's THR production cost was lower than Telangana Foods

FIGURE 1: Production process and operational details²



(see page 41 for more details). However, they no longer qualify to purchase wheat at a subsidized price due to the enforcement of Rajasthan government's policy that no SHG should receive a wheat subsidy. As a result, cost of raw materials increased by 30% and exposed the SHG to operational risks of price volatility and seasonal fluctuations of raw materials.³

Soya beans, sugar and lentils are purchased as per pre-defined procurement protocols that list out quality criteria for raw materials, procurement process through tendering and placement of orders and receipts.³ Premix is bought through the GAIN Premix Facility, a reliable source, and the SHG has never faced any disruption in its procurement.³

Delivery and distribution

Based on the purchase orders received from the government, the product is delivered to the block level and then it is distributed to the ICDS centers. Delivery to ICDS has been regular and on time. The service rate (percentage of products delivered on-time) is close to 100% and is laudable. However, having a defined stock management policy will ensure a perfect service rate.

Quality Control

Standard operating procedures (SOPs) are strictly followed. Machines are regularly checked and cleaned. Internal quality checks are diligently done during handling of raw materials and finished products, processing and packing. External quality checks are performed on composite samples from every batch of raw material and finished product by an independent lab in Delhi. The product has always conformed to the standards and no complaints have been made thus far. However, there is no policy on how to deal with negative test results and its subsequent impact on disruption in supply, and the financial impact due to inventory write-off.³

Coverage

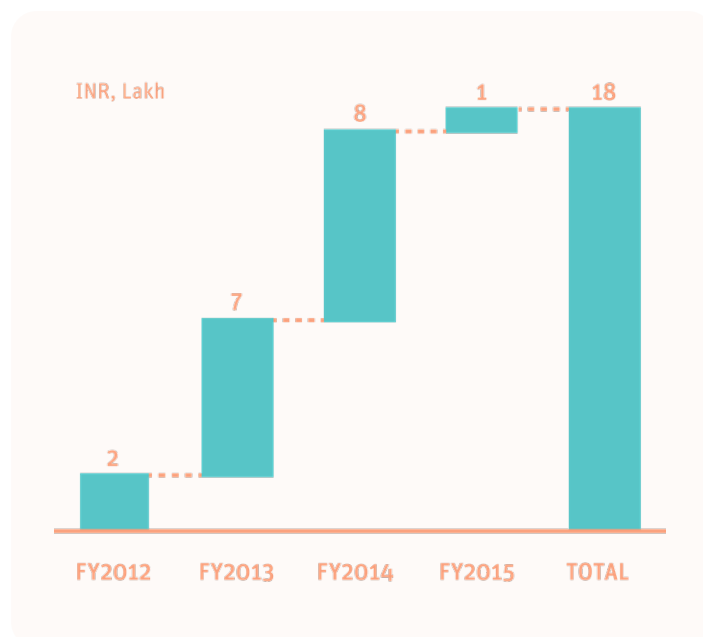
The factory delivers 30 MT of *Raj Nutrimix* per month, reaching over 6,000 children under age three and nearly 3,000 PLW through a network of 172 Anganwadi Centers (AWCs) in the block of Sagwada.¹

"The factory delivers 30 MT of *Raj Nutrimix* per month, reaching over 6,000 children under age three and nearly 3,000 PLW."

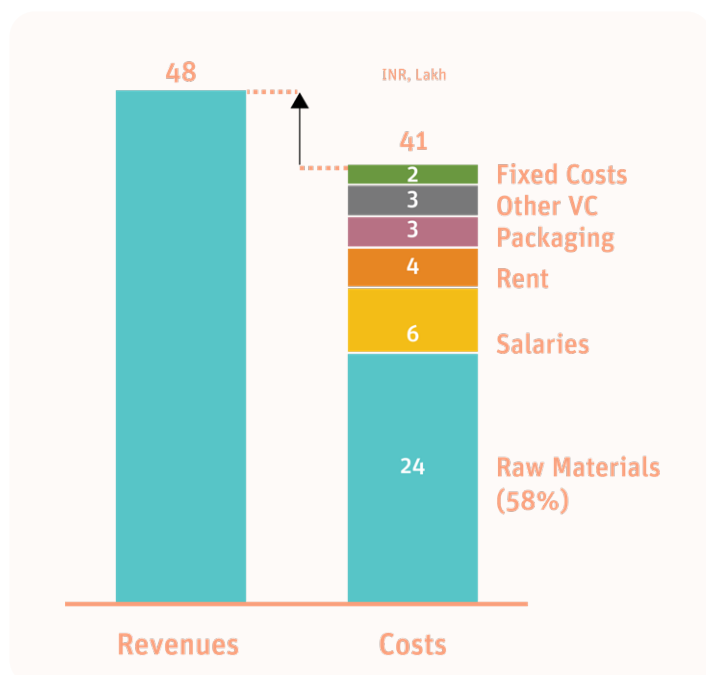
Financial Analysis

The setup of the Banswara model was sponsored by GAIN with grants worth INR 40 lakh for capital expenditure, initial working capital and continued technical assistance, over four years.⁴ The operating unit reached the current production volume of 30 MT per month during the first month of operation, suggesting that the SHGs can run semi-automated plants. However, they would need ongoing technical support to be able to maintain such an efficiency. The unit had retained earnings of INR 18 lakh in the first four years despite the withdrawal of the wheat subsidy in 2013, with an average of 12% profit margin (Figure 2).

FIGURE 2: SHG Factory Retained Earnings, FY2011-15⁴



In 2014, the SHG factory had a revenue of INR 48 lakh, with nearly INR 8 lakh in operating profit, which was used to cover other expenses such as technical assistance, depreciation of machinery and interest payments on bank loans (Figure 3). Nearly 60% of total expenses is the cost of raw materials and any volatility in their prices can make the model financially vulnerable. Assuming an interest of 11% and a depreciation of assets over five years, it was estimated that any loan payback period for the setup costs would be 8 to 9 years (as estimated in the year 2015). The fact that the factory is still running and filling the government's THR orders suggests that it is on the path to full financial sustainability.

FIGURE 3: SHG Income Statement for FY 2014⁵

Impact

First, the model achieved its primary objective of a high quality THR. THR supply is also regular to all assigned blocks. SHG women are able to raise awareness on the benefits of good nutrition and THR, leading to increased acceptability among the beneficiaries.

Second, women in the SHG are managers and co-owners of the factory. As a result, the project improved their self-confidence and social status within their community, while empowering decision-making on food consumption, children's education, and household expenditure. This agency has instilled a higher level of aspiration in these women.

Third, each woman receives a minimum wage of INR 200 per day for 300 days of work per year, is eligible to a share in the profits from the factory and has group accident and life insurance.⁵ Further, they have become financially more independent through their own bank accounts and savings.

However, some challenges remain to be addressed by the government. Many families do not exercise their entitlement to THR and among those who do, field observations have raised the issue of intrahousehold sharing.

Scalability

Rajasthan has 62,000 AWCs. The Banswara unit supplies to only 172 centers. Few considerations for the model to scale up are described as follows:

First, this model is proven to be viable at a minimum capacity of 1 MT a day. A higher volume of production is possible. A business case would be needed to analyze different factory sizes for supply at block, sub-district and district levels. It's important to remember that scale is achievable through a semi-automated or fully automated facility and not through a kitchen-based model of operation.

Second, a single SHG-run factory cannot be scaled up at the national or even state level without an enabling environment for the operation of SHGs, low cost capital and production infrastructure development. In Rajasthan, for example, one would need 360 such factories to cater to all AWCs. Governance and oversight would become key issues and hence a federation of SHGs would be needed. There should be access to low cost credit, inputs, equipment and land, technical assistance for building capacity in SHGs, and clear guidelines on how both central and state governments can support scale. In this model there were several instances over the five-year period where the SHG required daily technical assistance and managerial skill development to ensure smooth operations.

"Scale is achievable through a semi-automated or fully automated facility and not through a kitchen-based model of operation."

Replicability

To be able to replicate this model, here is a checklist of conditions:

- **Guaranteed offtake by ICDS at a 'cost plus' price, i.e. at least a small profit must be ensured** ICDS's guaranteed offtake enables Shitalamata SHG to cover operating costs and become financially viable. This particular factory-based model needs a minimum of 1 MT production per day to be viable.
- **Ability to procure quality inputs and negotiate competitive prices through an open market**
- **Strong technical assistance and capacity building for the SHG in food processing and management of the factory**
- **Access to reasonable cost and terms of financing or grant support from a development agency**

- **Selecting a mature SHG**

Shitalamata SHG has been operational since 2008. They had strong internal functions (e.g. clear norms, bookkeeping) before they undertook factory operations, allowing them to make a smoother transition from a kitchen-based operation to an enterprise.

- **Access to input and services**

Availability of inputs in the local market at reasonable costs has played a major role in the operational success of this model. For example, subsidized wheat boosted financial viability in the early years. Relatively easy access to support services such as laboratory testing of the product, equipment repair and maintenance is required.

To see how this model was replicated in Bihar and Karnataka, see pages 83 to 93.

Conclusion

While the positive impacts of the model are clear, critics questioned the practicality of hundreds of SHGs meeting the full demand of the state. Replication of the model to new regions will depend on the willingness of policymakers to create the organizational structure necessary to support it. In the meantime, women like Shakuntala prove that with appropriate investment, training and support, a primary school drop-out can be empowered and successful both at work and home.

References

1. A decentralized model for producing supplementary nutrition to a state. Internet: <https://www.gainhealth.org/sites/default/files/publications/documents/case-study-a-decentralized-model-for-producing-supplementary-nutrition-to-a-state-rajasthan.pdf> (accessed 27 January 2020)
2. Global Alliance for Improved Nutrition. Rajasthan SHG Model Overview. 09 January 2014. PowerPoint Presentation
3. Clémentine Antier MD, Salil Kumar CA, Sadhana Bhagwat MD, Rajan Sankar MD. Production of fortified food for a public supplementary nutrition program: performance and viability of a decentralized production model for the Integrated Child Development Services Program, India. *Asia Pacific Journal of Clinical Nutrition* 2014;23(Suppl): S20-S28. Internet: https://www.researchgate.net/publication/268228141_Production_of_fortified_food_for_a_public_supplementary_nutrition_program_performance_and_viability_of_a_decentralized_production_model_for_the_Integrated_Child_Development_Services_Program_India (accessed 27 January 2020)
4. Global Alliance for Improved Nutrition. An effective decentralized model for ICDS Food production. March 2015. PowerPoint Presentation
5. Empowering women entrepreneurs to produce fortified food for mothers and children in Rajasthan. Internet: https://www.gainhealth.org/sites/default/files/publications/documents/case-study_empowering-women-entrepreneurs-to-produce-fortified-food-rajasthan-india-2014.pdf (accessed 27 January 2020)