



CASE STUDY: EMPOWERING WOMEN ENTREPRENEURS TO PRODUCE FORTIFIED FOOD FOR MOTHERS AND CHILDREN IN RAJASTHAN

Global Alliance For Improved Nutrition (GAIN) Sets Up Pilot Projects For Women's Groups To Produce Supplemental Food Rations In Rajasthan, India

EXECUTIVE SUMMARY

In India's largest state of Rajasthan a high percentage of children are undernourished and are not consuming the necessary vitamins and minerals they need to thrive.

Poverty often leads to a limited diet that lacks the diversity necessary to provide all of the essential nutrients children need, and malnourishment at a young age increases the risk of impaired growth, susceptibility to serious illness and early death. To support the most vulnerable of Indians the government provides additional supplemental food fortified with vitamins and minerals for free to pregnant/lactating mothers and children under age three.

In 2010, the Global Alliance for Improved Nutrition (GAIN), the United Nations World Food Programme (WFP) and the Government of India launched a model for producing supplemental food, referred to as "take home rations," which would be distributed through government supported community centers. Their approach centered on developing small-scale production facilities run by a cohort of women entrepreneurs who would be both owners and workers in the factories. The production facilities in Rajasthan would produce a product called Raj Nutrimix: a mix of flours, wheat and sugar fortified with necessary micronutrients and palatable to children. The State Government of Rajasthan, through their social welfare program, would act as both a buyer and distributor of the product, and then provide the product to pregnant and lactating women and to children under age three through community centers.

The Banswara Factory was set up and training was completed and fully operational by 2011. Ten women own and operate the factory in a remote village deep within rural Rajasthan. The factory now delivers 30 metric tons daily of Raj Nutrimix, reaching over 6,000 children under age three and nearly 3,000 pregnant or lactating women.

The government had a critical role in this project as both a purchaser of the product and as distributor of it to the intended audience, which includes the job of educating mothers on how to appropriately cook and consume the product. Unfortunately, due to poor education and distribution strategies, the product remained foreign to many women in the rural areas and did not reach as many beneficiaries as had been anticipated.

Key Strategic Lesson

With appropriate investment, training and support, illiterate/semi-literate women can successfully produce a quality controlled, nutritious product in a locally managed facility.

Key Operational Lesson

Connecting with an existing public delivery system allows for quick, easy access to target consumers, but promotion is still necessary to increase consumption of the new product.

INVESTMENT SNAPSHOT

Geographic coverage: Southern Rajasthan, India

Project start: 2010

Stakeholders: GAIN India, World Food Programme, Integrated Child Development Services, Shitalamata Self-Help Group

Nutrient Products: Raj Nutrimix Take-Home Ration

Addressed customers: Distribute take home rations to 10,000 children

Project Goals: To set up seven production units producing 2100 Metric tons/ Year of Take Home Rations

To create and disseminate educational materials so that 75% of consumers understand optimal child feeding

Total anticipated project cost: \$1,385,077

GAIN contribution (% total project): \$850,330 (61% total project value)

State contribution: \$534,747



ABOUT GAIN. The Global Alliance for Improved Nutrition (GAIN) is an international organization launched at the UN Special Session on Children in 2002 to tackle the human suffering caused by malnutrition. We believe that everyone in the world should have access to an affordable, healthy and nutritious diet. We focus our efforts on children, girls and women because we know that providing these groups with sustainable, nutritious diets is crucial to ending the cycle of malnutrition. We act as a catalyst – bringing together alliances of governments, business and civil society - to find solutions and deliver results. Through this collaborative approach, we believe that malnutrition can be eliminated within our lifetime.

For Further Information

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ABOUT MALNUTRITION AND FOOD FORTIFICATION

Malnutrition is a global issue that affects billions. The term malnutrition refers to both undernutrition and overnutrition. Undernutrition indicates a lack of the necessary energy, protein or micronutrients while overnutrition and obesity mean too much energy, fats or specific micronutrients.

Vitamins and minerals, also known as micronutrients, are a critical component of good nutrition. In particular, folate (vitamin B9), iodine, iron, vitamin A, zinc, and other B vitamins including thiamin (vitamin B1), riboflavin (vitamin B2), niacin (B3), cobalamin (vitamin B12) and pyridoxine (vitamin B6) are important for healthy and productive populations. Without them, children develop birth defects, blindness and an inability to learn properly, among other long-term disabilities.

Food fortification is the process of adding vitamins and minerals to staple foods and condiments. With GAIN support, more nutritious foods and condiments such as wheat flour, maize meal, salt and vegetable oil are now available in over 28 countries.

BACKGROUND & CONTEXT

Malnutrition in Rajasthan is a burgeoning concern, and two federal policy directives led to GAIN's intervention to support small production units of supplementary nutritious food.



Located in India's west-central interior, Rajasthan is India's largest state in terms of its geographic area, with a population of 68 million almost half of which are under the age of 18 years. As in most Indian states, malnutrition is a serious concern: 20% of children under three are wasted (low weight for height), 34% are stunted (low height for age) and 44% are underweight. A full fifth of children under five suffer from wasting and of those, 7% suffer from acute malnutrition. Addressing malnourishment at an early stage of life is critical, starting in the womb and throughout the first few years of life. It has been demonstrated that if a child doesn't receive the appropriate nutrients before age two, it may be impossible to compensate later in life.

To address these nutrition concerns among children, the Government of India established the Integrated Child Development Services (ICDS), a federally sponsored social welfare program that provides supplemental nutrition and food, basic healthcare, and daycare services for children aged 0-6 years, adolescent girls

and pregnant/lactating women throughout India. This social welfare program is overseen by state governments and operates through local community health centers, known locally as Anganwadi Centers, which each serve a population of 500 to 1,000 people. There are nearly 1.3 million of these community health centers in India serving more than 8.6 million women and 39 million children according to UNICEF.

A key responsibility of the centers is the weekly distribution of supplemental food rations for mothers and their children. Food provisions offered by the centers can vary by state and neighborhood block. In many cases the centers offer supplemental hot meals, as well as dal, oil and vegetables. The centers also provide to families what are called, "take home rations:" dry packaged food that is picked up and brought home as a supplement to regular meals. Take home rations are typically a commercial packet, such as a mix of flours, wheat and sugar that are fortified with the necessary micronutrients, and then distributed to the families for free. Since they are brought home and consumed it is difficult to limit who is the ultimate beneficiary, however the intention is that they are to be consumed by children under age three and pregnant/lactating women. These rations are provided throughout India and have been been a method of providing fortified food to mothers and children in inaccessible and rural areas who don't consistently visit their local Anganwadi Centers, but can take them home and consume on their own.

In 2004 there was a motion encouraging the government sponsored program to decentralize the production of supplemental food for the Anganwadi Centers from being produced by large-scale private or commercial contractors to using small-scale production units run by locally hired women and men. Based on this directive, the Indian Supreme Court later mandated that state governments were required to decentralize the production of supplemental food and increase the number of small production units to meet demand. This marked a considerable shift in approach and emphasized the important role that local communities could perform in the delivery and production process. In addition to allowing for more production units to be established, the Supreme Court also pressed the government to fulfil its commitment of providing food rations that adhered to strict industrial quality standards.

GAIN Looks to India's Successful History of Engaging Women's Self Help Groups

One intention of the directives was to activate local women's groups that had been established throughout India as village-based financial intermediaries and engage them in the production process. Starting in India in the mid-1980's local women's community groups, referred to as "self help groups" were formed for micro-financing purposes. Members were linked together based on relationships of trust and support, typically similar in income and occupation as well as caste or tribe. The women collectively could deal with commercial banks and market institutions and jointly build capital. In addition to micro-finance loans they would make mutual agreements to contribute to a common fund. Many self help groups (SHGs) are attached to banks. They are widespread and constitute a mainstream activity in India's rural finance system. Today there are around 2.2 million SHGs in India representing around 33 million members. Activating SHGs plays a vital role in India's long-term economic development plan.

The State of Rajasthan has the highest burden of undernourished children across India. Facing these two policy directives from the Supreme Court, Rajasthan officials had to improve access and consumption of supplemental food, as well as improve the quality of the product—without relying on large production factories. The question was, could these SHGs in Rajasthan be mobilized as the directive envisioned, to produce take home rations at scale?

OBJECTIVES AND APPROACH

GAIN Invests in Women Entrepreneurs and Local Production Facilities

GAIN and World Food Programme Develop New Process to Allow for Women's Self Help Groups to

Manage and Co-own Small-Scale Production Factories

GAIN's objective was to pilot an intervention in Rajasthan that would help the state government support small-scale production and improve the quality of supplemental fortified food rations. GAIN, with their partner the World Food Programme (WFP), designed a mechanized process that could produce a quality take home ration in an operationally feasible, easily repeatable and economically viable manner. The model developed was seen as a mid-way business model that would bring advantages of industrial commercial production at a reasonable scale and be managed by individual facilities of around ten workers. Without financial and technical assistance to these small production facilities, the production of the rations would be limited to micro-level kitchen-based facilities that would bring their own set of challenges around quality and scale, and would not enable fortification.

The partnership would be transformative both by addressing malnutrition through increased access to government-provided take home rations, but also by empowering rural women who would be charged with owning and running their own businesses. Literate and semi-literate women with limited opportunities in rural areas received training and skills in manufacturing and production, paid employment, and the opportunity to become part owners of the facility.

In April 2010, GAIN contracted the World Food Programme (WFP) with the intention to set up seven pilot factories where cohorts of rural women entrepreneurs could produce take home rations for their local communities. The project would facilitate the procurement of the take home rations by the Integrated Child Development System (ICDS) directly from the individual factories who would then distribute the product, branded as Raj Nutrimex, to pregnant/lactating women and children through their Anganwadi Centers.

Explore Small-Scale Production Model by Concentrating on One Pilot Project

The Banswara Factory, run by the Shitalamata Unit in Rajasthan is up and running within a few months



The partners at first placed all emphasis on making one factory fully operational. After Banswara was chosen as the pilot factory, GAIN became the cross-sector champion facilitating relationships between all of the different partners. Using GAIN investment dollars, the production facility was completed in June 2011. The ten women of the Shitalamata self help group were given ten days of comprehensive training in topics such as procurement, production management, processing, hygiene, accounting, quality management and record keeping. After a five-day trial run, the production facility was fully operational and two months after construction received its first order.

Connect with an Existing Supplier and Distribution Network

GAIN ensures compliance with the government mandate, has a buyer for its product and an already established vast distribution network to reach beneficiaries.

By linking the new production facilities to the existing distribution system of the Integrated Child Development Services (ICDS) and their locally run Anganwadi Centers GAIN accessed the vast reach of the current distribution network—the program has over 1.3 million local community centers that serve 80 million children and 18 million pregnant/lactating women. The community centers are designed to reach the “last mile,” touching every remote village and community across the breadth of the country and targeting the most vulnerable and malnourished sections of society. GAIN and WFP were able to quickly and economically distribute to consumers that most needed reaching.

CHALLENGES AND OPPORTUNITIES

Sustainability Requires Continual Investment and Oversight of the Self Help Groups

Building on the social and financial success of small production units requires significant time, assistance and external resources.

The women of the Shitalamata SHG running the Banswara factory demonstrate detailed knowledge of factory operations, have opinions on the factory’s output and profits, and they voice strong concerns about being unable to reinvest in machinery if their financial situation does not improve. While this clearly demonstrates the progress they have made, the women still require assistance with daily factory operations and guidance on working together as a group of enterprise owners. Upon visiting the factory, observers noted that the women lost their confidence operating machinery without the assistance of a male technician. Even after three years,

it remains the responsibility of the international partners, GAIN and the WFP, to identify, organize and facilitate an ongoing training program and reinforce certain best practices. In the face of declining margins and inconsistent order quantities, many of the women were unmotivated to continue working at the factory. During such periods of hardship, the women rely on an external voice to help them maintain factory operations, solve larger issues and also provide regular encouragement.

The women also continue to rely on the international partners to provide a bridge to the outside world. Negotiating with suppliers for ingredients and with the government for both order quantities and prices all remain external duties where training has been limited. In the two additional factories that were established the women are eagerly awaiting their first orders. GAIN assisted the women to write to the government, but while this represents a positive first step in promoting the direct linkage between the women owners and their customer, it will take time, external oversight and considerable assistance before this relationship is in place. Many in the industry are concerned that the road to complete independence without external support for self help groups could be decades in the making.

Political Factors in India Limit Expanding the Small-Scale Production Model

While government support for the small-scale production model exists in Rajasthan, political conditions have revealed challenges for both the ongoing sustainability and scalability.

This model is unique in that there is only one customer – the government is the sole and assured purchaser. In order to build a successful business model critical environmental conditions include a centralized, accessible point of contact with the decision-making power, and financial and logistical support structures in place for the long term.

While this small-scale production model has had positive outcomes in terms of creating a livelihood opportunity for the women of the Shitalamata SHG leading the Banswara factory, livelihood was not the primary lens through which GAIN approached the pilot. The main focus was on demonstrating the operational and economic feasibility of a small production unit owned and operated by illiterate/semi-literate women and to demonstrate that a quality assured and nutritious product can be produced in a decentralized environment. In turn, GAIN built strong relationships with the Rajasthan government as the buyer and distributor of Raj Nutrimix. On the production side, the partners successfully negotiated a wheat subsidy with the Ministry of Women and Child Development, the office that oversees women’s livelihood initiatives at the Federal level, to

keep production costs low. However, because these two offices operate independently, GAIN must navigate between two points of contact and have both offices sign off on every decision, creating lag time and challenges when things like policy and production changes occur. An example of this occurred when the State Government of Rajasthan withdrew the wheat subsidy to any self help group in 2013, throwing the small-scale production model into jeopardy.

Supply Does Not Ensure Demand

While the partners had quick, easy access to the target consumer through the already established vast distribution channel, they were not able to influence actual consumption.

The government was invaluable not only in being a guaranteed purchaser of Raj Nutrimix, but also in providing an entrenched distribution channel capable of reaching the most vulnerable in rural areas. However, with the focus on production and distribution of supplementary foods, the project was not able to influence the actual consumption of the Raj Nutrimix product by the proposed beneficiaries. Consumption and related positive health outcomes were not the focus of the project mandate, though they are of course an ultimate end-goal. Many families were not exercising their entitlements to the supplementary foods. Anecdotal evidence indicates that many families are not picking up their take home rations for reasons that included long distances from the home to the center and lack of concern or awareness about take home rations or nutrition in general. For instance, when visiting an Anganwadi center, one can review a register containing names of children and pregnant/lactating women in the area alongside the signatures of those that had picked up their supplemental rations in the last week. Unfortunately, many of the names had no signatures next to them.

Even when the families pick up their rations, local activists point out that it is often added to the ‘family pot’ rather than fed exclusively to the intended beneficiaries, the children and pregnant/lactating women. A local NGO that recently visited homes in the Banswara region in Rajasthan found that most families were unable to identify food that was reserved for children and pregnant/lactating women—an indicator of the pooling of take home rations with other food. Further, consumers report that Raj Nutrimix is often used to make the chapati (bread) that is the foundation of traditional family meals.

The challenges above reveal significant gaps in awareness about nutrition, health and sanitation amongst the target population and the general challenges of the project. Although experts agree that a convergent strategy is necessary to achieve overall

health, Anganwadi workers and local NGOs bemoan the slow progress in educating women on adequate hygiene and infant feeding practices, such as not feeding children honey in lieu of exclusive breast feeding and encouraging them to wash hands before preparing meals. Getting Raj Nutrimix to the Anganwadi center is one thing, but creating positive nutrition outcomes that rely on proper consumption of the fortified product and the use of healthy practices is the real “last mile.”

OUTCOMES AND LOOKING AHEAD

Small Women-Led Production Units Show Potential

A small-scale production model that can be scaled and replicated has the potential to meet the supplemental nutrition demands of a state.

Today, the Banswara factory now delivers 30 metric tons daily of Raj Nutrimix and reaches over 6,000 children under age three and nearly 3,000 pregnant/lactating women. With demonstrated success in their initial pilot project, the partners originally expected to duplicate the experience in six more pilots across the state of Rajasthan.

Based on the results from the Banswara Factory and the successful examples of large-scale business models that use federated self help women groups in other industries, this model has the potential to meet the supplemental nutrition demands of a state. GAIN’s pilot operation has proven that organized cohorts of largely illiterate, inexperienced women can successfully run a manufacturing facility to produce quality supplemental food rations. Since starting operation in August 2011, the women of the Shitalamata Unit have demonstrated the ability to meet demand consistently, create a high quality product, and operate at a cost comparable to large-scale production facilities within the government budget. Exhibit 1 shows the monthly production for the Shitalamata Unit from December 2011 to November 2013. In its three-year history, the only time the women have struggled to fill an order was in December 2012 when production was interrupted by a delay in receiving raw materials from suppliers.

The unit has also demonstrated its ability to produce a consistent, high-quality product. An independent laboratory based in New Delhi assessed randomly taken samples of every 15 MT of Raj Nutrimix produced. Over its lifetime, the unit has produced over 350 MT of take home rations and it successfully passed all of its 20-plus quality tests.

Perhaps most surprisingly, it was observed that the Banswara factory not only has a cost structure comparable to large-scale facilities but also one that fits within the government budget mandated by the Supreme

Court. Prior to November 2013, both the Banswara factory and the large-scale production facility in Andhra Pradesh known as AP Foods received their key wheat inputs at a government-subsidized rate. At that time, the Banswara factory actually produced their Raj Nutrimix at a price lower than the comparable AP Foods product. More recently, due to the enforcement of the Rajasthan government's policy that they no longer qualify for a wheat subsidy, the women at the Shitalamata Unit lost the ability to purchase wheat at a subsidized price. Although their costs have increased as much as 30% without the wheat subsidy, it is still lower than the minimum amount a state is required to spend on take home rations. While margins are thin, the women earn wages and are shareholders in any profits. In the absence of distributable profits, women still continue to earn a living.

While the women of the Shitalamata Unit have demonstrated that they can successfully produce take home rations for one district block in Rajasthan, other industries have demonstrated that, when women's self-help groups are federated, they are capable of producing at a much larger scale. FabIndia, a company that sells traditional textiles, crafts, organic foods and personal care products, for example, sources a significant percentage of its products from self-help groups. The company has federated over 80,000 women and has stores all across India. Dastakar, a federation of more than 250 different women's groups, has also demonstrated an ability to produce and sell textiles on a large scale. While food production is a more complicated exercise, there are several examples of federated women-led self help groups that have created successful economies of scale.

Address Malnourishment While Investing in Women

GAIN supports the development of new production facilities, while also educating and training illiterate and semi-illiterate rural women to be managers and co-owners.

The success of the Banswara factory is due to the empowerment of the women who run the facility and, in turn, their leadership is necessary for its continued sustainability. The improvement in the women's stature and livelihood cannot be underestimated. Over the past three years, the group has evolved significantly from where they started as a shy group of women with limited experience working outside the home and strong fears of assuming responsibility for the factory. During their first ever meeting with GAIN, the women covered their faces and let their husbands speak on their behalf. Today, they sit comfortably in a circle with strangers and fiercely articulate opinions about their wages, families, and the

life they see for their children. They proudly show off their homes and show curiosity about life outside their village. Their economic and social empowerment is visible both in the way they carry themselves and converse with outsiders, as well as the higher status that they have achieved in their households and communities.

The Challenge of Financing Future Projects

In Rajasthan, the government supported the project in principle, but GAIN and WFP provided all technical and financial support necessary to launch the pilot model.

Further financing options for similar projects are extremely limited. At approximately \$75,000 for plant set-up and initial working capital, funding needs are too large for a microfinance lender, but too small and risky to qualify for most social venture funding. While GAIN and other non-profit partners may be able to provide initial pilot funding, scaling to many production facilities will necessitate much larger infrastructure expenditures.

Economic viability is subject to government determination of price. In terms of pricing in Rajasthan, GAIN sells to the government at a fixed price determined by a previously negotiated contract. Since product inputs can fluctuate dramatically over time and are the key driver of unit costs, fixed prices leave operating units financially vulnerable.

Key Operational Lesson

Connecting with an existing public delivery system allows for quick, easy access to target consumers, but promotion is still necessary to increase consumption of the new product.

It's clear that distribution through Integrated Child Development Services and their community centers is a key to the success of the model, because the goal of ICDS and its beneficiaries are seamlessly intertwined with the goal of the supplementary nutrition project. However, just providing the rations to beneficiaries the Rajasthan project cannot insure that they are used by either the right people or are used properly. Marketing and education are a time-consuming and expensive activity. The Rajasthan government would need to provide the funding and the manpower to enable education to become part of the distribution mission. Community workers would have to be trained to educate people in their village on supplementary nutrition in general and proper use.

Key Strategic Lesson

With appropriate investment, training and support, illiterate/semi-literate women can successfully

produce a quality controlled, nutritious product in a locally managed facility.

The primary hypothesis of this project, namely that enabling women to run a production facility in their community will allow for the localization of production in Rajasthan and potentially throughout India, proved correct. GAIN and their partners were able to provide training, infrastructure, business models and markets to women, providing more empowerment in some ways than had even originally been anticipated. Illiterate and semi-literate women who never held jobs previously became skilled in manufacturing, production, accounting, food fortification, and management—true entrepreneurs. Beyond just business skills, they also gained confidence, know-how and legitimacy in their communities. Although the main goal of the project may have been focused on nutrition and local production, the process of investing in self help groups had external benefits.

Looking Ahead

GAIN will weigh the benefits of this model—for women and community empowerment as well as for improving nutrition—against the difficulties of creating organizational structures to support it.

The women of the Shitalamata Unit are pushing the factory to thrive in the face of shrinking margins; in Dungarpur, the self help groups remain hopeful that the government will order product from their factory soon; and in the state of Bihar, the State Livelihood Mission is aiming to use this model to bring hundreds of other families out of abject poverty.

While the positive impact of the model is inspirational, the pilot has raised many unanswered questions. Skeptics point out that the idea of hundreds of self help groups meeting the full demand of the state is unrealistic and there are benefits to having economies of scale. GAIN, through its projects in Rajasthan, has perhaps

built a blueprint to prove that this decentralized model can be part of the solution. The road is long and difficult, and the question of whether the self help group model can be successful at scale will only be answered over time.

Moving forward, GAIN will weigh the benefits of this model for women and community empowerment as well as for improving nutrition. Replication of the model to new regions will depend on the policymakers' level of commitment to the model as well as their willingness to create the organizational structures necessary to support it. Intensive support will be required by any SHG, varying over time only in nature and subject matter, and not level of effort. A convergent, context-specific strategy is needed to achieve the intended health and nutrition impact.

CONTRIBUTING ORGANIZATIONS

This article was written in collaboration with the Global Alliance for Improved Nutrition (GAIN), the Global Business School Network (GBSN), and the Tuck Global Consultancy Program at the Tuck School of Business at Dartmouth. For more information on GAIN, please contact Dessie Tarlton at dtarlton@gainhealth.org; GBSN, please contact Lisa Leander at



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