GAIN: Rajasthan

A decentralized model for producing supplementary nutrition to a state

The self-help group (SHG) model is the dominant form of microfinance in India. Comprised of ten to twenty local women, SHGs are formed by NGOs or the government to promote the economic empowerment of India's most vulnerable communities. By pooling their savings, SHG members loan money to one another at rates far below what they could obtain from commercial lenders. SHGs with proven track records may even link to commercial banks to obtain larger loans. In addition to lending activities, SHGs are often involved in other forms of livelihood (e.g. manufacturing textiles) and serve as a platform for the delivery of myriad health, educational and other social services to their communities. According to the Indian National Bank for Agriculture and Rural Development, there are currently more than 2.2 million SHGs in India.

In support of the state government of Rajasthan and the Indian Integrated Child Development Services, the Global Alliance for Improved Nutrition (GAIN) launched a project to pilot a production model for producing supplementary nutrition via self-help groups. This decentralized approach centered on developing small-scale production facilities capable of producing only one MT of fortified take-home rations per day. The key takeaways from the project are:

- *An SHG model has the potential to meet the supplemental nutrition demands of a state*
- *However, the success of SHG-run production units requires significant time, assistance, and external resources*
- *Given the challenges, an SHG production model needs a policy environment that is willing to create organizational structures to support and fund the model*
- *By connecting with an existing distribution network, the project gained quick, easy access to its target consumer, but did not have the ability to influence actual consumption*

The Project, through its decentralized SHG model and implementing partners, produces sufficient take-home rations (THRs).

GAIN: Rajasthan

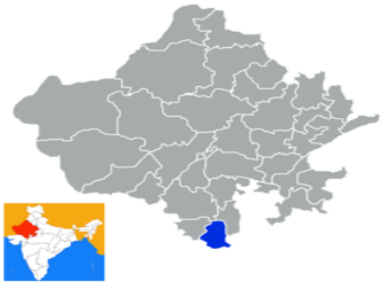
A decentralized model for producing supplementary nutrition for a state

Shakuntala lifts a bag of wheat and dumps it into the cleaning machine, the first step of the production process. Across the factory floor, her husband Kanti leans over a stack of papers and determines just how much the factory should produce that day. Shakuntala is one of ten members of the Shitalamata self-help group (SHG) who own and operate this factory in Banswara, a village deep within rural Rajasthan. The group has employed Kanti to manage the factory as well as a local technician to operate the machinery. This team works six days a week producing RajNutrimix, a fortified food powder distributed throughout the region as a take-home ration (THR).

Before they worked at the factory, Shakuntala was a community volunteer and Kanti, a driver; their family relied heavily on sustenance farming. Now, the factory has given them a steady and significantly higher stream of income. They can consistently put food on the table, buy clothes for the family, and most importantly for them, save and pay for their children's education. "Our son is enrolled in private school and has private tutors to help him prepare for the national exams," says Kanti proudly. They pay INR 27,000 for school and private tutors—nearly a quarter of their annual income—and are on their way to saving the INR 45,000 needed to enroll him in medical school prep classes. Although he's only fifteen, they dream that someday he'll become a doctor.

Background & Context

Two policy directives led to GAIN's intervention in Rajasthan. First, in 2004, the Indian Supreme Court passed a motion encouraging the Integrated Child Development Services (ICDS) to decentralize production of supplementary nutrition by using local women's self-help groups, instead of large-scale private contractors, to produce take-home rations (THRs). Second, the Supreme Court pressed the government to fulfil its commitment of providing fortified THRs that adhered to strict industrial quality standards. GAIN's objective was to pilot an intervention in Rajasthan that helped the state government address these two directives, so they designed a mechanized process that SHGs could use to produce a quality THRs in an operationally feasible, easily repeatable and economically viable manner.



The Integrated Child Development Services (ICDS) is a federally-sponsored program that provides supplemental nutrition, basic healthcare, and daycare services for children aged 0-6 years, adolescent girls and pregnant/lactating women. The ICDS is overseen by state governments and operates through local community centers called Anganwadi Centers (AWCs), which each serve a population of 500 to 1,000 people. There are nearly 1.3 million AWCs in India serving more than 8.6 million women and 39 million children according to UNICEF. A key responsibility of the AWCs is the weekly distribution of take-home rations (THR)—packets that contain supplementary nutrition in the form a fortified food staple intended for both children aged 0-3 years and pregnant/lactating women.

The model developed was seen as a mid-way model that would bring advantages of industrial production at a reasonable scale and decentralization at a cluster level. In the absence of this model, decentralization would be limited to micro-level kitchen-based facilities which would bring their own set of challenges around quality and scale, and would not enable fortification.

In April 2010, with the blessing of the Government of Rajasthan, GAIN contracted the World Food Programme (WFP) to set-up seven pilot factories where SHGs could produce THRs for their local communities. The project would facilitate the procurement of THRs by the ICDS directly from the SHGs; the ICDS would then distribute the THRs to local Anganwadi centers. In partnership with Rajasthan's Department of Women and Child Development, WFP selected the Shitalamata SHG to run the first factory. The production facility was completed in June 2011 and WFP subsequently provided the SHG members with 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, in August 2011, received its first order from the ICDS. The Banswara factory now delivers 30MT daily of their THR product—marketed as Raj Nutrimix—and reaches over 6,000 children under age three and nearly 3,000 pregnant/lactating women through a network off 172 Anganwadi Centers in the block of Sagwada.

Encouraged by the success of the first unit, the project set up two similar factories in the Dungarpur district of Rajasthan and selected local two SHGs to run them. Both factories were completed in March 2013 and SHG training was completed by May 2013. However, GAIN and WFP found it difficult to efficiently navigate the high levels of bureaucracy and hierarchy in Rajasthan, and after seven months of back-and-forth with the state government, no product has been ordered from either unit. These delays have caused GAIN to reduce the ambition of the original plan of setting up seven units and instead focused on getting the two Dungarpur units, and a fourth plant that has yet to be built, operational by mid-2014.

The Banswara factory reaches over 6,000 children under age three and nearly 3,000 mothers

"Our son is now enrolled in private school and has private tutors to help him prepare for the national exams."

Key Takeaways

The pilot program in Rajasthan has highlighted both opportunities and challenges associated with implementing a decentralized SHG model. Although the Banswara unit has demonstrated that SHGs have the capability to meet demand with a quality product, creating a network of producing SHGs will require significant external resources. Given the inherent challenges, the SHG model requires a favorable policy environment that is willing to create strong structures and devote significant resources to support it. In addition, even with a successful SHG model, one must recognize that it represents only one of many important steps needed to achieve GAIN's nutritional goals. As such, we have identified four key takeaways

that could be considered when taking this model forward.

The Shitalamata Unit has demonstrated the ability to meet demand consistently, create a high quality product and operate at a cost comparable to large-scale production facilities

Takeaway 1: An SHG model has the potential to meet the supplemental nutrition demands of a state.

Based on the results from the Shitalamata Unit and the successes of large-scale SHG business models in other industries, it was demonstrated that an SHG model has the potential to meet the supplemental nutrition demands of a state. GAIN's pilot operation has proven that an SHG of largely illiterate, inexperienced women can successfully run a manufacturing facility to produce quality THRs. Since starting operation in August 2011, the Shitalamata Unit has 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. While on average the unit produced approximately 15 MT per month—roughly half of their 30 MT/month capacity—this result was driven by low demand rather than an inability to produce at higher levels. There were multiple months in late 2011 and early 2012 where the unit produced over 25 MT/month, and over the last two years, the factory produced an average of 0.95 MT/day when operational and reached a high of 1.6 MT/day on several occasions. In December 2013, the unit received their largest order to date—35 MT in a month—and are on pace to deliver on schedule. In its three year history, the only time the Shitalamata Unit has struggled to fill an order was in December 2012 when production was interrupted by a delay in receiving raw materials from its suppliers.

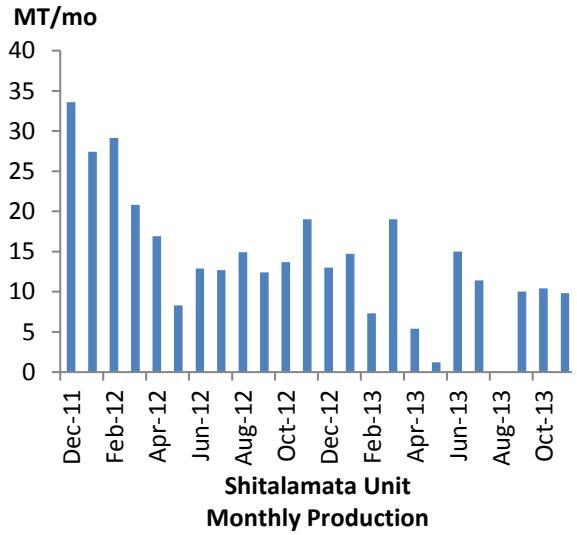
The unit has also demonstrated its ability to produce a consistent, high-quality product. An independent laboratory based in New Delhi assessed randomly taken samples of every 15 MT of Raj Nutrimix produced. Over its lifetime, the unit has produced over 350 MT of THRs and it successfully passed all of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

Perhaps most surprisingly, it was observed that the Shitalamata Unit 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 Shitalamata Unit 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 Shitalamata Unit 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 no SHG should receive a wheat subsidy, the Shitalamata unit lost the ability to purchase wheat at a subsidized price. Although Shitalamata's unit 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 THRs. While margins are thin, the women earn wages and are shareholders in profits. In the absence of distributable profits, women still continue to earn.

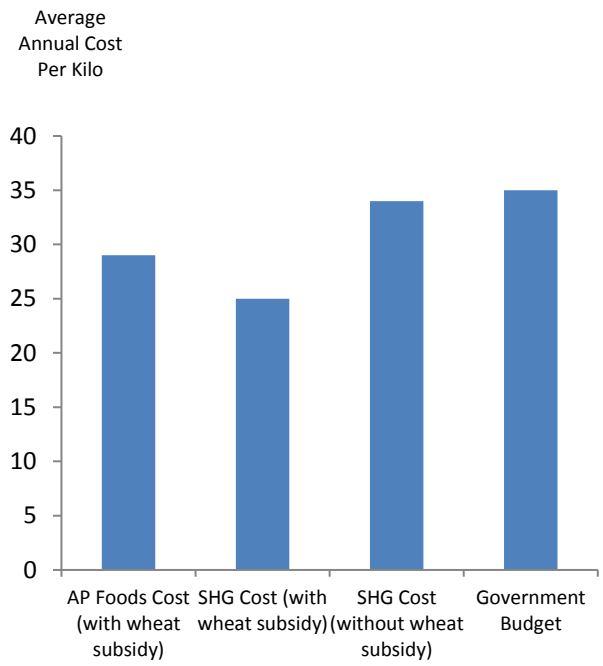
While the Shitalamata Unit has demonstrated that it can successfully produce THRs for one district block in Rajasthan, SHGs in other industries have demonstrated that, when federated, they are capable of producing at a much larger scale. FabIndia, a company that sells traditional textiles, crafts, organic foods and personal care products for example, sources a significant percentage of its products from SHGs. The company has federated over 80,000 SHG women and

has stores all across India. Dastakar, a federation of more than 250 SHGs, 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 learnings that can be taken from the success of textile-based SHGs.

The success of the Shitalamata Unit and that of other SHG groups in achieving scale indicate that it is possible to use an SHG model to produce supplemental nutrition on a large scale and potentially meet the demands of a state.



Shitalamata Unit Monthly Production



Takeaway II: The ongoing success of SHG-run production units requires significant time, assistance and external resources

The success of the Shitalamata Unit has led to their considerable empowerment, but significant intervention is still required to build the group's capacity to manage factory operations and negotiate with other players in the value chain independently.

Over the past three years, the Shitalamata Unit has come a long way from 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 ask inquisitively about life outside their village. Their 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 Shitalamata Unit demonstrates detailed knowledge of factory operations. They 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, it was also observed that the women have lost their confidence operating machinery without the assistance of a male technician. Even after three years, it remains the responsibility of the external implementing partner 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 demotivated to continue working at the factory. During such periods of hardship, an external voice is needed to act as the group's manager, helping the women maintain factory operations while bringing solutions to larger issues and also providing regular encouragement.

The SHG continues to rely on the implementing partner to provide a bridge to the outside world. After three years of operation, there remains significant scope to strengthen the Shitalamata Unit's capacity to negotiate directly and independently with the ICDS. Furthermore, the implementing partner is currently trying to identify wholesale distributors of primary inputs like wheat to avoid paying inflated market prices. Negotiating with suppliers for ingredients and with the ICDS for both order quantities and prices all remain external duties where capacity building has been limited thus far. In Units 2 and 3 where the women are eagerly awaiting their first orders, the implementing partner assisted the women to write to the ICDS. While this represents a positive first step in promoting the direct linkage between the SHG and their customer, it will take time, external oversight and considerable assistance before this relationship is in place. Many in the industry believe that the road to complete independence for these types of SHGs could be decades in the making.

Local Anganwadi centers distribute take-home ration, educate mothers, raise awareness around child nutrition and health issues, and prepare nutritious meals

Takeaway III: Given the challenges, an SHG production model needs a policy environment that is willing to create organizational structures to support and fund the model

While political support for the SHG production model exists in Rajasthan, political conditions have revealed challenges for both the ongoing sustainability and scalability of this model. This model is unique in that it is not a true market model – the ICDS is the sole and assured purchaser. In order to build a successful SHG model, critical environmental conditions include a centralized, accessible point of contact with decision-making power and financial and logistical support structures in place for the long-term.

In compliance with the Supreme Court directive, GAIN started the SHG project in Rajasthan with the specific goal of producing fortified THRs in a decentralized manner. While the SHG model has had positive outcomes in terms of creating a livelihood opportunity for the Shitalamata Unit, 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 ICDS as the buyer and distributor of THRs in Rajasthan. On the production side, the project negotiated a wheat subsidy with the Ministry of Women and Child Development, the office that oversees women's livelihood initiatives. 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.

The Rajasthan experience, demonstrates the importance of closely linking health and livelihood when building an SHG production model. In Bihar, the state government has already created an operating structure that links nutrition and livelihood. The ICDS has contracted oversight of the THR/supplementary nutrition program to the Bihar Rural Livelihood Promotion Society (BRLPS), giving BRLPS direct control over nutrition and livelihood activities in forty-four districts. BRLPS provides GAIN with a central point of communication, which allows a partner like GAIN to support multiple production facilities through a central body. BRLPS also groups single SHGs into federations, creating larger platforms from which to scale and facilitate centralized training. With this solid structural support, GAIN may focus its efforts on technical assistance in production and management.

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 SHG 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 ICDS 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.

GAIN has agreements with the government of Bihar that would overcome initial capital and product pricing challenges. Given a successful pilot, this State entity might directly provide funding for production facilities and bodies like the Bihar Rural Livelihood Promotion Society (BRLPS) will facilitate access to financing for working capital. In terms of pricing, the state of Bihar will buy THRs through a cost-plus agreement, at a set percentage higher than marginal cost. This agreement will provide security for the SHGs against raw material price fluctuations.

To date, four facilities in Bihar are currently under construction and are scheduled to begin operations in mid-2014. While this new project in Bihar only recently started, it potentially addresses many of the limiting factors observed and lessons learned in the Rajasthan pilot.

Takeaway 1V: By connecting with an existing distribution network like ICDS, GAIN gained quick, easy access to its target consumer but was not able to influence actual consumption

By linking the SHG production to the existing ICDS system, GAIN recognized the vast reach of the ICDS—the program has over 1.3 million local community Anganwadi Centers that serve 80 million children and 18 million pregnant/lactating women. The ICDS is designed to reach the "last mile," touching every remote village and community across the breadth of the country, and targets the most vulnerable and malnourished sections of society. Through supplying fortified THR solely to the ICDS, GAIN was able to quickly and economically access to consumers that GAIN was most interested in reaching.

However, with the focus on production and distribution of supplementary foods through the ICDS, the project was not able to influence the actual consumption of the Raj Nutrimix product by the ICDS beneficiaries. While consumption and related positive

health outcomes were not the focus of the project mandate, they remain a desirable end-goal of any nutrition-focused organization. Speaking with both paid community volunteers, referred to as Anganwadi workers, and local NGOs, it became apparent that many families were not exercising their entitlements to the supplementary foods. Anecdotal evidence indicates that many families are not picking up their THR for reasons that included long distances from the home to the Anganwadi center and lack of concern or awareness about THR 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 THR in the last week. At most centers, half the names have no signatures next to them.

Even when the THR is picked up by the families, local activists point out that the THR 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 THR with other food. Further, consumers report that Raj Nutrimix is often used to make chapati (bread) which is the backbone 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 with the ICDS. Although experts agree that a convergent strategy is necessary to achieve overall health, Anganwadi workers and local NGOs bemoan the slow progress that they make in educating women on adequate hygiene and infant feeding practices, such as not feeding children honey but exclusive breast feeding, and encouraging them to wash hands before preparing meals. Getting THR to the Anganwadi center is one thing, but creating positive nutrition outcomes that rely on proper consumption of THR and the use of healthy practices is the real ' last mile'.

Moving Forward

Shakuntala and Kanti are pushing the factory to thrive in the face of shrinking margins; in Dungarpur, the women of units two and three 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 SHGs meeting the demand of an entire state is unrealistic, but GAIN, through its projects in Rajasthan and its nascent work in Bihar, has perhaps built a blueprint to prove that the SHG model can be part of the solution. The road is long and difficult, and the question of whether the SHG model can be successful at scale will only be answered over time.

With GAIN's support, Shitalamata is capable of producing as much as 30 MT of Raj Nutrimix per month

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 SHG model as well as their willingness to create the organizational structures, as in the case of Bihar, 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. The SHG model might be one part of that strategy.

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 lleander@gbsnonline.org; and the Tuck Global Consultancy Program or the Tuck School at Dartmouth, please contact Kerry Laufer at Kerry.L.Laufer@tuck.dartmouth.edu.