# MODELS FOR WORKFORCE NUTRITION PROGRAMMES IN FACTORY SETTINGS

REFLECTING ON PROGRAMMATIC APPROACHES TO INCREASE THE AVAILABILITY AND DESIRABILITY OF NUTRITIOUS FOODS 2019-2023



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The Global Alliance for Improved Nutrition (GAIN) is a Swiss-based foundation launched at the UN in 2002 to tackle the human suffering caused by malnutrition. Working with governments, businesses, and civil society, we aim to transform food systems so that they deliver more nutritious food for all people, especially the most vulnerable.

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#### **SUMMARY**

Since 2015 the Workforce Nutrition programme at GAIN has piloted, scaled, and evaluated demand and access models to improve the diets of workers in both farm and factory settings globally. The purpose of this paper is to reflect on these intervention models and assess the relative strengths and weaknesses of each to inform future programmatic approaches. Each intervention model is assessed against the following criteria: potential for impact, feasibility, scalability, and resource efficiency.

Overall, factory settings offer a structured intervention setting with high potential for impact so long as worker schedules are accommodated in enabling workers to participate in programme activities during working hours. Models that improve direct access to nutritious foods in factory settings, such as canteens or on-site shops, have been found to have the most potential for impact, in terms of achieving meaningful dietary improvements. However, intervention models that focus on behaviour change and demand, such as peer-to-peer education, were generally assessed as having higher feasibility, resource efficiency, and scalability. However, while they may require lower up-front costs, they are of low impact if not combined with access interventions. Organisations looking to implement a workforce nutrition programme should focus on adopting a holistic approach that combines both access and demand approaches.

# **KEY MESSAGES**

- To be most effective, workforce nutrition intervention models need to be adapted to the diversity of work settings that exist globally in both high- and low-income settings.
- In factory settings, access models such as canteen meal improvements and supplementation were particularly impactful in sustaining meaningful dietary changes.
- Demand models tend to be more feasible, scalable, and resource-efficient but can be constrained by tight worker schedules and as such need to be well adapted to the factory environment.
- Overall, a combination of both access and demand approaches, with regular re-assessment
  of different models, is key to maximising impact whilst balancing feasibility, scalability, and
  resource efficiency.

# **BACKGROUND AND OBJECTIVE**

Much of the adult population spends a significant amount of time at work, making the workplace a powerful lever to pull to reach workers—including on topics related to health and nutrition. GAIN's Workforce Nutrition programme aims to leverage this opportunity by developing, testing, and promoting nutrition interventions for workers in agricultural and industrial supply chains. It is essential for such approaches to be efficient – including by fitting with the company's core business and leveraging existing training structures and communications. In this way, it is more feasible to craft sustainable platforms to provide ongoing nutrition programming (1). Workforce nutrition programmes should ideally be a win-win for businesses: improving the health their employees while also improving business outcomes through increased loyalty and reduced absenteeism (2-4). (See Box 1 for more details).

# **BOX 1. THE DEFINITION OF WORKFORCE NUTRITION PROGRAMMES (4)**

Workforce nutrition programmes are a set of interventions that work through the existing structures of the workplace - whether a corporate office or tea plantation - to address fundamental aspects of nutrition amongst employees or supply chain workers. These programmes aim to create improved access to - and demand for - healthier diets with the aim of changing employees' behaviours around food consumption, and thereby improving employee health and wellbeing. Workforce Nutrition has been characterised using a four-pillar framework. Healthy Food at Work programmes focus on increasing employees' access to healthy and safe foods at work. Nutrition education programmes aim to change the nutrition and/or lifestyle behaviours of employees through increasing employees' knowledge of beneficial health habits. Nutrition-focused health checks are periodic one-to-one meetings with a health or nutrition professional to assess, and usually discuss, the employee's nutritional health. Breastfeeding support programmes are integral to workforce nutrition programmes as they enable working parents to provide adequate nutrition to their infants: this is an investment in the nutritional health of future workforces.

**In factory settings**, GAIN currently delivers programmes in Bangladesh in partnership with VF Corporation, an international textile-buying corporation, and Auchan Foundation, a global retail group. Garment workers, of which the majority are women, have been identified as a group being particularly at risk of malnutrition, with high rates of micronutrient deficiencies, low dietary diversity, and increasing risk of obesity and other non-communicable diseases (5).

The objective of this working paper is to reflect on current programmatic approaches that aim to improve access to and demand for healthier diets via employer delivery mechanisms in factory settings. The paper complements a similar paper examining farm settings (6). The models assessed in this paper focus on Healthy Food at Work and Nutrition Education, as these have been piloted and scaled by GAIN in multiple contexts since 2013 (Figure 1). This critical assessment of current approaches supports GAIN and other stakeholders interested

in implementing workforce nutrition programmes to identify current best practices and assess the potential for impact, feasibility, scalability, and resource efficiency of each intervention model.



# **ENABLING ENVIRONMENT**

# Intervention models

Factory settings: Nutrition Improvement Committees

**Figure 1.** Access, demand, and enabling environment intervention models piloted, scaled, and assessed by GAIN since 2019 for Nutrition Education and Healthy Food at Work.

# **PROJECT STRUCTURE AND REACH**

The Strengthening Workers' Access to Pertinent Nutrition Opportunities ("SWAPNO") programme has been ongoing since 2013 and currently comprises two parallel-running projects that started in 2019, each funded by distinct private-sector organisations: VF Foundation and Auchan Foundation. The programme is built on factory-driven models, implying that the factory management and nutrition improvement committees lead on driving nutrition education and food diversification for the workers and their communities. The project activities funded by VF Foundation have been implemented in five factories across Dhaka and Chittagong divisions in Bangladesh, with a targeted reach of 30,000 factory workers and 20,000 community members. The project activities funded by Auchan Foundation are focussed on Dhaka division only, with a targeted reach of 15,000 workers and 15,000 community members.

The intervention models for the workforce nutrition programmes used in some or all of these factory settings can be summarised as follows:

### **Access:**

- **Canteen meals:** A nutritionally improved mid-day meal served to workers, including the diversification of food groups and portion-size control as per national foodbased dietary guidelines.
- **Fair Price Shops:** Retail spaces on factory premises that sell basic food items and specific nutritious foods that can be consumed on site or used to cook at home, at a preferential price with interest-free credit.
- **Iron-Folic Acid (IFA) supplementation:** the provision of regular micronutrient supplements to female workers, meant to be complementary to dietary modifications through canteen meals. IFA supplements are provided to further reduce the risk of iron-deficiency anaemia and folate deficiency (which can be harmful in pregnant women, in particular).

### **Demand:**

- **Behaviour Change Communications (BCC) campaigns:** Materials promoting good nutrition practices (e.g., videos, audio clips, flyers, paper games) are disseminated among workers, or similar messages are shared in the workplace (e.g., via posters or central public announcement systems).
- **Peer educators:** Trained volunteer workers (usually women) share nutrition tips and advice with peers to promote good dietary habits, during working hours and on factory premises.
- **Community nutrition interventions:** Trained community agents conduct sessions sharing nutrition information with worker households outside of factory premises, often reaching vulnerable communities.

GAIN also seeks to support the development of an enabling environment that ensures the sustainability of the activities. This includes working closely with public-sector stakeholders within local governments to create supportive policies and leverage existing government programmes where possible. One specific enabling environment intervention model was considered here:

Mutrition Improvement Committee: factory committees made up of 9-15 members representing different areas of work, varying from garment workers and kitchen staff to health professionals and management. About 40% of the members are workers, 10% from the canteen staff, and 50% from the management level (including medical staff and those from the Production, Human Resources, and Welfare departments). The committee manages the workforce nutrition initiatives on the premises and is key to involving worker voices in related decision-making. They emerged as a feature of Quality Improvement approaches (6).

# **METHODOLOGY OF ASSESSMENT**

The findings from this working paper are the product of a learning workshop that took place in November 2022 in Bangladesh. This workshop, conducted in Dhaka, brought together GAIN colleagues from India, Ethiopia, Bangladesh, and The Netherlands, as well partners from the Bangladesh Ministry of Labour and Employment, the Institute of Nutrition

and Food Science at the University of Dhaka, and private-sector partners from MATI Industries Ltd, Wellbeing for Makers, and the implementation partner READI. The aim of this learning workshop was to visit field settings and observe interventions being delivered in communities, discuss the pros and cons of various models, share experiences in monitoring, and develop new learning plans. Participants were divided into small groups to discuss and assess each intervention model along the following criteria: potential for impact, feasibility, scalability, and resource efficiency. During the small group discussions each model was discussed based on experiences to date with designing, implementing, and monitoring. Consensus was sought with the wider group during a plenary session to establish the scores presented in Table 1, which capture how strong a given model was across each dimension.

**Table 1.** Spotlight assessment of access and demand models Bangladesh, produced during the learning workshop in Dhaka in November 2022 based on a review of monitoring data, process evaluations, and discussion amongst all project stakeholders. Dark blue = High, Light blue = Moderate, Grey = Low

ACCESS MODELS	Potential for impact	Feasibility	Scalability	Resource efficiency
Canteen meals				
Fair Price Shops				
Iron-Folic Acid supplementation				
DEMAND MODELS				
Behaviour Change Communication (BCC)				
- Peer educators				
- Community Nutrition Intervention				
ENABLING ENVIRONMENT				
Nutrition Improvement Committee				

The assessment highlights the relative strengths and weaknesses of each intervention model. Among the three access models, canteen meals and Fair Price Shops follow a similar assessment across the four parameters. The provision of IFA supplementation stands out as a stronger intervention model in terms of feasibility and resource efficiency. Peer educator initiatives are the highest-scoring demand model. In the next section, we elaborate on the project teams' discussions and reasoning behind the scoring. We also considered how the workshop's outputs relate to the wider evidence base for that intervention model, as used in other contexts.

# **ACCESS MODELS ASSESSMENT**

#### **CANTEEN MEALS**

Canteen meals are at the core of the Workforce Nutrition model in factory settings and have high potential for impact and scalability. Improving the nutritional quality of the meals that workers consume at the factory can have a substantial impact on dietary outcomes and health, particularly as this can often be the most important meal of the day for low-income workers, accounting for more than one third of their daily nutritional intake (7). In worksites where there is already an in-built food distribution system, such as a canteen or catering service, this is also a highly feasible intervention, as it may only involve changing cooking techniques or ingredients. However, if no pre-existing system or infrastructure is in place, it can be difficult to set up food provisioning from scratch. Adapting canteen meals is also limited by cost constraints, as improving the nutritional content of meals involves training catering staff and may come with an increase in price, which is ideally absorbed by the employer. This means that support from management is necessary to ensure that there is sufficient budget allocation for healthy meals. Collaboration with and awareness among kitchen staff is also fundamental to establish sustained change. Lastly, effective communication with workers is required to ensure the food provision changes are not only acceptable but satisfactory. In factory settings, canteen meal changes have been found to be most successful when implemented in parallel with an engaging and participatory communication campaign to promote better nutrition practices (5).

# **FAIR PRICE SHOPS**

Fair Price Shops are a more recently introduced intervention model in factory settings in Bangladesh. Based on reflections from a pilot phase, fair price shops are identified as having high potential for impact and scalability, but moderate feasibility in implementation and resource efficiency. The factory-based shops offer packaged and non-packaged foods at a lower price than regular retail shops, thereby facilitating direct sales to nutritious foods. Besides, selected foods are sold in smaller quantities, which is known to address affordability challenges as long as the quantities are considered good value for money and food safety is safeguarded. As these shops are set up on factory premises, this offers the possibility of nudging workers towards specific nutritious foods though targeted behaviour change campaigns combined with store placement and advice. All factors contribute to high potential for impact. Fair price shops are also a scalable model because the concept can be applied to different factory settings, enabling large numbers of workers to access a diverse portfolio of nutritious foods. The model also contributes to strengthening local supply chains for more nutritious foods by working with both various national suppliers. However, the model depends on support from factory management, who co-manage the Fair Price Shops and ultimately decide on the continuation of business operations. Setting up Fair Price Shops can also be constrained by costs related to finding store space and employing staff for management and distribution. In addition, market prices directly determine the in-store prices of items, and adequate and frequent maintenance and stockkeeping are necessary. These factors challenge resource efficiency and feasibility of the model, especially during times of high food price volatility.

# **IRON-FOLIC ACID SUPPLEMENTATION**

Iron-deficiency anaemia, a prevalent condition where in which someone's blood lacks adequate healthy blood cells, which is linked to symptoms of fatigue and shortness of breath, can be addressed by IFA supplementation and other dietary changes (8). Indeed, IFA tablets are easy to distribute and considered very safe supplements for human consumption, with low incidence of problematic side-effects (9). Providing IFA supplementation to female workers of reproductive age via factory clinics was assessed as an intervention model with high potential for impact, feasibility, scalability, and resource efficiency. In Bangladesh, the distribution of these is coordinated with government initiatives, making them free to workers. In a peer-reviewed publication that evaluated a previous GAIN project in Bangladesh, the impact of providing IFA in workplace contexts was found to be strongest when combined with provision of healthy lunches, as underweight and anaemia are often co-existing forms of malnutrition (5). The main challenge with IFA supplementation is ensuring that anaemic women take the supplementation for the full duration of treatment (usually 90 days), which was improved when IFA was provided in combination with information campaigns promoting their intake.

# **DEMAND MODELS ASSESSMENT**

#### **BCC CAMPAIGNS**

The BCC campaign model can include different types of materials and leverage multiple communication channels. One sub-component of the BCC model in factories is the peereducator approach, which enlists volunteers to disseminate educational materials and is discussed further below. Overall, BCC campaigns were assessed as having high scalability, feasibility, and resource efficiency but moderate to low potential for impact. This finding is concurrent with two randomised-controlled trials that assessed the impact of a nutritioneducation campaign in work settings, finding good results on knowledge improvement but inconclusive results on sustained improvements in health and diet (10,11). BCC campaigns can be designed to be low cost but still reach many workers. When messages disseminated in BCC campaigns are evidence based, designed by a specialist, and tailored to the specific community of workers, they can be more effective in changing behaviour compared with generic nutrition education materials. Placement of these materials is also important. For example, posters in canteens or retail shops can nudge workers towards better nutrition behaviours or make other interventions in the workplace more acceptable (e.g., changes to meal plans). Other examples of highly scalable and feasible BCC sub-components include digital communications and gamification (games that impart nutritional messaging) as well as a group counselling and meal planners with nutritional advice. However, as a single intervention, this model has low impact as access to nutritious foods (both availability and affordability) can remain a barrier. This finding is consistent with the literature, which shows that BCC alone is often not sufficient to shift behaviours that will translate into sustained and significant improvements in dietary patterns or health outcomes (7). Additionally, BCC campaigns are more impactful when they go beyond filling knowledge gaps and are carefully designed to encompass a set of surprising and disrupting activities in a given context (12).

# PEER EDUCATORS

The dissemination of nutrition-positive messages and other educational materials via peereducators is a highly feasible, scalable, and resource-efficient model to reach workers. This approach is a more intensive component of the BCC approach; it can have higher potential for impact as the face-to-face contact can be more engaging and memorable for workers. In this model, workers can volunteer as peer educators to receive training and go on to be agents of change within their work environment by teaching peers about good nutrition practices. Training materials for peer-educators are pre-developed and tailored to the context, which makes this a scalable intervention, as many workers can be reached with verbal messages without requiring additional resource development or time, as would be required for a group training of all workers, for example. However, as mentioned above, the potential for impact remains moderate: on the one hand, receiving messages from peers can increase acceptability, but on the other hand, messaging accuracy can be lost in translation. In factory settings, this intervention is identified as being most impactful when combined with improved canteen meals or another access intervention, such as fair price shops. Indeed, without these, nutritional changes are less accessible to workers in terms of cost and time needed to change behaviours. This strategy has been recognised as the most effective method of providing education, considering time constraints during factory working hours. There is currently no published evidence on using a peer-educator approach to improve nutrition behaviours in the workplace that the authors could find. Nonetheless, theoretical evidence would suggest that messages delivered by peers are more likely to result in behaviour change as they lean on the 'social norm' motivation factor, which makes adopting a certain health positive behaviour more likely if one perceives peers are also doings so (12).

# **COMMUNITY NUTRITION INTERVENTIONS**

BCC campaigns can be designed and implemented not only in factory premises but also in worker communities surrounding factories. Community-based outreach has been applied across many settings worldwide as part of broader health promotion and education strategies, with results depending on the context, scope, intensity of activities, and intended outcomes. Community nutrition interventions are a model recently piloted in urban areas around factories in Bangladesh to increase the knowledge and awareness of healthier diets. Based on a first phase of implementation, these activities were assessed as having high feasibility and scalability but moderate potential for impact and resource efficiency. The model trains community workers who regularly engage with workers' households and other community members who are otherwise difficult to reach. As community workers are part of the communities themselves, they are knowledgeable about challenges that specifically affect garment workers and their families and have local credibility when it comes to conveying messages on good nutrition practices. However, this model's impact is limited by the fact that although nutritious food consumption is promoted, many households may lack economic or geographic access to these foods. Due to time limitations and issues with attendance, sessions were kept short, but a tendency by facilitators to compress the information in turn made the messages more difficult to recall for participants. Community-based interventions are more resource intensive than

interventions delivered in worksites since they often cannot build on existing delivery and communication structures.

# **ENABLING ENVIRONMENT ASSESSMENT**

# **NUTRITION IMPROVEMENT COMMITTEES**

Nutrition Improvement Committees were assessed as an intervention with high potential for impact and scale, but moderate feasibility and resource efficiency. Although there is limited evidence on the effectiveness of worker-employer committees like Nutrition Improvement Committees in other settings, there is evidence that integrating workers' representation and participatory decision-making more generally may help to address barriers regarding acceptance and adoption of changes such as nutrition interventions in the workplace (13). In Bangladesh, these committees were found to be crucial to the successful implementation of menu changes, for example, as they provided the opportunity to assess feedback from workers and ensure that all changes were acceptable whilst remaining nutrition-supporting. However, committees need support from factory management in terms of time and providing a confidential space to meet, as well as skilled facilitators to lead meetings. In factory contexts, this model was found to be highly scalable as once the initial time investment has been made to set up the committee, the potential for impact of all other intervention models (such as meal changes or BCC campaigns) was much higher (6). This model was scaled to factories that were not initially using a quality improvement approach as it was found to be so important in the roll-out of the overall project.

# **RECOMMENDATIONS FOR FUTURE PROGRAMMES IN FACTORY SETTINGS**

Factory settings are unique in providing opportunities to have repeated interactions with a targeted population group in contained environments. Workforce Nutrition programmes can also help upgrade the food environment in which workers spend a substantial part of their day and thereby directly influence the accessibility of and demand for healthier diets. The intervention models in factory settings discussed here are each unique in their potential for impact, feasibility, scalability, and resource efficiency. The overall potential for impact is increased when access- and demand-focused activities are actively combined.

There are four cross-cutting considerations for future programmes in similar factory settings. Firstly, it is worthwhile to examine how nutritional improvements can be made when food provisioning is in place. Affordability for both management and workers should always be considered, as this influences feasibility, scalability, and resource efficiency. Second, factory settings often have confined food environments that can be shaped to support better nutrition by sharing information on selected foods, using 'nudge' tactics, and influencing placement and promotion of healthy foods, as was done within the Fair Price Shops. This is resource efficient and strengthens the potential for impact of access-side activities. Third, all intervention models in factory settings should be designed to align with worker schedules—both for the benefit of workers and to fit the preferences of factory management. Convenience can be ensured in different ways: operating shops on factory premises, co-creating healthier meal plans, and working with peer educators. It is key to invest in collaboration and ensure that activities can continue beyond the programmes'

support. Finally, there is substantial scope to explore and redirect public health services through business structures, such as the case of distributing IFA supplementation to female workers through factory health facilities in Bangladesh.

# **CONCLUSION**

The aim of this paper and a complementary paper on Workforce Nutrition approaches in farm settings (6) was to discuss and assess the different intervention models that have been piloted, scaled, and evaluated by GAIN to make nutritious foods more accessible and desirable in farm and factory work settings. In both contexts, intervention models that focus on improving access to nutritious foods were overall most impactful, especially when the intervention provided both geographic and economic access to these. The structured workplace context of factories is conducive to implementing high-impact access interventions (such as mid-day meal improvements), as workers have more repeated contact with the intervention model. On the other hand, demand-side intervention models were generally assessed as more scalable and resource efficient, particularly when delivered directly to workers within the factory during working hours. Overall, including both types of models, regardless of the context, is key as these work in synergy: both access and demand are important to achieve the outcome of improved diets. Whilst some intervention models may be similar across both contexts, they were not always found to be equally well suited to achieving the desired aims. Therefore, considering the workplace context, whether farms or factories, is crucial to ensuring the success of different intervention models. For organisations looking to implement a workforce nutrition programme, the insights on different intervention models provided here can provide inspiration on approaches that can be used across various contexts.

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