USE OF QUALITY IMPROVEMENT METHODS FOR BUSINESS-LED WORKFORCE NUTRITION PROGRAMMES

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ABOUT GAIN

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

In 2019, in an effort to improve the efficiency and sustainability of its programming, GAIN's Workforce Nutrition Programme (WFN) shifted away from the traditional project development and evaluation cycle towards a nimbler 'Quality Improvement' (QI) approach. Deployed by the private sector for decades, QI relies on problem identification, repeated rounds of data collection and analysis, and iterative testing and scaling up of possible solutions. WFN initiated the QI approach for projects in Bangladesh, Ghana, India, Kenya, and Mozambique in 2019, and evaluated the experience in 2021-2022. The objective of this Working Paper is to report results of that assessment. Overall, the method was demonstrated to be feasible, effective, and to have added value in industrial settings. QI's success appears to have been affected by project context, with factory settings providing the best fit for the method's iterative testing requirements. The assessment found that an early introduction of QI increased the likelihood of alignment with broader project goals, an improved outcome, and other indicators of a positive experience; there were more challenges where QI was introduced later. Findings suggest that the application of QI may have been affected by how many interventions were included in the broader project, with multi-intervention projects creating a more complex landscape of input and outcome measures, leaving no obvious entry point(s) for application of QI practices. Despite general success in applying the approach, multiple questions remain. These include how to provide incentives and quality control measures for data collection, how to provide better support to GAIN staff, and how to build QI into deliverables and contractual agreements with implementing partners. Additionally, there is a need to consider whether QI is feasible in non-industrial settings where data collection is not embedded in working practices and work processes are harder to control.

KEY MESSAGES

- QI holds potential as a private sector-friendly approach to project design that keeps time and cost investments feasible, thus increasing likelihood of ownership and sustainability after project close.
- QI was successful from the perspective of business partners and other stakeholders when introduced early in the project cycle, in factory settings, for projects that were not multi-intervention.
- Results were less positive and harder to interpret when QI was introduced late, when projects had multiple interventions, and when the implementation setting was non-industrial.
- Increasing the likelihood of conclusive outcomes across contexts and project settings requires accepting the cost of the method in terms of budget and staff hours, requiring that the method be integrated early in the project cycle, and allocating funds accordingly.

BACKGROUND AND OBJECTIVE

Since 2015, GAIN's Workforce Nutrition Programme (WFN) has collaborated with private-sector partners in the cocoa, tea, and garment industries to improve the diets of workers and their households. In industrial settings such as clothing factories, the WFN model is simple: improve upon workplace food provision by offering healthy on-site lunches or snacks, accompanied by nutrition messaging (1). In agricultural settings, where workers are generally not provided with meals, the delivery platform is less straightforward. In these contexts, WFN works with partners to design projects tailored to specific venues accessed by workers and their families (2). For example, company-sponsored school or health-services, distribution centres where farmers sell commodities to aggregators, or local markets.

Initially, WFN followed a traditional project development sequence comprising formative research, design development, implementation, and ex-post evaluation. However, as a key goal for WFN programming is incorporation by businesses over the long term, the constraints of this model have become increasingly clear. Time and cost investments must be kept feasible from the perspective of the business in question, or commitment will waiver. Projects cannot be too complex or require much external input. Additionally, rigorous impact evaluations are difficult to conduct in real-world business contexts, the results are hard for non-research audiences to interpret, and they can be perceived by the business community as excessive and unnecessary.

For these reasons, in 2019 WFN decided to pilot a new strategy that shifted away from the traditional project development cycle towards a nimbler 'Quality Improvement' (QI) approach. Originally developed in the 1950s, QI is a project design and management philosophy that engages multiple levels of an organisation, company, or agency to improve the quality of its work on an ongoing basis, with quality defined as 'the measure of how well a product or service matches a need' (3).

There are a number of methodological frameworks which can be used to implement QI, including Lean, Six Sigma, and the Model for Improvement (3). GAIN chose to use the latter because it is the best fit for addressing complex public health challenges such as malnutrition. The causal chain for these types of problems typically comprises multiple social and environmental drivers, requiring a methodological framework that invites the exploration of possible interventions from a broad range of sources and then introduces systematic, iterative testing of potential solutions.[1] The Model for Improvement takes precisely this approach, using three questions and a cyclical 'Plan, Do, Study, Act' (PDSA) testing process to pursue improvements towards a stated goal (Figure 1). The three questions focus on i) identification of said goal, ii) identification of changes that might lead to improvement in achieving that goal, and iii) associated process and outcome indicators. Ideas for changes that might lead to improvement can be sourced from best practices, identified through data analysis and/or frontline staff (3). Tests of a given change are initially piloted at small scale to a subset the target population and then assessed using the identified indicators. If improvement is identified, the change is then implemented at scale.[2]

A critical aspect of QI is the assumption that new ideas should be implemented only when there is evidence of their efficacy based on the cycle of iterative testing and scale-up (4). As such, the

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[1] Lean and Six Sigma models primarily focus on process improvement, through either achieving greater reliability or the elimination of waste, often in industrial, laboratory, or manufacturing contexts.
[2] Modifications may be made to optimise impact and maximise chances of successful scale-up.

approach aims to balance the need to act when facing an organizational challenge with the need to know quickly whether those actions are making a difference (5), making it a good choice when efficiency, simplicity, and value are high priorities in both project design and monitoring and evaluation. With respect to nutrition delivery services, QI has shown promise for improving the quality of health care in low and middle-income countries (LMICs), both with respect to participants' perceived benefits and in terms of problem identification and lessons learned (3,6).
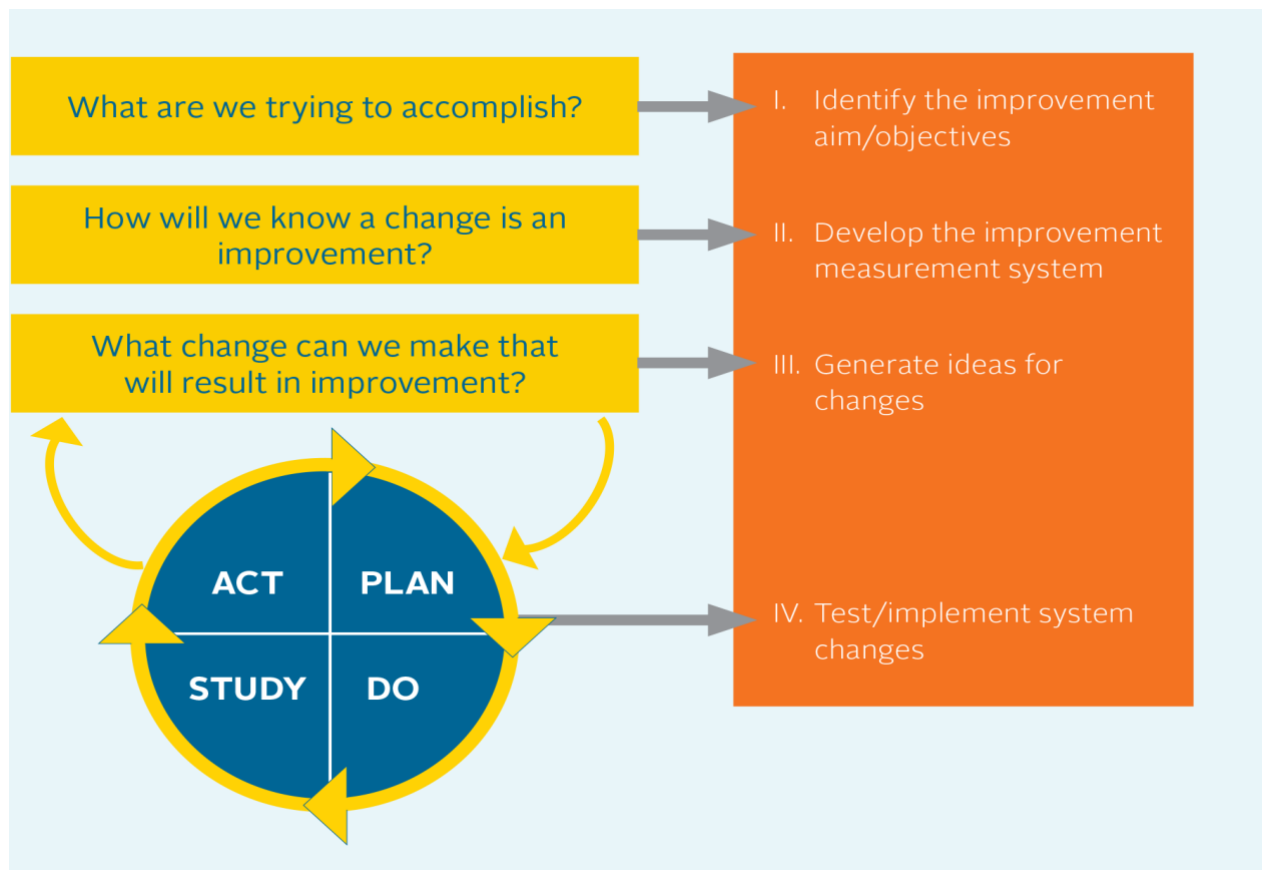

Figure 1. QI Model for Improvement (Reproduced from (6). Permission not required)

In June 2018, GAIN's WFN Programme initiated its use of QI with five virtual training workshops provided to staff and implementation partners (IPs). Led by three global QI experts, the series aimed to familiarise participants with the concept of QI and help participants identify how WFN projects could be improved using QI approaches (see Annex 1 for details). In conjunction with these training workshops, the QI experts worked with WFN staff to develop a series of implementation plans for specific WFN projects. The goal of each plan was to identify optimal ways to incorporate a QI approach into the design and implementation of the WFN project in question. Application of the QI approach for WFN was initiated in Bangladesh, Ghana, India, Kenya, and Mozambique in 2019. As per the implementation plans, activities were highly project- and setting-specific, with substantial variation in terms of ambition and scope.

In 2021, GAIN conducted an internal assessment of the QI experience within WFN, in order to identify lessons learned and explore feasibility for sustained application. The objective of this Working Paper is to report and discuss results of that assessment.

2

METHODOLOGY

RESEARCH QUESTIONS

Three lines of inquiry were used to structure GAIN's internal assessment of the QI experience:

- Were QI methods well timed and adaptable, given the broader project context?
- Were QI methods effective in identifying barriers and opportunities for improved outcomes?
- Were QI methods perceived by stakeholders as adding value?

DATA COLLECTION AND ANALYSIS

To answer these questions, an initial desk review was conducted, followed by a series of key informant interviews. The desk review considered a continuum of documents associated with WFN's adoption of QI, including design and implementation development reports, early learning documentation, and information extracted from monitoring databases. Interviews were conducted over a period of four months in 2021. Interviewees consisted of WFN project staff[3] (n=9), implementing partners (IPs) who were directly involved in the QI process[4] (n=4), and business management within each workplace setting or private-sector partners (n=5). Although there were separate questionnaires tailored to each of these groups, all questionnaires were designed around the research questions above (see Annex 2). Interviews were conducted via Zoom or in person in India, Kenya, Mozambique, Bangladesh, and GAIN's headquarters in Geneva, Switzerland. All interviews were recorded and auto-transcribed, with ethical approval granted by HML IRB Review (#923GAIN21).

SUFFICIENCY REQUIREMENTS - DEFINITION OF QI AS APPLIED IN WFN PROJECTS

As none of the WFN projects provided a setting conducive to textbook application of QI, four standard activities were identified as a practical strategy to approximate the method. Projects aimed to apply at least two of these, as follows:

- Engage leadership via sharing of information on the theory of QI and tracking QI-associated activities.
- Convene stakeholders regularly to conduct barrier analysis and discuss ideas for improvement and successes.
- Collect and analyse relevant data before and during the testing of changes.
- Introduce and test changes incrementally while tracking performance.

RESULTS

WFN PROJECTS AND QI APPLICATION

Bangladesh

In Bangladesh, QI was applied in direct support of the WFN project aim, namely **improvement of the nutritional content of meals provided to garment factory workers, while maintaining meal acceptability and cost**. **The approach was introduced relatively early in the project cycle** in two factories, a few weeks after contracts with GAIN and IPs were finalised. Per the Model for

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[3] This included the QI experts hired by GAIN to provide technical support.
[4] One IP per country setting.

Improvement, changes to the menu were introduced iteratively and were initially tested with a small sub-set of factory employees. During this early stage, feedback on each version of the menu was obtained through interviews with this sub-set. Later, as the intervention scaled up, a digital feedback screen located at dining hall exits captured and collated the wider workforce's view on acceptability (workers quickly tapped a button on an unhappy, impassive, or happy face upon exiting the canteen as a reflection on how they rated the food that day). This project included all four of the QI sufficiency requirement practices (Table 1).

Ghana

In Ghana, the broader WFN context consisted of a project to improve the nutritional status of smallholder cocoa-farming households, with training on dietary diversity and healthy foods comprising the main activity. **QI was introduced during the second, scaling-up phase of the project and focused on improving the skills of the facilitators providing this training.** This specific entry point was selected as the focus because during the pilot phase of the project, weaknesses had been identified in the facilitation and teaching style of the trainers and poor results had been recorded. QI was used to identify improvement opportunities and to coach the nutrition trainers to run more interactive sessions. The process was monitored through on-going observation and participant interviews. As with Bangladesh, this project included all four of the QI sufficiency requirement practices (Table 1).

India

In India, QI practices were introduced as part of a wider multi-intervention project aiming to improve the desirability and availability of nutritious food groups, namely fortified oil, fruits, vegetables, and eggs among tea estate workers and their families. **QI was introduced approximately 3 to 4 months after rollout, with the specific objective of increasing consumption of eggs by children attending estate-based day-care centres.** With respect to QI sufficiency requirements, this project included engagement of leadership and regular stakeholder meetings but did not include routine data collection or incremental testing of changes (Table 1).

Mozambique

The overall aim of the WFN project **in Mozambique was to improve the nutritional content of meals provided to workers in factories with existing canteens, while maintaining meal acceptability and cost.** As in Bangladesh**,** QI was applied as a strategy to contribute to this overall aim, with the main activity being the establishment of Nutrition Committees. Comprised of GAIN staff, IPs, and factory staff, Committee goals were to explore opportunities for improvement, track canteens' improvement approaches, and monitor data. **Although QI was introduced at rollout in Mozambique, implementation was interrupted by COVID, leading to attrition of all participating work sites but one.** With respect to sufficiency requirements as practiced by this remaining company, leadership was engaged and changes were introduced and tested incrementally, however data were not collected routinely nor were stakeholder meetings convened regularly (Table 1).

Kenya

In Kenya, **QI was introduced in the very late stages** of a multi-intervention project designed to increase consumption of healthier foods by smallholder tea farmers and their families. One of the interventions had been the distribution of attractive food labels to a cohort of kiosk vendors in local markets. These labels were designed to draw potential buyers' attention to the healthier food items (primarily produce) that were for sale in the kiosks, including describing their nutritional benefits. **A significantly modified QI approach was used to try and gather data on the efficacy of these labels in**

generating increased sales of healthier food items. A new geographical area was selected where no kiosk vendors had previously had access to the labels, and restock amounts were used as a proxy for sales. For this project, QI practices were limited to data collection and analysis (Table 1).

Table 1. WFN project settings, objectives of QI use, reach by end of project, and QI practices used

Project setting	Project specific use of QI (as identified at initiation)	Number of workers to be reached (target)	QI practices used (sufficiency requirements)
Bangladesh: Garment factory workers, factory canteens	Improving the nutrient quality and acceptability of mid-day meals to workers in a cost-controlled manner	11,265	✓ Leadership engaged ✓ Stakeholders convened regularly ✓ Multiple rounds of data collection and analysis conducted ✓ Changes introduced and tested incrementally, combined with tracking performance
Ghana: Cocoa farmers, community-based	Improving the quality of facilitation during the nutrition training delivery to farmers	2,261	✓ Leadership engaged ✓ Stakeholders convened regularly ✓ Multiple rounds of data collection and analysis conducted ✓ Changes introduced and tested incrementally, combined with tracking performance
India: Tea workers and their families living on estates, community-based	Increasing egg consumption in pre-school centres on tea estates	4,751	✓ Leadership engaged ✓ Stakeholders convened regularly ✗ Multiple rounds of data collection and analysis conducted ✗ Changes introduced and tested incrementally, combined with tracking performance
Mozambique: Workers in a fish processing worksite, factory canteen	Improving the nutrient quality and acceptability of meals and snacks to workers	501	✓ Leadership engaged ✗ Stakeholders convened regularly ✗ Multiple rounds of data collection and analysis conducted ✓ Changes introduced and tested incrementally, combined with tracking performance
Kenya: Smallholder tea farmers and their families, market-based	Testing the use of food tags to promote sales of nutritious food items by kiosk vendors in local markets	23,601	✓ Leadership engaged ✗ Stakeholders convened regularly ✗ Multiple rounds of data collection and analysis conducted ✗ Changes introduced and tested incrementally, combined with tracking performance

RESEARCH QUESTION 1: WERE QI METHODS WELL TIMED AND ADAPTABLE, GIVEN THE BROADER PROJECT CONTEXT?

Although QI was introduced after the inception phase of all the WFN projects, there was substantial variation in just *how* late in the project cycle the practices were introduced, with consequent implications for adaptability to the broader project context.

In Ghana, the QI introduction strategy leveraged information that had been generated during the pilot phase regarding one of the project's interventions (nutrition training for cocoa farmers). QI approaches were used to improve this existing intervention without disrupting the pre-determined workplan and timeline. As such, although it was introduced after the design and pilot stages, QI appears to have been adaptable in the Ghana WFN context. Notably, interviews with IPs indicate that it could have been used for all phases for even greater benefit, had it been introduced earlier in the project cycle as '*it would have helped us to ensure that all farmers who benefited within the pilot phase would have been on the same level as others [in terms of] the knowledge that was disseminated to them.*'

In Kenya, because QI was introduced at a very late stage, there was less of an obvious entry point within the pre-existing, pre-approved, project activities. Consequently, the decision was taken to do a one-off QI 'test' of efficacy by repeating the intervention providing produce labels for a new group of kiosk sellers, but this time using QI to track impact. (As above, because the kiosk-sellers had come from a specific area, it was possible to repeat the activity in an area that had not previously been targeted.) In this context, QI was perceived as a stand-alone activity implemented peripherally from other project operations, rather than as an intrinsic aspect of the project cycle. Similarly, in India, QI was initiated mid-project and with an objective (increase egg consumption at estate-based preschools) that was seen as distinct from the original project design. Consequently, adaptability was hamstrung in these countries by extremely limited time and budget due to late introduction and weak links with overall project objectives and monitoring frameworks.

In contrast, in Mozambique, the QI approach was introduced at rollout, but after the IPs implementation plan, and was seen as part and parcel of the broader project, which, importantly, aligned with the company's longer-term intentions. Consequently, it was felt that participating in the QI committee added momentum and accountability to an existing goal to improve workers' dietary intake without incurring additional costs. QI also created a structure within which to systematically follow changes that were gradually introduced (Box 1). As such, QI appears to have been highly adaptable in the Mozambique WFN context.

BOX 1. EXAMPLE OF A HIGHLY ADAPTABLE QI INTERVENTION, INTRODUCED AT PROJECT ROLLOUT

Mozambique Business Partner (Factory Manager): 'from the beginning…I'd say straight out the gate. I mean the project was basically, this is what you currently do at [the implementing factory], and this is how we think you can up your game and improve… these are your different options for ways to do it, that makes sense to you as a business… I would say it was pretty relevant. And I think again it was something we were already doing, and it just helped us strengthen what we were doing.'

In Bangladesh, QI was also initiated early in the project cycle and used the broader project aim as its entry point. Consequently, it was well-adapted to the main WFN project overall. However, there were initial challenges in Bangladesh regarding gaining the support of factory management for QI, namely because it was introduced as a project component only after the contract between GAIN and the garment factories were signed (albeit still prior to rollout). As a result, GAIN programme staff invested substantial time and energy in persuading the two participating factories to sign up for the more extended period of menu introduction and measurement required for QI. This was achieved but was reported by GAIN staff to have been challenging. Despite this limitation in timing, QI methods were found to be particularly well suited to garment factory settings where a similar approach to monitoring goals is used in other business practices. This meant that once participating factories were persuaded to use a QI approach, they were engaged in the monitoring process and valued the data-driven approach of this method.

RESEARCH QUESTION 2: WERE QI METHODS EFFECTIVE IN IDENTIFYING BARRIERS AND OPPORTUNITIES FOR IMPROVED OUTCOMES?

For multiple WFN projects, different interventions were implemented simultaneously over a short period of time, and most projects involved multiple partners, each accountable to different sponsors who had varying levels of belief in the potential of particular interventions. As a result, in most cases, input measures (e.g., how many people attended a training session or received promotional booklets) were the only data required by the project to substantiate investment of money and personnel, except in Bangladesh and Mozambique. This left little incentive to prioritise collection of data for QI that had the potential to demonstrate what was working and what was not. These circumstances complicated QI efforts to establish plausible attribution, leading in some countries to a wide mix of opinions regarding effectiveness of the approach with respect to an explicit improved outcome.

For example, in Ghana, where QI aimed to improve the skills of facilitators providing training on healthy foods to cocoa farmers, key performance indicators of facilitation were tracked with the intention of identifying gaps (i.e., barriers). Regular interviews with farmers attending the training courses were also conducted. 'Tremendous results' were reported by one key informant due to these activities; others spoke extensively about how QI meetings had encouraged conversations about barriers to improving communication and how these could be overcome.

However, not all interviewees from the Ghana project shared the opinion that QI had led to 'tremendous results'. One informant reported that the rapid assessment had helped identify gaps but

also stated that identification of opportunities to improve skills had not occurred. Another felt the limitation of QI's applications meant its impact was negligible on the wider project. As a result, it is difficult to draw a clear conclusion regarding QI's impact on facilitator performance and onward impact on consumption of targeted nutritious foods among trainees, per se (Figure 2).
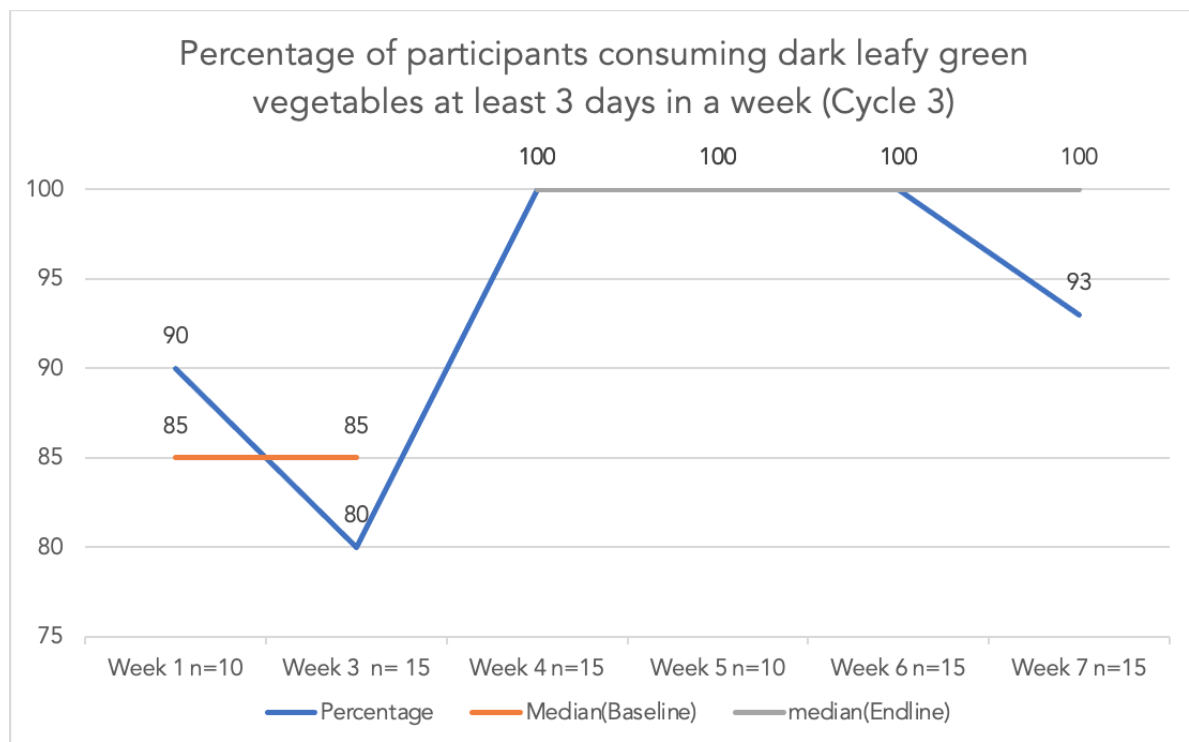

Figure 2. Chart showing the percentage of participants who reported consumption of dark leafy vegetables at least three times a week in cycle 3 of the training period in Ghana. Although the data points are insufficient to draw conclusions, the trend appeared positive as a result of the trainings. (Source: GAIN QI monitoring data, October- December 2029)

In India, where QI aimed to improve children's egg consumption, interviewees' perceptions of effectiveness were similarly mixed. QI was seen by one informant as having been successful in identifying opportunities for improvement across the broader project, namely the need to improve household access to fortified oils. However, another interviewee stated that QI had *not* contributed to any new revelations about potential opportunities for improvement, although it was noted that several barriers had come to light as part of the QI process, including issues of egg affordability and prohibitive cultural taboos. A third informant commented that feedback from partners indicated that the original QI aim (to focus on increasing egg, rather than protein, consumption) had been too narrow, noting the cost of eggs was too difficult to overcome.

In Kenya, the project sought to address constraints posed by a late start by using QI narrowly, as a strategy to gather information on a single intervention (food labels for kiosk sellers) in a new location with a baseline period built into the design, and with data collection for an outcome indicator (restock amounts of fruits and vegetables, as a proxy for sales) stipulated. However, time pressures and challenges of data collection led to inconclusive results. It was difficult to incentivise the kiosk vendors to collect the data, and estimates had to be made for personal consumption and wastage. Moreover, any changes in re-stocking amounts could not be attributed to the food labels alone as consumers

were also potentially exposed to other interventions initiated in the wider project (e.g., leaflets, posters, cooking demonstrations).

However, key informants reported that the QI intervention in Kenya did help expose barriers to trying to measure the impact of this type of initiative. Namely: insufficient data points, the unavailability of food types due to seasonality, a failure to measure food wastage and the movement of kiosk sellers to different locations (lost to the study). Additionally, the QI intervention appears to have generated opportunities for vendors in that it raised awareness regarding the market and health potential of fruits and vegetables and strengthened their capacity for record-keeping.

In Mozambique, where QI was introduced at the design phase to improve the nutritional content and acceptability of workers' meals, application of the methodology appears to have been effective in generating an improved outcome (Box 2). Factory management credited the QI process with increasing staff engagement and facilitating incremental changes that eventually led to creative solutions. For example, at project close, a factory-based kitchen garden had been relocated and greater effort was being invested into increasing its production capacity. In addition, a portion of the factory's product – high-protein dried fish - was being set aside for staff lunches.

BOX 2. QI CONTRIBUTED TO AN IMPROVED OUTCOME IN MOZAMBIQUE

Mozambique Business Partner (Factory Manager): 'We have no cold chain storage to speak of and around 40-degree heat, and yet we're still trying to feed everyone a relatively nutritious meal a day. How are we going to do this? …. That's why everyone suddenly became really into the garden because it's like 'wow, you've got the small little garden, let's make it bigger: let's spend money on getting some seeds, let's spend money on getting some tools, let's move the garden to a better spot, let's see how much we can produce ourselves that can go into the garden, that can go towards the kitchen.'…. you're literally producing a highly nutritious fish …. So what that [realization] allowed us to do is we started to say "Okay, one of the easiest ways for us to improve the meals, is to say…a certain amount from the [fish] harvest is kept aside [4 to 8 times monthly]. for the kitchen and then that fish is prepared for everyone for the meal that day."

In Bangladesh, application of QI was extensive relative to the other projects. Initially, only ten workers were selected to try out the modified lunches, with feedback obtained through interviews. Based on workers' responses, adjustments were made to the taste, consistency, and/or portion size, and the meal was tested again (Figure 3). Introduction of the nutritionally improved menus on a small scale also enabled the close monitoring of cost increases and course correction, if needed, before scale-up (Figure 4).

| Do you like | | Which foods are better, please explain. | | | | What foods did not taste good, please explain. | | | | What makes this new meal better |
Yes	No	Egg	Mixed Vegetables	Dal	Green Chili & Lemon	Egg	Mixed Vegetables	Dal	Green Chili & Lemon	than the food you're currently serving?
✔		Egg was good	Vegetables was good. Amount of spice is okay.	Dal was slightly thicken	Always served	Excessive oil				Today's food is better
✔		Did not eat egg curry	Vegetable was okay, amount of all ingredients was okay	Dal was good	Always served					Today's vegetables was okay
✔		Egg curry was not good	Vegetable was okay, amount of all ingredients was okay	Did not eat.	Always served	Less salt and tasteless				Vegetable was okay and egg curry was not good
✔		Egg curry was taste bad	Vegetable was okay, amount of all ingredients was okay	Dal was good	Always served					Same as before, egg curry was not good

Figure 3. Feedback sheet from rapid qualitative survey among group of workers testing the new meal in Bangladesh reviewed during QI meetings to discuss improvements (Source: GAIN QI monitoring data from a participating WFN factory)

During the scale-up process, a potential barrier was identified by senior management: the possibility of discontent spreading among employees as a result of the changes in lunch menus. The root concern was that this discontent could have a negative impact on productivity. The opportunity to try out modifications to a set meal, initially on just a few workers, increased senior managers' confidence to make any changes. Obtaining this regular feedback on meals was perceived by senior managers as a general 'pulse checking' of overarching worker satisfaction and thus valued beyond its nutritional benefits to workers.
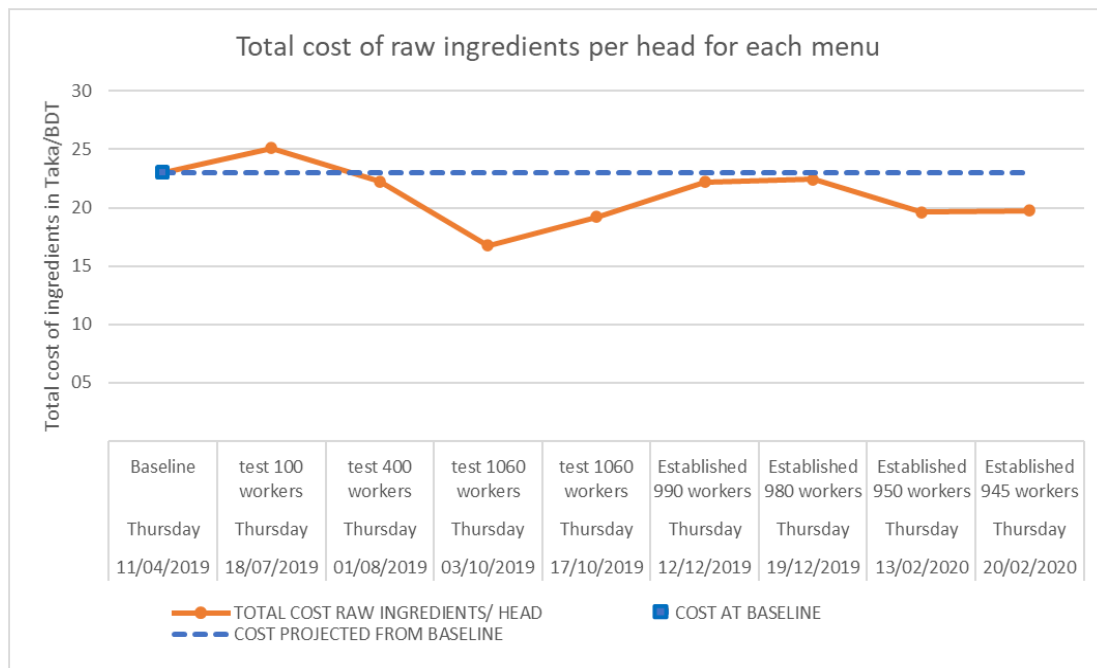
Figure 4. Run chart to monitor the cost of menu improvements from testing to scaling in participating factory, April 2019 – February 2020. Conversion rate for time period: 1 Bangladeshi Taka equals 0.012 USD. (Source: GAIN QI monitoring data from a participating WFN factory)

An additional barrier was identified at the outset of the project in terms of workers, who were hesitant to provide opinions on the meals as they feared reprisals if they gave a negative response. Once assurances had been given, staff were more forthcoming, and managers saw the wider benefits of engaging representatives of the workforce in decision-making. Overall, application of QI practices within this project appears to have been effective in generating an improved outcome (Box 3). Moreover, in Bangladesh QI committee meetings were held on a regular basis, with all stakeholders in attendance: implementing partners, a factory nurse, the catering manager, an HR representative, a worker representative, and GAIN partners. At these regular meetings, quantitative data and qualitative feedback were reviewed, and they provided the opportunity to quickly identify problems and make problem-solving decisions immediately, which eventually became of interest to factories that were not initially going to use QI methods.

> **BOX 3. QI CONTRIBUTED TO AN IMPROVED OUTCOME IN BANGLADESH**
>
> Bangladesh IP: 'QI has helped us involve the general employee with the process, share their feedback, share their comments'
>
> Bangladesh IP: '… the process of QI implementation has helped us to find that barrier, has helped to find the mistake [in food preparation for example, identify bottlenecks]. Because it's food, and it's a sensitive issue and we need to be more conscious [to not upset workers]'
>
> Bangladesh Business Partner (Factory Manager): 'It was the first time [that] GAIN [interviewed] ten workers, and [asked them] what is the food, tasted food, food quantity measures [to provide feedback on the first test meal]. So based on this data…they shared with us, after that, we also asked the vendor to get a coordination meeting with our management involving HR people… So actually, it was really nice process.'

RESEARCH QUESTION 3: WERE QI METHODS PERCEIVED BY STAKEHOLDERS AS ADDING VALUE?

QI was seen as having increased ownership and credibility for most of the WFN projects. Additionally, the iterative data-collection aspects of QI were perceived as adding value in the majority of project settings. This process was described repeatedly as an effective and novel strategy (Box 4).

> **BOX 4. ADDED VALUE OF QI: STRONG STAKEHOLDER ENGAGEMENT AND ITERATIVE DATA COLLECTION**
>
> India GAIN programme staff (project manager): 'It's a new skill. I think, with the master trainers as well, so I could see many of the master trainers really getting excited about, 'okay, this is how it is' and I never thought of this issue as this way.'
>
> Kenya GAIN M&E consultant: 'The data that we get we got I think was an eye opener.'
>
> Ghana business partner: 'The biggest advantage was really the ownership and starting the conversation and making trainers feel part of the process rather than telling them what to do…QI helps us to know before-time the level of the farmers in things which we were going to disseminate to them. Then based on that we can provide tailor-made training, based on what they need, not what we think of as they need.'

The incremental aspect of QI was also cited by multiple interviewees as having added value to the process across multiple dimensions, including by keeping projects on a steady, if slow, track towards progress, by reducing anxiety with respect to the ultimate goal, which at times seemed out of reach, and by contributing to potential sustainability after project close (Box 5).

> ## BOX 5. ADDED VALUE OF QI: EMPHASIS ON INCREMENTAL PROGRESS
>
> Mozambique Business Partner (Factory Manager): 'I think that's definitely an added value…that you're constantly moving towards a better way of doing things. Even if it's incremental, even if it's two steps forward, one back, there's still progression in a positive direction, and I think that's really important….it didn't feel like we were being forced into something that we were not capable of delivering…. I think that is the kind of approach that a company like us really needs because we're in a really difficult context, very challenging.'
>
> Kenya GAIN Consultant: 'I think [QI] is a very great opportunity for us to test interventions on an incremental basis and it's also cost effective … I think it will help us upscale best and sustainable interventions that can be part of the project exit strategy.'

Although these positive reactions were common across interviews, the degree of enthusiasm depended on circumstances. First and foremost, late introduction inarguably reduced QI's perceived value for key informants. Inadequate implementation windows, budget, and familiarity with the method were all cited as challenges. Second, perspectives on QI's added value differed by stakeholder, with GAIN country staff particularly affected by late introduction and related issues of inadequate time, training, and budget (Box 6).

> ## BOX 6. ADDED VALUE WAS DECREASED FOR GAIN PROJECT STAFF DUE TO DELAYED INTRODUCTION AND RELATED ISSUES
>
> Ghana GAIN staff: '[QI's] application in just a small part of the Ghana programme probably did not add value relative to the effort involved, particularly in gathering data.'
>
> Kenya GAIN staff: 'If QI was integrated at the start of implementation, or even at the design stage the added value would have been greater as all stakeholders could prepare for it and even set budget aside….I guess we needed more time to learn on the QI approach and to be able to plan it well, because mostly we felt ourself deficient of what's in there to be done. – with the QI, I can't quite remember any learnings that we would implement on a full scale and probably because it was because of the timing and how it all came to evolve…. it was kind of an additional resource, like an additional task that you are supposed to complete along the other competing project implementation activities.'

In contrast to country staff, GAIN's WFN leadership were fully engaged in utilizing QI methodology. In most instances, this commitment was derived from a genuine organizational need to strike a balance between keeping time and cost investments feasible for WFN's private-sector partners, while also tracking project outcomes for WFN's internal validation and evolution. However, QI was perceived as requiring a higher degree of involvement in regular monitoring of specific project outcomes compared to traditional implementation methods. For example, in the Bangladesh setting, although the data-driven approach was eventually highly valued by business partners, significant GAIN staff time had to

be invested in setting up responsive monitoring practices to create charts and build capacity among implementing partners on how to use these tools.

With respect to IPs, QI was not seen as adding value in India, Kenya, and Mozambique. Reasons for this include the fact that, in these countries, IPs had often agreed on set, contracted deliverables and timelines prior to requests to incorporate a QI approach. When requested to incorporate QI in the implementation process, the additional demands in terms of training staff, changing implementation methods, or altered timelines often meant clashing priorities between the implementation process to reach overarching project objectives and specific QI objectives. An important exception was Ghana, where the IP embraced QI due to its extensive prior experience with participatory approaches and learning.

Business partners, for the most part, readily accepted and liked QI. Interviewees from this stakeholder group felt the approach's 'pivot capacity' aligned well with business thinking. For example, in Bangladesh and Mozambique, factory managers appreciated the incremental and iterative aspects of QI, which they saw as mitigating potential disruptions in productivity. In Ghana, one of WFN's cocoa industry partners stated that his company was already expanding application of QI in several other programmes (Box 7).

BOX 7. BUSINESS PARTNERS PERCEIVED THE ADDED VALUE OF QI TO BE HIGH

Ghana cocoa industry representative: 'The added value, for me, is mainly the improvement in the delivery of the trainings which we saw to be of high concern in the prototype phase…for us in [the company], we have already endorsed it and …we have scaled it to the rest of our programmes so I would encourage… other teams working on reaching out to farmers with sustainable initiatives also consider introducing QI models within their development or implementation framework.'

Bangladesh factory manager: 'So, I think this process [is] very, very relevant and important to ensuring standard nutrition level. And it will, it will help to actually to support and to inform the management. Because if the workers not healthy, they cannot deliver their work, you know…. So we need to make and ensure healthiness, first. Then we will get effort from them.'

CONCLUSION

Based on the findings above, the following broad conclusions can be drawn regarding the assessment's three research questions:

- **Were QI methods well timed and adaptable, given the broader project context?**
  Earlier introduction of QI increased the likelihood of alignment with broader project goals. This was clear in Bangladesh and Mozambique, where QI was introduced at rollout and the method was well-integrated with overall project goals. In Kenya and India, QI practices were introduced mid-project and were also seen as time-consuming add-ons. In Ghana, the situation was more nuanced, as QI was introduced in the project's second phase, which proved early enough that it was incorporated without disrupting the greater workplan and helped address some failures in the

initial phase.

- **Were QI methods effective in identifying barriers and opportunities for improved outcomes?** In Bangladesh and Mozambique, where QI was introduced in a timely manner, the method was also seen as having contributed to an improved outcome. For projects where the method was introduced late, results were less clear, with informants reporting a wide mix of experiences regarding effectiveness of the approach. Notably, for these more ambiguous cases, multiple informants commented on how, even though it was impossible to attribute an explicit improved outcome to QI practices, the method had inarguably assisted in identifying barriers and (sometimes) opportunities that led to a better understanding of how to pursue a given aim in the future. This experience was the case for informants in Ghana, Kenya, and India.

- **Were QI methods perceived by stakeholders as adding value?**
  In all countries, multiple informants reported that QI contributed to increased project ownership and credibility. The process of incremental data collection and the iterative testing aspect were also cited as advantages. However, in projects where QI was introduced late, these positives appear to have been outweighed for GAIN programme staff and most IPs by challenges related to inadequate time, training, and budget.

It is important to note that, given the substantial variation between projects in terms of scope, goal, and target population, these 'overall' conclusions regarding WFN's experience with QI should be interpreted with caution. In particular, three contextual aspects appear to have had a modifying effect.

First, in addition to timing, QI's success also appears to have been affected by implementation setting, with the community-based projects in Ghana, Kenya, and India posing a greater challenge than the factory-based initiatives in Mozambique and Bangladesh. This is likely due to the fact that the scale of operations and predictable routines in factory contexts are more conducive to frequent data collection and analysis than community-based settings, where the lack of pre-existing structure makes it challenging to systematically collect and analyse data.

Second, the number of interventions included in the broader project may have had an impact. In Bangladesh and Mozambique, there was only one primary intervention associated with the broader project and limited change options. In both cases, QI was explicitly pinned to this intervention and its objective, making it easy for participants to see how the QI work was serving the project's theory of change. In Kenya and India, the main WFN project consisted of multiple interventions, creating a more complex landscape of input and outcome measures and making it difficult to attribute improvements to any single or sub-set of interventions.

Third, there was some – albeit less than expected – correlation between projects that applied most or all of the designated QI practices and positive findings. Bangladesh and Kenya are the clearest cases: the former used all four practices and recorded a positive experience across all three of the research topics, the latter used only one practice and, predictably, recorded a less impactful result. However, there were also some countries where the pattern was less clear. The most marked example is Ghana, which applied all four practices, used a community-based setting, introduced QI after rollout, and recorded very mixed results. Mozambique's experience is also difficult to interpret; the project setting was factory-based, and a positive experience was reported. However only two of the four practices

were applied. (The impact of COVID surely also played a role in Mozambique. In addition to reducing the number of participating factories, the pandemic presumably affected the ability of the single participating factory's Nutrition Committee to gather data and meet on a regular basis, solicit employee feedback, and convene employees for factory-provided meals.)

Moreover, even in Bangladesh, GAIN staff faced challenges with the time and capacity required to collect, process, and review high volumes of monitoring data to support decision-making in QI committee meetings. It is unclear whether the approach would be replicable with lighter-touch technical support from within GAIN, QI expert consultants, and Implementing Partners.

As such, should GAIN continue to shift away from the traditional programme development cycle towards QI? On the one hand, there is now proof that the method is feasible, effective, and adds value when introduced early in the project cycle, in industrial settings. On the other hand, multiple challenges are clear, including the need for incentives and quality-control measures, particularly with regard to data collection, even in factory contexts, the need to provide better support to GAIN staff, and the need to build QI into deliverables and contractual agreements with IPs. Additionally, there is a need to explore strategies to make QI more feasible in non-industrial settings, including assessing whether the method's returns on investment are high enough to justify application in these contexts, which, as mentioned at the beginning of this report, are less straightforward for the WFN model in its entirety.

Meeting these challenges would require accepting the cost of the method in terms of budget and staff hours, allocating funds accordingly, and introducing the method early in the project cycle. With these fundamentals in place, QI should have a higher likelihood of generating more conclusive outcomes across a range of contexts and project settings and of eventually achieving its full potential for some, if not all, WFN projects.

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ANNEX 1: QI TRAINING WORKSHOP CONTENT

In 2018, WFN initiated its use of QI with a series of training workshops provided to GAIN staff and the programme's implementation partners (IPs) at both central and country levels. Led by a team of three global QI experts, the series aimed to both familiarise participants with the concept of QI and help GAIN staff identify areas for improvement using QI approaches. QI theory, its fundamental components, and practical tools were all covered, as follows:

Theory

- Demings's System of Profound Knowledge (7), including understanding variation in performance
- The Psychology of Change

Fundamental components of the methodology

- The need to agree upon a clear, measurable aim with related indicators
- The need to conduct problem analysis to identify barriers to improvement and potential solutions
- The need to establish interdisciplinary teams whose members are invested and available to coordinate the improvement work locally
- The need to facilitate and sustain engagement of leadership

Tools for action

Name of Tool	Attributes of Tool
Driver diagram	Facilitates exploration of underlying drivers that are likely to be contributing to system performance. Making changes to drivers should contribute to achieving the improvement aim
Root cause analysis	Explores the underlying causes of specific problems in a granular enough way to facilitate the development of change ideas
Process mapping	Enables visualization of the current process and its failures which stimulates new change ideas for achieving the improvement aim
Pareto chart	Focuses attention on the most important contributors to a problem so resources can be more efficiently used to address the problem
Run chart	Displays data over time in order to understand variations within a process, detect improvements in the process being changed and monitor sustainability of process improvements
Dashboard	Provides clear and concise visualization of key measures that inform the organization of progress towards the improvement aim and any unintended consequences (both positive and negative) that the change efforts might be having on the system

Follow-up webinars that included sharing of progress and a continued discussion of QI theoretical approaches continued until November 2019.

ANNEX 2 : KEY INFORMANT INTERVIEW GUIDES ON USE OF QUALITY IMPROVEMENT IN WORKFORCE NUTRITION (WFN) PROJECTS

Protocol for the interviewer:

- Please ensure that the interview is being recorded. It will be set up to do so automatically, but if it doesn't please make sure you record it as the host and upload the recording on the relevant Sharepoint folder.
- Written consent to record the call will have already been obtained by email. Ask for consent before recording the interview.
- The interviews should take no more than 45 minutes for GAIN staff and implementing partners, and 30 mins for business partners.
- Always ensure recorded verbal informed consent is obtained before proceeding with the interview questions.
- Questions outlined in bold should be read out as stated and used as a guiding structure for the interview. The sub- questions can be used as probes to seek more in-depth answers to the main and don't all need to be enunciated if the information has already been shared by the participant.
- The notetaker in these interviews is not required to carry out verbatim transcription of the interviewee's responses, however we do ask that each interviewer review and share the notes in a separate document as well as enter these into the learnings Matrix in the Sharepoint Folder.

CONSENT FORM

Principal Investigator: Christina Nyhus Dhillon, Global Alliance for Improved Nutrition

Purpose of the research:

- The purpose of this interview is to assess the extent to which a Quality Improvement approach in Workforce Nutrition programmes was successfully integrated into different project contexts, effective in identifying barriers and opportunities, and presented a value added to the project in each country.
- To this effect a desk review of programmatic documents and monitoring databases will be carried out, as well as interviews with key project partners in each country including GAIN project managers, implementing partners, and private sector stakeholders.
- We seek to interview key Workforce Nutrition project partners in India, Kenya, Ghana, Bangladesh, and Mozambique to add insights to the desk review and better understand how the use of a Quality Improvement approach was perceived by different stakeholders, draw lessons learned and best practices for future projects.
- The data generated through these interviews will be transcribed, analysed, and securely stored by The Global Alliance for Improved Nutrition. The findings generated through this assessment will be published in a non-attributed form and identifying factors will be removed unless explicitly request otherwise and under agreement of both parties (GAIN and the interviewee).

Consent for participation in Interview:
- I (*interviewee name*) voluntarily agree to participate in this assessment led by the Global Alliance for Improved Nutrition.
- I understand that even if I agree to participate in this interview I may withdraw at any time or refuse to answer any question.
- I understand the nature and purpose of the study and have had an opportunity to ask any questions about the study.
- I consent to my interview being recorded.
- I understand that all information provided through this interview will be treated confidentially by the Global Alliance for Improved Nutrition. At the point of transcription and analysis identifiable factors will be removed to ensure that the findings are not attributable to individual participants.
- I understand that my data will be securely stored by the Global Alliance for Improved Nutrition.
- I understand that I can withdraw permission to use data from this interview within two weeks after the interview, in which case the material will be deleted.
- I understand that I am free to contact any of the people involved in this assessment to seek further clarification and information.

If you consent to the above, your expression of consent will be video-recorded via the Zoom platform before starting with this interview.

If you have any questions or concerns at any point in your engagement with this research project please reach out to Christina Nyhus Dhillon (contact details redacted for publication) .

INTERVIEW GUIDE FOR GAIN PROJECT STAFF

1. **Tell me what your understanding of Quality Improvement (QI) is.**
   a. Where does your knowledge on QI come from? Trainings/ personal research/ other?
   b. How many gain-facilitated QI trainings did you attend (conducted by either Ankur, Nana, or Cathy)? Do you recall how many hours of training you received in total?
2. **Did you use a QI approach in the WFN project that you were involved in?**
IF YES, PROCEED TO NEXT SECTION, IF NOT ASK QUESTION 2.a.
   a. Why didn't you use a QI approach in your project?
   b. What do you think were the main barriers in adopting this approach?
   c. Would you like to try using a QI approach in future projects? If so why, and what would support you in doing so?
3. **How did you use QI in your project?**
   a. At what stage was QI integrated or adopted in your project?
   b. In retrospect, would it have made sense to integrate this approach during a different project stage (e.g. design)? What were the barriers to introducing it at this stage? What would have been the advantages had you been able to overcome these barriers?
   c. What were the project aims and how did QI support you in reaching those aims?
   d. What were some of the improvement approaches used (e.g. QI committees or teams, analysing baseline data to understand current performance and opportunities for improvement, collection of data over time to help decide what to do next, piloting ideas on a small scale and adapting them, if necessary, before introducing on a large-scale, etc.)?
   e. What resources (both time, personnel, and financial resources) were available to you to integrate QI in your project? Where these sufficient?
   f. How often did you hold QI meetings with project stakeholders? Who attended those meetings (workers, management, GAIN, HR department)?
   g. Was the data collected through improvement processes sufficient (or too much) evidence to inform you about where the best opportunities for improvement lay, to test change ideas on a small scale and identify those showing the most potential for scale up and manage private sector expectations?
4. **How relevant was a QI approach for your project setting?**
   a. What kind of private sector process improvement approaches were already in place and used, if any?
   b. FOR BANGLADESH ONLY: Did you notice any difference in the performance of the project in factories where QI was used versus where we didn't use a QI approach? Please elaborate.
5. **Do you think the QI approach supported you in effectively identifying barriers and potential opportunities for impact?**
   a. How was data used to identify barriers and potential opportunities for impact?
   b. Were the decision makers (e.g implementing partners, GAIN project managers) empowered enough to make changes to the original implementation plan (ie course correct)? To what extent was capacity built, both within your team and among partners, to run and adapt the programme?
6. **What were the limitations or barriers of adopting a QI approach in your project?**
   a. How do you think the limitations were perceived by other stakeholders? Implementing partners/ business management/ others.
7. **What was the added value of including a QI approach in your project?**
   a. How do you think this value was perceived by other stakeholders? Implementing partners/ business management/ others.
8. **Would you use a QI approach in future projects?**
   a. If no, why?
   b. If yes, why? How would you use QI differently or similarly in future projects?
9. **What are some of the best practices in quality improvement that you learned over the course of this project that you can share with us?**

10. **Is there anything else you would like to share with us? Any feedback on the QI approach that is important to you?**

Name:	Organisation:
Position:	Date:
Interview conducted by:	

INTERVIEW GUIDE FOR IMPLEMENTING PARTNERS

1. **How were you involved in the GAIN Workforce Nutrition project?**
    a. What was your role in this project?
2. **Tell me what your understanding of Quality Improvement (QI) is?**

IF THE RESPONDENT HAS NOT UNDERSTOOD WHAT QI IS SHARE A DEFINTITION: What we define as QI is a systematic approach that uses specific techniques to improve quality. This can be done through testing planned changes on very small scale, collecting information to ensure the changes are helping achieve key aims of the project before scaling up successful change ideas.

    a. Does the above definition make sense to you and is this something you recognise being a part of the project you supported? Why or why not?
    b. Where does your knowledge on QI come from? Trainings/ personal research/ other.
    c. If you attended or later watched GAIN-initiated trainings, how many QI trainings did you attend?
3. **How was the QI approach used in this project?**
    a. At what stage was QI integrated or adopted in the project?
    b. In retrospect, would it have made sense to integrate this approach during a different project stage (e.g. design)? What were the barriers to introducing it at this stage? What would have been the advantages had you been able to overcome these barriers?
    c. What resources (both time, personnel, and financial resources) were available to you to integrate a QI approach in the project?
    d. What were the project aims and how did QI support you in reaching those aims?
    e. How often did you hold QI meetings with project stakeholders? Who attended those meetings (workers, management, GAIN, HR department)?
4. **How relevant do you think the QI approach was in this project setting?**
    a. What kind of process improvement approaches were already in place and used by private sector partners engaged in helping secure improvements under this project , if any?
    b. How efficient do you think the QI approach was during implementation in this setting?
    c. FOR BANGLADESH ONLY: Did you notice any difference in the performance of the project in factories where QI was used versus where we didn't use a QI approach? Please elaborate.
5. **Do you think the QI approach supported the effective identification of barriers and potential opportunities for impact?**
    a. How was data used to identify such barriers or opportunities? Was the data collected through improvement processes sufficient (or too much) evidence to inform you about where the best opportunities for improvement lay, to test change ideas on a small scale and identify those showing potential for scale up and manage private sector expectations?
    b. What was the process to select and test change ideas? How were these decisions made and adopted?
6. **What were the limitations or barriers of adopting a QI approach in this project?**

     a. How do you think the limitations were perceived by other stakeholders? Business management/ others.

     b. Did you experience any barriers in data collection? What could be done to mitigate these in the future?

7. **What was the added value of including a QI approach in this project?**

     a. How do you think this value was perceived by other stakeholders? Business management/ others.

8. **Would you recommend the use of a QI approach in future projects in which you are involved?**

     a. If no, why?

     b. If yes, why? How would you use QI differently or similarly in future projects?

9. **What are some of the best practices in quality improvement that you learned over the course of this project that you can share with us?**

10. **Is there anything else you would like to share with us? Any feedback on the QI approach that is important to you?**

Name:	Organisation:
Position:	Date:
Interview conducted by:	

INTERVIEW GUIDE FOR BUSINESS MANAGEMENT

1. **How were you involved in the GAIN Workforce Nutrition project?**
   a. What was your role in this project?
2. **Tell me what your understanding of Quality Improvement (QI) is.**

IF THE RESPONDENT HAS NOT UNDERSTOOD WHAT QI IS SHARE A DEFINTITION: "What we define as QI is a systematic approach that uses specific techniques to improve quality. This can be done through testing planned changes on very small scale, collecting information to ensure the changes are helping achieve key aims of the project before scaling up successful change ideas."

   a. Does the above definition make sense to you and is this something you recognise being a part of the GAIN project you were involved in? Why or why not?
   b. Do you use Quality Improvement as part of your core business practice?
   c. Where does your knowledge on QI come from? Trainings/ communication with GAIN team/ Implementing partners/ personal research/ other.
3. **How was the QI approach used in this project?**
   a. What were the project aims and how did QI support reaching those aims?
   b. How often did you participate in QI meetings (nutrition improvement committee meetings)? Who else attended these meetings?
   c. How often were you shown QI data during such meetings? Who presented this data?
4. **How relevant do you think the QI approach was in this project setting?**
5. **Do you think the QI approach supported the effective identification of barriers and potential opportunities for impact?**
   a. How was data used to identify such barriers or opportunities?
   b. How efficient do you think the QI approach was during implementation?
6. **What were the limitations or barriers of adopting a QI approach in this project?**
7. **What was the added value of including a QI approach in this project?**
   a. How do you think this value was perceived by your colleagues (HR managers / workers / catering staff)?
   b. How do you think this value was perceived by external partners (such as external catering companies, etc) if any were involved?
8. **Would you recommend the use of a QI approach in future projects in which you are involved?**
   a. If no, why?
   b. If yes, why? How would you use QI differently or similarly in future projects?
9. **What are some of the best practices in quality improvement that you learned over the course of this project that you can share with us?**

Is there anything else you would like to share with us? Any feedback on the QI approach that is important to you?