

Guide for Monitoring Scale-up of Health Practices and Interventions

Manual

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ACRONYMS

AED	Academy for Educational Development
BCC	behavior change communication
BEST	Best Practices at Scale in the Home, Community and Facilities
CCC	comprehensive care center
CHPS	Community-Based Health Planning and Services project
CHW	community health worker
CM	community mobilization
DHS	Demographic Health Survey
DMPA	depot medroxyprogesterone acetate (Depo-Provera, a Pfizer brand)
DRH	Department of Reproductive Health
ESD	Extending Service Delivery project
FASQ	Facility Audit of Service Quality
FP	family planning
GHI	Global Health Initiative
GIS	geographic information systems
GPS	global positioning system
HIP	high impact practice
HMIS	health management information system
IBP	Implementing Best Practices
IEC	information, education, and communication
IRH	Institute for Reproductive Health
LQAS	lot quality assurance sampling
M&E	monitoring and evaluation
MCHIP	Maternal and Child Health Integrated Program
MLE	Measurement, Learning & Evaluation project
MoH	ministry of health
MSC	most significant change
MSI	Management Systems International
NASCOP	National AIDS and STI Control Programme (Kenya)
NIRN	National Implementation Research Network
PAC	postabortion care
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
QIQ	quick investigation of quality
RRI	Rapid Results Initiative
PRH	population and reproductive health
R-HFA	Rapid Health Facility Assessment
RHS	Reproductive Health Survey
SARA	Service Availability and Readiness Assessment
SDM	Standard Days Method
SoP	standard of practice
SPA	Service Provision Assessment
SUN	Scaling Up Nutrition
TFR	total fertility rate
USAID	U.S. Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Several resources have been developed to assist program implementers with the process of scaling up. However, once scale-up is underway, few resources exist to help ensure continuous and systematic monitoring of the process to track progress toward sustainability of these innovations. This guide is intended to provide governments, donors, country organizations, and implementing partners with a low cost and replicable approach to monitoring the process of scaling up innovations in health. The guide helps to:

- determine gaps in implementation of scale-up to inform mid-course corrections and improve programming;
- assess the integrity of the practice once it is moved from the pilot to the scale-up phase;
- track progress toward institutionalization of the practice within the health systems and relevant structures;
- track progress in the geographic spread of the scale-up; and
- manage the scale-up process to ensure the scale-up is progressing systematically and in line with the scale-up goals and objectives.

Specifically, the purpose of this guide is to help monitor the scale-up process of practices or innovations for which scale-up is already underway, even if the scale-up was not initially well-planned or monitored. It is a practical “how to” resource, which includes:

- an overview of scale-up, challenges to monitoring the scale-up process, the reasoning behind why this is important, and what questions this guide should help answer;
- criteria for systematically reviewing the practices currently being brought to scale in a particular country to identify which ones to focus monitoring efforts on for success in scale-up and long-term sustainability;
- an understanding of the key considerations for monitoring the scale-up process in simple and practical terms (it includes guidance on how to plan for, gather, analyze, and use data; the expectation is that these considerations will be applied in an iterative process that users can refer back to as needed);
- guidance on how to define exactly what the innovation is;
- selected frameworks and approaches that have been used to address scale-up and how each framework addresses monitoring and evaluation;
- case studies highlighting various aspects of monitoring scale-up; and
- an explanation of the value of using geographic information systems for monitoring scale-up efforts.

This resource is not meant to be a tool for measuring the achievement of outcomes, such as changes in knowledge, attitudes, beliefs, and behaviors among the scale-up beneficiaries; nor is it meant to be a guide for conducting an impact evaluation. The goal is to assist country stakeholders with identifying if scale-up is happening as intended; where, if necessary, there need to be mid-course corrections; and if the practice can be sustained to achieve the desired impact.

1 INTRODUCTION TO MONITORING SCALE-UP

To achieve improved health outcomes, countries are focused on scaling up proven effective health services and practices. On a global level, scaling up best practices is essential to achieving the United Nation’s Millennium Development Goals. At the country level, scale-up — or replication, expansion, or going to scale — is necessary for reaching national health targets and subsequent expansion of quality health services. Multilateral organizations and donors are committed to supporting scale-up of successful health services and practices. In addition to its attention to health systems strengthening, the World Health Organization (WHO) hosts initiatives on scale-up and promoting best practices (e.g., Implementing Best Practices [IBP] Initiative, Scaling Up Nutrition [SUN] Initiative, and ExpandNet, to name a few.) The United States government supports scale-up through Best Practices at Scale in the Home, Community and Facilities (BEST); High Impact Practices (HIPs); in family planning (FP); and the Global Health Initiative (GHI), which is “devoted to implementation and expansion of proven interventions.”¹

ExpandNet has defined scale-up as “deliberate efforts to increase the impact of health service innovations successfully tested in pilot or experimental projects so as to benefit more people and to foster policy and program development on a lasting basis.”²⁻⁴ Scale-up is not always a strategic or deliberate process but can occur somewhat opportunistically as available funding increases, country and donor priorities change, or societal norms and behaviors adjust, among other changes. Recognizing this, scale-up in this guide pertains to *the process of reaching more people with a proven practice, more quickly, and more effectively in a particular context.*

While all scale-up is, in some ways, unique to the practice and the program context in which it is being implemented, there are common monitoring issues to all scale-up processes. And though much attention has been given to scale-up, few scale-up models have provided comprehensive guidance to address the monitoring and evaluation (M&E) components.

To address this gap, this guide has been developed to assist with monitoring the scale-up and institutionalization of best practices, innovations, HIPs, or any practice that is deemed worthy of scaling up in a given country context. While this is the focus, it can be adapted to any scale-up experience. The main objective of this resource is to provide guidance on how to monitor the scale-up process in a low-cost and replicable manner rather than to conduct an impact evaluation of the practice of interest. It has been designed to help address the following questions, though additional tools or assessments may be required to fully answer these questions:

- Do we have a better understanding of what it takes to scale up the main elements of the practice?
- Do we have essential information for continued replication and sustainability?
- How can we more systematically plan for and manage scale-up beyond routine program management and implementation?
- As scale-up takes place, is it maintaining the core components of the practice?
- With changing environments, are appropriate adaptations being made during scale-up?
- Where do we need to put more attention?

- Is scale-up proceeding on a path toward country ownership?⁵

Use of this guide should serve primarily to support program improvement by being a management tool to assist with determining whether all or part of the intended outcome has been achieved and where, if necessary, mid-course corrections are needed.

Rationale

While a desired outcome of scaling up is the incorporation of the practice into a program's standard operations, effective and sustainable scale-up is not routine program implementation; it requires extra thought, attention, and planning. Procedures are needed to monitor whether scaling up is actually occurring, assess how it is taking place and if the scale-up is maintaining integrity to the practice, and track results to inform strategic adjustments and adaptations.² Yet this information is rarely gathered. There's a dearth of tested, practical methods and tools to monitor scale-up systematically. Furthermore, there is limited understanding of the processes by which innovations are implemented and sustained, particularly when scale-up does not happen systematically or in accordance with long-term planning.

*Just because an innovation worked on a small scale does not imply that scaling it up will automatically be successful. Scale-up should be carefully planned and monitored to ensure success and avoid the **implementation gap** that occurs when effective programs or practices are not implemented as intended, not sustained, or not used on a sufficient scale to make a meaningful impact.*

Other challenges with monitoring the scale-up process include:

- lack of financial resources and commitment;
- incorporating M&E, which is typically already a weak area, into the scaling-up process without overburdening the system;
- lack of clarity among both program implementers and stakeholders regarding what the “practice” really is;
- involving multiple stakeholders and monitoring the coordination of integrated mechanisms and processes;
- identifying the critical components of the intervention that cannot be compromised while adapting the practice to meet the context;
- changing strategies and interventions once adaptation and replication starts;
- the need/desire to move quickly and not take the time to measure progress and results;
- diminishing adherence to the model or pilot during scale-up;
- the tendency to neglect the more difficult, time-consuming, and less measurable parts of the scale-up model, which is usually the institutionalization of the practice; and
- difficulties in monitoring underlying principles such as gender equity and human rights.⁵

A desired outcome of scale-up is the incorporation of the practice into a program's standard operations, which rarely happens spontaneously. Issues related to sustainability, quality improvement, and scalability should be considered at the onset of scale-up. Realistically, these

issues are often overlooked, which can jeopardize the success of and the significant investments made in scaling up a practice. Taking time to monitor how the scale-up is progressing allows program implementers, as well as stakeholders, to systematically and thoughtfully compare progress made to agreed-upon benchmarks and make mid-stream adjustments.

Thus, the purpose of this guide is to offer resources and guidance for monitoring scale-up, even if the scale-up was not initially well-planned or executed with a monitoring plan from the outset.

Successful scale-up involves two fundamental elements: institutionalizing the practice and expanding or replicating it (figure 1).

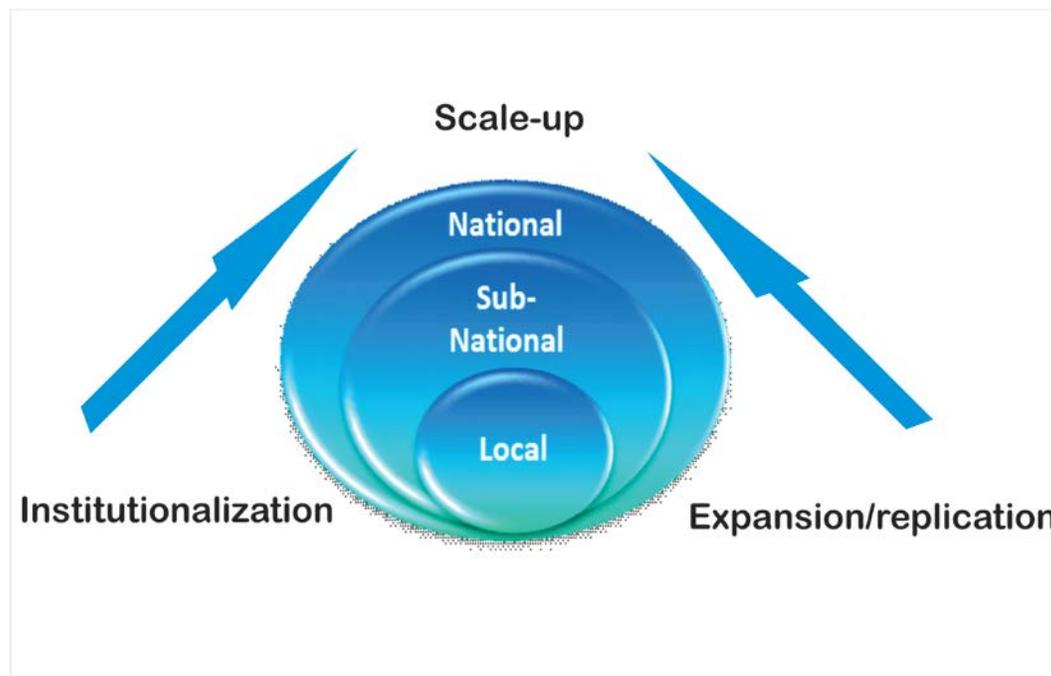


Figure 1. Successful scale-up involves institutionalizing the practice and expanding or replicating it.

Institutionalization is the “systems” piece of scale-up, and is sometimes referred to as vertical scale-up. It includes buy-in from leaders and stakeholders, which translates into legal, political, and institutional changes. For example, when scaling up the Standard Days Method (SDM) – a simple fertility-based FP method using a color-coded string of beads called CycleBeads that represents the days of a woman's cycle can provide an individual with a visual aid for using SDM. The Institute for Reproductive Health (IRH) assessed institutionalization by monitoring whether SDM had been incorporated into the following:⁶

- norms and procedures
- training curricula
- supervision
- health management information systems (HMIS)
- supply distribution
- budget lines

Although policy dialogues, advocacy, networking, demand-generation, and other aspects of institutionalization are generally more time-consuming with long-term results, true institutionalization is key to sustainability and moving a practice beyond the pilot phase or being used within a small geographical area.

Expanding or replicating the process includes moving it from one geographic area to more areas, or from one level of health service to other levels. Among other steps, expanding involves increasing staffing or service delivery providers; engaging and educating existing staff, providers, and other stakeholders at service sites; training; task-shifting or task-sharing; additional technical assistance and supervision; modifying or upgrading facilities; procuring supplies, equipment, and other commodities; distributing materials; adapting data collection methods or tools; and creating public awareness and support. Expansion or replication is also sometimes referred to as horizontal scale-up.

Definitions

Monitoring is the routine tracking of a program's activities by measuring on a regular, ongoing basis whether planned activities are being carried out⁷. It is the process of measuring progress towards program/project objectives through tracking activities conducted, resource utilization, and the outputs generated.

Evaluation is a process of determining systematically and objectively the relevance, effectiveness, and impact of interventions in relation to their objectives. Unlike monitoring, which is a measurement, evaluation is when monitoring data are used to assess the meaning of the change (or lack of change) measured.⁷

A **best practice**, as defined by WHO, is “a technique or methodology that, through experience and research, has proven reliably to lead to a desired result.”⁸ The IBP Consortium defines a best practice as “a process, procedure, tool or principle that is based on scientific evidence and/or programmatic experience and has improved the quality of health programs.”⁹ Both definitions refer to *evidence-based practices* or *high impact practices* that have proven to work.

Although there are distinct definitions for innovation, intervention, practice, high impact practice, and best practice, these terms are used interchangeably in this guide to refer to that which is being scaled up.

An **innovation** is a new or different health practice. ExpandNet explains that “existing or well-known technologies, procedures, service models or best practices that have not been used in a specific location are innovations, regardless of how widely available and applied elsewhere.”² Furthermore, “a technology in itself is rarely a simple solution to a complex problem, and as such, is alone not considered a health service innovation.” Instead, an innovation is a set or package of interventions including a new technology, clinical practice, educational component, or community initiative, as well as the managerial processes necessary for successful implementation.³ (See Appendix A, Defining the Innovation, for additional information.)

Intended Audiences

The main audiences for this guide are those managing and implementing the scale-up process, including national governments, USAID missions, implementing partners, the private sector, civil society, and donor agencies. Public health program managers who are involved with scale-up and those who are providing technical assistance in scaling up best practices will benefit from using this guide as a resource for strategic planning and assessing whether expansion and institutionalization are on track. While this guide seeks to provide monitoring assistance that can be useful in any context, it also acknowledges that each country environment is unique and, thus, the guide was developed with the understanding that this will be a reference tool to be adapted to specific circumstances and health topics as appropriate.

2 ASSESSMENT OF PRACTICES BEING SCALED UP: STRATEGICALLY DECIDING WHERE TO FOCUS MONITORING RESOURCES

In any given country, there are typically multiple health practices in various stages of scale-up and with varying degrees of support and momentum. However, not all of these practices are high priority or have an equal chance of becoming fully integrated into existing health programs and operating at scale. Thus, strategic decisions must be made to assess if it is worth the time and resources to invest in monitoring the scale-up process. The following criteria will assist in the process of systematically reviewing the practices currently being brought to scale in a particular country or context, to identify which ones would benefit from more concerted and strategic monitoring of the scale-up process in order to make mid-course corrections and ensure long-term sustainability. Figure 2 provides a flowchart summary of the following five decision-making steps.

Clarity

- ✓ **The practice can be defined.**

First and foremost, the practice must be clear enough to enable it to be monitored. The actual intervention may not have been articulated yet, but it must be able to be defined (see Appendix A: Defining the Innovation) so it can be measured to determine if it is taking place.

Available Evidence

- ✓ **Evidence exists that the scaled-up practice will have a positive impact on health outcomes.**

It is important to determine whether scale-up of the identified practice will have an impact on the outcomes of interest. In other words, it should be a proven best practice. For example, there is substantial evidence from many countries of the positive impact on contraceptive use from disseminating locally designed and tested FP messages through multiple channels, including the media and community networks, to promote social and behavioral norms. In contrast, although there is emerging evidence that the use of mobile phone technologies can improve the provision of FP services and information dissemination, more research needs to be conducted to validate the impact of these technologies on improving contraceptive use.

- ✓ **Experience from an evaluation of a local pilot is available.**

The process of bringing a selected practice to scale requires major commitment and resources. Thus, having experience from a local pilot, or at least from a pilot conducted in a very similar programmatic and country context, is critical for successful scale-up.¹⁰ Once effectiveness of a practice has been established, pilot projects can measure feasibility and acceptability of the practice in the local context. For instance, before the injectable contraceptive depot medroxyprogesterone acetate (DMPA), was scaled up in Viet Nam, a pilot was conducted to determine if providing DMPA in the public sector increased adoption of the method, facilitated follow-up and continuation, and improved quality of care in the provision of all FP methods in

the pilot sites. Following the end-of-project workshop, the ministry of health (MoH) appointed a high-level committee to further review the evidence before recommending proceeding with the scale-up.¹¹

Choosing to closely monitor a scaled-up activity that has benefited from an evaluation of a local pilot or a pilot from a comparable context and setting is judicious because pilot studies can:

- provide evidence that the practice has a relative advantage over existing practices or that the practice fits into the existing health system structure and programs;
- assist with identifying all stakeholders needed for successful scale-up;
- provide an indication of the level of interest in and demand for the selected practice;
- assist with determining the scope and extent of resources needed (e.g., funds, staff, time);
- reveal the health systems issues that need to be addressed (e.g., policy, program, training, commodities, M&E needs);
- provide unseasoned staff with the confidence and experience to go through all the essential steps, from planning to evaluation;
- identify essential elements needed for full implementation of scale-up; and
- provide data on use of the practice on a small scale to guide full scale-up.

Integration into Existing Structures, Processes, and Practices

- ✓ **The scale-up adheres, to the extent possible, to existing health system structures, processes, and practices.**

Scale-up is least complicated and burdensome when implementation of the practice capitalizes on existing health system structures, processes, and practices. Often in pilots, existing structures, processes and practices are tweaked or even circumvented. It is critical that the health care system is fully understood to ensure integrity of the practice once it has moved from the pilot to the scale-up phase. Scaled-up practices that have been well-integrated into existing systems, budgets, curricula, policies, and so forth with limited deviation from current health system structures, process, and practices have a greater chance of success and sustainability and will likely not require extensive technical support and time.¹⁰

Necessary Resources

- ✓ **The resources needed for scaling up have been identified.**

Without sufficient resources, no scale-up will be sustained. Resource needs can include costs related to training, commodities, and physical infrastructure, among other components. Scale-up could require support structures, supplies, or outside organizations, expertise, and funding to implement. No one can expect to know what the actual budget for scaling up will be, but to the extent possible, if the resource needs and costs for both scaling up and operating at scale — in the short and long term — have been determined, it will help to ensure the scale-up's success.

Furthermore, the source of funding and any financial or legal/regulatory restrictions applicable to the scale-up of interest must have been considered. For instance, when the U.S. Congress

enacted additional requirements during the reauthorization of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), disbursements in payments to fund HIV/AIDS prevention and treatment services in 2010 were significantly delayed,¹² resulting in interruptions in scale-up plans and the need to adjust timelines and implementation strategies. One of PATH's lessons learned from scaling up active management of the third stage of labor during childbirth was that predictable, adequate funding needed to come from both international and local sources for at least 10 years.¹³

Interest and Commitment

✓ **There is a strong level of interest/commitment.**

The same practice may be appropriate in one country but not another based on an individual country's priorities, interests, and cultural norms. One of the key factors of successful scale-up is the government's level of commitment in scaling up a particular practice and how well it aligns with national health sector goals. With that interest, there is higher likelihood that the government will invest the necessary national resources and political will to support and sustain the scale-up. Evidence of political interest, which can be measured in a number of ways, will also demonstrate to potential donors the degree of on-the-ground commitment to the scale-up.

To illustrate this point, in the 1990s the government of Bhutan made a concerted effort to promote and increase access to voluntary vasectomy. By 2000, a national survey revealed that nearly 14 percent of Bhutanese women of reproductive age relied on their partner's vasectomy for contraception. In comparison, in that same year only 0.2 percent of Botswanan women of reproductive age cited reliance on vasectomy.¹⁴ Unlike Bhutan, Botswana had no notable government support or interest in promoting vasectomies.

✓ **There is a commitment to monitoring the scale-up process.**

Scaling up requires careful planning and rigorous monitoring to assist with ensuring the practice is implemented as designed and contributes to the expected impact. For example, in collaboration with FHI 360's PROGRESS Project, voluntary vasectomies were being quickly scaled up in Rwanda with the noteworthy support of a vasectomy champion in the Rwanda MoH. Country stakeholders developed an M&E plan specifically for the scale-up, with concerted attention to quality standards.

A strong M&E system, with a clear monitoring plan and regularly generated data that are reviewed and used to make modifications to the scale-up plan, as needed, will help maintain adherence to the practice as it is scaled up.

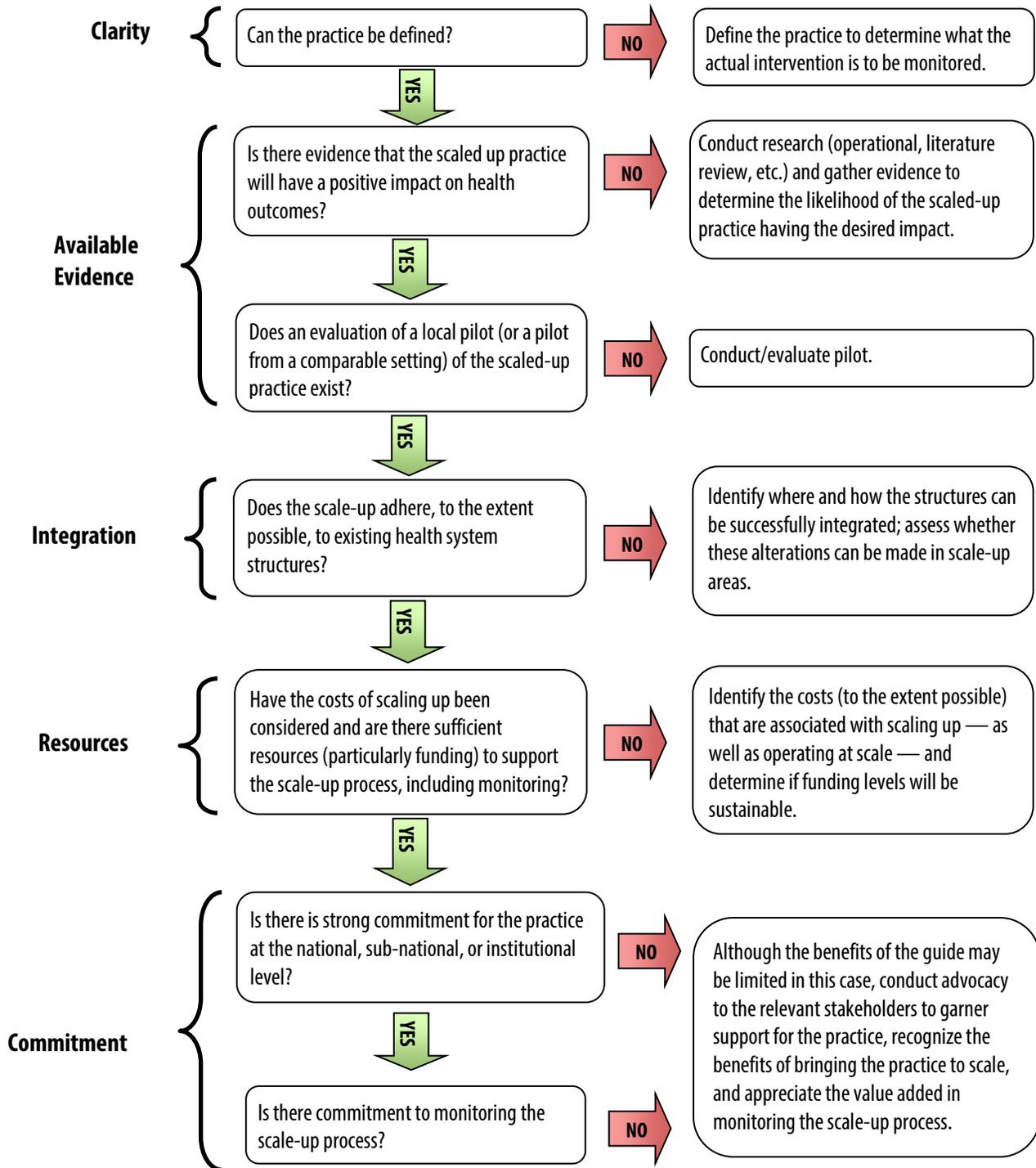


Figure 2: Criteria for reviewing practices being brought to scale.

3 TEN CONSIDERATIONS FOR MONITORING SCALE-UP

Although program implementers may be familiar with the steps to monitoring, drawing from various M&E resources, the emphasis here is on monitoring through a scale-up lens, addressing the challenges and specific considerations that come with this process. Effective monitoring is not a one-time event. Ideally, progress should be measured on a regular basis for each element of the process of scaling up. This includes:

- implementation of the defined innovation or practice;
- adaptation to different environments (e.g., geographical, political, cultural, institutional);
- capacity of the scale-up implementers;
- role of the implementers (i.e., the institutions, organizations, or people that will be responsible for adopting the innovation or practice and implementing it at scale)
- role of the resource team (i.e., those who seek to promote and facilitate the scale-up)
- effect of communication and advocacy efforts;
- acceptance of the innovation or practice by the target audience;
- available resources (human, financial, and institutional);
- extent and pace of expansion;
- incorporation of the practice into policies;
- integrity/fidelity to the model and inclusion of essential elements;
- variation in conditions resulting from changes over time or regional differences; and
- extent of change from the norm.

Existing M&E systems for service delivery are seldom designed to measure all of the above. Therefore, a concerted effort should be made by program implementers to create a monitoring plan tailored specifically to measure the efficiency and effectiveness of the scale-up process.

Monitoring Plans

Ideally a monitoring plan should be designed prior to scaling up – at the same time programs are being developed — yet this is rarely done and often evolves while scale-up is underway. Traditionally, a monitoring plan includes evaluation and describes all M&E activities in an M&E system. It is a comprehensive document that answers the following key questions:

- *Why:* Why do you need the information?
- *What:* What should be measured and to what depth?
- *How:* How are you going to track progress.
- *When:* When and how often will information be collected?
- *How much:* How much is needed in terms of resources?

An M&E plan can guide monitoring activities by standardizing and coordinating the process, making procedures transparent, and helping to keep the process on-track. It is a living document that needs to be adjusted when a program is modified. It contains the information that will be collected, stored, and disseminated for use by program implementers and other stakeholders. While most M&E plans provide a guide for monitoring an entire program, project, or intervention, a monitoring plan in this context is intended to monitor only the processes involved with taking a practice to scale and not health outcomes.

This guide presents 10 considerations to monitoring scale-up as part of a basic monitoring plan. IRH's scale-up of SDM was rigorously monitored and included 10 similar components as part of its M&E plan (summarized in table 1). See the case studies in appendix C for more details on the M&E of scaling up SDM.

Depending on each unique scale-up experience, these 10 considerations may happen concurrently, be repeated, elaborated, or adapted. The idea is to use these considerations as a guide to monitoring how a practice or innovation is being incorporated into both services and systems in a participatory and sustainable way.

Table 1. M&E of Scaling Up SDM in Five Countries as It Relates to 10 Considerations

Consideration	M&E of Scaling Up SDM in Five Countries
Define objectives and scope of the scale-up plan	Think about the multisector, global, and national levels and define success in scale-up
Create a framework	Develop a logic model
Identify necessary resources to implement a monitoring plan	Identify and gather the necessary M&E tools
Select indicators	Select indicators and create operational definitions
Establish data sources and reporting systems	Determine the data sources
Develop a data use and dissemination plan	Decide how and to which audiences the findings will be presented
Collect data	Create a database and enter in data
Analyze data and determine if scale-up is progressing on track	Conduct data analysis
Make program adjustments based on findings and recommendations	Feed the information back to the program implementers
Continue the M&E process	Make continuous adjustments and improvements based on the data

Source: Institute for Reproductive Health presentation.¹⁶

Consideration 1: Define the Innovation and the Objectives and Scope of the Scale-Up Plan

Once the innovation has been defined (see Appendix A: Defining the Innovation), decide how you will define success for the scale-up process so you can generate a roadmap for the monitoring activities to ensure you get where you want to be. As such, when developing the monitoring plan, **be mindful of the objective** and consider the factors that demonstrate a program’s success or failure:

- What do you want or need to know in order to say your scale-up is working?
- How will you know that your scale-up is working?
- Is the scale-up fulfilling the objectives of the original program or pilot?
- How will you know if there are problems or that your scale-up is not achieving its pre-determined objectives?¹⁷

The answers to these questions will help identify indicators of scale-up success. Although this may sound simple enough, be prepared for the possibility of this taking time if there isn’t immediate agreement on what will constitute a successful scale-up. Nonetheless, it is an important step.

Defining the Objectives — To complete your understanding of the “big picture”, define the **objectives** of the scale-up. This forms the basis for understanding the key components of the scale-up and thus, what critical elements in the scale-up framework should be monitored. The objectives should be SMART:

S	Specific
M	Measurable
A	Achievable
R	Realistic
T	Time bound

Breaking the objectives down into the short-term objectives or milestones disaggregates the scale-up into “units” that are more easily understood and tracked, and helps program implementers better analyze the M&E information collected.¹⁸ For instance, in the Ghana Community-based Health Planning and Services (CHPS) Initiative, the goal (or long-term objective) of the scale-up plan was to transition from facility-based health care to high-quality, integrated community-based health services.¹⁹ To achieve that goal, there were several shorter-term objectives, such as the following:

- Provide outreach to traditional leaders and build community awareness.
- Select a Community Health Committee and train community health officers.
- Mobilize the community to build a simple facility (Community Health Compound).
- Mobilize providers to visit households.
- Procure motorbikes and conduct motorbike rider training.
- Train and deploy volunteers.

After the objectives have been identified, identify the coverage or **geographic area** where the practice is being expanded or replicated. Where will the practice be scaled up (which villages, cities, districts, and so forth) and in what order?

While this refers to scope or *breadth*, identifying the **levels of facilities** and/or **levels of providers** who will be involved in implementing the scale-up pertains to the *depth* of the intervention.

Who will be the primary beneficiaries or **target population** of the scale-up (e.g., pregnant women, youth, children under age 5, rural population)?

At all levels, who are the **key stakeholders or policy makers** (e.g., religious leaders, parents, specific ministry staff) who must be engaged for the scale-up to succeed?

What are the **key activities or interventions** involved with scaling up the practice that need to be measured?

What are the primary scale-up **monitoring activities** (e.g., conduct facility audits, perform desk review of service protocols)?

Lastly, what is the realistic **timeline** for completing the interventions and monitoring activities? In other words, what is the pace; how quickly will the practice be brought to scale, and what are appropriate deadlines? The work sheet in table 2 can be used to answer these questions.

Evaluators are encouraged to modify the work sheet if there is a need to break down the components of the scale-up by benchmarks (i.e., objectives, geographic area, beneficiaries, levels of facilities or providers, key stakeholders, key activities or interventions, monitoring activities, and timelines). The advantage to doing so is to improve the planning and M&E process by deconstructing a large, multi-faceted activity into discrete components.

Evaluators may not have enough information to complete all the sections at once. Some of the pieces, such as identifying all the monitoring activities, may be filled in once the monitoring plan is more finalized.

Table 2. Work Sheet for Defining Objectives and Scope of Scale-up Plan

OBJECTIVES	
Long-term objective	
Short-term objectives (i.e., milestones)	
DESCRIPTION OF WHO/WHAT IS INVOLVED IN THE SCALE-UP	
Geographic area	
Levels of facilities or levels of providers	
Target population	
Levels of key stake- holders and/or policymakers	
Key activities or interventions and timelines	
MONITORING DESCRIPTION	
Monitoring activities and timelines	

Consideration 2: Create a Framework

Creating a logical or conceptual framework will link your goal and objectives to the innovation or practice. It will provide a reference for why the monitoring exercise is being done and what it is meant to accomplish. The suggested monitoring scale-up framework shown in figure 3 can provide stakeholders with an overview of the multiple components involved in monitoring scale-up, as well as their interrelated nature.

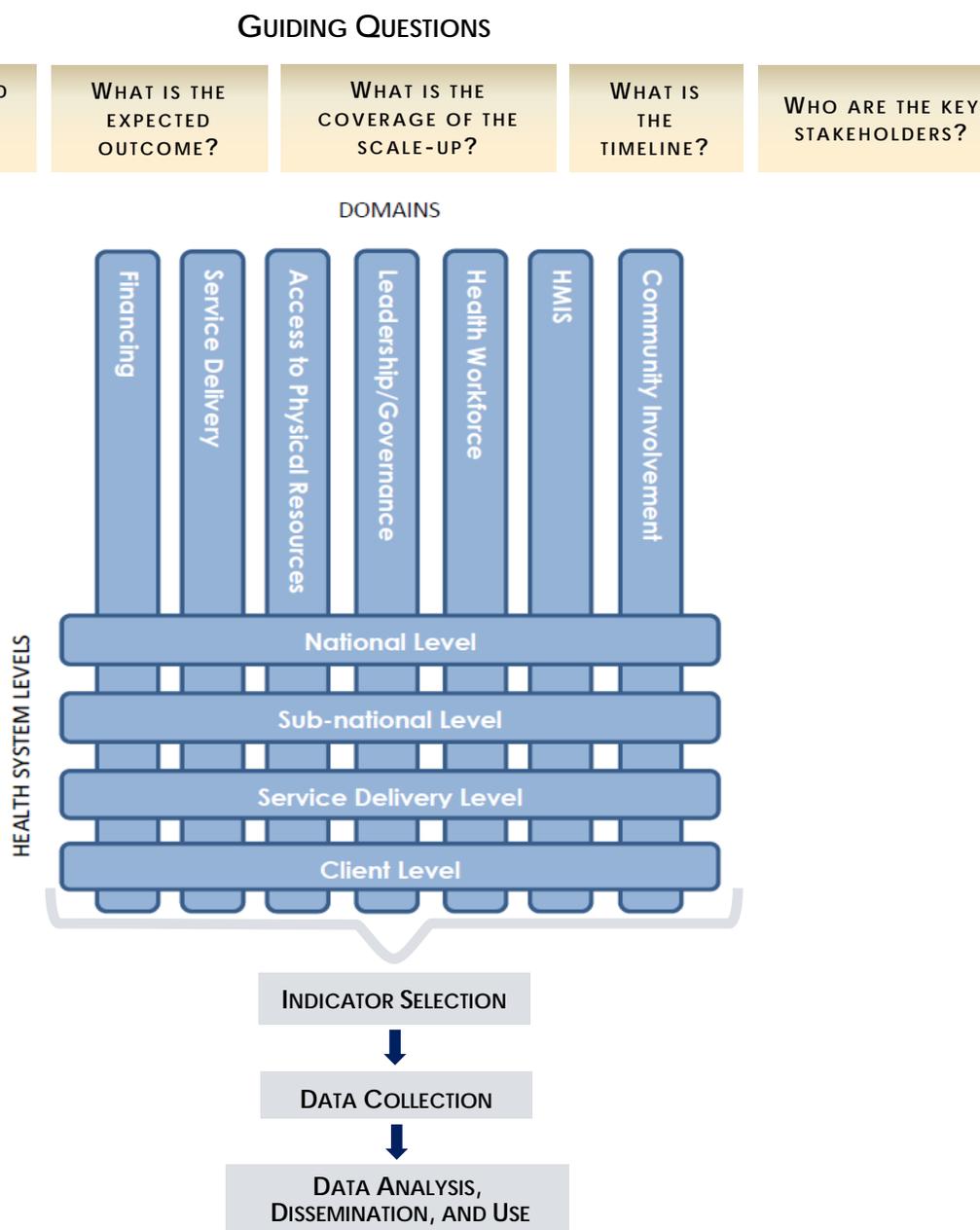


Figure 3. Monitoring scale-up framework.

There is no universal, “correct” approach to scale-up or monitoring scale-up (see Appendix B: Selected Frameworks and Approaches for Scale-up of Health Interventions), since different strategies depend on the intervention and the context.²⁰ [ExpandNet’s](#) framework lists five elements of scaling up: the innovation, user organization, environment, resource team or organization, and scaling-up strategy.² Another framework organizes the scale-up process into categories based on six attributes: the specific tool or service being scaled up, the implementers, the chosen delivery strategy, the “adopting” community, the socio-political context, and the research context.²¹ Regardless of which framework is used, planning, implementation, consolidation, and sustainability are all common phases.²² The approaches highlight the need to be systematic, involve a wide range of stakeholders, and adapt according to local needs.

Guiding Questions — As mentioned in the previous section, it helps to think of the defined practice (i.e., **content**), geographic area (i.e., **coverage**), timeline (i.e., **pace**), and **key stakeholders** when monitoring a scale-up. The guiding questions in the framework are a useful beginning point to fully articulate the parameters of the intervention. **Defining the practice or intervention** as a first step will help to focus monitoring efforts and provide a necessary anchor for future efforts. (See Appendix A: Defining the Innovation.)

Once the practice or intervention is defined, the **expected outcome or outcomes** can be specified. Consider what the specific scaled-up practice might feasibly accomplish and have this guide the expected outcomes. By defining this at the outset — in other words, identifying what the main objective is and keeping that in mind — stakeholders can be reminded of how monitoring efforts can be used to measure these achievements.

Scale-up efforts often differ in their **coverage**, both in terms of breadth (i.e., geographic area) as well as depth (i.e., level of facilities and/or providers involved). Some scale-up efforts may intend to achieve national coverage of a practice, while others may focus on the state or district level. Taking these and other factors into account when defining the coverage can help to inform the type of monitoring that will be possible for the chosen intervention and identified timeframe.

Defining the timeline, which refers to the scale-up intervention and not the monitoring exercise, provides a key benchmark or endpoint against which actual progress shown as a result of the monitoring can be measured. Having a clearly articulated timeline can also help to set priorities for financing, training, and evaluation opportunities. Returning to the understanding that scale-up may be well underway for most users of this guide, some may be concerned if a timeline was never discussed or agreed upon. It’s not too late to think about a realistic timeframe for when the practice or intervention has reached scale, and/or what the timeline is for your phase of scale-up.

Finally, **identifying key stakeholders** involved in the scale-up should serve to inform indicator development as well as data collection and dissemination efforts. Think about who will be interested in the data collected and who will have the ability to use the data findings to affect change. In addition to identifying external stakeholders, program implementers should also identify who will be responsible for collecting the data, analyzing data, and disseminating the findings. Stakeholder engagement is a key driver of scale-up success; considering this as part of monitoring is important to understanding why scale-up is or is not happening as expected.

Health Domains and Health System Levels — To monitor scale-up effectively, the context of the health system in which the practice will be brought to scale must be recognized. Health systems vary considerably, however there are some standard domains and levels that should be incorporated when developing a monitoring plan to ensure effective expansion, replication, and institutionalization of a practice. The recommended **domains** to include when developing a plan to monitor scale-up are adapted from the WHO’s *Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurements*²³, with each block contributing to a different component of the health system. While a selected practice may seem to easily fit into one block, successful scale-up never occurs in isolation and therefore it is necessary to incorporate other domains into the monitoring framework.

Incorporating the **levels of the health system** is another way to make certain all aspects of scale-up are being addressed and monitored. For example, if a practice is implemented at the community level, not only should community-level indicators be tracked, but also indicators that monitor if the practice is being institutionalized at the sub-national or national level. Inclusion of indicators at the national, sub-national, service delivery point and client health system levels provides the implementers of scale-up with a holistic view of the health system, and can serve to identify for the program monitors potential barriers and challenges for the scaled-up practice.

Work Sheet — Table 3 provides a simple yet practical work sheet-style tool intended to be used during the planning phases of scale-up interventions. It can also be used to guide the development of monitoring frameworks for interventions further along in the scale-up process. The purpose is to provide a tangible resource for defining and organizing the key components of a specific scale-up so stakeholders and evaluators have a common vision of scale-up as it relates to their unique perspectives. The work sheet poses general guiding questions for stakeholders to consider when designing a monitoring framework for scale-up. The data collection section provides space for indicator selection, which could be organized by:

- health system level;
- health domain; or
- indicator level (i.e. input, process, output, and outcome).

The result is an integrated and comprehensive approach to the monitoring of scale-up. In addition, it provides the opportunity to list the data sources for each indicator and frequency of data collection. While it is intended to be comprehensive, it is by no means exhaustive, and may be revised pending field application.

Table 3. Monitoring Scale-up Framework Work Sheet

GUIDING QUESTIONS

What is the defined practice/intervention?	
What is the expected outcome?	
What is the coverage of the scale-up?	
What is the timeline?	
Who are the key stakeholders involved?	

DATA COLLECTION

Indicators (Input → Process → Output → Outcome)	Data Source	Frequency of Data Collection	Domain
National Level			
Sub-National Level			
Service Delivery Point			
Client Level			

Consideration 3: Identify Necessary Resources to Implement the Monitoring Plan

Human Resources — Developing and implementing a monitoring plan requires resources, including human resources (e.g., staff time and expertise), finances, and systems (e.g., data collection and reporting protocols, and mechanisms for providing feedback on data findings). Furthermore, staff require capacity in M&E. Ideally, the project, ministry, department, or organization that is implementing the scale-up would have an M&E unit with staff who are trained in M&E. Realistically, there may not be even one M&E person, let alone a unit. The organization or institution implementing the scale-up should assess if it has the necessary skills, capacities, and funding to conduct the monitoring exercise, and if not, determine *how it will get done*. Working under the assumption that there is no M&E unit, identify who will be assigned as the point person for monitoring scale-up. This individual may have M&E staff working with him or her, but it will be his or her responsibility to lead the development and coordination of the monitoring plan.

Those developing the monitoring plan, as well as the monitoring framework, should take advantage of readily available technical resources such as indicator guides, M&E materials (e.g., manuals, textbooks, free online courses), and communication tools. Monitoring staff will also require the authority, mandate, and funds to develop and implement the monitoring plan. Furthermore, including M&E in work plans and other programming is a joint responsibility of all stakeholders.

Stakeholders are another key human resource and **are critical for scaling up and monitoring the agenda and activities**. Stakeholders include everyone who will be involved in the scale-up process from the national (e.g., ministries), subnational (e.g., provinces, districts), and program levels (e.g., program managers, administrators, and service providers). These are the individuals whose commitment and cooperation is required to monitor a scale-up.

To achieve stakeholder buy-in, the appropriate set of stakeholders needs to be identified and involved when proposing, designing, implementing, and reporting on M&E initiatives.

- Who needs to use the data, and what questions do they seek to answer?
- Who has influence and resources that can be brought to bear to aid this activity?
- Who will be directly or indirectly affected by the outcome of this scale-up?

When the Extending Service Delivery (ESD) project helped Save the Children/Egypt scale up the government's postpartum care package, they found a major obstacle was the lack of coordination and awareness among postpartum care stakeholders at all levels. Because the participation of government officials was difficult to secure, yet imperative for the success of the scale-up, they realized the need to build in additional time to educate the stakeholders on the importance of the scale-up and accommodate their busy schedules to maintain their engagement and support throughout the scaling-up process.²⁴

- Who will support the plan? Who will oppose it? Why? How do we deal with this?
- What do each of these individuals contribute to the process?²⁵

Consistently promoting the message that the monitoring plan is designed to track the progress and implementation of scaling up a particular practice or intervention, demonstrating the extent to which the objectives are being met, and ultimately improving the scale-up, will help keep people engaged, focused, and in a better position to move the plan forward.

Key points include the following:

- Make sure everyone understands what consensus you are trying to achieve.
- Ensure that all stakeholders are involved early in the process. Do not underestimate the importance of stakeholder buy-in and ownership at every juncture.
- Provide stakeholders with the opportunity to provide input and feedback.
- Consistently promote the message that M&E provides the means to demonstrate the extent to which a program is achieving its objectives.

Financial Costs — In addition to the human resources required to monitor scale-up, little can be accomplished without financial resources. Various costs that should be budgeted include:

- information systems (data collection, processing, and analysis);
- information dissemination and use (technology and communications, editing and printing reports, holding dissemination meetings or workshops, presenting at conferences);
- data quality control system (staff time and communication and transportation costs to verify data quality); and
- coordination and capacity building (the human resources and infrastructure and technology to support staff, stakeholder engagement).

Costs will vary depending on several factors including the scope of the scale-up, the data collection methods used, how in-depth the monitoring is, as well as unforeseeable circumstances such as heavy rains that require the use of trucks for data collection versus motorbikes, an unexpected increase in Internet costs, and so on.

Although all domains should be monitored to gain a complete picture of how the scale-up is progressing, the on-the-ground reality is that limited funding may mean monitoring all the domains fully will be cost-prohibitive. Thus, important decisions must be made about prioritizing the key aspects of institutionalization and expansion in a given context and focusing resources accordingly.

When the Zambian MoH decided to scale up expanded contraceptive choice, it proved to be challenging due mostly to contraceptive supply stock outs. Thus, with an emphasis on strengthening procurement and logistics management and obtaining a national budget for reproductive health supplies, selecting mostly management and policy/budget indicators would have been appropriate to monitor their scale-up process.⁹

Also, the low-cost, replicable approaches described within may need to be followed up on, with more focused assessments to answer specific questions. This will require more time and human and financial investments.

Consideration 4: Select Key Indicators

It is difficult to identify universal indicators for assessing the inputs, processes, outputs, and outcomes of scale-up. Each monitoring plan for scaled-up activities needs to include its own indicators, based on the practice and the mutually agreed upon objectives and goals of the scale-up. The rationale for selecting these indicators will be based on the conceptual framework and the information needs of decision makers. This process should be an iterative, participatory process with stakeholders. As in most instances, where the monitoring exercise is happening after the scale-up is well underway, program managers may already have an idea of what general aspects of the scale-up are not proceeding as efficiently or effectively as planned and should therefore pay closer attention to these areas when selecting indicators. But in other cases, bottlenecks can come as a complete surprise. Therefore, it is necessary to select indicators from across the range of health systems levels and domains to ensure the entire spectrum of the scale-up is being captured in the monitoring exercise.

Selecting indicators can seem bewildering, particularly when the objective is to concentrate on monitoring the scale-up process and not just the outcomes. With the conceptual framework in mind, the following criteria can be used to select indicators for monitoring scale-up:

- **Relevance:** There is a clear relationship between the indicator and the scale-up.
- **Accuracy:** The indicator measures what it purports to measure.
- **Importance:** The measurement captures something that “makes a difference” in how the scale-up is progressing.
- **Usefulness:** The results point to areas for improvement in scaling up.
- **Feasibility:** Data can be obtained with reasonable and affordable effort.
- **Distinctiveness:** The indicator lacks redundancy and does not measure something already captured under other indicators.

The indicators should measure both the institutionalization as well the expansion/replication of the practice and should assist with determining if essential elements of the practice have been lost during scaling up (i.e., degree of fidelity to the model), quality is being maintained, and there are any unexpected results.

Indicators should represent the relevant health domains, health system levels, and indicator levels while capturing the key characteristics of the practice of interest. For an example, see *Monitoring the Scale-Up of Family Planning Integration into HIV Comprehensive Care Centers in Kenya through the PROGRESS Project case study*, found in Appendix C: *Monitoring Scale-up Case Studies*.

It is helpful to develop an indicator matrix, or indicator reference sheet, summarizing the indicators in the monitoring plan. An indicator matrix is a table listing indicators with specific information on definition, data source, disaggregation (when needed, data can be broken down

by age group, sex, rural/urban, socio-economic status, or other subset), frequency of data collection, and who is responsible for collecting that information. The M&E unit/M&E officer or point person will need to consult with program managers to see if the indicators in the monitoring plan reflect actual data being collected and whether that information is the most useful for them in order to make decisions for program improvement.

Table 4 provides an illustrative list of indicators for monitoring a scale-up, which should be modified and expanded according to the practice of interest, scale-up objectives, stakeholder priorities, and the country context.

For guidance on selecting indicators in FP and reproductive health, the [Family Planning and Reproductive Health Indicators Database](#) includes core indicators for 36 technical areas with definitions, data sources, data requirements, purposes, issues, and links to related indicator sources. The Measurement, Learning and Evaluation (MLE) project [Measuring Success Toolkit](#) has links to other indicator resources for other health topics including HIV/AIDS and tuberculosis, malaria, maternal and child health, neglected tropical diseases, and water and sanitation.

Table 4. Illustrative Indicators for Monitoring Scale-up

Level	Indicator (by Health Domain)	Data Sources
<i>FINANCING</i>		
Input	Funds allocated to the practice in national and local budgets	National or local expenditure budget documents with evidence of approval; national accounts; invoices, and other evidence of expenditures; personnel or staff assignment rosters
Process	The practice is included in the current year annual operating plan	Operational plan; budget
Process	The budget is linked to the current year annual operational plan	Budgets; chart of accounts; operational plan
<i>ACCESS TO PHYSICAL RESOURCES</i>		
Process	Percent of facilities with adequate physical infrastructure (e.g. private counseling space, private examination area, consistent supply of electricity and water) to implement the practice	Health facility audit; GIS data; specialized survey
Process	Percent of facilities with available equipment to implement the practice	Health facility audit; GIS data; specialized survey
Process	Availability of job aids and service protocols for the given practice	Health facility audit; specialized survey
Process	Number of information, education, and communication (IEC) materials related to the practice distributed	Health facility records; project records
Output	Percent of facilities or community-based providers that experienced a stock out of a given commodity at any point during a specified time period	Site visits, physical inventories, stock records; logistics management information system records; supervision records; GIS data
<i>LEADERSHIP/GOVERNANCE</i>		
Process	Existence of a strategic plan for expanding coverage of the practice	Review of strategic plan or strategy documents; interviews with key staff (e.g., managers)
Process	Evidence that the strategic plan for expanding coverage of the practice has been disseminated to the relevant facilities and/or to the relevant providers (facility or community-based)	Interviews with relevant staff; health facility audit; specialized survey
Process	Use of management tools and procedures to address constraints with implementing the practice	Project records; interviews with key staff
Output	Examples of practice being included and/or supported in national or subnational policy, strategy, guidelines, curricula, or related documents and communications	Review of national or subnational policy, strategy, guidelines, curricula, or other related documents
Output	Evidence of political support for the practice	Voting records; quantitative opinion polls of defined leadership groups (e.g., parliamentarians) or of the general public; key informant interviews; media scans that archive texts, audio or video tapes of official speeches, newspaper articles, official documents, govt. communiqués, or other public expressions. (Avoid anecdotal evidence or non-systematic clipping services, especially if measuring change over time.)
<i>HEALTH MANAGEMENT INFORMATION SYSTEMS</i>		
Input	Health management information system (HMIS) adapted to capture and report on key information on the implementation of the practice	Meeting notes; HMIS

Level	Indicator (by Health Domain)	Data Sources
Output	Key information on the implementation of the practice routinely reported in the HMIS	HMIS
<i>HEALTH WORKFORCE</i>		
Process	Number of providers trained in the practice, by type of personnel	Training records
Process	Number or percent of supervisors who have been oriented on the practice and related service delivery provisions	Orientation/training record
Output	Number or percent of providers competent to provide specific services upon completion of training	Competency tests (such as a checklist administered by the trainers and/or external expert observer)
Output	Demonstrated organizational capacity to carry out provider training on a sustained basis	Assessment by an external evaluator with training expertise
Output	Percent of providers who received supervision in the past six months	Facility records; program records; facility audits; interviews with providers
Output	Percent of providers who reported discussing the new practice during their last supervision visit	Facility records; program records; facility audits; interviews with providers
Output	Percent of providers who have positive attitudes towards implementing the practice	Facility audits; interviews with providers
<i>SERVICE DELIVERY</i>		
Output	Practice is incorporated into the programmatic and technical standards, norms and practices of relevant systems	Review of standards of practice
Output	Number of sites implementing the practice	Facility records; facility audits; program records (for community-based services); interviews with key staff; GIS data
Output	Client satisfaction with services that include the practice	Exit interviews with clients
Output	Percent of trained providers performing the core components of the practice	National guidelines/standards for service delivery; checklists and notes of an expert observer
Output	Percent of trained providers performing the practice based on quality of care guidelines	National guidelines/standards for service delivery; checklists and notes of an expert observer
Outcome	Number of clients receiving the practice of interest in a given timeframe	Facility records; exit interviews with clients; client-provider interaction observations
Outcome	Percent of sites implementing the practice with fidelity to the model, based on pre-determined criteria and definition of the practice/innovation	Facility records; facility audits; program records (for community-based services); interviews with key staff
<i>COMMUNITY INVOLVEMENT</i>		
Process	Community outreach to promote the practice	Program records
Output	Community participation in and support for the practice	Program records; focus groups; in-depth interviews
Output	Percent of audience with a favorable attitude toward the practice	Sample surveys with members of the intended audience; focus groups; in-depth interviews
Output	Percent of community members surveyed aware of the practice being offered and how/where to access it	Sample surveys with members of the intended audience; focus groups

Consideration 5: Establish Data Sources and Reporting Systems

Several tools, systems, and surveys have been developed for the purpose of gathering data to answer specific questions related to the health status or behavior of certain populations. These range from Demographic Health Surveys (DHS) and Reproductive Health Surveys (RHS), to focus group discussions and routine service statistics collected at the health facility level. Although the information obtained from these sources can be highly informative when monitoring a scaled-up practice, it will generally only tell part of the story. For example, health facility data may indicate what percent of postabortion care (PAC) clients received FP counseling, but it will not reveal whether the counseling was correct and consistent, the progress in expanding FP trainings to service providers, the political support behind ensuring FP counseling and commodities to PAC clients, the extent to which FP job aides have been distributed to PAC facilities, or other indicators.

Data Sources — In order to make evidence-based decisions, decision makers require information from a variety of sources. **Data sources** are the resources used to obtain data for M&E activities. There are several levels from which data can come, including client, program, service environment, population, and geographic levels.⁷ Furthermore, monitoring both expansion and institutionalization will require different data sources. For instance, desk reviews of national budgets and key stakeholder interviews may be the primary data sources for indicators measuring institutionalization, while service statistics and geospatial data may be the most helpful for measuring various aspects of expansion and replication. (See Appendix D: GIS for Monitoring Scale-up, for more information about using geographic information systems (GIS) to capture, manage, analyze, and visualize spatial data for monitoring scale-up.)

Monitoring the process of scaling up is intended to be relatively quick and inexpensive. For this reason, conducting a Service Provision Assessment (SPA), DHS, RHS, or other large, expensive, and infrequent survey designed to measure outcomes and impact rather than processes and inputs will not be particularly helpful for this exercise. Be mindful that the trade-off for rapid assessment and low cost is the loss of some detail and in-depth information that would be available, for example, from a SPA.

Be mindful of the power of qualitative data. The Most Significant Change technique asks the scale-up beneficiaries and implementers to reflect on what they think is the most significant change in their experience as a result of their involvement with a particular practice or innovation. Story telling is another way to poignantly capture and portray (often in the form of success stories) key programmatic lessons and experiences. Anecdotes, quotations, and photographs from project participants and stakeholders can be valuable complements to facts and figures, filling data gaps and providing insight and understanding into statistics.

IRH uses the Most Significant Change technique to document and understand the meanings of scale-up processes and outcomes. The conversations can reveal intangible and unanticipated aspects of scale-up undetected by quantitative methods.²⁶

Although monitoring the scale-up *process* may require using different data sources than what is used for monitoring the scale-up *outcomes*, it will generally be cheaper, faster, and less demanding on staff to use, when possible, the existing management and information system/service statistics or other existing sources of information to collect data rather than create a new reporting system.

The frequency of data collection should be stated for all indicators and must be feasible (i.e. it will be possible to collect the data at the stated frequency) and affordable (i.e. supported in the project/program budget). Also, the same data sources should be used to measure indicators throughout the lifetime of the monitoring exercise (i.e. identical measurement methodology for baseline and follow-up). Table 5 presents examples of selected data sources appropriate for monitoring scale-up indicators with corresponding advantages and disadvantages.

Table 5. Comparison of Selected Data and Tools for Monitoring the Scale-up Process

Type of Data, Methodologies, or Tools	Examples	Pros	Cons
Service statistics (or routine health data)	<ul style="list-style-type: none"> • Client records • Admission records • Laboratory results 	<ul style="list-style-type: none"> • Easy to obtain • Provides most readily-available data on services provided • Because this information is routinely collected, it provides information for time and seasonal trend analyses 	<ul style="list-style-type: none"> • Accuracy, timeliness, and definitions used in reporting may be inconsistent • Critical information for analysis may not be captured (e.g. patient's age) • Data may be biased if there are results-based expectations of reward or fears of discipline • Requires a well-functioning HMIS system
Administrative or program records	<ul style="list-style-type: none"> • Financial data • Participant lists (e.g., training) • Service delivery protocols • Commodity or logistics files/logs/records 	<ul style="list-style-type: none"> • Can be easy to obtain 	<ul style="list-style-type: none"> • Potential data quality issues (data missing, incomplete, and/or inaccurate)
Lot Quality Assurance Sampling (LQAS)	This is a sampling methodology to be used in combination with a data collection tool	<ul style="list-style-type: none"> • Relatively rapid and inexpensive • Method allows for smaller sample sizes than standard probability surveys • Can be population or provider based 	<ul style="list-style-type: none"> • Is not intended to measure incremental change over time • Provides only binary estimates of targets (met/not met, acceptable/not acceptable)
Rapid Results Initiative (RRI)	This is a sampling methodology to be used in combination with a data collection tool	<ul style="list-style-type: none"> • Builds momentum for achieving results • Goals are sharply defined and measurable • Encourages teamwork and ownership 	<ul style="list-style-type: none"> • Because the focus is on results, processes can be overlooked • The 100-day timeline is fixed

(Table continues next page)

Type of Data, Methodologies, or Tools	Examples	Pros	Cons
Desk Reviews of Government Documents & Other Official Records	<ul style="list-style-type: none"> • Official policies, plans, or guidelines • Laws, regulations • National budgets, accounts • Meeting minutes 	<ul style="list-style-type: none"> • Good for measuring institutional changes • Useful for assessing the extent to which a practice is being valued and operationalized 	<ul style="list-style-type: none"> • May be difficult and costly to obtain • Does not measure if actual implementation of the policy, guideline, law, etc. occurred • Inclusion into govt. policies or laws may have less to do with recognizing something's merits and more to do with pure political motivation • Requires careful analysis and contextual information normally best obtained through qualitative methods
GIS	This is a methodology to be used in conjunction with other data sources	<ul style="list-style-type: none"> • Can link different types of data together in one system • Visually displays data • GIS data is inherently better quality data due to strict data standards • Patterns and associations not apparent in tabular data can be seen on maps 	<ul style="list-style-type: none"> • GIS infrastructure is sometimes costly • Training for GIS is time-consuming • Not all data can be mapped • Mapping data sometimes requires significant time in cleaning and structuring data
Facility Assessments	Service Availability and Readiness Assessment (SARA)	<ul style="list-style-type: none"> • Can be done through routine supervisory visits by district medical officers • Good for providing immediate information on basic infrastructure and service availability • Collects information on the type of facility, the managing authority, and GPS coordinates 	<ul style="list-style-type: none"> • Agreement has not been made on a uniform way to present information • This system is meant to "flag" problem areas where more in-depth surveys or research may be required
	Rapid Health Facility Assessment (R-HFA)	<ul style="list-style-type: none"> • Relatively rapid instrument for measuring a small set of key indicators • Identifies main bottlenecks to quality service delivery 	<ul style="list-style-type: none"> • Is only suitable for first level facilities (non-referral) and allied community service providers (CHWs/TBAs)
	Quick Investigation of Quality (QIQ)	<ul style="list-style-type: none"> • Practical, low-cost methodology for monitoring clinic-based quality of care FP programs 	<ul style="list-style-type: none"> • Requires client and provider consent • Scope of information collected through this survey is limited and does not provide an overview of primary health services

(Table continues next page)

Type of Data, Methodologies, or Tools	Examples	Pros	Cons
Facility assessment (continued)	Facility Audit of Service Quality (FASQ)	<ul style="list-style-type: none"> • Low-tech and can be implemented by local staff • Quick and relatively low cost • Often adapted to focus on a particular type of service or facility 	<ul style="list-style-type: none"> • Does not collect information on the actual process of delivery of care
	Health Facility Census	<ul style="list-style-type: none"> • Collects information on physical assets on all public and semi-public health facilities in an area and can serve as a baseline assessment for investment into the health sector 	<ul style="list-style-type: none"> • This measures the coverage and availability of health facilities but is not designed to measure quality of care, client satisfaction, and detailed information of human resources (i.e., must be triangulated with other data)
Qualitative interviews	<ul style="list-style-type: none"> • In-depth interviews • Client exit interview • Focus group discussions 	<ul style="list-style-type: none"> • Can obtain rich qualitative information • Can be facility or community-based 	<ul style="list-style-type: none"> • Can be time consuming to collect and analyze • Often a smaller sample size • Subject to interviewer-bias as well as courtesy bias where clients will not speak negatively of their experience
Observation	<ul style="list-style-type: none"> • Client-provider observation • Mystery clients 	<ul style="list-style-type: none"> • Actual practices, behavior, etc. can be witnessed • Can provide validation of information collected through routine reporting 	<ul style="list-style-type: none"> • Subject to the <i>Hawthorne Effects</i> when the presence of an observer changes the subject's natural behavior • Requires excellent observer training • Time-consuming
Self-administered assessments and questionnaires		<ul style="list-style-type: none"> • Can reach a large sample size • Can be administered where health systems are weak 	<ul style="list-style-type: none"> • May be difficult to validate responses • Requires literacy and/or other respondent capacities that are not always guaranteed

Consideration 6: Develop a Data Use and Dissemination Plan

Again, the ultimate purpose of monitoring scale-up and collecting and analyzing data is to enable evidence-based decision making, which improves the scale-up process. A data use and dissemination plan, therefore, ensures that findings from monitoring efforts are not wasted because they were not processed appropriately and subsequently shared.

Your data use and dissemination plan need not be long and complex. A table or chart is a good way to depict a data use plan. The idea is to begin the monitoring planning stage with a definition of what the desired information is so that results and feedback can be planned accordingly. Some of the questions the plan should answer are:

- Who will be responsible for analyzing the data?
- Who will be responsible for interpreting the data?
- How will the findings be presented (e.g., summary reports, graphs, maps)?
- How will the findings be disseminated (e.g., meetings, workshops, publications)?
- Who are the internal (within the scale-up project) and external (stakeholders) audiences for dissemination?
- Who will be using the data to develop solutions for redirecting or galvanizing the aspects of scale-up that have been derailed, delayed, or stalled?

Regarding stakeholders, how do you know which ones to target for information dissemination? To conduct a stakeholder analysis, consider the following:

- Who will benefit from the data and what questions are they seeking to answer?
- Who has influence and resources supporting this scale-up?
- Who needs to be targeted to get the data into action?
- Who is being directly or indirectly affected by the outcome of this scale-up?
- Who is supporting the scale-up, who is opposing it, and why?¹⁷

Developing a data use and dissemination plan falls under seven key steps (based on the *Seven Steps to Use Routine Information to Improve HIV/AIDS Programs*²⁷).

Step 1, identifying questions of interest and **Step 2, prioritizing key questions of interest**, go back to consideration 1 and defining what will make your scale-up a success. This will help to determine which areas of the scale-up are working well and should be continued and which ones need improvement. Each question should be as specific and well-defined as possible. As always, engage stakeholders in this step because they (the data users) and the resource team/program implementers (data producers) may play a variety of different roles, may have different interests and perspectives, and may have different resources available to them.

Step 3 is identifying data needs and potential sources. To answer your priority questions, you will likely need multiple indicators requiring multiple data sources.

The following four steps — **transform data into information (Step 4), interpret information and draw conclusions (Step 5), craft solutions and take action (Step 6), and continue to monitor key indicators (Step 7)** — are addressed later in this guide.

Consideration 7: Collect Data

Once you have your indicators and know what data you need, where you will find data, and how data will be used and disseminated, the next step is to collect the data. The point of the data collection is to identify bottlenecks and barriers to implementing your scale-up.

Even with well-defined indicators and a solid monitoring plan, on the supply side you may encounter major gaps in data availability and quality. Few developing countries are able to produce data of sufficient quality to routinely track progress in scaling up health interventions and strengthening health systems.²⁸ Based on the quality of the data gathered, this step may have to be repeated. Depending on your data sources, initial data collection can take as little as a few weeks to as long as a few months. The point is to conduct data collection until you have the information you need to answer your priority questions.

Consideration 8: Analyze Data and Determine if Scale-Up Is Progressing On Track

After specific data sources have been identified and obtained to answer your question of interest, the monitoring data can be transformed into useful information to facilitate decision making and subsequent action. The result of this data analysis can be depicted in visual (e.g., charts, tables, graphs) and narrative formats. When information is not presented using a method or format appropriate for a particular audience, it is considered inaccessible and not used for decision making. To use evidence-based information to improve scale-up, the information received by stakeholders must be *available, accessible, relevant, and useful*.

Referring to figure 3, the monitoring scale-up framework (page 18), what does your data analysis reveal in terms of institutional scale-up vs. expansion and replication? Other relevant questions (figure 4) are:

- How is scale-up progressing at the various levels, from the national level on a macro scale to the individual level on a micro scale?
- How well are the various domains being addressed?
- Is the practice being incorporated into policies, budget line items, pre-service and in-service curricula?
- Has the practice been included in standard operating procedures, job aids, or other health communication materials?
- Are the number of service delivery points currently implementing the practice on pace with what was planned?
- Are providers being adequately trained and is there supportive supervision?
- Do the service delivery points have the necessary commodities (e.g., implants, condoms, vaccines, antibiotics, IEC materials, etc.) for the practice to be properly implemented?

- Is community mobilization (CM) creating awareness of and support for the practice?
- Is the scale-up maintaining fidelity to the practice? In other words, *has something been lost while scaling up a practice or intervention from the pilot phase?*

After the data has been analyzed, additional data may need to be gathered to verify findings, especially if there are concerns over data quality. Meetings with various stakeholders and/or program implementers may need to be called to better understand the findings, particularly if there are unexpected results or if the scale-up is not maintaining fidelity to the original practice that had been piloted.

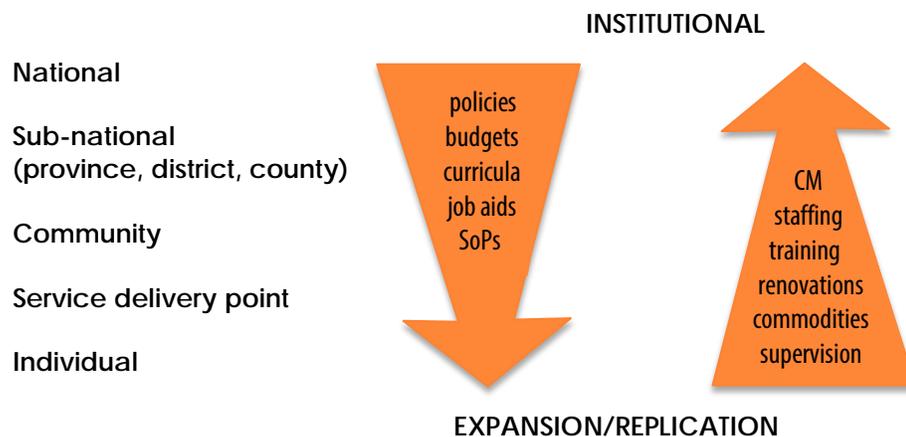


Figure 4. Relevant considerations during scale-up.

Consideration 9: Make Program Adjustments Based on Findings and Recommendations

After the data have been analyzed and compared against the goals of the scale-up with actual performance, the information must be shared and interpreted so that something can be done. This involves convening key stakeholders to discuss why the expected achievements in the process of scaling up have or have not been met and to make evidence-based program adjustments. It is critical to maintain stakeholder engagement in the process of brainstorming solutions to road blocks in your scale-up to ensure the solutions are actionable and ultimately implemented. A meeting should be convened to use the conclusions identified in your analysis to:

- identify where successes have been achieved and how they can be used as opportunities to create momentum;
- discuss challenges and potential solutions to getting the scale-up back on track or change strategies;
- further specify, craft, and prioritize these solutions to respond to problems and challenges (within given financial, human resource, infrastructure, and time parameters); and
- develop an action plan for implementing each of these solutions.

Based on your findings and recommendations, significant programmatic changes may be needed. This could entail additional financial resources, staff, stakeholders, technical assistance, and/or time. Continue to keep the main scale-up objective in mind as you determine which aspects of scale-up — institutionalization and expansion/replication — need adjustments or more concerted attention.

This is one of the most critical pieces to monitoring scale-up because it is the culmination of efforts in collecting, analyzing, disseminating, and using information. Collecting data is a waste of time if the data are not going to be reviewed and interpreted to make program improvements. Moreover, the information you have tells a story and deciding what to do with the information you have will dictate how your scale-up story ends.

Consideration 10: Continue the Monitoring and Evaluation Process

Monitoring the process and outcomes of your scale-up and evaluating the results will continue to be an ongoing process. The frequency of monitoring (continued collection, analysis, and interpretation of key indicators) will depend on the nature of the scale-up and practice of interest, the type of the question of interest, and resources — both financial and human.

Because successful scale-up involves significant time and money and an immense amount of coordination and planning, it is imperative that M&E be a continuing part of the process of scale-up. Expanding *and* institutionalizing the scale-up requires strong leadership, a dedicated national budget line, a sufficient number of competent health workers, knowledge and acceptance of the practice, an adequate and reliable supply of the necessary commodities, and community acceptance. Faltering in any one of these areas could jeopardize the coverage and pace of scale-up. However, if done continuously and well, monitoring and evaluating activities can find and address problematic areas and correct the course of the scale-up (figure 5).

New practices that are implemented set the occasion for discovering and creating the infrastructure supports, policy revisions, and funding streams needed to further develop and expand capacity. This leads to a never ending cycle to sustain and improve both the innovation and the infrastructure supports for the innovation for years to come.²⁹

Measurement is the first step that leads to control and eventually to improvement. If you can't measure something, you can't understand it. If you can't understand it, you can't control it. If you can't control it, you can't improve it.

H. James Harrington

Performance improvement consultant



Figure 5. Monitoring the scale-up feedback mechanism is an ongoing process.

APPENDIX A: DEFINING THE INNOVATION

The implementation and scale-up of best practices requires careful documentation of the evolution of the practice as well as lessons learned along the way. Often, however, practitioners get so invested in scale-up projects that they lose sight of the basics. Moreover, they struggle with scaling up because they are unable to articulate essential elements for expansion. Thus, theoretical concepts from ExpandNet, WHO, and the National Implementation Research Network (NIRN) as well as practice in real-life settings show that defining the innovation and its key components is an essential component of scale-up success.

With this understanding, you can follow a process to thoroughly define the components of the scaled-up practice or innovation you have chosen to focus monitoring efforts on. To do this, it is necessary to assess the body of data on successful implementation of the innovation collected during the pilot phase or in another setting and identify the key components, including the methodology, users, implementers, policy environment, and dissemination strategy. Useful resources to review include reports, operations research, and program evaluations, as well as documentation and tools from previous experiences with the innovation, such as monitoring instruments, supervision checklists, training manuals, budgets, and work plans.

The engine behind scaling up is comprised of six processes: staff recruitment and selection, pre-service or in-service training, coaching/mentoring and supervision, internal management support, systems level partnership, and staff and program evaluation. These processes enable implementation of evidence-based practices at scale by improving the organizational and systems environment.¹⁵ Without attention to these drivers, the scale-up process breaks down. The Defining the Innovation Work Sheet in this section combines understanding of systems thinking to guide practitioners through a process to define the human, financial, and time processes and resources required for scaling up an innovation. Ultimately, this exercise will help practitioners define their evidence-based programs or interventions and ascend to the next level of program scale.

Defining the Innovation Work Sheet

The work sheet consists of a multi-page table with basic principles and guiding questions. Items shaded in blue are the main steps, which serve as a checklist to assure all bases are covered in the definition while those shaded in grey are the probing questions that help drill down the necessary level of detail in each step of the definition process. Note that additional, customized questions may be inserted into the work sheet and participants should also be encouraged to expand the number of rows under each step, as needed.

To ensure a well-operationalized definition, the work sheet should not be used by program managers in isolation, but within the context of a participatory process involving a set of multi-disciplinary stakeholders who are part of or will be affected by implementation of the innovation. Although the total number of people involved in the exercise will depend on the organizational context and the innovation itself, it may be useful to assure representation from both the resource team and the users, as well as from each of the angles of the intervention. Once the group is convened, the format of the exercise should also be tailored and involve some combination of verbal and written forms, that is, one-on-one interviews as well as facilitated group discussions.

Defining the Innovation Work Sheet

1. Document the philosophy, values and principles that underlie the program, provide guidance for all decisions and evaluations, and promote consistency, integrity and sustainable effort across all organizational units

What are the underlying principles of the selected practice?	
What are the elements related to equity?	
What are the elements related to gender?	
What are the underlying human rights angles?	
What are the elements related to [ADDITIONAL THEME]?	
How does informed choice factor into this practice?	

2. Determine the inclusion and exclusion criteria that define the population for which the program is intended and who is most likely to benefit when the program is implemented as intended

Who does the innovation benefit?	
Who is the primary audience?	
What other audiences are involved?	
Who is not the intended audience?	

3. Enumerate the features or the essential ingredients (also known as core intervention components, active ingredients, or practice elements which may not be well known or understood) that must be present to say that a program exists in a given location

Service Delivery (effective, efficient, and accessible services)	
Human Resources (sufficient, well-trained staff)	

Medical Products, Vaccines, Technologies (equitably accessible)	
Information Systems (useful data on health determinants & health system performance)	
Governance (leadership with effective oversight, regulation & accountability)	
Finance (adequate funds for affordable services)	
4. Capture the components related to developing staff competency, organizational supports, and technical and adaptive leadership supports as well as the responsible party for each	
Staff Competency/People (List individual or group responsible for managing staff competency)	
Who will be involved in implementing this innovation?	
How will they be selected?	
What skills do they need?	
How will they be trained to introduce/maintain the innovation?	
Who provides the training?	
How is the training or coaching received, processed, and applied by the recipient practitioners?	
What type of ongoing coaching, monitoring, and/or supervision are required?	
Who will provide the coaching and support?	
What tools, if any, are needed?	
How will the processes & tools be integrated into systems for sustainability?	

What other resources are needed?	
Where will the resources come from?	
Organizational Supports/ Systems (List individual or group responsible for managing organizational supports/systems)	
What are our monitoring & evaluation capacities?	
What level of support can our HMIS provide?	
Is there administrative support for this innovation?	
What kind of administrative support do we have?	
What is the buy-in of management?	
Which organizational norms and policies facilitate the innovation?	
Which organizational norms and policies hinder/serve as obstacles to the innovation?	
What further systems support is required?	
Where will the additional support come from?	
What are the supervision and/or quality assurance capacities?	
What activities are needed to integrate this innovation into existing systems?	
Environmental/Other Elements (List individual or group responsible for managing environmental/ other elements)	
What national norms and policies facilitate this innovation?	
What national norms and policies hinder/serve as obstacles to the innovation?	

5. Describe how all core elements of the innovation interact with other sub-systems	
Sub-system	
Kind of interaction	
What are the system-wide effects?	
6. Define the adaptations needed for expansion/scale-up sites	
Adaptation	
Is this adaptation practical for the field context?	
If it is not practical, should we adjust or drop it? If adjust, how?	
What core elements of the intervention would the field application of the adaptation compromise?	
Where has this been successfully field tested before?	

APPENDIX B: SELECTED FRAMEWORKS AND APPROACHES FOR SCALE-UP OF HEALTH INTERVENTIONS

Many frameworks and approaches for scaling up health interventions have been developed and tested in recent years. Some of those used in FP and maternal and child health are described and summarized below.

Table B1. Selected Frameworks and Approaches for Scaling Up Health Interventions

Names/ Authors	Description	How the Framework Addresses M&E
ExpandNet/ WHO framework ^{2,5}	<p>ExpandNet 's framework links five elements:</p> <ol style="list-style-type: none"> 1. innovation itself 2. individuals and institutions facilitating its wider use (the resource team) 3. scaling-up strategy 4. users of the innovation 5. environment in which scaling up takes place 	<p>M&E is classified as a “strategic choice area” and is necessary to assess the process, outcomes, and impact of moving to scale. Guidance on using data collected from M&E to assess pilot, develop a scaling-up strategy, and carefully manage scale-up as well as guidance on indicator development, and mixed qualitative and quantitative methodology.</p> <p><i>Used by IRH to operationalize, evaluate and monitor scale-up in the Fertility Awareness Method (FAM) project</i></p>
Implementing Best Practices (IBP) Consortium, Guide for Fostering Change ³⁰	<p>IBP developed a guide for fostering change to scale up best practices based on four phases:</p> <ol style="list-style-type: none"> 1. define the need for change 2. plan for demonstration and future scale-up 3. support and implement the demonstration 4. going to scale with successful change efforts 	<p>The newly-updated <i>Guide for Fostering Change</i> now includes a monitoring step: Monitor the process of scaling up and measure and communicate the results of the scaled-up practices.</p> <p><i>The monitoring elements of the Fostering Change guide were primarily based on the content in this Guide to Monitoring Scale-up.</i></p>
Improvement Collaborative Approach from the Healthcare Improvement Project ³¹	<p>Developed for the U.S. context and adapted by University Research Co. for developing countries, the Improvement Collaborative Approach involves teams of health professionals working together to improve certain components of the health system. It focuses on a single technical area, develops a time-limited strategy (i.e., one to two years), and spreads existing knowledge to multiple settings through teamwork and learning from others.</p>	<p>Monitoring is noted as an essential phase of the improvement collaborative approach. Indicators should include measures of input, process, and outcome/impact. Suggestion of additional indicators to monitor how well a specific change is achieving results. Approach is mainly focused on quality improvement.</p> <p><i>Used by the Extending Service Delivery (ESD) project to scale up best practices in FP/reproductive health in the Asia/Middle East region</i></p>

<p>Maternal and Child Health Improvement Program (MCHIP) framework³²</p>	<p>MCHIP's framework illustrates the pathway to applying strategies for preventing and managing postpartum hemorrhage, pre-eclampsia and eclampsia at scale. Implementation of scale-up, broken into introduction, early, and mature phases, is guided by a readiness assessment of:</p> <ul style="list-style-type: none"> • health system governance • policy • service delivery capacity • health worker capacity/training • drugs/equipment <p>These components are monitored (and addressed again, if necessary) during the various implementation phases.</p>	<p>Includes routine monitoring as a component of scale-up, but most countries included in this mapping indicated this area as a weakness. Provides a snapshot over time, updates may demonstrate the role of M&E.</p>
<p>Management Systems International (MSI) Scaling Up Management Framework for Practitioners¹⁸</p>	<p>MSI's framework expands on three main steps:</p> <ol style="list-style-type: none"> 1. Develop a scale-up plan 2. Establish the preconditions for scaling up 3. Implement the scaling up process <p>Within these steps are 10 tasks starting with creating a vision to tracking performance and maintaining momentum.</p>	<p>The last task, Track Performance and Maintain Momentum, states the importance of assessing outcomes as well as monitoring progress so that the monitoring can be a catalyst for maintaining momentum and accountability , and for keeping the scaling-up process on track.</p>

Source: Adapted from *The Policy Dimensions of Scaling Up Health Initiatives*²²

APPENDIX C: MONITORING SCALE-UP CASE STUDIES

The following three case studies highlight different aspects of the monitoring of scale-up experience.

Monitoring the Scale-Up of Family Planning Integration into HIV Comprehensive Care Centers in Kenya through the PROGRESS Project

In 2008-2009, the Kenya Ministry of Health (MoH) Division of Reproductive Health (DRH) and National AIDS and STIs Control Programme (NASCO) conducted a successful pilot project integrating family planning (FP) into HIV Comprehensive Care Centers (CCCs) in the Rift Valley and Coast provinces. Operations research showed that the use of modern methods of contraception increased significantly among female HIV care and treatment clients in the pilot.

Following the successful pilot, the MoH decided to scale up this integrated practice to all HIV CCCs in Kenya. FP/CCC integration has since been included as part of the National Reproductive Health/HIV Integration Strategy, a National FP Orientation Package for HIV Service Providers, and the Minimum Package for Reproductive Health /HIV Integration in Kenya.

In 2011, FHI 360's PROGRESS Project began working with the NASCO and the DRH to conduct a cross-sectional approach to monitoring scale-up of FP/CCC integration. The approach was designed to be rapid and low-cost, so that it could be repeated over time to assess progress and pace of scale-up.

Indicators — Stakeholders, including members of the Reproductive Health /HIV Interagency Coordinating Committee and the FP Technical Working Group were engaged in designing the approach. They identified a list of priority information needs that should be monitored (table C1).

Table C1: List of Priority Information Needs that Should Be Monitored, Kenya

Financing	<ul style="list-style-type: none">• support for FP/CCC integration in budget documents
Service Delivery	<ul style="list-style-type: none">• whether or not CCC clients are actually receiving FP services within CCCs
Access to Physical Resources	<ul style="list-style-type: none">• availability of job aids for FP within CCCs• availability of FP commodities and supplies within CCCs
Leadership/ Governance	<ul style="list-style-type: none">• leadership in support of FP/CCC integration• support for FP/CCC integration in policy, guidance, and training documents
Health Workforce	<ul style="list-style-type: none">• supervisors within CCCs are oriented towards and supportive of FP provision• CCC providers trained in FP services
HMIS	<ul style="list-style-type: none">• facility and client record keeping forms include and support FP provision within CCCs

The information needs represent the various levels and domains as reflected in the **Framework for Monitoring Scale-Up**. Because monitoring scale-up requires looking at multiple domains and levels of the health system, multiple data collection methods may be necessary. In this situation, the stakeholders decided to undertake four different methods of data collection.

Data Collection Methods — The monitoring approach that was developed focused first on determining the degree to which the integration of FP into CCC services is occurring. Using **client exit interviews**, clients were asked if they were, or have ever at that CCC, been screened for FP need, counseled on methods, and/or provided a method or a referral, as appropriate to the client's needs and desires. *This data collection method covered the client-level indicators, looking at the service delivery domain.*

Secondly, the necessary inputs that contribute to the provision of the practice at the service delivery point/facility level were assessed through **structured interviews with an in-charge at the CCC facility**. The facility assessment covered availability of commodities and supplies, job aids for FP, providers trained to provide FP services, and supervisors supportive of FP provision at the CCC. The interviews were combined with observations for quality assurance. *This data collection method covered the service delivery point level, looking at the access to physical resources, service delivery, and health workforce domains.*

Interviews with key stakeholders (program managers and policy makers at the national and sub-national levels) identified key enabling and disabling factors affecting scale-up and assessed support for FP/CCC integration among stakeholders at the national and sub-national level. These interviews provided insight on the degree to which the practice has been institutionalized within the wider health system.

Finally, a **desk review** was conducted to assess the level of support for the practice in national and sub-national policy, programming, fiscal, training and other documents and systems. Questions from the desk review included: *Do key HIV and CCC policy, guidance, planning and programming documents support provision of FP services?*

The key stakeholder interviews and desk review covered the national and sub-national levels, looking across six of the seven domains (excluding community involvement). Table C2 shows the completed monitoring scale-up work sheet for FP/HIV Integration into CCCs.

Table C2: Completed Monitoring Scale-up Framework Work Sheet for FP/HIV Integration into CCCs in Kenya

GUIDING QUESTIONS

What is the defined intervention?	FP screening, counseling, referrals, and methods offered to clients at HIV CCCs (FP/CCC Integration)
What is the expected outcome?	CCC clients are offered FP services
What is the coverage of the scale-up?	Nationwide, Kenya
What is the timeline?	Not set
Who are the key stakeholders involved?	NASCOP, DRH, Implementing partners (USAID APHIA Plus partners), health facility staff, WHO, UNFPA, others on reproductive health/HIV Interagency Coordinating Committee and FP Technical Working Group

DATA COLLECTION

Indicators (Input → Process → Output → Outcome)	Data Source	Data Collection	Domain
National Level			
Proportion of policy and guidance documents supportive of FP/CCC integration (includes FP, HIV, CCC, and reproductive health /HIV integration in national and sub-national level policy, guidance, planning and programming documents, fiscal planning documents, job aids, training curriculum, facility and client record keeping forms and the H MIS system, and commodities systems)	Desk review	TBD / Annually?	All, except Community Involvement
Proportion of interviewed stakeholders who have positive attitudes towards FP/CCC integration	Key stakeholder interviews		Leadership/ Governance
Proportion of interviewed stakeholders who perceive the attitudes of others to be mostly favorable towards FP/CCC integration	Key stakeholder interviews		Leadership/ Governance
Proportion of interviewed stakeholders who perceive the successes and opportunities for the scale-up of FP/CCC integration to be greater than the challenges and barriers	Key stakeholder interviews		Leadership/ Governance
Enabling and disabling factors for successful scale-up named by 5 or more stakeholders	Key stakeholder interviews		Various
Sub-National Level			
<i>Key stakeholder interviews were conducted with national and sub-national level stakeholders, but results were not disaggregated.</i>			
Service Delivery Point			
Proportion of in-charge nurses that report their supervisors asked about or discussed FP integration when they last visited	Structured interviews with facility in-charge		Service Delivery
Proportion of facilities with a supply of the appropriate FP methods in stock	Structured interviews		Physical Resources
Proportion of facilities with appropriate job aids for FP provision available	Structured interviews		Physical Resources
Proportion of facilities with at least half of CCC providers trained	Structured interviews		Health Workforce
Client Level			
Proportion of CCC clients who are appropriately screened, counseled, and/or provided a method or referral	Client exit interviews		Service Delivery

Monitoring the Scale-Up of Standard Days Method in Five Countries through the Fertility Awareness-Based Methods Project

Under the Fertility Awareness-Based Methods (FAM) Project, Georgetown University's Institute for Reproductive Health (IRH) conducted a five year (2007-2012) prospective study to assess and document the process and effects of large-scale integration and scale-up of standard days method (SDM) in family planning (FP) and reproductive health systems in the Democratic Republic of Congo, Guatemala, India, Mali, and Rwanda. This included planning and M&E at client, facility, provider, and policy levels. SDM scale-up was monitored and evaluated to:

- guide the scale-up process;
- maintain stakeholder momentum and accountability;
- assess outcomes to determine if scale-up has been achieved; and
- contribute to a growing evidence base on scale-up with a focus on monitoring and evaluation.

Process — Following successful piloting of SDM services and in partnership with country-level stakeholders, IRH applied the systems analysis framework and scaling-up principles of the ExpandNet/WHO model to scale up SDM within existing programs and services. An essential first step was to create an SDM scale-up **logic model** depicting inputs, processes, outputs, and outcomes that would be monitored and evaluated.

Next, stakeholders were engaged to **define the innovation** and make explicit values such as gender-equity and informed choice. Scale-up success was defined as the availability of SDM at national, sub-national, and organizational levels; availability of SDM at service delivery points; and provider capacity. Having a clear definition of the innovation and scale permitted semi-annual benchmark monitoring by stakeholders.

In relation to the logic model, IRH **selected indicators** to monitor the scale-up. Examples of selected indicators used in Jharkhand, India are given in table C3. Using Microsoft Access, IRH created a monitoring database where indicators could be reported on directly and country-level and donor reports are automatically generated for program management.

Table C3: Examples of Selected Indicators Use in Jharkhand, India

Financing	<ul style="list-style-type: none"> • funds leveraged for SDM
Service Delivery	<ul style="list-style-type: none"> • percent of service delivery points with SDM included in method mix
Access to Physical Resources	<ul style="list-style-type: none"> • SDM included in information, education, and communication materials • systems for commodities logistics and procurement
Leadership/ Governance	<ul style="list-style-type: none"> • SDM included in key policies, norms, and protocols
Health Workforce	<ul style="list-style-type: none"> • public or private training organizations including SDM in in-service training • SDP included in pre-service training • number of providers trained
HMIS	<ul style="list-style-type: none"> • SDM in health management information system (HMIS)
Community Involvement	<ul style="list-style-type: none"> • number of resource organizations

IRH used both qualitative and quantitative **data sources** for assessing scale-up progress. They included: service statistics, baseline and endline community and facility assessments, structured supervision visits with providers, quarterly guided discussions with global staff, periodic stakeholder interviews and event-tracking timelines. Additionally, most significant change story collection was used to measure unanticipated effects of scale-up and the extent to which intervention values were scaled up.

Lessons Learned — After **data collection and analysis**, the monitoring results showed that IRH scale-up work yielded sustainable, quality SDM services in over 90 percent of service delivery points in the scale-up areas and contributed the following key lessons:

- Periodic systems assessments help maintain accountability and build systems evaluation capacity of stakeholders.
- A simple, flexible monitoring system can guide processes and aid in developing better practices to meet the multidimensional challenges of achieving universal coverage; user-friendly tools for data collection and analysis are critical.
- Those involved in systematic scale-up should document implementation surprises, miscalculations, and incorrect assumptions at different phases of scale-up.
- Identifying actionable gender-equity practices and outreach strategies are critical to the implementation and monitoring of scale-up since it facilitates the development of appropriate messages for women and for men, engenders community-based male involvement, and enhances couple-focused service delivery models in facilities.

Monitoring Vitamin A Promotion in Niger under the Nutrition Communication Project

Survey data from 1984 collected from the Tahoua Region of Niger estimated clinical vitamin A deficiency among children to be a serious public health problem. In response to the Nigerien MoH's increased interest in expanding its vitamin A program, the Niger Vitamin A Promotion Project under the Nutrition Communication Project (NCP) was implemented in Tahou Region from 1991 to 1994. The USAID-funded project was managed by the Academy for Educational Development (AED) with Helen Keller International and the Niger Ministry of Public Health as implementing partners.³³

Although the MoH and Helen Keller International had actively distributed vitamin A capsules, it had no experience with behavior change programs encouraging the consumption of vitamin A-rich foods. A two-year pilot study was successfully conducted and reached approximately 26,000 people. The project was then scaled up and reached approximately 250,000 people. The project goal was to increase consumption of vitamin A-rich foods (i.e., liver, dark-green leafy vegetables, squash, and mangoes) among vulnerable groups (children between the age of 6 months and 6 years, pregnant women, and nursing mothers) through radio dramas and radio spots, drama performances, and group discussions using counseling cards.

Key Monitoring Issues — Project planners understood that the key to successful scale-up was how well they could design strategies to promote locally available and affordable food that could improve the vitamin A status of rural women and children. The challenges they faced included limited sources of vitamin A-rich foods, geographic isolation, illiteracy, and poor access to information. The project staff knew they had to closely monitor their communication strategy to address these challenges and effectively scale up. Priority information needs to be monitored included those listed in table C4.

Table C4: List of Priority Information Needs that Should Be Monitored, Niger

Financing	<ul style="list-style-type: none"> • funds secured to expand the government's vitamin A program
Service Delivery	<ul style="list-style-type: none"> • face-to-face counseling conducted • village dramas performed
Access to Physical Resources	<ul style="list-style-type: none"> • availability of print materials (counseling cards and educational postcards) • village dramas broadcasted on regional radio station
Leadership/ Governance	<ul style="list-style-type: none"> • government support for increased education on and funding of activities promoting vitamin A consumption • training of MoH staff on communication programs • buy-in from local leaders to implement the media strategy
Health Workforce	<ul style="list-style-type: none"> • training of change agents, or <i>encadreurs</i> (trainers & supervisors) • supervision of <i>encadreurs</i> • <i>encadreurs</i> training village drama teams • led by project staff, local leaders creating drama teams & selecting actors
HMIS	<ul style="list-style-type: none"> • surveillance on vitamin A deficiency
Community Involvement	<ul style="list-style-type: none"> • local authorities informed about the project and their needed involvement • community members demonstrating increased awareness of the benefits of eating vitamin A-rich foods

Lessons Learned — The project scale-up involved two phases with phase II heavily informed by M&E findings from phase I. Monitoring the institutionalization and expansion of vitamin A promotion from the first phase yielded the following lessons learned which in turn were used to make mid-course adjustments to the scale-up:

- **Monitor community activities regularly and frequently.** The village dramas, while being an energizing force for community involvement and a powerful way to build interest in a nutrition issue, required adequate supervision to keep up motivation of volunteer actors and assure that the content of performances was on track. Program managers had to devote more funding and personnel for this critical function.
- **Community-based practices are better adopted and sustained when the change agent is from the same community.** Phase I findings revealed that villages with resident *encadreurs*, (comprised of government health workers, teachers, and agricultural extension agents) did better than those without.
- **Careful planning at the village level significantly extends the reach and effectiveness of communication activities.** For example, rural groups appeared to respond favorably to activity goals that were challenging yet realistic. When allowed to set their own activity goals, drama groups performed more frequently than when goals were set for them by the national project team. Since the dynamics of larger villages (over 2,500 people) differ significantly from smaller villages, reaching a high percentage of the population required an implementation plan that included specific targeted activities in each village neighborhood.
- **More precise and refined media planning significantly increases the reach and effectiveness of communication programs.** Village size, for example, appears to be a key factor in how information flows and the kind of media mix that is most effective. Monitoring of the scale-

up showed that the impact of drama groups dropped substantially with increasingly larger villages if local planning did not ensure wide coverage. Radio coverage also varied with village size, with significantly more listeners in larger villages.

- **Overall access and exposure to mass media and community events varies extraordinarily by gender.** Careful audience segmentation by village unit and also by gender improved the impact of communication efforts. Using multi-media was a key strategy for reaching women. Whereas men were exposed to multiple channels, women, because of their more circumscribed lives, tended to be exposed to only one channel — and this varied from woman to woman with equal overall exposure to radio, drama and talks. Using more channels increased chances of reaching them.³⁴

Overall, the scale-up was a success and showed increased food consumption of vitamin A in the target beneficiaries. Although the intervention in Niger was designed for a difficult and unique environment, and both messages and media were tailored for a distinct population, a number of lessons are applicable to scaling up other social marketing programs.

APPENDIX D: GIS FOR MONITORING SCALE-UP

Geographic information systems (GIS) are used in various types of research as one type of many tools for managing and analyzing data. GIS provides a set of spatial tools used by researchers to map populations and characteristics of populations, as well as manage and analyze data associated with the population of interest. In a GIS, the data can be uploaded in a series of layers that can include information such as location of health facilities, catchment areas of health interventions, locations of resources, administrative boundaries, roads, rivers, and population-based data. Detailed analysis on the interactions and relationships among those layers can improve understanding of our data. Additionally, a GIS tool and its ability to manage, analyze, and visualize data can help to support evidence-based decision making.

Increasingly, the public health and development community has begun to realize the value of mapping and the need for more sophisticated spatial analysis to improve decision making, policy making, advocacy, and resource allocation. Due to the complexity of family planning (FP) and reproductive health needs and programs, there is a great need for using multi-sectoral data to have a complete understanding of the environment in which these programs are operating.

The complexity of FP programs also arises because such programs have many and diverse stakeholders and include several types of providers (public and private, facility-based, and community-based) working together and separately to address different segments of FP supply and demand in overlapping service areas.³⁵ Using a GIS tool helps to break down the complexity of the data while adding an additional component — space. By understanding how all of these variables interact and relate to one another in space, we are better able to understand and make sense of our data.

Generally, GIS and mapping have been used for program planning, resource allocation, and monitoring and evaluation (M&E) focusing on mapping unmet need for FP, and calculating and measuring program or facility reach and coverage. This section will explore additional uses for GIS in FP and reproductive health, such as understanding accessibility and utilization of services, stock outs of commodities, and supply and demand for services and commodities.

Value of Mapping and GIS for Monitoring of Scale-up Efforts

There are different aspects of scale-up that can utilize GIS and mapping. Horizontal scale-up, or expansion or replication of a practice or intervention, is inherently geographic in scope, and therefore most any data that contains a geographic component can be imported into a GIS and mapped for use in program planning, evidence-based decision making, learning, program improvement, and advocacy. In addition to mapping, which is essentially a visualization of the data, a GIS tool plays a strong role in linking different data sources together to be able to understand how variables relate to one another in space.

Space Influences the Diffusion Process — One of the most basic laws of geography is Tobler's law which states that everything is related to everything else, but near things are more related than

distant things.³⁶ Understanding a region or health facility and the space with which it operates, or the distance between the health facility and its clients, is important. Since nearer things, in this case populations, tend to be more similar than those populations farther away, space and distance can influence the diffusion process of an intervention or resource.

Cook and Fujisaka, in their discussion of what influences the diffusion or scaling up of interventions, state that “distance will decrease the strength of interactions among individuals. As distance increases, the chances that an intervening process will occur that influences individuals in a different way also increase.”³⁸ Based upon the theories of Tobler, Cook, and Fujisaka, diffusion of an intervention or program is influenced by what is around it; if there is uptake of an intervention in one area, or population, similar areas or population will be more likely to accept the intervention as well due to their commonalities. Similarly, if there is slow or stagnant uptake of an intervention in an area or population, areas that are nearer may be less likely to adopt the intervention as well.

Access or Barriers to Health Services May be Geographic in Nature — Access to health care is a multi-faceted issue that includes availability of appropriate services, availability of quality services, lack of social barriers, and financial and physical accessibility. This is specifically about physical access to a health care service or health resources. Physical access to a health facility or health resources (such as contraceptives) is commonly discussed in terms of the proximity of the user to the facility, which is generally measured in distance. In particular, we often measure Euclidean distance which is a straight line. We also often talk about a catchment area or facility

‘reach,’ which is quickly and easily created using a buffer function (as seen in figure D1); that the standard for an average catchment area or ‘reach’ of a health facility is 5 km. However, in most of the developing world, we know that many users’ travel time can be one hour or more, particularly in rural areas.

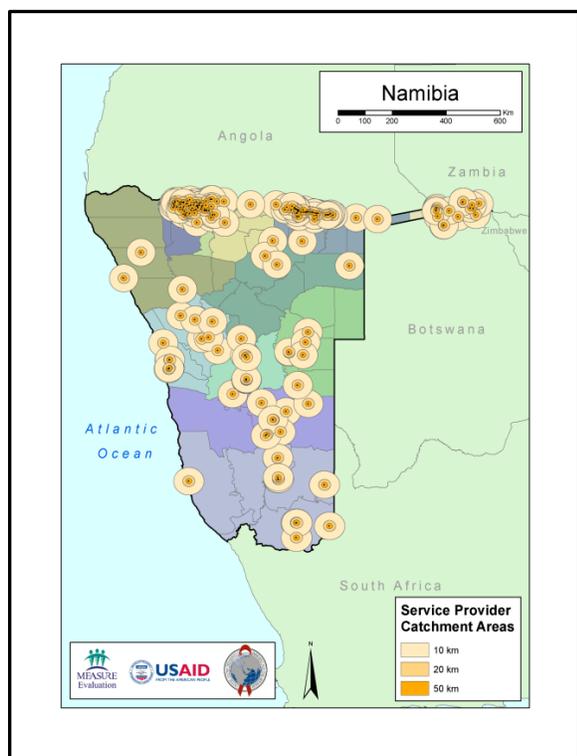


Figure D1. Catchment areas of 10, 20 and 50 km for service providers in Namibia.
Source: MEASURE Evaluation

Figure D1 is a map of Namibia showing the location of one type of service provider. The concentric circles surrounding the central points indicate Euclidean (straight line) radius distances of 10 km, 20 km, and 50 km from each health facility. While this can be a sufficient method for understanding the reach of a health facility for some types of health systems, such as in urban areas, it is not sufficient in areas that are predominantly rural or where terrain is difficult and transportation networks are poor or non-existent.

Figure D2 is another type of map illustrating health facility access in Ethiopia. The red plus

signs indicate the location of a tier A health facility, and the dark black boundary lines indicate the ‘referral network’ or reach of that facility. The yellow and pink polygons illustrate the ‘adjusted travel time’ to the tier A health facilities based upon terrain and transportation networks. This map shows where some of the pink polygons (that represent an excess of two hours travel time) are very close to a health facility (see black arrows), likely indicating that either there are no roads, roads in poor condition, or some geographical barrier to direct access to the facility such as mountains or rivers. Creating catchment areas using a transportation network analysis can be useful in understanding access, utilization, and diffusion of scale-up interventions for health services.

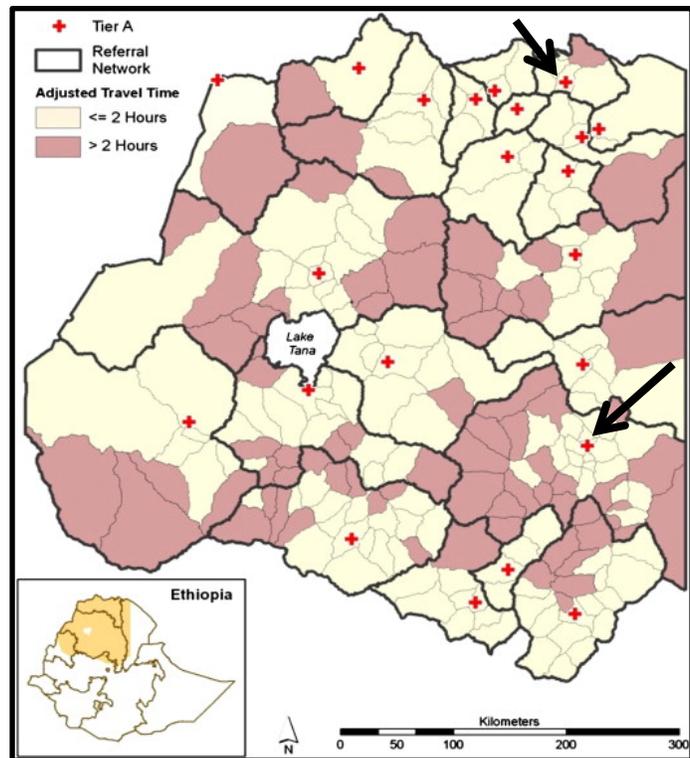


Figure D2. Catchment area in Ethiopia taking into account transportation networks and terrain.

Source: Bailev et al.³⁷

Understand Which Locations Are Increasing Uptakes Relative to Others —

One of the greatest values of using a GIS to monitor scale-up of an intervention is to understand how and why scale-up is happening in certain locations or areas in relation to others. This can be done quite simply in a GIS by linking various data sources through the use of geographic identifiers and layering contextual data along with programmatic data, such as number of sites implementing the practice, number of health workers trained in a practice, etc. Examples of the contextual data that can add value to the understanding of uptake or diffusion of a practice are: literacy or educational attainment, religion or ethnicity, gender, TV or radio ownership, poverty levels, and population density, among other demographic data. Additionally, as mentioned previously, geographic features can also play a role in how or if a practice or intervention is adopted.

Identify Favorable Areas for Expanding the Scale-up —

When we apply contextual data to the service provision or utilization data that we use to monitor geographic expansion of scale-up, we start to understand trends in areas that are increasing uptake of the practice either more quickly than others or more often than others. This context can help us to understand the populations that might be more likely than others to adopt the intervention. By linking demographic and contextual data, not only can we understand the characteristics of an area or population that is benefiting from a scaled-up practice, but we can then apply spatial analysis to find areas or populations with similar characteristics where we would assume would be favorable climates for adopting the intervention.

A site that has a suitable condition increases the likelihood of adoption during scaling up or out.³⁸

Focus on the Supply and Demand Side of Scale-up — When monitoring the expansion of a practice or intervention, the focus is often on the supply side (e.g., number of service providers trained, number of clinics implementing the practice, number of clients receiving the intervention during a specific period of time) while the demand side is overlooked. By linking contextual data in a GIS, we can analyze data and select out areas of demand for the type of intervention. For instance, rather than monitoring only the supply side, we might be interested in monitoring our interventions focusing on areas where unmet need is highest and tracking those numbers to see if they decrease over time. Monitoring both the supply and demand side is essential for monitoring the successful horizontal scale-up of an intervention. A GIS, through data linking and data analysis, can help us to look at both the supply and demand side of the equation.

... when the supply side is weak, uneven or erratic, this may further reduce demand for the innovation.³⁹

Patterns, Trends or Associations May Be Evident Only after Viewing Spatially — Mapping geographic trends of scale-up may also help to better understand the factors that are involved when an intervention or practice is scaled up. Additionally, most GIS applications have advanced spatial analysis functions that can measure the

directional trends of a variable of interest. One way to do this in a GIS is directional distribution. Another common way is through the use of a center mean. While some patterns may be apparent by creating a simple chloropleth* map, spatial analysis, through the use of analysis tools in a GIS, can help to prove these trends or patterns.

Figure D3 illustrates one way of viewing patterns for the purpose of monitoring the trends and movements of a scale-up. In this map the colors represent the values of the total fertility rate (TFR) by district in Bangladesh, with the darker colors representing a higher TFR rate. The blue dot in the center indicates the weighted geographic center of the TFR values. Using the mean center tool is particularly useful for understanding changes in the distribution of values across a country or region. Viewing the center mean of a variable over time allows us to see the movement of values such as number of patients utilizing a service.

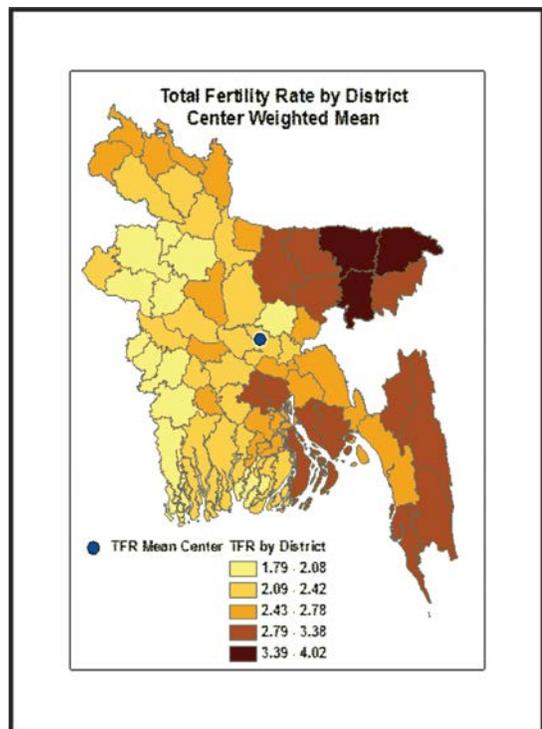


Figure D3. TFR by district showing center weighted mean.

Source: MEASURE Evaluation

Figure D4 shows another example of using patterns and trends to view and illustrate scale-up using the weighted standard deviational ellipse. The ellipse is weighted based upon the values of the variable of

* A choropleth map is a basic map that shows values of a variable by geographic boundary allocated to a specific color. Frequently, these values and colors are in a descending or ascending color scheme such as seen in figure D3. In general, a choropleth map uses different colors to denote different values.

interest, in this case the TFR by district. The directional distribution ellipse takes into account and summarizes the spatial characteristics of central tendency, dispersion of the values and trends of the values. As we can see in figure D4, the width of the ellipse shows that there is a wide variety of values that are spread out, but that the trend is showing lower to higher rates moving west to east and north to south. Plotting these weighted directional ellipses can help model the scale-up trends of the intervention or activity over time.

Mapping for Scale-up

There are many ways to display and visualize specific indicators for monitoring the scale-up of an intervention. When monitoring data, we are interested in looking at changes over time; time series maps or maps that can be viewed side-by-side allow the individual doing the monitoring to visually understand changes in indicators. The best way to display these is by using choropleth maps.

Additionally, when tracking indicators to monitor the process of scaling up, we might be interested in looking only at the ‘delta’ or change in value in a given geographic area over time. In many GIS, a variable can easily be created to calculate the difference in values. The new variable (e.g., change in value X from 2005 to 2010) can then be displayed via a choropleth map to understand areas of greater and lesser change in the value of interest.

Other ways to use GIS to analyze and visualize the monitoring of scale-up of an intervention is by using multiple indicators. When we visualize a map with different indicators represented on it, we can see associations or patterns that may not have been apparent in a tabular format. Additionally, in a GIS we are able to link data sources from disparate places based upon a common geographic identifier.* By linking data from different sources, such as health management information system (HMIS) data and stock-out data, we may see associations that help us to better understand the situation and our data overall.

In the following mapping examples, the indicators referenced in this guide will be used to show how these maps can be created to manage, analyze, and visualize data to help monitor the expansion/replication aspect of scale-up. We will utilize multiple indicator maps and other maps that show time-series and change in values.

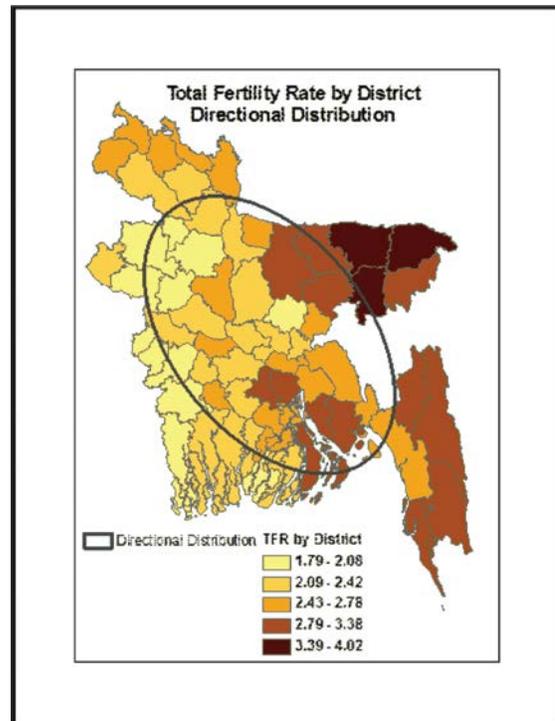


Figure D4. TFR by district showing directional distribution.

Source: MEASURE Evaluation

* A geographic identifier is an identifier that is unique to the geographic area of interest; such as a street intersection, a GPS location, a region name, a country name, etc.

Domain: Access to physical resources

Indicator: Percent of facilities with adequate physical infrastructure to implement the practice

The map in figure D5 shows multiple indicators key to the scale-up of a particular intervention or practice. Two indicators referenced in this guide are represented: the number of sites in a geographic region currently implementing the practice, and the percent of facilities with adequate physical infrastructure to implement the practice. This map is specifically showing the percent of facilities having an adequate water and electricity supply by district in Bangladesh. (Note, this is dummy data used just for illustrative purposes, thus, an actual practice has not been defined. For this example, the assumption is that an adequate water and electrical supply at the health facilities is essential to implementing and scaling up the practice of interest.)

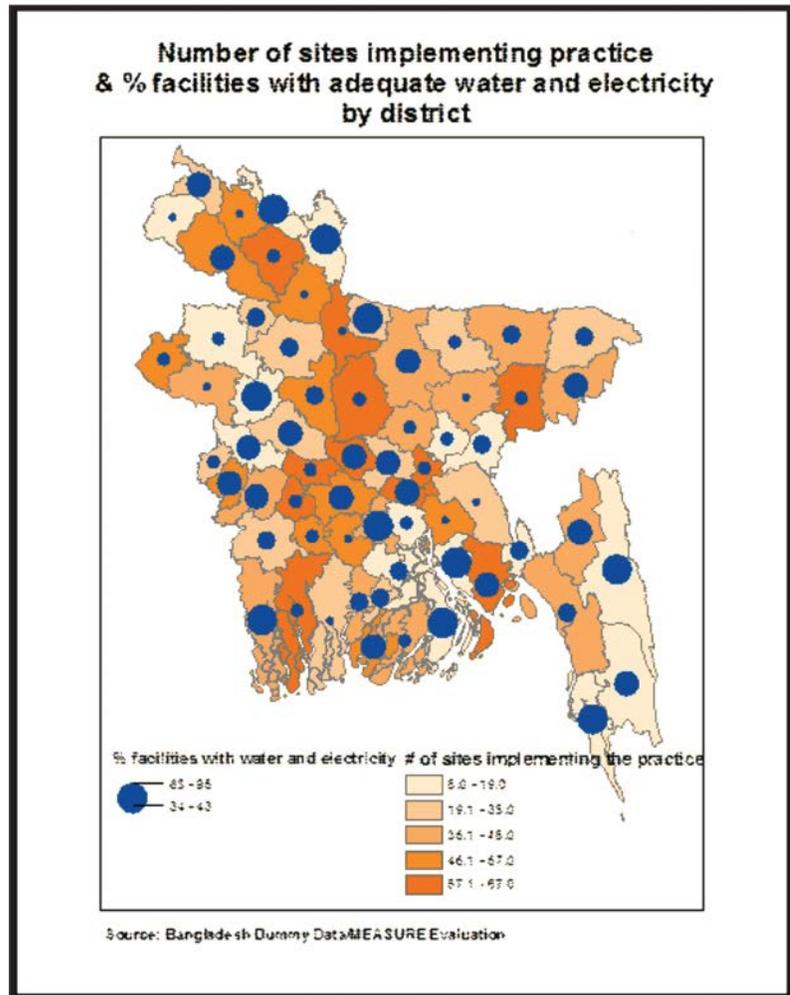


Figure D5: Multiple indicator map.

A few different things can be visualized in this map. First, we notice the difference in colors among the districts across the country. The darker colors represent more sites implementing the practice in a district, while lighter colors represent fewer sites implementing the practice in a district. The different sized blue dots are called graduated symbols and are representative of the values of the indicator. The larger the blue dot, the higher the percent of facilities in the district that have adequate supplies of electricity and water. By layering these two indicators, it is apparent that while some of the districts have a high percentage of facilities with adequate water and electricity, a low number of sites are actually implementing the practice. While this can lead us to question why the practice has not been scaled up, or scaled up well, in the districts with adequate health facility infrastructure, what we cannot deduce from this map is the total number of facilities in each district (i.e., the denominator) to understand what percentage of sites are implementing the practice and what percentage of sites still need to implement the practice.

Domain: Access to physical resources

Indicator: Percent of facilities or community-based providers that experienced a stock out of commodity at any point during a specified time period

Figure D6 looks at stock outs by district. Values are indicated by shades of purple for each district with the darker colors representing a higher percent of facilities experiencing a stock out of condoms within the last three months. The larger orange circles indicate a larger percent of community health workers (CHWs) experiencing a stock out of condoms within the last three months. As in the previous figure, we are able to see associations, patterns, and anomalies in our data by viewing it visually. We can also take this map and create a time series map, which looks at percent of facilities and CHWs experiencing a stock out within the last three months a year or two years ago in order to understand and visualize the difference in values.

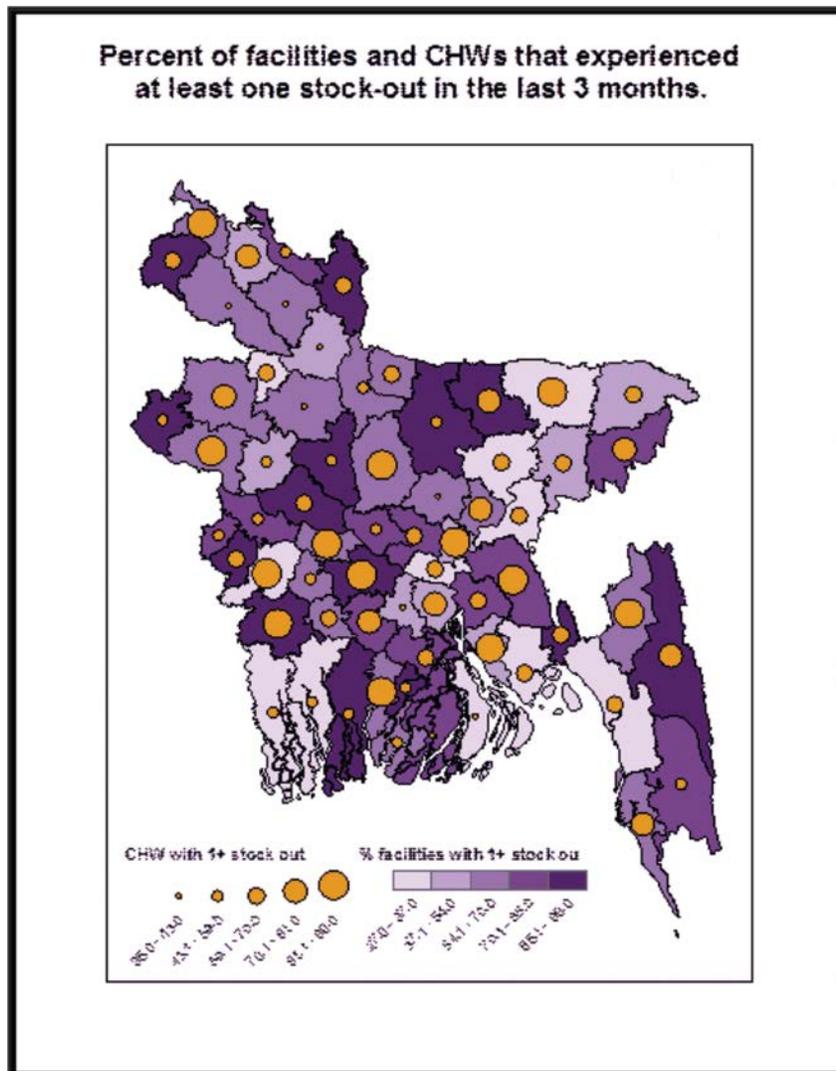


Figure D6: Map showing stock outs by district.

Figure D7 illustrates a time series map of facilities with at least one stock out of condoms within the previous three months. On the left map we see the values by district in January 2010 and on the right map we see the values by district in January 2011. By visualizing the change in colors from one map to the next we will be able to locate districts in which positive and negative change has occurred.

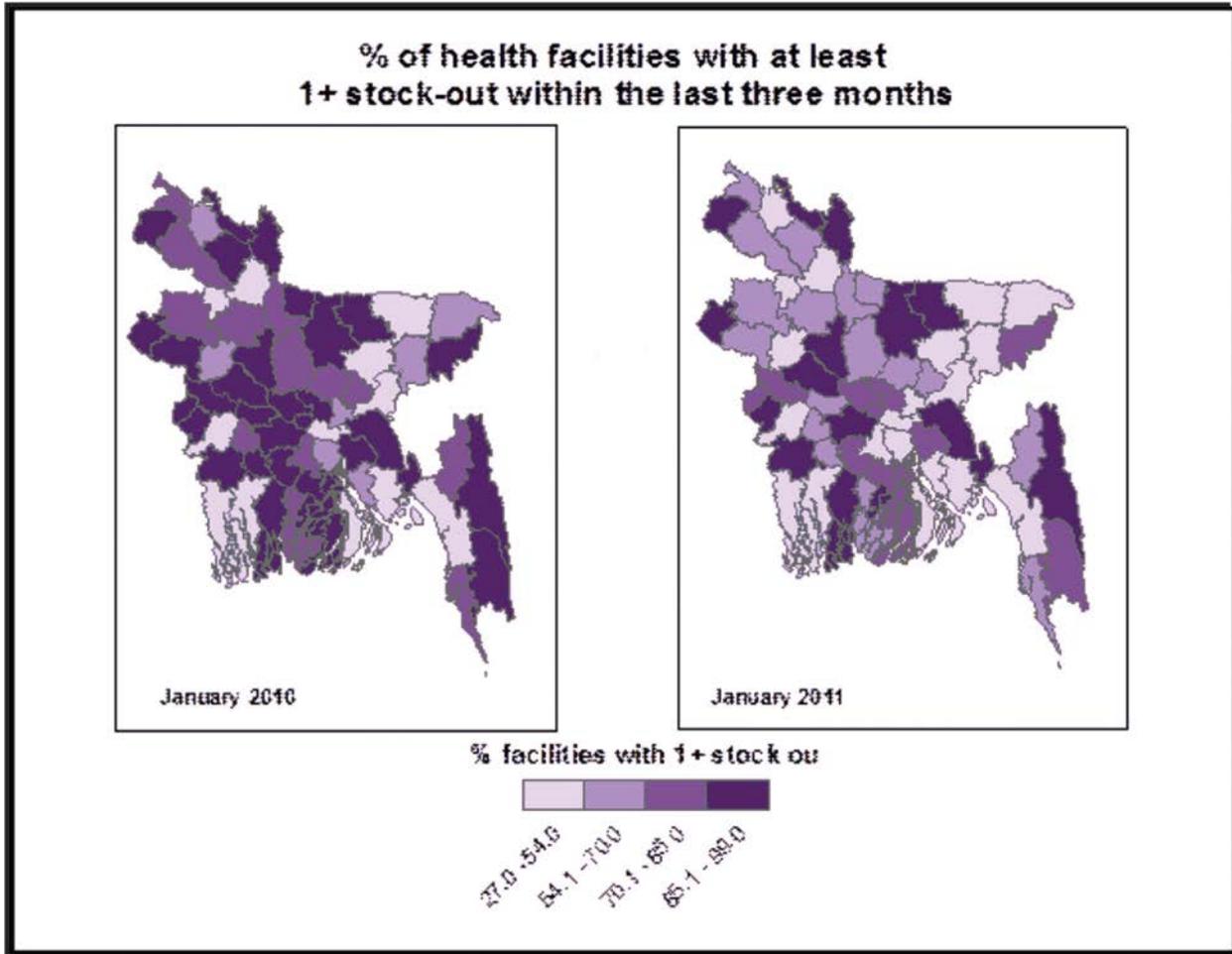


Figure D7: Map showing a time series.

Domain: Service deliver

Indicator: Number of sites implementing the practice

There are several ways to visualize the number of sites that are implementing a practice. A simple chloropleth map as can be seen in figure D8 shows the number of sites implementing a practice by district. We can also display this chloropleth map by taking the number of sites implementing the practice (the numerator) and dividing by the total number of sites by district (the denominator) to display the percent of sites per district that are implementing a practice. The

implementation or scale-up of a practice can be monitored over time by viewing the percent of facilities implementing the practice in a district or region.

Additionally, with access to actual global positioning system (GPS) points of the facility, the precise location of the facility that is implementing a practice can be mapped. An example of this is in figure D9. With the GPS locations of the facilities, data sets associated with these facilities can be linked, such as an HMIS, in order to display and analyze more information about the facility or site. Also, in the interest of monitoring the expansion or replication of the practice or intervention, catchment areas of these facilities can be created to take into account the location of the facility as well as the number of clients served, services utilized, or commodities dispensed.

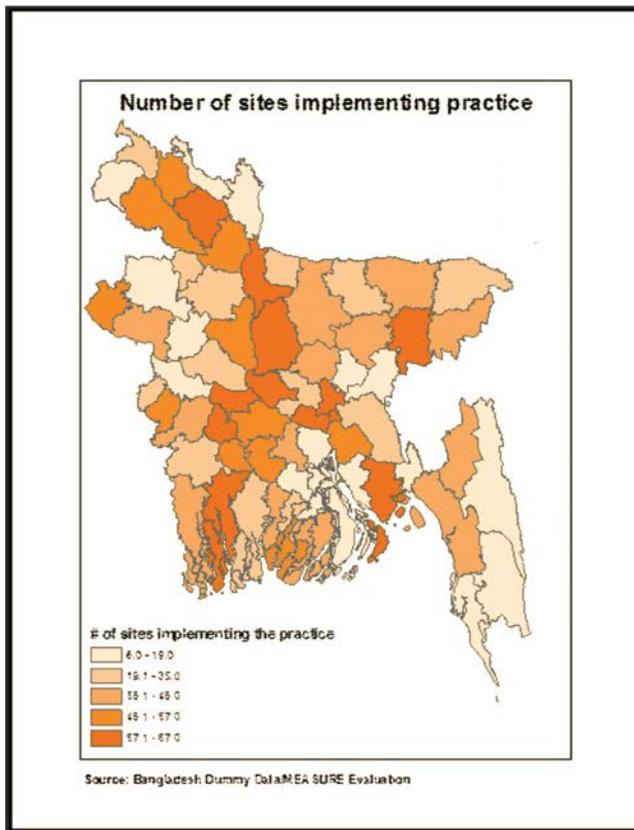


Figure D8: Choropleth map of number of sites per district.



Figure D9: GPS location of sites implementing practice in District X.

Domain: Service deliver

Indicator: Number of clients receiving the practice of interest in a given timeframe

Similarly, there are a variety of ways to display on a map the number of clients receiving a practice of interest over a given time period. If we are interested in seeing if there has been an increase in the overall number of clients served by an intervention, comparing simple choropleth

maps like in figure D10 from various points in time can be a good visual representation of the data. Regional maps can be made if we are interested only in a certain region of a country which shows locations of facilities or service provider with graduated symbols indicating number of people served in a specified timeframe. We could also create a rate map showing the number clients receiving the intervention over a time period such as a week, a day, or a month.

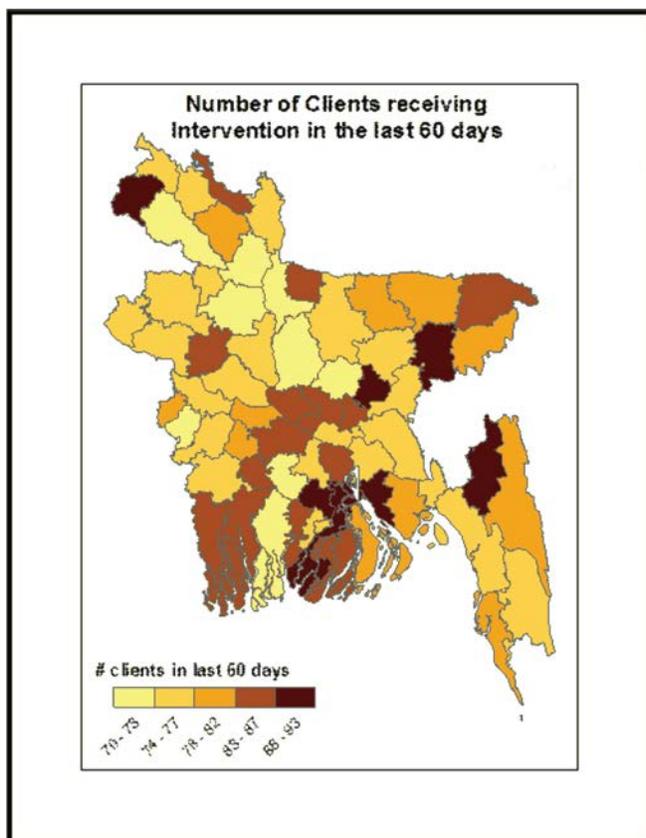


Figure D10: Number of clients receiving an intervention within last 60 days.

Conclusion — GIS and its functionality in mapping, managing, and analyzing data is important to monitoring the horizontal scale-up of interventions because of the inherently geographic features of scale-up or replication. When we look at the replication and uptake of programs, projects, interventions, or health practices we are interested in the size as well as the extent of uptake. The scale-up of interventions can be visualized in multiple ways and via multiple types of maps. Looking at maps across time provides a better understanding of the spread of the intervention. Layering on multiple variables provides a snapshot of how indicators relate to one another in space and in relation to the intervention. In a GIS, we also have the robust ability to link disparate and multi-sectoral data sets into one table of attributes. Displaying these layers on top of one another is helpful for analyzing and understanding barriers as well as accelerators to scale-up.

Technical Information and Resources

This section provides technical and reference information on the requirements needed for mapping data in a GIS, how to format data for use in a GIS, where to find data for use in a GIS, and how to link data together in a GIS.

Requirements for Mapping Data — In order to import data into a GIS and map it, the data need to be formatted in a way that the GIS can properly display the data.

Formatting data:

1. Importing Data from Excel Spreadsheets: Dos, don'ts, and updated procedures for ArcGIS 10 <http://www.esri.com/news/arcuser/0312/files/excelmagic.pdf>

2. How to Create a GIS Ready Excel Spreadsheet @ImcGIS, 2011 <http://lmcgis.blogspot.com/2011/06/how-to-create-gis-ready-excel.html>

Finding shapefiles and data:

1. Global Administrative Areas <http://www.gadm.org/country>
2. HIV Spatial Data Repository <http://www.hivspatialdata.net/>
3. DIVA-GIS <http://www.diva-gis.org/>
4. UN Second Administrative Level Boundaries <http://www.unsalb.org>
5. MEASURE DHS: Demographic and Health Surveys <http://www.measuredhs.com/Data/>
6. Multiple Indicator Cluster Survey (MICS) http://www.unicef.org/statistics/index_24302.html

Data linking:

1. GIS Data Linking to Enhance Multi-Sectoral Decision Making for Family Planning and Reproductive Health: A Case Study in Rwanda, MEASURE Evaluation Working Paper 2012 <http://www.cpc.unc.edu/measure/publications/WP-11-129>
2. ArcGIS 10.0 Desktop: About Joining and Relating Tables <http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html#//005s0000002n000000>
3. Using ArcMap 10 to join Excel data with a shapefile: Journalism GIS <http://www.youtube.com/watch?v=mfyEXkkeLAg>

GIS Software — Available GIS software can be proprietary or open-source. Often considered the ‘gold standard’ of GIS software, ArcGIS is proprietary software with highly advanced data management and analysis capabilities. <http://www.esri.com/>

Quantum GIS ([QGIS](http://www.qgis.org/)) is free and open-source GIS software that is increasingly being used around the globe. Because it is open-source it is constantly being upgraded by volunteers who can make edits to the software and create additional plug-ins to enhance the capabilities of the software. <http://www.qgis.org/>

Excel to Google Earth ([E2G](http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/e2g)) 2.0 is a free mapping tool from MEASURE Evaluation. E2G allows users to create choropleth maps in Google Earth using simple Excel spreadsheets for administrative divisions (provinces and districts). Data is available for 40 countries around the globe. <http://www.cpc.unc.edu/measure/tools/monitoring-evaluation-systems/e2g>

Open GeoDa is free and open source spatial data analysis software that includes mapping functionality along with robust geospatial analysis. <https://geodacenter.asu.edu/>

District Health Information Software 2 (DHIS-2) is widely-used free and open-source GIS software. In addition to its capacity to manage, analyze and map data, it has the additional capacity as a data collection tool. <http://dhis2.org/>

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