

# Four Conditions for Supply Chain Transition

## LESSONS FROM A DECADE OF SUPPLY CHAIN STRENGTHENING IN 50+ COUNTRIES

Global health is entering a period of rapid transition as governments assume greater responsibility for financing, managing, and delivering health programs that have benefited from decades of external support. ***In this article, transition refers to the progressive transfer of donor-supported operations, oversight, and financing to government institutions while maintaining performance, preserving service continuity, and sustaining results over time.*** Declining aid resources, growing calls for aid reform, evolving donor policies such as the America First Global Health Strategy (AFGHS), and increasing local government leadership have accelerated the focus on country ownership, accountability, and sustainability. A central concern for governments, donors, and partners today is how to support this transition while sustaining essential services and protecting hard-fought health gains. Health supply chains are critical to this evolving transition.

### THE FOUR CONDITIONS

Our experience points to four core conditions that, together, inform effective transition of supply chain functions to government:

**01**

#### Institutionalized Capacity and Ownership

National governments and local institutions have the skills, systems, and authority to plan, manage, and lead supply chain functions, and they treat these functions as their own responsibility rather than a donor-run activity.

**02**

#### Fiscal Sustainability

Domestic budgets and financing mechanisms accurately estimate, budget and reliably cover the cost of commodities and supply chain operations, so performance doesn't depend on continued donor funding.

**03**

#### Efficient and Optimized Systems

Supply chain networks, processes, and data systems are streamlined and continuously improved, so products reach clients reliably at the lowest reasonable cost and limited domestic resources go further.

**04**

#### Effective Accountability and Oversight

Clear roles, transparent data, and strong governance mechanisms let governments monitor performance, catch problems early, and hold actors at every level responsible for results.



Sustaining progress against infectious diseases, maternal and child health challenges, and emerging public health threats depends in part on reliable systems to forecast, procure, store, distribute, and track critical health products. AFGHS and accompanying bilateral memorandums of understanding (MOUs) identify supply chains as a foundational enabling system for longer-term, government-led health programs. Through the MOUs, country governments are making explicit commitments to assume greater fiscal and operational responsibility for supply chain functions while adopting standards and quality frameworks (e.g., ISO 9001, GS1).

For more than a decade, Chemonics has supported global health supply chains through both direct implementation of operations and support to local institutions to foster supply chain ownership and sustainability. Through the Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project and other programs, we improved access to lifesaving health commodities while working alongside country institutions to strengthen systems, resource mobilization and management, and workforce capabilities needed for country ownership. In aggregate, we have supported the gradual transfer of 29 supply chain functions (e.g., monitoring inventory levels, transportation and distribution) from donors and implementing partners to governments. Drawing on this experience, we have identified four conditions (see above) that we believe underpin more sustainable, country-led transitions.

These core conditions informed the design of our technical assistance across diverse country contexts and helped guide efforts to strengthen ownership, manage risk, and sustain results after donor support recedes. While each condition contributes to sustainable transition, our experience suggests the strongest results occur when all four are advanced together. They offer a practical lens for governments to organize transition timelines, donors to prioritize investment, and implementing partners to design and deliver technical assistance during this transition phase. The sections below describe each core condition through examples of how partner countries and our programs advanced them. We offer country stories that show the impact of the conditions when applied together. These experiences provide lessons for governments, donors, and implementing partners from a supply chain practitioner's perspective on how to design and support transition efforts in today's evolving global health landscape.

CORE CONDITION 1

# Institutionalized Capacity and Ownership



Sustainable government ownership depends on key functions being retained by institutions rather than individuals or projects. Transition is most successful when critical supply chain functions are embedded within enduring systems that can maintain performance long after external support ends. While training may be important, lasting transition requires stronger governance structures, clearly defined responsibilities, institutionalized processes, and organizational systems that enable governments to lead and improve supply chain performance independently. Sustainable institutions must also embed active, day-to-day coordination practices by translating formal terms of reference into practical working routines, clear decision-making pathways, and consistent cross-departmental collaboration. When these foundations are in place, capacity remains even as staff, funding streams, and external partners change.

## EXAMPLES IN PRACTICE

Building sustainable ownership requires considering more enduring institutional factors (see box). We used these factors as a framework to prioritize and plan for the transition of supply chain functions to government in 32 supported countries. For example, in Benin, Burkina Faso, Mali, and Nigeria, GHSC-PSM worked with the Ministries of Health to facilitate full functional responsibility of forecasting and supply planning processes — meaning the ministry now leads the full process, from convening stakeholders and analyzing data to identifying funding and timing gaps and advocating for resources and shipment changes.

In some cases, institutionalization requires creating or formalizing government structures to embed supply chain functions within the health system. In Kenya, GHSC-PSM supported the establishment of county-level Health Products and Technologies Units and related policy reforms that formalized supply chain responsibilities within government structures and strengthened accountability for performance.

### FACTORS FOR TECHNICAL INDEPENDENCE

**01** A formal designation of responsibility to the entity

**02** A standardization of the process with associated documentation

**03** An institutionalized training approach insulated from staff turnover

**04** The use of a performance indicator to manage the activity

In all cases, a foundational factor is political will and leadership capacity. Supply chain professionals require the motivation and mandate to initiate and implement changes in the institutions in which they work. With the Empower School of Health, Chemonics delivered the Strategic Training Executive Programme (STEP 2.0) to 25 senior leaders and managers at Rwanda Medical Supply, pairing them with coaches from pharmaceutical companies, to ideate and lead projects that resulted in clear operational efficiency gains. For example, through strategies deployed, data accuracy increased, procurement approaches shifted, and routine performance monitoring was institutionalized.

TRANSITION STORY

LESOTHO

# Building a Self-Financing National Medical Store

When GHSC-PSM began work in Lesotho in 2016, NDSO (National Drug Service Organization) had just been asked to take on monthly last-mile delivery to about 220 health facilities. NDSO is financially independent of the Ministry of Health and covers its costs through mark-ups and handling fees. Its managers did not know their true costs and feared that raising mark-ups would drive customers away. Today, NDSO is a successful parastatal that performs like a private-sector company, handling procurement, warehousing and last-mile distribution itself. To ensure a successful transition, we applied all four critical components of sustainable government ownership, as shown below:

01

### Institutionalized capacity and ownership

GHSC-PSM supported the Ministry's Supply Chain Management Department (SCMD) and NDSO to lead forecasting, supply planning, performance monitoring, and logistics management. GHSC-PSM transferred staff, positions, and technical assistance activities in stages. SCMD and NDSO now operate independently, manage all supply chain functions, and have shared the model with Botswana, Eswatini, Namibia, Uganda, and Kenya.

02

### Fiscal sustainability

GHSC-PSM introduced activity-based costing, which measured the true cost of receiving, storing and delivering each type of product and reviewed NDSO's cost recovery scheme. With clear cost data, NDSO broke even without raising its mark-ups, and its profitability tripled by the end of 2018. NDSO is now fully self-financing.

03

### Efficient and optimized systems

By adopting activity-based management with the support of GHSC-PSM, NDSO runs its central site as a distribution center that keeps products moving, not a warehouse that stores them. The project scaled up an electronic ordering system that calculates facilities' average monthly consumption automatically, saving each facility eight hours of manual calculation. NDSO's order-to-dispatch time fell from two weeks to four days.

04

### Accountability and oversight

With GHSC-PSM's support, NDSO wrote standard operating procedures that set out who is responsible for each task, from procurement to last-mile delivery. Its warehouse management system and activity-based costing tools track stock availability, warehouse turns, inventory accuracy, cost per unit and throughput, so managers can hold staff accountable and catch problems early.





CORE CONDITION 2

# Fiscal Sustainability

Governments need dependable domestic budgets and financing mechanisms, realistic estimates of workforce and operating costs, and credible plans to close funding gaps. Fiscal sustainability is a longstanding challenge and constraint to supply chain transition that is being elevated through co-financing requirements under bilateral MOUs. Country governments have made significant commitments to assume financial responsibility for previously donor-supported functions (e.g., commodities, workforce) over a five-year timeline. Meeting these commitments will require governments to make difficult decisions about how to use limited resources effectively and pushes supply chain stakeholders to clearly define and advocate for supply chain costs. Strategic advocacy, such as data-driven cost-benefit analysis of supply chains' contribution to health system goals (e.g., universal health coverage) and other evidence, can help make the case for supply chain investment to health and finance policymakers and decision-makers.

## EXAMPLES IN PRACTICE

The first step toward fiscal sustainability is understanding the true cost of supply chain operations. In Zambia, we conducted costing analyses that demonstrated outsourced logistics models could deliver services more cost-effectively than government-operated alternatives. These analyses provided governments with evidence to make informed decisions about how supply chain services should be financed and managed over time.

Similarly, in Ghana and Lesotho, activity-based costing was used to improve accountability, reduce costs and support more sustainable approaches to service pricing and resource allocation. A traditionally private-sector approach, activity-based costing identifies cost drivers to uncover inefficiencies in warehousing processes and costs, implement process improvements to lower costs, and continually evaluate performance for further improvements.

Governments are also more likely to invest in supply chains when they have evidence to support financing decisions. In Namibia, analysis of the resource implications of the country's HIV "Treat All" policy helped government stakeholders better understand future treatment costs and financing needs. Similar approaches were used across multiple countries to quantify funding gaps, support budgeting processes, and strengthen advocacy for increased domestic investment in health commodities and supply chain functions.

*Chemonics, through the PASCO program, collaborated with the U.S. Government, Global Fund, ZAMMSA, and the Ministry of Health to analyze public health supply chain distribution costs in Zambia. The study compared ZAMMSA's 1PL model with the 3PL model. The findings showed that the 3PL model is four times cheaper. Based on these findings, PASCO recommended a hybrid model, using 3PL for regular orders and 1PL for emergencies to balance cost and efficiency. This work laid the groundwork for PASCO to conduct further work to enhance ZAMMSA's capability to outsource operations directly, promoting sustainability and generating significant interest and enthusiasm from the Ministry of Health and ZAMMSA.*

**SOURCE: CONTRACTOR PERFORMANCE ASSESSMENT REPORT, USG, 2024**

TRANSITION STORY

VIETNAM

# Turning a Financing Decision into a Functioning Supply Chain

Donors once funded more than 80 percent of Vietnam's HIV medicines. In 2016, the government decided to use Social Health Insurance (SHI) to buy antiretrovirals (ARVs) for 106,000 people living with HIV. At the time, Vietnam was the only PEPFAR focus country to fund HIV treatment this way. GHSC-PSM, staffed entirely by Vietnamese nationals, helped turn that decision into a government-run supply chain by 2020. To ensure a successful transition, GHSC-PSM applied all four critical components of sustainable government ownership, as shown below:

01

### Institutionalized capacity and ownership

The Vietnam Administration for HIV/AIDS Control (VAAC) adopted a national quantification manual, rules for moving ARVs between funding sources, and a 2021–2025 supply plan. More than 200 trainers from all 63 provinces learned to forecast ARV needs. Senior procurement officials traveled with GHSC-PSM to Thailand to learn how a publicly funded health insurance scheme buys medicines, and came back with a procurement handbook written specifically for SHI-funded tenders.

02

### Fiscal sustainability

GHSC-PSM researched the prices hospitals were paying and coached government negotiators. As a result, the first SHI tender, in 2019, saved $1.1 million, or 19 percent of the bid package. The share of patients on SHI-funded ARVs rose from 42 percent to 73 percent in a year.

03

### Efficient and optimized systems

VAAC had been coordinating ARVs from four funding sources across 400-plus facilities in Excel. GHSC-PSM replaced this with a single electronic tool linked to VAAC's existing HIV management system. It was handed over in 2020 and rolled out to all treatment facilities.

04

### Accountability and oversight

GHSC-PSM strengthened the role of Vietnam Social Security (VSS) as payer. A new module tracks supplier deliveries, contracts and payments. Training in VEN/ABC drug-use analysis equipped staff from 44 provincial agencies to review how facilities spent insurance funds.





CORE CONDITION 3

# Efficient and Optimized Systems

Governments are more likely to sustain systems that are efficient, affordable, and integrated into existing structures. Transition efforts should therefore focus not only on transferring responsibilities but also on reducing the long-term cost and complexity of managing supply chain functions. This includes integrating programs and information systems, optimizing networks and processes, and deploying tools that improve performance while making more effective use of limited resources. When systems are designed to operate efficiently, governments are better positioned to sustain them with their own resources over time.

## EXAMPLES IN PRACTICE

Sustainable systems often depend on simplifying and standardizing complex processes. To improve forecasting and supply planning, GHSC-PSM developed the Quantification Analytics Tool (QAT), an integrated platform that replaced multiple legacy quantification tools and streamlined forecasting, supply planning, and pipeline monitoring processes. Now used in 44 countries, QAT provides governments with a common platform for forecasting, supply planning, and decision-making, improving forecasting accuracy, data quality, commodity security, and visibility for all stakeholders. By making forecasting and supply planning processes more efficient and standardized, and less prone to user error thanks to built-in validations and quality checks, QAT reduced the long-term burden on national supply chain teams while strengthening government stewardship of critical planning functions.

> Seeing Uganda move to a single, nationally owned platform that supports forecasting, supply planning, scenario analysis, and funding-gap assessment across multiple health programs is a remarkable achievement. More importantly, the transition of these functions to the Ministry of Health through the Quantification and Procurement Planning Unit has created a strong foundation for sustainable, data-driven decision-making and continued strengthening of the health supply chain well into the future.
>
> SUPERVISORY HEALTH SPECIALIST, OFFICE OF GLOBAL HEALTH DIPLOMACY

GHSC-PSM also helped countries optimize supply chain and laboratory networks to improve performance while reducing costs. Across more than 15 countries, the project supported diagnostic network optimization (DNO) exercises to help governments deploy resources where they have the greatest impact while reducing inefficiencies within laboratory networks. In Nigeria, our work to design an optimized National Integrated Specimen Referral Network produced a 385% increase in sample collection coverage and a 77.9% cost reduction compared with the legacy sample transport model, and it reduced rejection rates to less than 1%.

Sustainability does not require governments to operate every part of the supply chain directly. In many cases, governments can achieve better results by strengthening their stewardship role while leveraging private-sector capabilities. We have supported governments in Ghana and Nigeria, with funding from the Global Fund, and in 10+ countries under GHSC-PSM to adopt third-party logistics models. We have also used vendor-managed solutions, working with manufacturers and logistics providers to assume responsibility for activities such as product pre-positioning and delivery. In Zambia, Chemonics' PASCO program applied both optimization and outsourcing approaches to achieve a 100% improvement in cost efficiency compared with a traditional government-run logistics model.

TRANSITION STORY

RWANDA

# From Donor Procurement to a Direct Government Partnership

In July 2021, the USG awarded Rwanda Medical Supply Ltd (RMS) a contract to manage procurement, warehousing and distribution of USG-funded health commodities. It was one of USG's largest direct commodity contracts with a local supply chain organization, and RMS now buys and distributes all of Rwanda's HIV commodities. This model grew from years of GHSC-PSM groundwork. To ensure a successful transition, GHSC-PSM applied all four critical components of sustainable government ownership, as shown below:

01

### Institutionalized capacity and ownership

GHSC-PSM developed the business strategy that guided RMS's creation, followed by its procurement and financial manuals and five-year strategic plan. GHSC-PSM also helped the Ministry of Health develop a supply chain professionalization framework that sets job descriptions, competencies, training requirements, and performance indicators for each role, creating a career pathway for the supply chain workforce.

02

### Fiscal sustainability

GHSC-PSM developed Rwanda's pharmaceutical pricing and cost containment policy, which cabinet adopted in October 2020. It also drafted the regulations on maximum mark-ups and price levels for imported medicines, and trained a pricing unit and advisory committee at Rwanda FDA to put them into effect.

03

### Efficient and optimized systems

RMS inherited 30 small district branches that delivered only 56 percent of orders in full. In 2024, GHSC-PSM's network design analysis recommended consolidating them into four hubs, cutting estimated costs by 18 percent while largely using RMS's existing trucks. GHSC-PSM built the model with free, open-source software and gave RMS an Excel tool so its own staff can recalculate hub sizes and costs as plans change.

04

### Accountability and oversight

GHSC-PSM gave RMS tools to measure its own performance. These included KPIs for procurement, warehousing and quantification, and a supplier performance evaluation tool. Joint quality-improvement supervision with the Ministry of Health raised inventory accuracy at RMS branches from 75 to 92 percent.





CORE CONDITION 4

# Effective Accountability and Oversight

Sustainable ownership requires trusted systems that enable governments to monitor performance, manage risk, and make informed decisions. The bilateral MOUs require reporting on fraud and corruption, along with regular supply chain audits and performance reviews. To meet both their own accountability needs and U.S. government requirements, governments need mechanisms that ensure resources are used appropriately and transparently. They also need quality data that shows how supply chains are performing and where corrective action is needed. A key element of transition must be strengthening accountability across operational, financial, and governance functions by establishing clear performance measures, strengthening oversight mechanisms, improving access to reliable data, and creating systems that promote transparency, continuous improvement, and trust.

## EXAMPLES IN PRACTICE

A prerequisite of accountability is ensuring that commodities, transactions and supply chain activities are visible. In multiple countries, GHSC-PSM supported traceability and visibility initiatives that helped identify anomalies, verify deliveries, and strengthen oversight. More recently, GS1-based traceability systems have emerged as a core component of government-led accountability frameworks, reflecting the growing importance of visibility for sustainable system stewardship.

Visibility must also be translated into performance expectations. Across nine countries, GHSC-PSM developed and standardized warehousing and distribution key performance indicators that enabled governments, parastatals, third-party logistics providers, and other actors to use a common set of measures. In some settings, these indicators were incorporated into performance-based contracting models to create a more transparent and accountable operating environment across the supply chain ecosystem while providing stronger incentives for continuous improvement.

GHSC-PSM also built customized analytics tools to provide governments with the data required to find and fix issues in the downstream supply chain. We analyzed facility-level consumption patterns to identify unusual reporting trends, potential losses, and potential leakage. We also practiced data triangulation — bringing together case and consumption data to identify discrepancies that may indicate leakage or data quality issues. In Namibia, we supported development of systematic data triangulation procedures as a sustainable way for the government to link patient and commodity data to strengthen supply chain decision-making. In Ethiopia, we designed results-oriented supportive supervision, a data-driven approach to performance management. Rather than applying the same level of supervision everywhere, the government can strengthen accountability and focus support where the data suggests the greatest need. The approach is now government-run in multiple regions.

Standardized assessment and benchmarking tools such as the National Supply Chain Assessment and the World Health Organization's Global Benchmarking Tool, provide a mechanism to understand, measure, and monitor supply chain performance, equipping governance bodies and stakeholder leadership to exercise proactive management. GHSC-PSM used version 2.0 of the National Supply Chain Assessment to build consensus on the current and desired future state of supply chain and pharmaceutical management operations; identify the underlying factors that inhibit progress; and inform strategic planning, advocacy, and performance management and oversight.



THE BOTTOM LINE

# Final Thoughts

## The four conditions for transition may be consistent, but the solutions will differ.

As responsibility for health programs continues to evolve, the conversation can extend beyond the mechanics of transition to the relationships, choices, and resources that shape country-led pathways. Sustainable supply chain transition is not simply about transferring existing systems and responsibilities to governments. It is about designing supply chains that countries can realistically own, finance, oversee, and continuously improve. As the examples throughout this article demonstrate, there is no single model for achieving that objective. GHSC-PSM's experience across different countries and operating environments has shown how different combinations of institutional reforms, financing arrangements, technologies, and commercial partnerships can address specific national challenges. The four conditions for transition may be consistent, but the solutions will differ.

Government ownership need not mean government operation of every supply chain function. National institutions can set priorities, finance services, regulate markets, and hold providers accountable while manufacturers, nonprofit organizations, and logistics companies perform specialized tasks where appropriate. GHSC-PSM's experience with vendor-managed solutions and all-inclusive laboratory service-level agreements demonstrates how commercial partners can assume greater operational responsibilities and associated risks while supporting efficiency, reliability, and public health objectives.

The key is ensuring governments can determine which arrangements best serve their national priorities and have the institutional capabilities and financing to manage them sustainably. That includes the ability to oversee performance, adapt arrangements as needs change, and replace providers where necessary.

The lesson for future transitions is not to prescribe a particular operating model but to focus on these four conditions to enable governments to sustain performance and improve their supply chains over time.



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## ABOUT CHEMONICS

Chemonics is a global partner that helps governments, businesses, and organizations deliver results in complex environments. With more than 50 years of experience designing and implementing programs in more than 150 countries, Chemonics brings together local presence, technical expertise, and the ability to implement at scale.

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