

# Leveraging the Power of Public Supply Chains to drive change for children every day, across the globe

**A Process guide and compendium of proven methods for strengthening supply chains**

## UNICEF

### Technical Cooperation on Supply Chain Strengthening

Marmormolen 51  
2100 Copenhagen  
Denmark

Telephone: +(45) 45 33 55 00  
Email: [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)  
[www.unicef.org](http://www.unicef.org)

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**Etleva Kadili**, Director, Supply Division, **Suvi Rautio**, Deputy Director, Supply Chain; **Ken Legins**, Chief, Supply Chain Strengthening Centre (SCSC); **Pablo Panadero**, Chief, Transport Centre (TC); **Abdallah Makhlof**, Chief, Health Technologies Centre (HTC), **Jonathan Mitchell Weiss**, Chief, Procurement Services Centre (PSC), **Akthem Fourati**, Chief, Medicines and Nutrition Centre (MNC), **Anne Ottosen**, Senior Manager, Vaccine Centre (VC), **Michelle Seidel**, Senior Advisor, Immunization, Programme Division, **Saul Guerrero**, Senior Advisor Nutrition, Programme Division, **Elena Trajkovska**, Regional Chief of Supply, Eastern and Southern Africa Regional Office (ESARO), **Jean-Cedric Meeus**, Regional Chief of Supply, Western and Central Africa Regional Office (WCARO), **Silvia Uneddu**, Regional Chief of Supply, Middle East and North Africa Regional Office (MENARO), **Ryan McWhorter**, System Design Unit Lead, SCSC; **Dominique Zwinkels**, Executive Manager, People that Deliver (PtD); **Aurelia Gasca**, Unit Lead, Vaccine Centre (VC); **Heidi Martinussen**, Project Specialist, Strategy, Change and Communication Centre (SCCC); **Marcia Attaran**, Unit Lead, PSC; **Joyce Bakka**, Unit Lead, MNC; **Pedro Amado**, Unit Lead, Human Resources Centre (HRC); **Patrick Gaparayi**, People and Policy Unit Lead, SCSC, **Gemma Orta-Martinez**, Manager, Monitoring & Strategic Data Evidence Unit (MSDEU), **Jacqueline Enstone**, Regional Supply Specialist, East Asia and The Pacific Region, (EAPRO), **Albert Nettey**, Supply Specialist, ESARO, **Anahitta Shirzad**, Contracts Specialist, Health Technology Centre (HTC); **Olamide Folorunso**, SC Specialist, SCSC; **Mamadou Diallo**, SC Specialist, SCSC; **Jay Bararia**, SC Specialist, SCSC; **Adebayo Adekola**, SC Specialist, SCSC; **Innocent Dube**, SC Specialist, SCSC; **Luigi Capriotti**, ICT Specialist, Operational Analysis and Technology Centre (OATC); **Taeksoo (Ted) Kim**, SC Specialist, SCSC; **Krista Hund**, Planning Specialist, VC; **Aleksandra Krukar**, Finance Specialist, PSC; **Fabiana Biasini**, Learning and Development Specialist, HRC; **Jaclyn Benche**, Knowledge Management Officer, SCCC; **Alexis Strader**, Project Officer, PtD; **Modeste Irategeka**, Monitoring Officer, MSDEU; **Loic Sanchez**, Project Officer, VC; **Jorge Mazuze**, Nutrition Supply Chain Consultant, WCARO, **Tautvydas Juskauskas**, Consultant, SCSC; **Marina Romero**, Consultant, SCCC.

# Bridging the gap in access through strengthened supply chains

# Strengthening in-country capacity

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## Glossary

<b>AIDS</b>	Acquired ImmunoDeficiency Syndrome
<b>CCE OP</b>	Cold Chain Equipment Optimization Platform
<b>CO</b>	Country Office
<b>COVID-19</b>	Coronavirus Disease 2019
<b>EUM</b>	End-User Monitoring
<b>EVM</b>	Effective Vaccine Management
<b>FCDO</b>	The United Kingdom Foreign Commonwealth & Development Office
<b>FFP</b>	Food For Peace
<b>HIV</b>	Human Immunodeficiency Virus
<b>HMIS</b>	Health Management Information System
<b>HR</b>	Human resources
<b>HSiS</b>	Health system and immunization strengthening
<b>HSS</b>	Health System Strengthening
<b>JRF</b>	Joint Reporting Form
<b>KPI</b>	Key Process Indicator
<b>LMIS</b>	Logistics Management Information System
<b>NLWG</b>	National Logistics Working Group
<b>PtD</b>	People that Deliver
<b>RO</b>	Regional Office
<b>RUTF</b>	Ready to Use Therapeutic Food
<b>SAM</b>	Severe Acute Malnutrition
<b>SCANIT</b>	Supply Chain Analysis and Intelligence Tool
<b>SCSC</b>	Supply Chain Strengthening Centre
<b>SD</b>	Supply Division
<b>SDGs</b>	Sustainable Development Goals
<b>TB</b>	Tuberculosis
<b>TGF</b>	The Global Fund
<b>UAS</b>	Unmanned Aircraft Systems
<b>UN</b>	United Nations
<b>UNICEF</b>	United Nations Children's Fund
<b>USAID</b>	United States Agency for International Development
<b>VII</b>	Vaccine Independence Initiative
<b>VPPEF</b>	Vaccine Procurement Practitioners Exchange Forum
<b>VPPN</b>	Vaccine Procurement Practitioners Network
<b>WASH</b>	Water, Sanitation and Hygiene
<b>WHO</b>	World Health Organization

## Ensuring children survive and thrive every day through national supply chain transformation

Where there are no supplies, there are rarely results for children.

Strong supply chains save lives. They are fundamental building blocks of national welfare systems and necessary for attaining the Sustainable Development Goals.

Recognizing fragility as one of the greatest challenges to children's rights, UNICEF has prioritized a systems strengthening strategy so that all children have equitable and timely access to health, nutrition, water, education, sanitation and hygiene (WASH) services and supplies.

Adapting to emerging government demands, UNICEF's supply role has evolved in the last decade with an increasing focus on strengthening national supply chains. Our technical expertise and comparative advantage touch upon many fields, including: assessing performance gaps and identifying priority investment areas; supporting countries' domestic resource mobilization for supplies; deploying cutting edge innovation to reach the last mile; improving product visibility from manufacturer to child; digitalizing supply chains; and transferring supply chain technical and managerial skills to ensure long-term ownership and sustainability.

UNICEF's commitment to realizing the rights of all children by strengthening national supply chains is guided by the [UNICEF Strategic Plan \(2018-2021\)](#) and underlying [UNICEF Strategy for Health \(2016-2030\)](#).

Acting as a strategy accelerator, [UNICEF's Health System Strengthening \(HSS\) Approach](#) has identified the reinforcement of government-led supply chain systems as a critical factor for achieving universal health coverage. This message is echoed in the Gavi Supply Chain Strategy (2022-2025), which UNICEF helped to shape, in that it prioritizes the development of national systems to surmount supply chain barriers to vaccination of children and adolescents.

UNICEF is joining forces with key development partners such as The Gavi Alliance, The Global Fund to Fight AIDS, Tuberculosis and Malaria; the United States Agency for International Development; and The United Kingdom Foreign Commonwealth & Development Office, to achieve greater collective impact in strengthening the maturity of government supply chain systems for nutrition, HIV, TB, malaria and other maternal, newborn, child and adolescent supplies.

Together, we are mobilizing the strengths, capacities and competencies of private and civil society partners, supporting countries to improve equitable access to life-saving vaccines, medicines and health products. This work is defined in [UNICEF Supply Division's Private sector engagement approach](#).

UNICEF's technical assistance in strengthening the public sector has contributed to placing national supply chains as a key component and integrator between health, education, child protection and social protection systems. These efforts and investments have facilitated results across many of UNICEF's programme areas, including maternal and child health, education, nutrition, and WASH.

Our ability as an organization to embrace change, adapt to national priorities, and strengthen capacities is reflected in the commitment of our staff to lead the delivery of supplies from manufacturers to end users. Our nearly 1,000 supply chain staff working across the organization have been instrumental in leveraging supply chain management expertise from within and outside of UNICEF, acting as trusted technical advisors on systems strengthening to governments, private sector and academic institutions.

The Coronavirus pandemic (COVID-19) has further amplified the importance of building resilience in supply chains. The pandemic, which has exposed the structural and functional limitations of existing health systems and undermined national response efforts, calls for greater partner investments and focus in strengthening national public health supply mechanisms.

UNICEF regional offices and country offices will continue to play a pivotal role in supporting governments shape, execute and assess their supply chain strategies and roadmaps to improve programme outcomes for children.

We hope that this compendium of tools, methodologies and best practices, which highlights UNICEF's unique expertise and value proposition in supply chain management as part of health and welfare system strengthening, will be as inspiring as it is helpful for governments and partners in their efforts to accelerate children's access to all essential services and meeting the Sustainable Development Goals, leaving no one behind.



**Etleva Kadilli**  
Director,  
UNICEF Supply Division

## UNICEF's Supply Chain Strengthening Approach

Agile and resilient public supply chains are critical cornerstones of well-functioning public welfare systems and a driving force toward the achievement of the [SDGs](#). They have a fundamental role in reaching the last mile and assuring access to life-saving vaccines, medicines and other health technologies, as well as education and WASH supplies.

The yearly government-reported immunization data consolidated by WHO and UNICEF through the Joint Reporting Form (JRF) since 2010 highlights a growing trend in the number of countries facing an interruption in their immunization-related services, coupled with a steady increase in the occurrence and length of national and district-level stockouts for at least one routine antigen.

Against this backdrop, UNICEF has, in recent years and together with partners, been lending its technical know-how in all strategic and tactical areas of the supply chain, with a view to overcoming these challenges, fostering country-owned, sustained and holistic supply chain improvement that impacts upon broader public health and welfare systems.

The below supply chain rainbow illustrates the different components of the supply chain, including all operational areas, and their 'enablers', i.e. the core supportive capability functions that are required to manage them effectively, and how they come together to form a standard supply chain.



Our strengthening journey is an iterative process which starts with the identification of governments' needs using the UNICEF Supply Chain Maturity Model.

This cloud-based tool takes the form of an evidence-based practice questionnaire whereby relevant government officials and supply chain stakeholders -usually forming the National Logistics Working Group- consensually and quantitatively assess the level of maturity -in a scale of one to five- across all supply chain areas.

These findings will support national leadership efforts to quantify the scope of the needs, target the priority investments to be made, guide strategic partnerships and roll-out comprehensive, context-specific and evidence-driven supply chain strengthening plans.

Beyond deploying its supply chain technical expertise, UNICEF is uniquely positioned to strengthen the capacity of governments to outsource some of their supply chain services to the private sector and expand local and regional supply chain service markets based on comparative advantages.

Leveraging cross-sector partnerships and the assets, strengths and capacities of the private sector as a change agent for children has proved critical for shaping efficient supply chain models, developing quality medicines, keeping prices affordable and reaching the last mile.

The Maturity Model has a dual purpose and is also used as a monitoring and evaluation results framework that countries can use to measure the success of all deployed interventions. The Model serves as a critical tool for decision-making, enabling countries to adjust their road map or redefine their plans or targets based on the new needs identified.

All development cooperation efforts, including UNICEF led technical assistance, can therefore be quantified and evaluated through changes in the supply chain across the maturity continuum. This exercise is done using the results of the initial situational analysis phase in which baselines and performance gaps were preliminarily identified and strategies for improvements formulated.

Evaluating the performance of supply chain strengthening operations is instrumental for leading country-owned, sustained and holistic supply chain ameliorations. Lessons learned and best practices should be integrated into national supply chain situation analysis and strategic and implementation plans to best inform and support continuous improvement planning cycles.

In all the aforementioned steps, UNICEF can provide technical, operational and financial support to assist countries in meeting their supply chain strengthening planning, implementation, monitoring and evaluation, and learning and development needs throughout their undertaking.



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## A glimpse into a successful national supply chain strengthening story in Central African Republic

The Maturity Model assessment identified supply chain related challenges as one of the main obstacles behind the limited access to Ready to Use Therapeutic Food (RUTF) and subsequent high level of Severe Acute Malnutrition (SAM) among children under 5.

The limited product availability triggered by ineffective distribution channels was compounded by commercial exploitation and misuse of the supplies which had commonly been used as an aphrodisiac. The Maturity assessment allowed for these challenges to be quantified and a performance baseline for each supply chain area was subsequently established.

Building on these findings, the Government together with partners as part of the National Logistics Group, developed a comprehensive strengthening road map with a view to planning for, and leading a coordinated and multi layered strategic response to effectively and sustainably break down these barriers to coverage.

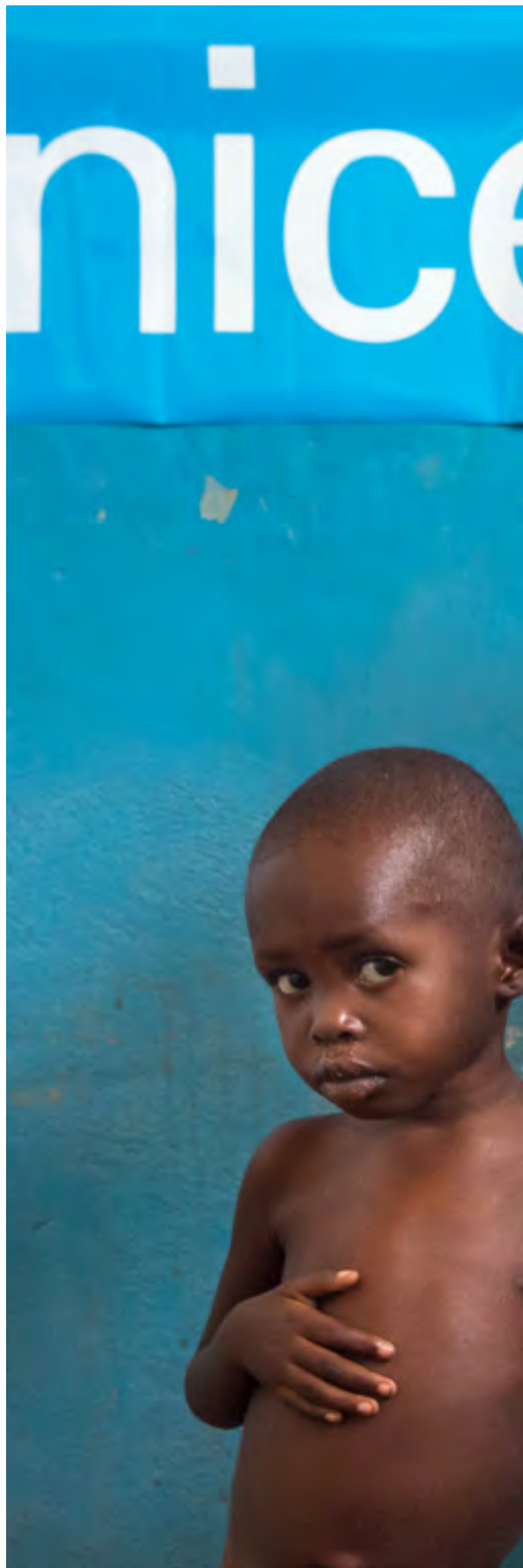
The deployed actions went beyond the strengthening of traditional logistical operations –which were enforced by means of reinforcing local stock management capacities and the public distribution network- and supported interventions in other key areas of the supply chain.

They comprised decentralized investments towards the empowerment of primary care workers with on the job training, the integration of nutrition and essential health supply chains and the establishment of innovative End-User Monitoring (EUM) to assess the impact of these targeted actions on intended beneficiaries.


UNICEF leveraged the political and economic momentum created around the nationally led road map and secured the required resources from development partners to match needs with available donor funding. Once in place, these supply chain strengthening endeavours expanded the distribution coverage and accessibility of RUTF products to both caregivers and families improving child health coverage.

Beneficiary feedback collected by community health workers through EUM surveys highlighted the need to invest in community sensitization as only 4 percent of those interviewed reported knowing how to administer the right dosage.

This further illustrated the contribution of supply chain strengthening work in guiding programmatic decisions and the fundamental and strategic complementarities between the Programme and Supply functions in shaping and delivering effective interventions.







In 2019 in the Central African Republic, 43,000 children under 5 suffered from **severe acute malnutrition** with limited access to, and misuse of RUTF.

- These barriers were surmounted by **developing needs-driven strengthening plans** based on the UNICEF Supply Chain Maturity Model.
- This led to an **increase in geographical coverage** and improved and timely access for all intended beneficiaries.
- Strengthening work identified through EUM surveys found that **only 4 percent of parents know how to administer** the proper dosage.

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## Supply Chain areas where UNICEF can add value to national supply chains

The following pages provide a succinct overview of the technical areas and types of support provided by UNICEF across all levels of the organisation.

These areas are aligned to the Supply Chain Rainbow as depicted below:



Page	Technical area
12	<a href="#">Identifying priority needs and investments with the UNICEF Supply Chain Maturity Model</a>
14	<a href="#">Enabling the supply chain workforce of the future</a>
16	<a href="#">Transforming data into actionable evidence</a>
18	<a href="#">Optimizing last mile delivery systems</a>
20	<a href="#">Extending the reach of programmes and saving lives: The case of the drone programme in Malawi</a>
22	<a href="#">Supporting vaccine forecasting</a>
24	<a href="#">Supporting vaccine procurement</a>
26	<a href="#">Improving supply and demand management through needs-driven forecasting</a>
28	<a href="#">Bridging the gap between availability and access through end-user monitoring</a>
30	<a href="#">Leveraging the power of end-user monitoring: The case of the Afghanistan education programme</a>
32	<a href="#">Enhancing the long-term risk resiliency and shock-absorption capacity of supply chains</a>
34	<a href="#">Investing in temperature-controlled supply chains</a>
36	<a href="#">Keeping vaccines through the last mile</a>
38	<a href="#">Closing the financing gap by mobilizing domestic resources and external funding</a>
40	<a href="#">Compendium of supply chain strengthening tools</a>



65

countries across 5 regions are currently engaged in **supply chain strengthening activities** with the support of UNICEF.

45

tools and methodologies developed by UNICEF and **available to support countries' supply chain strengthening work.**

9

countries have **increased their maturity levels** in at least 1 of their supply chain areas with UNICEF's support.



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## Identifying priority needs and investments through the UNICEF Supply Chain Maturity Model

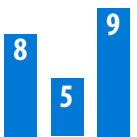
The UNICEF Supply Chain Maturity Model is an assessment tool which organisations can use to evaluate progress towards achieving supply chain maturity. It conveys the idea of development from an initial to a more advanced state, and is anchored on the notion of evolution, suggesting that an organisation passes through several intermediate states on the way to maturity. UNICEF Supply Division has developed the maturity model to support countries to measure the progression of national supply chain maturity from low levels of performance to highly efficient and effective supply chains that serve public needs. The model is product agnostic and can be implemented in any supply chain such as nutrition, essential medicines, special disease programmes (HIV/AIDS, Tuberculosis, Malaria), and provides the following benefits:



**Identifies and quantifies gaps and priorities** across all areas of the public supply chains which serve as the foundation to develop **evidence-based roadmaps and grant proposals** to strengthen supply chains, such as procurement and supply management plans for Global Fund grant proposals and Gavi Health System Strengthening funds.

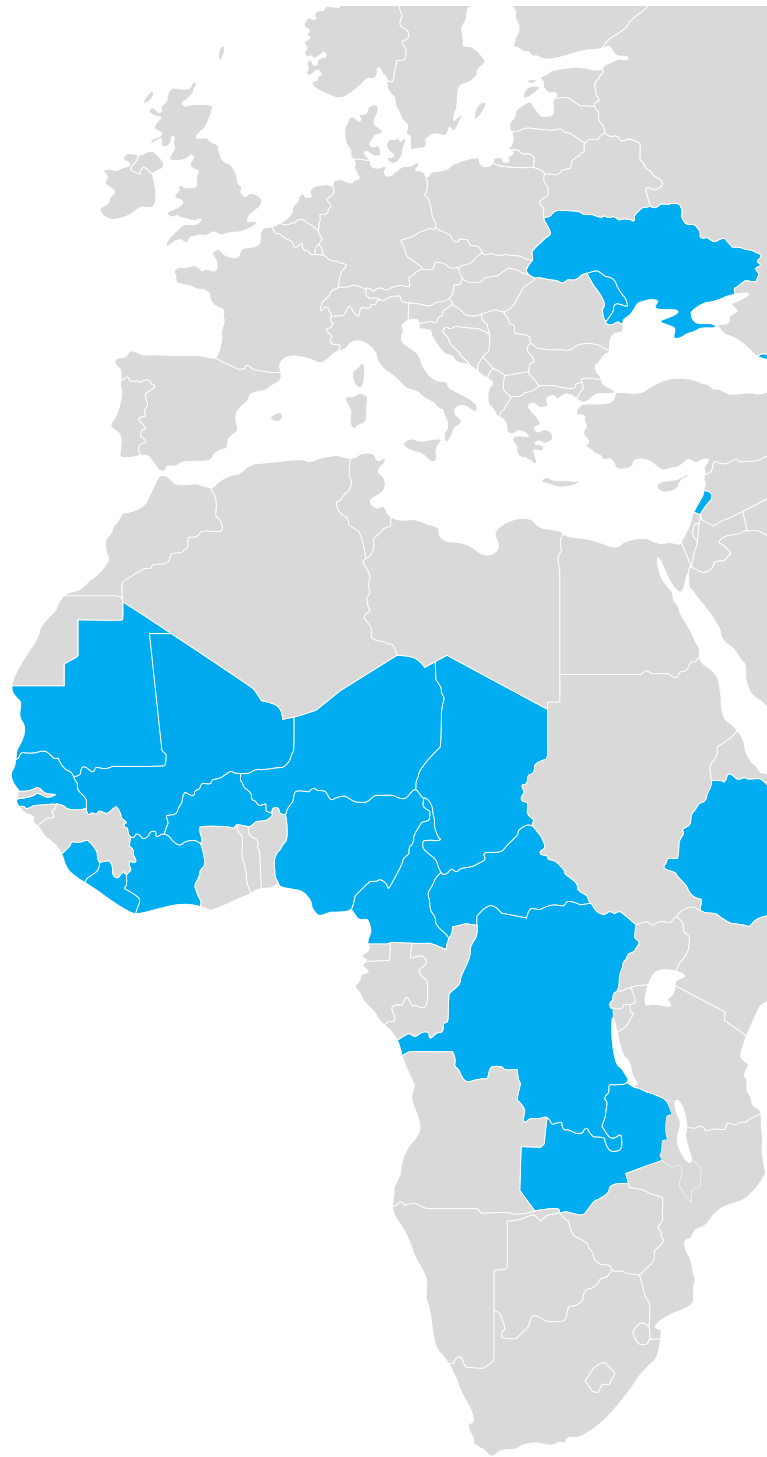


Informs **the government response plan** and serves as the basis for partners to provide the required technical contribution in support of government-identified objectives. UNICEF provides its technical expertise across a wide array of fundamental operations and enablers (see following pages).



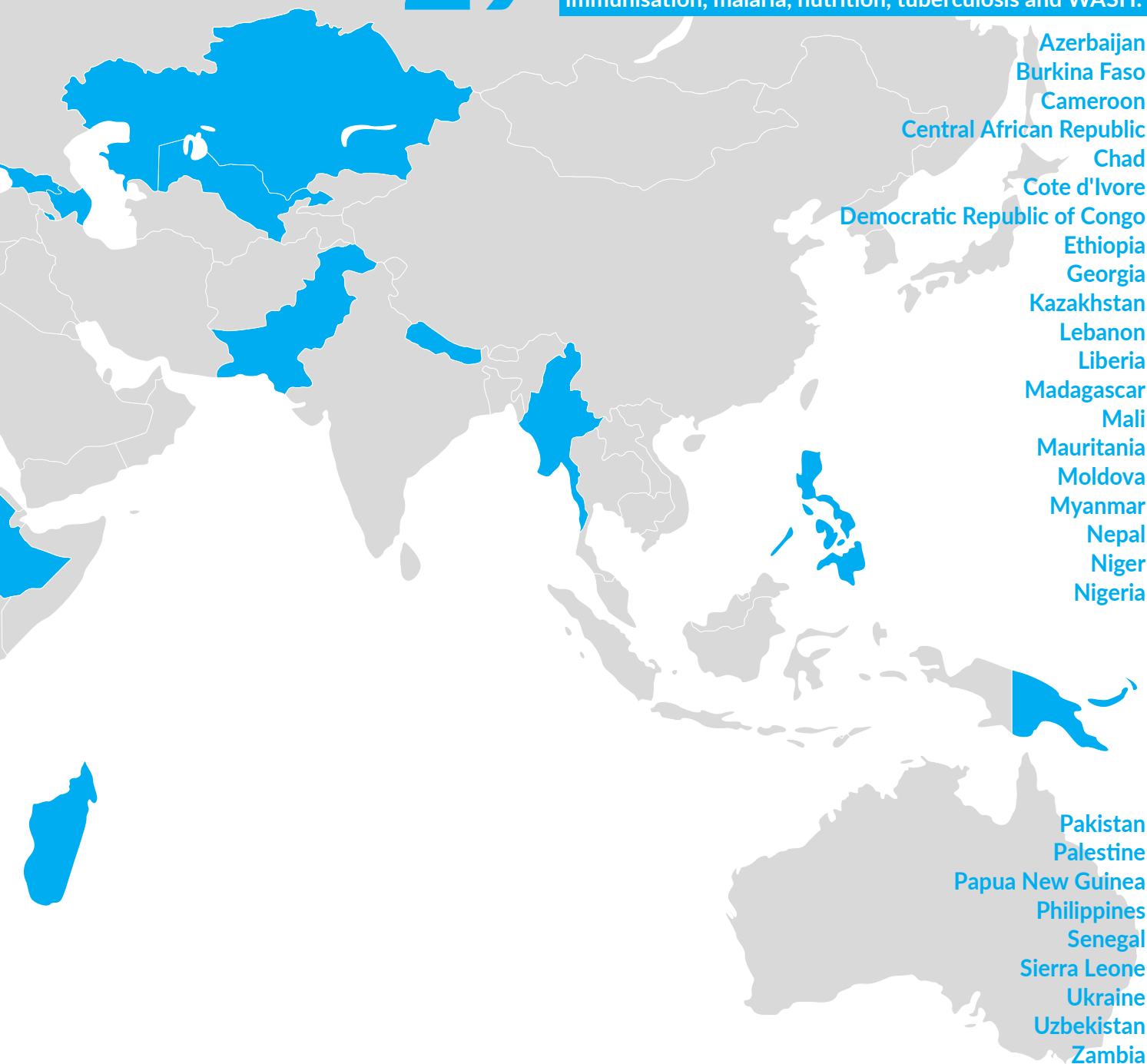
Serves as a **monitoring and evaluation framework** to track progress along the maturity continuum from all deployed interventions. Additionally, it can serve as a complement to quantitative and detail-rich assessments such as the Effective Vaccine Management initiative.

The [assessment](#) is available online and accessible to all partners free of charge. It will be complemented by a resiliency module, which is being co-developed by the World Health Organization and UNICEF, to assess the readiness, scalability and robustness levels of countries' supply chains to withstand external shocks and manage surging needs. A free distance-learning course on [UNICEF AGORA global hub for learning](#) will help partners to run the assessments.



# 29

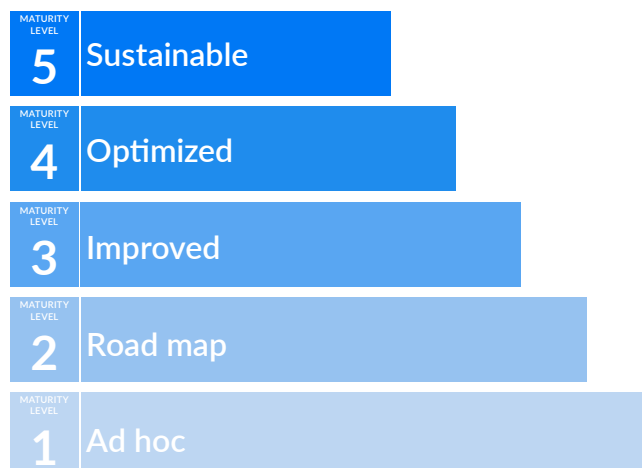
countries have completed the UNICEF Supply Chain Maturity Model to identify supply chain gaps and strengths across education, essential medicines, HIV, immunisation, malaria, nutrition, tuberculosis and WASH.



### are analyzed to identify

	1	2	3	4	5	
<b>Enablers</b>	People and policy	1	2	3	4	5
	Data analytics	1	2	3	4	5
	System design	1	2	3	4	5
	Financing and domestic resource mobilization	1	2	3	4	5
	National regulatory frameworks	1	2	3	4	5
<b>Operations</b>	Definition of need	1	2	3	4	5
	Budgeting and planning	1	2	3	4	5
	Procurement	1	2	3	4	5
	Delivery and clearance	1	2	3	4	5
	Inspection	1	2	3	4	5
	Warehousing, Distribution & Reorder	1	2	3	4	5
	Utilization by end user	1	2	3	4	5
	Monitoring & Evaluation	1	2	3	4	5

### their maturity level



## Enabling the supply chain workforce of the future

Governments benefit from investing in developing the technical skills of staff working across all supply chain areas to build stronger and more sustainable systems for developing, recruiting and retaining a qualified health supply chain workforce.

The supply workforce includes all stakeholders, whether individuals, teams or organizations, with influence and interests in having an impact on the demand, funding, management and monitoring of health products for children and communities. These actors include governments, donors, development partners, service providers, end-users, caregivers, among others.

The policy component includes national strategies, action plans, legal frameworks and standard operating procedures that are used to clarify accountability, document best practices, realize efficiency and effectiveness, and ensure patient safety.

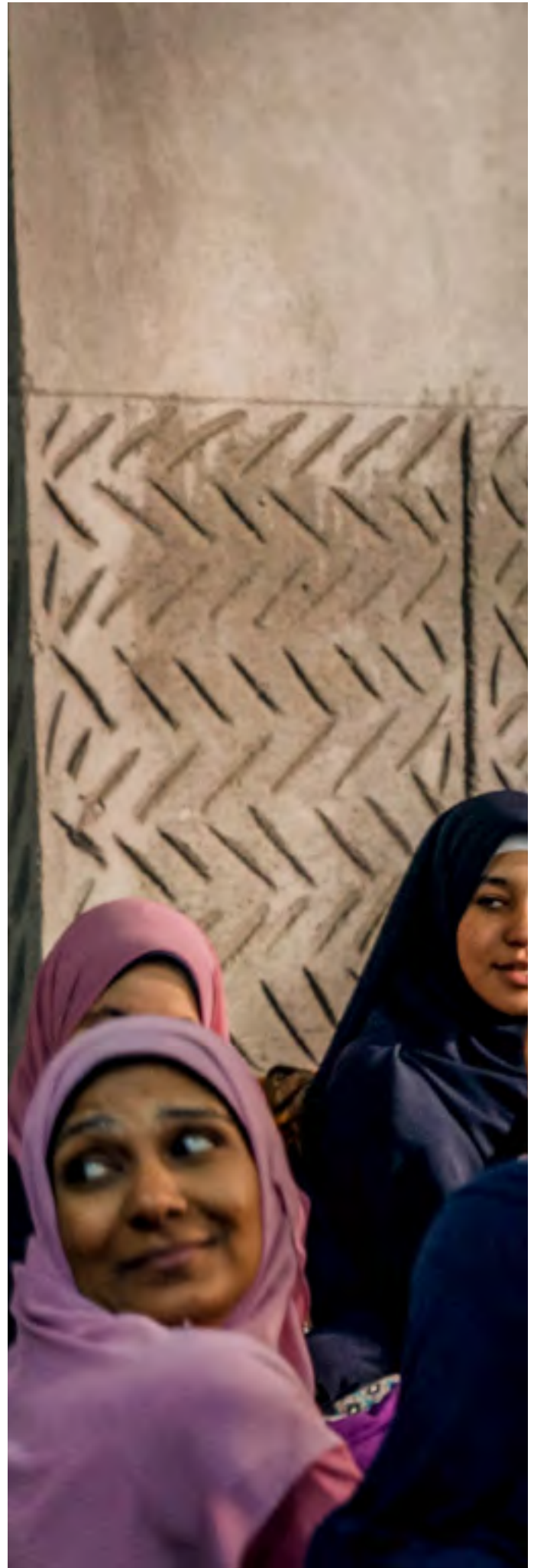
UNICEF is supported by its main partner, People that Deliver (PtD) a global coalition of organisations focused on technical leadership in human resource for supply chain management.

In its efforts to build a qualified, educated health supply chain workforce across the public and private sectors within the health system, PtD builds on the experiences of its 250 member organisations to advocate for, and drive, change at a global and country level.

Together, UNICEF and PtD can lend their knowledge and transfer their technical know-how in human resource for supply chain management, to support the capacity of governments on:

#	Added value
1	Creating an <a href="#">enabling legal, operational and organisational environment</a> fit for supporting a competent and sufficient supply chain workforce.
2	<a href="#">Improving mechanisms to support the professionalization</a> of a qualified, educated health supply chain workforce.
3	Building and access a <a href="#">qualified supply chain workforce</a> , including leaders and managers, which is endowed with adequate staffing, skills and career development opportunities.

To learn more about the materials available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)



Sources:  
1 WHO, Forum on Medicines, countries and civil society push for greater transparency and fairer prices, 2019  
2 Liu, J.X., Goryakin, Y., Maeda, A. et al. Global Health Workforce Labor Market Projections for 2030. HR Health 15, 11 (2017)

Why is it crucial to invest in shaping the health workforce and developing policies?

**50** percent of the world's population **lack access to essential health services.**<sup>1</sup>

**80** million health workers will be required by 2030 to **ensure the world's population has equitable access to medicines.**<sup>1</sup>

**100** million people every year are **pushed into poverty** because of the price of out-of-pocket medicines.<sup>2</sup>



## Transforming data into actionable evidence

Data analytics is the practice of collecting, exploiting, harnessing and managing data to transform them into actionable evidence that allows decision makers to take the best course of action.

The transformation of raw data into actionable-evidence enables governments to make informed decisions that will affect policy, strategy and tactical level endeavours. This area is of crucial importance to develop needs-driven, beneficiary-centred and cost-efficient strategies capable of leveraging supply chain assets, operations and enablers with a view to increasing the coverage, equity and access of all required health products and services to children in need.

Investing in data analytics allows governments to have ownership of the data generated by the supply chain so that they can make evidence informed decisions. Data ownership is key to driving sustainable change across all the operations and enablers of the supply chain and increase supply chain maturity indicators.

UNICEF will support the strengthening efforts of governments by:

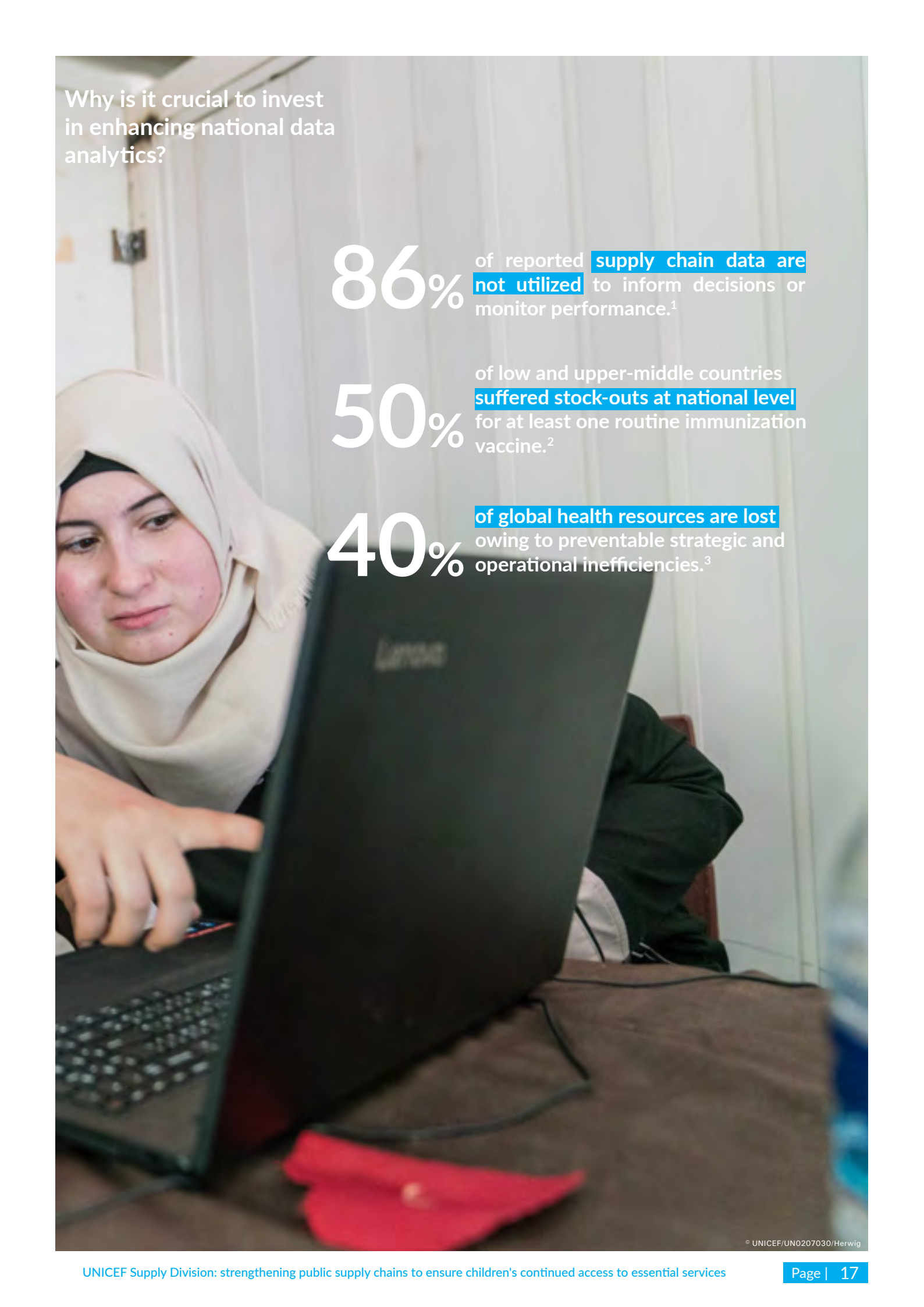
#	Added value
1	Enhancing the capacity of countries to <b>implement evidence-driven response plans</b> . By deploying a series of methodologies and tools, governments can identify gaps and priority areas across all work streams of their supply chains. UNICEF has instruments on hand to quantify the size of the gaps and develop value-adding proposals that provide an overview of the expected benefits.
2	<b>Digitalising national information systems to support decision-making processes</b> . To achieve this, UNICEF has the expertise to analyze and improve the capability, processes and technology used to support the generation, registration and reporting of data across all levels of the system.
3	<b>Driving sustainable change across all areas of the supply chain</b> by ensuring system-wide gains. The deployment of prescriptive analytics techniques will empower governments to take advantage of future opportunities and deploy corrective actions to better manage risks or tackle cross-sectoral inefficiencies undermining efforts to increase access and equity.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)



Sources:  
1 Gavi, UNICEF, WHO, "Review of an information system".  
2 2019/WHO/UNICEF, "Joint Reporting Form", Dec 2019.  
3 WHO, "Health system Financing, The World Health Report", 2010.





Why is it crucial to invest in enhancing national data analytics?

**86%** of reported **supply chain data are not utilized** to inform decisions or monitor performance.<sup>1</sup>

**50%** of low and upper-middle countries **suffered stock-outs at national level** for at least one routine immunization vaccine.<sup>2</sup>

**40%** of global health resources are lost owing to preventable strategic and operational inefficiencies.<sup>3</sup>

## Optimising last-mile delivery systems

Investing in supply chain network optimisation is critical for adapting to rapidly changing needs of current health programmes. New vaccines have to be delivered to new populations of mother and children and adolescents. New diseases emerge; populations move and roads, rail, and airports are closed or opened. These are some of the many factors which impact the capacity to reach the beneficiary.

Network optimisation is an evidence-based approach to analyzing and transforming the components of the supply chain, such as the location and distribution of products, with the goal of improving the availability of essential products at all levels of the public system.

The approach enables governments to analyse the performance of their supply chain – as measured by its reliability, availability, efficiency, and reach – in relation to overall programmatic goals such as coverage and equity. Through this approach, governments are empowered to identify appropriate supply chain interventions, targeted investments and technical assistance towards:

#	Added value
1	<b>Increasing end-to-end logistical performance</b> by optimizing the efficiencies and effectiveness of national supply chain storage, distribution and management practices.
2	Assessing nationally managed supply chain systems to <b>develop risk profiles and implementation road maps</b> with the goal of transitioning countries out of donor support.
3	<b>Identifying last-mile innovations</b> that contribute to higher product availability and greater efficiencies in hard-to-reach populations in remote rural, urban poor and conflict settings.
4	<b>Segmenting the supply chain</b> to identify value-added opportunities for governments to engage with and leverage competencies of local institutions and the private sector.

Working with donors and partners, UNICEF Supply Division leads the global immunization supply chain design efforts. Governments and partner organisations can benefit from a wide range of guidance and evidence, tools for engagement, technical assistance, knowledge exchange and catalytic resources for implementation.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)



Why is it crucial to ensure the delivery of all required health products down to the last mile?

72%

of countries with 4 or more supply chain levels could **reduce their operating costs through simplified structures and operations.**<sup>1</sup>

15

**countries are optimising their national network design,** compared with a baseline of 5 countries in 2016.<sup>2</sup>

## Reaching vulnerable populations with drones

The adoption of drone in Malawi has been critical to increasing the service delivery of health commodities and transportation of laboratory samples to and from remote locations.

The UNICEF Malawi HIV/AIDS section originated an analysis of integrating drones into the public health supply chain with the goal of reducing turnaround time of early infant diagnosis for HIV.

The country's infrastructure and weather-induced transportation challenges were identified as underlying reasons behind the unavailability of medical commodities in health facilities as well as lengthy turnaround times for testing. Together, these issues directly contributed to the lack of treatment and high prevalence of HIV/AIDS.

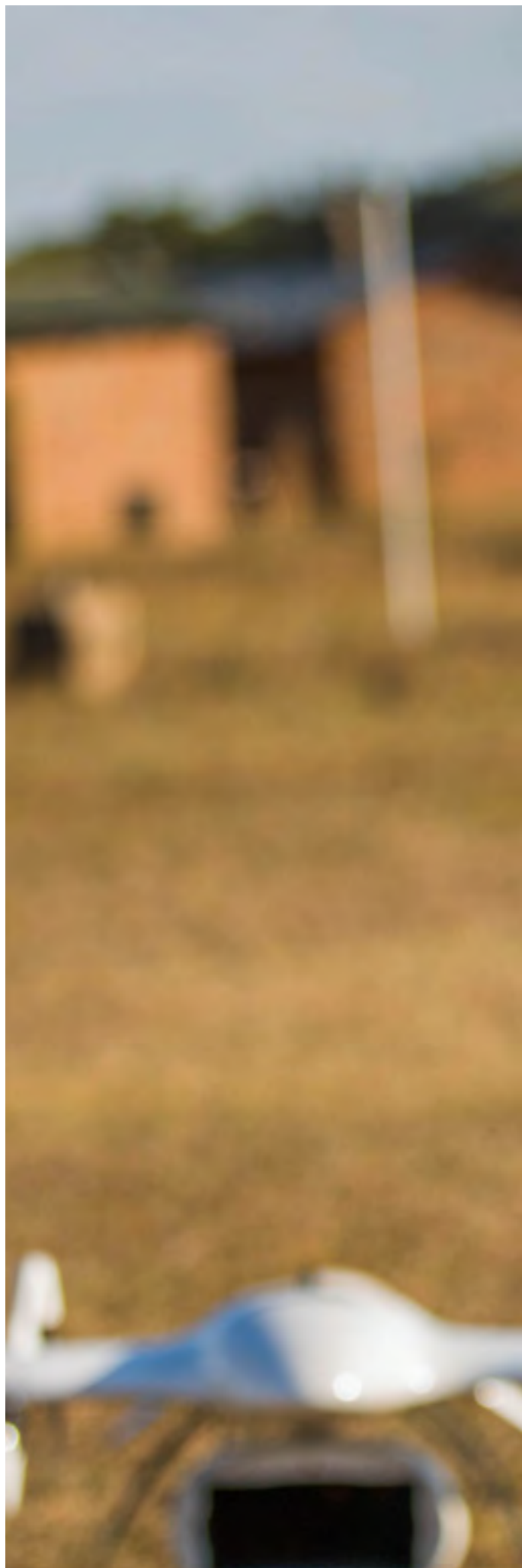
UNICEF commissioned an assessment to identify the bottlenecks of the in-country referral system and provide recommendations on transport network optimization. The report highlighted the critical added value of using drones as an alternative transport modality in certain hard-to-reach areas with limited road accessibility. Although the cost of flying drones was two times higher than the cost of motorcycle transport, the increased transport speed and reliability was forecasted to generate improvements in health outcomes.


A drone project was thereafter set up in northern Malawi to serve the communities in hard-to-reach areas. A key advantage of drone transport is the ability to land on the grounds of remote health facilities to collect lab samples and return paper-based test results.

The USAID-funded project ran between June 2019 to February 2020 resulting in the number of samples collected increased by 130 per cent, contributing to a greater number of patients being tested and treated. In addition, turnaround times decreased significantly with patients receiving results within two to four weeks, down from eight weeks. This was pivotal to increase patients' access to treatment.

Drone deployment was transformational in improving health and diagnostics supply chains and supporting hard-to-reach communities. A long-term commitment from governments and donors will be essential in making the use of this promising technology sustainable. In 2017, UNICEF and the Government of Malawi opened the first drone testing corridor worldwide as a technology-friendly environment for local and international drone companies to test their solutions.

Source:  
<sup>1</sup> USAID Drones in international development, Oct. 2020





Since 2017, UNICEF and the Government of Malawi opened the first drone testing corridor worldwide as a technology-friendly environment for companies to test different solutions.

65%

reduction in turnaround times of diagnostic samples was gained in with the adoption of UAS.<sup>1</sup>

130%

increase in diagnostic sample collection was achieved, leading to more patients being effectively treated.<sup>1</sup>

## Supporting vaccine forecasting

Immunization saves 2 to 3 million lives each year. By protecting children against serious diseases, vaccines play a central role in ending preventable child deaths.

National vaccine demand forecasting activities ensure that adequate stocks are available to mitigate the risk of stock outs, shelf-life expiration and other stock imbalances to achieve national immunization goals. It also offers visibility into future market needs to donors and industry partners

National vaccine forecasting is a continuous, data-driven process that is used to estimate the total quantity of vaccines needed and their related costs for countries to achieve full immunization coverage over a specific period of time in the future. It is a key process to support the decision making of national vaccine budgeting and procurement plans.

Due to the complexity and various conditions required to produce high quality forecasts, UNICEF employs a systems perspective approach whereby various programme and supply datasets from partners are analysed to ensure greater accuracy in vaccine forecasting. UNICEF also works toward the standardization and institutionalization of in-country forecasting processes.

UNICEF provides expertise and support in the following areas:

#	Added value
1	Supporting countries in developing <a href="#">annual vaccine forecasts</a> to inform national procurement planning and budgeting needs.
2	Improving countries forecasting methodologies, management systems, processes and practices, including forecast-specific data understanding, to <a href="#">anticipate programme needs at different supply chain levels</a> .
3	Supporting countries in <a href="#">implementing UNICEF's online vaccine pipeline monitoring and visualization tool</a> (Visibility for Vaccines: ViVa) to help anticipate and mitigate the risk of vaccine stockouts.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org).





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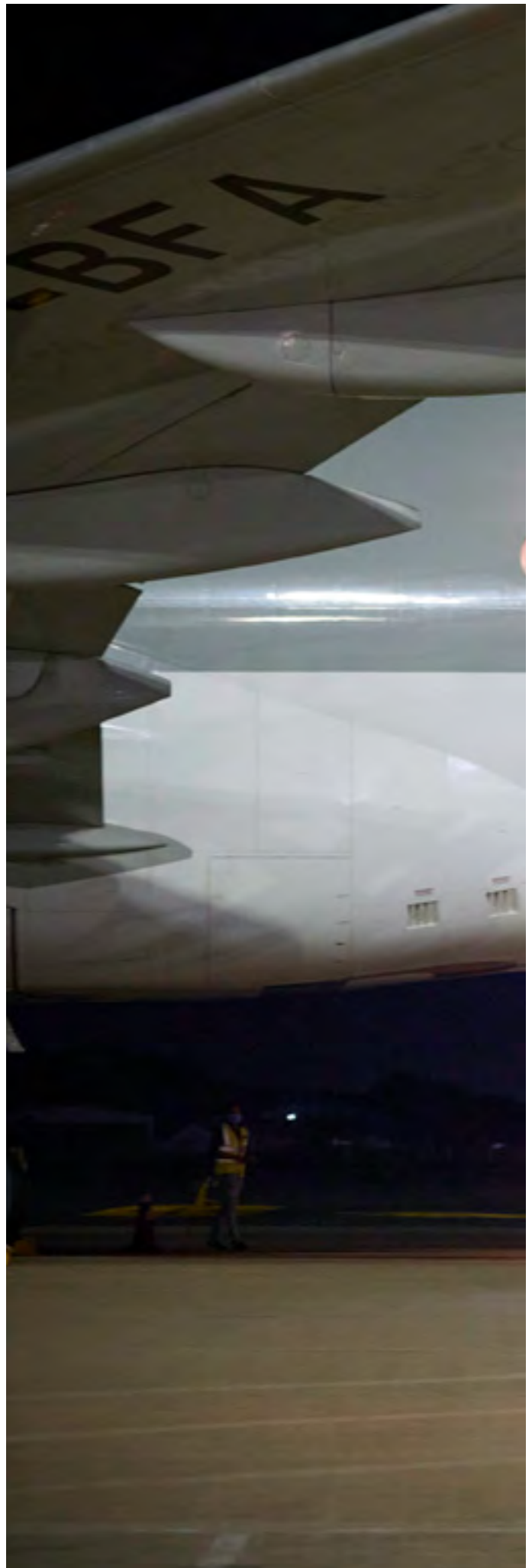
## Supporting vaccine procurement

Strong national procurement systems for immunization are essential for sustainable access to quality assured vaccines and immunization supplies. A strategic approach to procurement considers multiple demand and supply dimensions and ensures that sufficient time is built into the procurement process to develop a procurement strategy that leads to overarchingly being able to secure vaccines and contributing to the overall strength of a country's supply chain.

UNICEF employs a vaccine security approach, which is focused on three main tenets: available funding, accurate forecasting and appropriate contracting. Working with government partners, UNICEF supports countries to strengthen the capacity of national systems for improved strategic vaccine procurement practices, vaccine security and sustainability.

UNICEF, working with partners, has initiated several initiatives to support countries in this area, including:

#	Added value
1	The Vaccine Procurement Practitioners Exchange Forum (VPPEF) launched in 2015 and represents a unique, in-person platform to <a href="#">foster knowledge sharing and best practices</a> and strengthen participants' skills and understanding on diverse vaccine procurement topics, e.g., regulatory, financing, forecasting and procurement.
2	The Vaccine Procurement Practitioners Network (VPPN), hosted by UNICEF Supply Division, was established in 2015 as an online community of practice and resource portal for professionals and technical experts <a href="#">supporting national immunization programmes</a> , including partners such as UNICEF, WHO and Gavi.
3	The vaccine procurement assessment toolbox is a compilation of resources that <a href="#">provide guidance for those engaged in vaccine procurement</a> , who would like to assess their procurement processes. It is not a stand-alone assessment tool, but instead provides a methodology to identify key aspects of the procurement system for immunization supplies that need to be covered in an assessment.
4	The strategic vaccine procurement e-learning course focuses on the strategic vaccine procurement cycle and its processes. The course is intended to <a href="#">provide a background on key vaccine procurement processes</a> to strengthen the capacity of national governments to ensure sustainable access to and timely supply of affordable vaccines. The course is still under development in collaboration with multiple partners.





Why is it crucial to invest in strengthening vaccine procurement processes?

**16** countries are graduating from Gavi support and transitioning to self-procurement in 2020.



## Improving supply and demand management through needs-driven forecasting

Demand forecasting for essential medicines and other health technologies aims to understand the factors and potential risks that influence the systematic components of the demand with a view to calculating the right number of health products required to satisfy the needs of the population.

It is a crucial entry point to strengthen the capacity of partners to analyse data and devise robust integrated supply chain planning solutions in the areas of procurement, distribution and others.

Governments benefit from implementing forecast exercises under an overarching data analytics umbrella as it enables a natural continuation and interaction across all data-related areas ranging from forecasting, and planning to monitoring.

This integrated approach allows countries to follow an iterative programme management cycle process and ensure a deeper understanding and more reliable perspective of the variables, unexpected factors and risks that could affect or contribute to the efficient delivery of services to people in need.

UNICEF will support government-driven forecasting exercises by:

#	Added value
1	Providing adequate training to model the demand behaviour of all health technologies (except vaccines). This workstream includes the development of disease-specific tools that consider country-specific factors and assumptions, resulting in high-degrees of accuracy.
2	Guiding the deployment of adapted methodologies to complement the estimated demand and empower governments to anticipate and identify potential stock-risky situations (excess and shortages).
3	Providing technical cooperation to integrate the forecast exercise into the broader data analytics work to enhance the government's capacity to predict better and model the demand's behaviour. This will leverage the different prescriptive analytics methodologies that will complement a demand forecasting exercise.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org).



Why is it crucial to invest in demand forecasting for essential medicines?

94%

forecast accuracy when comparing estimated demand against registered consumption is obtained when developing programme-specific tools



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## Bridging the gap between availability and access through end-user monitoring

End-User Monitoring (EUM) a patient-centred engagement that aims to understand if last-mile available products are reaching the beneficiary and having the intended impact on their well-being.

With the generous support of USAID Food for Peace (FFP), UNICEF has been engaged in supporting governments to have greater accountability for, and visibility on, the efficiency of their nutrition services. EUM of RUTF has been designed to provide select information to policymakers, and programme and logistics managers on the effectiveness of the supply chain in making RUTF available consistently, and on programme implementation to ensure correct use of RUTF in the community. EUM was also used in Afghanistan to help determine the impact of the education supplies UNICEF had procured and delivered in hard-to-reach areas.

The EUM tool takes the form of a survey addressed to health facilities and recipient households. It is administrated by different stakeholders, such as nutrition staff with supervisory roles, community health workers and/or representatives of community-based organizations (for example women's groups).

The information collected will identify gaps in the last mile of the system but are not diagnostic; further data collection through qualitative interviews with stakeholder and implementers may be required to identify the root cause of the problem and inform corrective actions.

Design of EUM activities should be done using a consultative approach that engages key local stakeholders, including ministries of health, donors, and implementing partners. These stakeholders must agree on an approach for implementing EUM that complements and strengthens existing activities. Stakeholders may also want to incorporate additional indicators, commodities or questions.

This country-specific and tailored approach will ensure that the EUM results are as useful as possible to national and local decision makers.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)



Sources:  
1 WHO, Forum on Medicines, countries and civil society push for greater transparency and fairer prices, 2019  
2 Liu, J.X., Goryakin, Y., Maeda, A. et al. Global Health Workforce Labor Market Projections for 2030. HR Health 15, 11 (2017)

Why is it crucial to invest in end-user monitoring?

**16** million children suffer from an extreme form of severe acute malnutrition.<sup>1</sup>

**80** million health workers will be required by 2030 to ensure the world's population has equitable access to medicines.<sup>2</sup>

**25%** of all global health expenditure is on medicines, with the main source of financing being individuals.<sup>2</sup>

## Leveraging the power of end-user monitoring

### The Case of the Afghanistan education programme

In 2018, the political tension and conflict in Afghanistan constrained UNICEF's ability to regularly monitor its programme supplies because of difficulties accessing schools and institutions in the deprived provinces it serves. These challenges meant that UNICEF could not determine the proportion of supplies reaching children or whether the supplies provided were of the right quality, or appropriate to the needs of children.

An EUM study was commissioned to help determine the relevance, effectiveness and appropriateness of education materials provided to the Afghanistan Ministry of Education. The EUM exercise revealed some vulnerabilities across the programme and supply functions which included process, coordination, alignment and other specific technical areas.

The EUM exercise revealed that forecasts and distribution plans developed at the central level had included schools which had since been closed because of the conflict or were no longer operational owing to lack of staff. Other schools, while operational, had no attendance because of political tensions and territorial control by insurgent groups.

The prevailing high security risks in Afghanistan prevented the verification of school inventory to determine those that were viable and operational. Among other findings, the EUM determined the number of schools that were open and operational compared with those registered in the national Education Management Information System in the provinces visited.

This approach provided greater visibility of operational and non-operational schools which in turn ensured that closed schools were not included in the teaching and learning materials forecast. This contributed to considerable cost savings.

It was acknowledged that EUM provides key insights and visibility on programme and supply performance, further informing refinement and design of future programmes or adjusting existing ones. This demonstrated that the two functions can be mutually reinforcing bringing about efficiencies and cost savings for the benefit of the overall programme.

The EUM also revealed that over-reliance on central level data without aligning with lower levels potentially distorts forecast figures resulting in higher procurement and supply costs. In addition, the need for verifying data at subnational level was further amplified by the findings of the EUM exercise.





The political tension and fragile context in Afghanistan affected the capacity of the government and UNICEF to reach all children and ensure access to teaching and learning materials.

- An End-User Monitoring assessment was deployed to determine the strengths and gaps of the national education programme.
- The EUM identified limited visibility on the number of operational schools and data-related challenges which affected planning and procurement.

## Enhancing the long-term risk resiliency and shock-absorption capacity of supply chains

The quick spread of the COVID-19 outbreak has represented a significant challenge to governments' public welfare systems, whose structural and functional vulnerabilities have limited the capacity of national authorities to provide health services and products to their populations.

The acuteness and scope of the current pandemic has placed enormous strain on national supply chains, which need to be robust enough for governments to address a significant spike in demand and guarantee timely delivery of life-saving and other essential health technologies with limited resources and reduced capacity amid an increasingly restricting and complex operating environment.

The pandemic has had a severe adverse impact on the global economy with damaging spillover effects and disruptions of international, regional and local manufacturing and supply chains. This has limited the ability of national chains to produce, ship, and deliver -on time and in full- all required health products to meet the recent demand induced by COVID-19.

These events have exposed the structural and functional limitations of existing health systems and shed light on the importance of investing further in optimizing the foundations, performance, emergency preparedness capacity, and resilience of national and district-level supply chains against external shocks. Governments must be further empowered to sustainably manage and run efficient public systems and be better prepared for managing surging needs.

In this challenging context, UNICEF recommends a phased approach to gradually and sustainably address these supply chain-related challenges. Government partners can rely upon [UNICEF's support in identifying and responding to their COVID-19 related needs](#) and transitioning from a pandemic-focused response phase towards the development of resilient national systems.

Other guidance on [assessing the downstream supply chain and building resilience in response COVID-19](#), [preventing in-country stock-risky situations through prescriptive analytics](#) and [using drones to support governments' COVID-19 response](#), can be consulted.



Sources:  
1 Logistics Cluster, <https://logcluster.org/preparedness>





Supply chain operations have been assessed to account for an average of 73 per cent of humanitarian response costs<sup>1</sup>

- Governments benefit from strengthened national supply chains designed to withstand emergency driven operational shocks.
- The Maturity Model for Resiliency provides the foundation for developing a country-specific roadmap to enhance preparedness and response levels.

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## Investing in temperature-controlled supply chains

The Cold Chain Equipment Optimization Platform (CCE OP) is an initiative established through Gavi and its Alliance Partners in 2016 to support national immunization programmes via the improvement and extension of their cold chain infrastructure into remote areas. In addition to the purchase and installation of WHO-prequalified equipment, eligible countries benefit from complementary in-country logistics and health worker capacity development services from manufacturers along the supply chain and down to the health- facility level ('service bundle').

Beyond its current lead-procurement function, UNICEF has a strategic advisory and technical role in supporting governments to identify and address cold chain capacity gaps, leveraging resources to support countries applying for equipment and services, and supporting the development, implementation as well as the monitoring of nationally-led operational deployment plans based on current and future needs.

In addition to CCEOP, UNICEF expertise can be deployed across the following areas:

#	Added value
1	Conducting a cold chain equipment inventory to <a href="#">identify capacity gaps and investment needs</a> .
2	<a href="#">Strengthening cold chain maintenance and management systems</a> .
3	<a href="#">Optimizing countries' cold chain system design</a> through a temperature monitoring study that will identify the areas of improvement in the transport routes.
4	Assessing the performance of newly pre-qualified cold chain products to <a href="#">improve product specifications and meet programme needs</a> .

The COVID-19 pandemic has stressed the importance for countries to rely on agile and flexible systems to deliver comprehensive health services and manage all cold chain commodities.

This has been attested to by [UNICEF and WHO](#), which have advocated for [greater integration for temperature-sensitive supply chains](#). These new developments further highlight the critical need to shift toward a more holistic approach to cold chain management and invest in national health supply chain strengthening efforts at large.

To learn more about the different tools and methodologies available to support the work in this area, please contact the UNICEF Country Office operating in your country and/or send your request to [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org).



Why is it crucial to invest in cold chain equipment?

**100** thousand cold chain units will be available by 2021 across **health facilities in +50 countries.**

**6** countries are **managing government-led service bundle** contracts as part of the efforts to increase the ownership and sustainability of the CCE OP programme.

## Closing the financing gap by mobilizing domestic and external resources and funding

Achieving financial sustainability is a key cornerstone of building efficient public systems. To this end, UNICEF engages governments to influence the mobilization, allocation and use of domestic financial resources, for greater, more equitable results for children.

UNICEF specifically supports governments' transition towards sustainable self-financing of essential supplies ('Country Supply Financing'); and focuses on leveraging financing tools to improve and accelerate market access and affordability of essential supplies ('Supplier Financing'). Key supply financing challenges include insufficient allocations to child-related programmes; inefficient expenditure; inequitable allocations; and inadequate financial accountability.

Within the country supply financing discipline, UNICEF offers support in two areas: pre-financing and increasing governments' fiscal space. Pre-financing interventions are deployed to address temporary cash flow timing issues.

The Vaccine Independence Initiative (VII), UNICEF's main tool for supply pre-financing, accelerates access to essential supplies, including vaccines and other non-immunization commodities, while providing a platform to ensure a systematic and sustainable supply for country partners facing temporary budget shortfalls. This support is delivered via a formal subscription to the VII Revolving Fund or ad-hoc pre-financing for occasional needs for non-subscribing countries.

Through UNICEF's work in increasing governments' fiscal space, UNICEF provides technical assistance and normative support to address the underlying causes of insufficient budget allocation, low and/or delayed budget execution to improve a country's long-term self-financing capacity, and is focused solely on supplies.

These activities consist of supporting countries' strengthening of their capacities of country-owned forecasting and budgeting, financial procedure development, and mobilization of domestic funds through evidence-based advocacy and multi-year planning.

#	Added value
1	Support in <a href="#">addressing temporary cash flow timing issues via pre-financing</a> , including through subscription to VII.
2	<a href="#">Support in supply and procurement planning and budgeting, procedural development</a> , including in the long-term quantification, forecasting and costing of procurement needs.





How can pre-financing solutions support governments?

200

million doses of vaccines were accelerated through pre-financing in 2019.

5

months is the average lead time that countries gain to deliver supplies when leveraging UNICEF's pre-financing services.

## Keeping vaccines safe through the last mile

A vaccine's journey through the supply chain is complex. Because most vaccines are sensitive to heat or light, they must be transported and stored under correct conditions to maintain their quality and potency. This requires robust and reliable cold chain equipment.

As part of a strategy to strengthen vaccine supply chains and achieve better immunization equity and coverage, in 2015, Gavi the Vaccine Alliance, UNICEF and other partners launched the Cold Chain Equipment Optimization Platform (CCEOP) – a \$400 million, five-year project to upgrade existing cold chain equipment in 56 countries by 2021. Strengthening cold chains in country also supports agile vaccine response efforts for infectious disease outbreaks, including the COVID-19 vaccine.

Upgrading thousands of units in health centres across the eligible countries presented a unique opportunity to move forward with innovations in both equipment and approach. Newer technologies have included solar powered units to replace gas or battery powered refrigeration systems and remote temperature monitoring systems have been introduced and tested at scale to guide repair and maintenance planning.

The CCEOP has also introduced and scaled up a service bundle concept. Under this approach, manufacturers provide the equipment and manage in-country logistics, installation and training of staff.


The concept has proven efficient in ensuring quick installation and staff training of the needed equipment. UNICEF and partners have worked closely with countries to highlight the advantages of investing in the new and improved cold chain equipment.

The CCEOP implemented measures give countries the flexibility to determine the best fit for their context.

By investing in new cold chain equipment, countries can ultimately save money over the average 10-year lifespan of the equipment, and safeguard vaccines for routine immunization programmes through the last mile of their journey.

This story has been published in [UNICEF SD 2019 Annual report](#)



A man wearing a white cap and a blue t-shirt is walking across a rusty metal roof. He is carrying a large, rectangular solar panel under his arm. The background shows a cloudy sky and another building with a green and yellow striped container on its roof.

UNICEF ensures **long-term sustainability** of the CCEOP project by transferring the relevant technical skills to government staff.

- To support the solar refrigerator systems that UNICEF supplied to the Republic of Congo, a **solar vaccine refrigeration training** was delivered in 2020 to provide technicians from the ministry of health with the skills to install, operate and maintain the new solar powered Dulas refrigerators (Republic of Congo).

## Compendium of supply chain strengthening tools

Below is a list of reference strengthening-related tools, methodologies and guidelines (co)developed by UNICEF. Some are accessible publicly through the links below while the others can be provided on request through UNICEF Country Offices or [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org).

### Health System Strengthening

#	Title	Purpose	Description
1	The UNICEF Health Systems Strengthening Approach	This document describes the UNICEF approach to strengthening public health systems. This seven-step methodology identifies six main pillars, of which, supply chain is one.	<a href="#">Methodology</a>
2	Supply Chain Maturity Model - online assessment	The Model serves to identify supply chain gaps, priority needs and development cooperation opportunities with governments across a wide array of supply chain operational and functional areas.	<a href="#">Online assessment</a>
3	Supply Chain Maturity Model - e-learning course	The course provides guidance on how to run and interpret the results of the UNICEF Supply Chain Maturity Model.	<a href="#">Online course</a>

### Logistical Operations

#	Title	Purpose	Description
1	Logistics at UNICEF	The course strengthens the logistics capacity of staff to provide timely programme inputs and emergency response.	<a href="#">Online course</a>
2	Procurement at UNICEF	This course provides the foundation for the procurement of goods and services for UNICEF, in accordance with the standards and good practices.	<a href="#">Online course</a>
3	Introduction to UN Procurement Harmonization	This course will help you understand how to make procurement actions more efficient and effective.	<a href="#">Online course</a>
4	Contracting for Services	This case-based learning programme aims at highlighting some of the critical issues faced by UNICEF offices in the area of Contracting for Services.	<a href="#">Online course</a>
5	Contract management	This will help you understand contract management processes and build successful relationships to implement contracts effectively.	<a href="#">Online course</a>

### COVID-19 related

#	Title	Purpose	Description
1	Strengthening Public Health Supply Chains for an Immediate COVID-19 Response and Beyond	This document provides an overview of how UNICEF offices can support governments in their nationwide efforts to respond to the pandemic and the recommended transition towards strengthening national supply chains.	<a href="#">Guidance</a>
2	Preventing In-Country Stock-Risky Situations Through Prescriptive Analytics in the COVID-19 Context	This advocacy document analyses the Joint Report Forms data for the past decade to identify supply chain barriers and correlate its impact on health outcomes.	<a href="#">Guidance</a>
3	Assessing the Downstream Supply Chain and Building Resilience in Response to the	This document provides guidance to assess in-country logistics capabilities, identify alternative supply chain designs, assess local service providers and establish a contracting and operational monitoring plan.	<a href="#">Guidance</a>
4	How Can Drones Help with COVID-19 Response?	This brief memo provides an analysis of publicly available information on drone use-cases in response to COVID-19	<a href="#">Guidance</a>
5	Health Supply Chain Workers are Essential in the Fight Against the COVID-19 Pandemic	This guidance highlights the critical role of, and provides recommendations for the supply chain workforce to be empowered to safely procure and deliver supplies.	<a href="#">Guidance</a>
6	COVID-19 Vaccine Market Dashboard	The COVID-19 Vaccine Market Dashboard is the go-to public resource for the latest information on the world's COVID-19 vaccine market and the COVAX Facility's vaccine deliveries.	<a href="#">Tool</a>
7	Strengthening nutrition supply chains in the COVID-19 pandemic context: considerations for partners	An approach to mitigate the impact of the pandemic on nutrition supply chains and nutritional outcome.	<a href="#">Guidance</a>



## Supply Chain workforce

#	Title	Purpose	Description
1	Training Needs Analysis for the Immunization Supply Chain Workforce	A training needs analysis toolkit comprising methodologies, templates and resources to enable countries to develop informed training plans for the immunization supply chain workforce.	<a href="#">Guidance</a>
2	Organisational Design for Public Health Supply Chains	Provides templates and tools to support the immunization programmes in countries to ensure seamless supply chain operations for last-mile delivery and visibility in accordance with recommended standards of practices.	Guidance
3	Human Resource Rapid Assessment for the Immunization Supply Chain	A comprehensive HR assessment that covers planning, management and development with specific indicators within each category to inform a plan.	<a href="#">Assessment</a>
4	Performance Management Framework	Guidance on effective people and performance management which shares key principles and practical tools to support best practice performance management for the immunization supply chain workforce.	Methodology
5	Organizational Behaviour and Change Management Guidelines	This guidance focuses on organizational and cultural change. The tools are designed as a means to help users understand, lead and manage change more effectively. It provides ideas, insights, case studies and best practices.	<a href="#">Guidance</a>
6	Process Guide and Toolkit for Strengthening Public Health Supply Chain	A framework for public health supply chain strengthening that takes the user through a step by step approach for developing, implementing and monitoring a comprehensive supply chain strategy and implementation plan.	<a href="#">Guidance</a>
7	Supporting National Logistics Working Groups	This toolkit provides guidance for ISC Managers on how to effectively establish and manage logistics working groups for effective collaboration and oversight/leadership of immunization SC activities and improvement plans.	<a href="#">Online course</a>
8	Technical assistance delivery framework for health supply chain strengthening	The guidance presents six new approaches to accelerate efforts towards high impact of technical assistance for strengthening national health supply chains. It sets a new standard for harmonizing approaches and investment priorities across stakeholders to enhance the efficiency and impact of global, regional and local responses in reaching children with life-saving supplies.	<a href="#">Guidance</a>
9	The PtD Health Supply Chain Competency Framework for Managers & Leaders	The framework defines the skills, competencies and associated behaviors that are required for effective supply chain management. It can be used to map existing competencies with desired competencies at all levels of the system and inform a capacity development plan to address the gaps.	<a href="#">Guidance</a>

## Data Analytics

#	Title	Purpose	Description
1	Data Science: Holistically Strengthening National Data Systems	This document provides step- by- step guidance to review and strengthen national data systems considering all the components of a national information system.	<a href="#">Guidance</a>
2	Supply Chain Analytics: Transforming Data into Evidence to Inform Strategic & Tactical Decisions	This material raises awareness about the importance of investing in the strengthening of national information systems.	Brochure
3	A Review of JRF Data to Identify Supply Chain Barriers to Equitable Immunization Access	This advocacy document analyses the Joint Report Forms data for the past decade to identify supply chain barriers and correlate its impact on health outcomes.	Document
4	The Impact of Prescriptive Analytics to Ensure Continuous Access to Medicines for all	This communication material raises awareness about the importance of adopting an analytical process to enable governments to identify stock- risky situations months in advance, allowing for the implementation of corrective actions.	Brochure
5	Data Analytics: Blurring the Division between HMIS and LMIS Through Visual Analytics	This guidance provides step-by-step instructions to enable governments to develop management dashboard and implement an analytical process to identify trends and patterns across multiple data sets including but not limited to health outcomes and supply chain indicators.	Guidance
6	Review of Supply Chain Assessment Tools	This review assists national governments, donors, development partners and other stakeholders to select the most appropriate supply chain assessment tool that meets their specific needs, context and budget.	<a href="#">Guidance</a>

Network optimisation			
#	Title	Purpose	Description
1	System Design	Evidence-based, continuous improvement approach towards supply chain performance. The recommended approach to properly analyzing supply chain design follows a series of stages from problem definition, through analysis, into proposals, implementation and evaluation.	Methodology
2	Unmanned Aircraft Systems (UAS)	Highlights existing regulations and systems and used cases for supply chain operations. The guidance also provides essential information and resources for examining the potential use of UAS in country programmes.	<a href="#">Guidance</a>
3	Supply Chain Analysis and Intelligence Tool (SCANIT)	SCANIT is a UNICEF system design tool for visual analysis of in-country supply chains such as storage, distribution and the overall network. It provides national and sub-national stakeholders with a clear understanding of trade-offs between different supply chain scenarios.	<a href="#">Tool</a>

Vaccine forecasting			
#	Title	Purpose	Description
1	Visibility for Vaccines (ViVa): using data in the immunization supply chain	This online course aims to introduce you to the ViVa online platform.	<a href="#">Online course</a>

Vaccine procurement			
#	Title	Purpose	Description
1	Vaccine procurement strengthening initiatives	UNICEF works together with national governments to ensure that countries can timely access affordable and quality vaccines. Access the Vaccine Procurement Practitioners Exchange Forum to learn and share best practices.	<a href="#">Tool</a>
2	The Vaccine Procurement Practitioners Network (VPPN)	An online community of practice and resource portal for professionals and technical experts supporting national immunization programmes and partners sign in from to TechNet.	<a href="#">Tool</a>
3	Strategic Vaccine Procurement Assessment Toolbox	A compilation of resources that provides guidance for those who would like to assess their procurement processes. It provides a methodology to identify key aspects of the procurement system for immunization supplies that need to be covered in an assessment.	<a href="#">Toolbox</a>
4	Strategic Vaccine Procurement e-Learning Course	An e-learning course focused on the strategic vaccine procurement cycle and its processes. It provides a background on key vaccine procurement processes to strengthen the capacity of national governments to ensure sustainable access to and timely supply of affordable vaccines.	In development
5	Key Supply Markets Dashboards	Explore a summary of UNICEF's market assessment of 72 strategic essential products for women, children and young people.	<a href="#">Tool</a>
6	Market Notes and updates	Explore market and product updates highlighting trends in supply, demand, shortages, surplus and availability of key strategic products procured by UNICEF.	<a href="#">Tool</a>
7	UNICEF Vaccine Pricing Data	List of vaccine prices for UNICEF Supply Division- procured products for Gavi-eligible countries.	<a href="#">Tool</a>
8	UNICEF Pricing Data	Find prices of essential and strategic products procured by UNICEF.	<a href="#">Tool</a>
9	UNICEF Emergency Vaccine Stockpiles	Overview of vaccine availability through the emergency stockpiles that UNICEF manages.	<a href="#">Tool</a>

End user monitoring			
#	Title	Purpose	Description
1	Guidance on End User Monitoring for RUTF	Provides an approach for routine monitoring of the availability and use of RUTF at the last mile.	<a href="#">Guidance</a>
2	RUTF Guidance on Continuous Survey Approach	A light advocacy tool for supply chain assessment based on analysis and modeling; it provides recommendations to look deeper and complement other diagnostic supply chain assessments.	<a href="#">Tool</a>

## **UNICEF**

Technical Cooperation on  
Supply Chain Strengthening

Marmormolen 51  
2100 Copenhagen  
Denmark

Telephone: +(45) 45 33 55 00  
Email: [sc.strengthening@unicef.org](mailto:sc.strengthening@unicef.org)  
[www.unicef.org](http://www.unicef.org)

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