

unicef  | for every child

# SUPPLY CHAINS SAVE LIVES

Unlocking access for children,  
their families and communities















# Contents

01

## **Executive summary** \_\_\_\_\_ **08**

02

## **The state of supply chains: Understanding their role and identifying barriers to access** \_\_\_\_\_ **12**

What are supply chains and why are they important? .....	14
What is access? .....	16
Strong supply chains: The key to equitable access .....	18
Health supply chain barriers to access .....	20
Nutrition supply chain barriers to access .....	30
Water, sanitation and hygiene supply chain barriers to access .....	34
Education supply chain barriers to access: UNICEF's lessons learned from the education response to the COVID-19 crisis .....	38

03

## **UNICEF Supply chains in action** \_\_\_\_\_ **40**

Transforming end-to-end supply chains .....	42
Buying and delivering life-saving supplies and services to all corners of the globe .....	44
Driving innovation at scale .....	48
Meeting children's humanitarian and development needs .....	51
Delivering supplies in emergencies .....	52
Working with governments to strengthen public supply chains .....	54
Creating long-lasting change for local economies .....	56
Stimulating local RUTF production .....	58

04

## **Global goods** \_\_\_\_\_ **60**

UNICEF Supply Chain Maturity Model .....	62
The effective vaccine management initiative .....	63



The Traceability and Verification System .....	66
Vaccine Independence Initiative and other supply financing solutions.....	69
NutriDash .....	71
People that Deliver .....	73

## 05

### **Global supply and programme partnerships: Unlocking access for children \_\_\_\_\_ 76**

Global health partnerships .....	78
Global nutrition partnerships .....	83
Global WASH partnerships .....	84
Global education partnerships .....	84

## 06

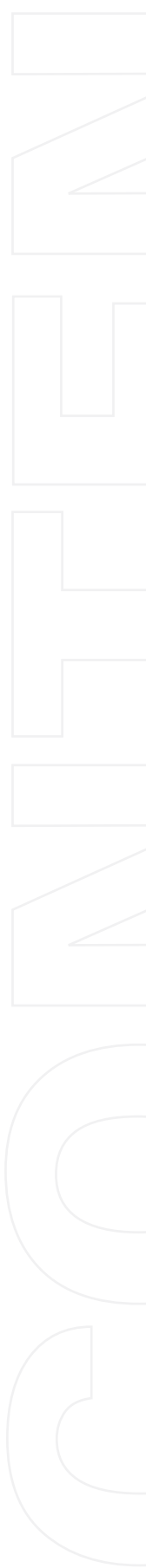
### **Case studies: Bridging the access gaps \_\_\_\_\_ 86**

The life-saving power of data in Nigeria .....	88
Drones: The missing link in Malawi .....	90
Beating malnutrition in Africa .....	93
One UN for health supply chains in Madagascar .....	96
Rolling out vaccines in Mozambique, Nepal and Uzbekistan .....	98
Delivering on multiple fronts in Haiti .....	101
A new, cleaner normal in Pakistan .....	103
Helping children to hear in Rwanda .....	106
Ensuring continuity of care in Lebanon .....	108
Oxygen: Saving children’s lives in Cambodia.....	112

## 07

### **Recommendations \_\_\_\_\_ 114**

Accelerate access to reliable supply chain data and technology to support decision-making .....	116
Promote environmental, social and economic sustainability through supply chains.....	118
Strengthen service delivery systems and quality of care all the way to the last mile .....	120
Increase public financing for supplies and reform fiscal policies.....	122
Support local production and manufacturing of supplies, including through market-shaping .....	123
Enhance governance, private sector involvement and multi-partner coordination .....	124
Invest in supply chain workforce development.....	125
Foster and strengthen global partnerships in a post-pandemic future .....	126



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**Purpose of the report:** This report provides a compendium of information and resources for UNICEF staff and partners working on supply chains. While it may be read from beginning to end, readers are encouraged to use the contents page to locate specific materials that are most applicable to their needs and access the report online to easily navigate throughout the compendium.

We hope that this publication will assist readers in 1) understanding the supply chain gaps for specific programmes; 2) providing examples of tools to overcome bottlenecks; 3) demonstrating how UNICEF's expertise in supply chain management achieves results for children; and 4) informing future supply chain development requirements and investments.

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01

**EXECUTIVE SUMMARY**







**Supply chains save lives.** They are one of the fundamental building blocks of the health, nutrition, education, and water, sanitation and hygiene (WASH) systems that must work to meet children's rights so every child can meet their full potential.

From product selection and strategic procurement to contracting logistics services through to last mile delivery, UNICEF and our partners are supporting governments to reach all children in need, delivering to the right place, at the right time with quality supplies and services.

The COVID-19 pandemic has shown the whole world the value of resilient, equitable supply chains. Equitable access to lifesaving health, nutrition, education and WASH supplies will require us to work together to be prepared, respond to and reflect on successes and failures.

This report was developed with two objectives:

1. To provide an analysis of the **key health, nutrition, education and WASH supply chain barriers** that limit children's access the products, services and treatments they need.
2. To offer a compendium of resources to address the most critical barriers to strengthening supply chains.


Evidence from the experiences and knowledge of partners including governments, USAID, the Global Fund, the Global Alliance for Vaccines (GAVI) the Bill & Melinda Gates Foundation, the African Centre for Disease Control, SAPICS (the professional body for supply chain management), the private sector, WHO, UNFPA and many others has informed eight recommendations that can increase access to quality, lifesaving supplies and services in a post-pandemic future.

To develop strong supply chains with the aim of saving lives, we must invest in:

1. Accelerating access to **reliable supply chain data and technology** to support decision-making
2. Promoting **environmental, social and economic sustainability**
3. Strengthening **service delivery systems and quality of care** to the last mile
4. Increasing **public financing for supplies and reforming fiscal policies**
5. Supporting **local production and manufacturing of supplies**, including through market-shaping





- 
6. Enhancing **governance, private sector involvement and multi-partner coordination**
  7. Empowering the **supply chain workforce**
  8. Fostering and strengthening **global shared-value partnerships**

Accelerating action requires a concerted effort to scale global goods, in conjunction with the reinforcement of existing, and establishment of new, partnerships that foster entrepreneurial and well-proven supply chain expertise. For years UNICEF has been partnering with host governments, international development agencies, civil society organizations, industry, private sector organizations and academia to **produce and deploy global innovative tools and public goods** to strengthen supply chains across all the aforementioned areas. These include:

- The **Vaccine Independence Initiative**, a \$234 million fund that governments can tap into to procure health and nutrition supplies and treat tens of millions of children each year.
- The **Traceability & Verification System**, which serves to verify the authenticity of vaccines and other health products and improve patient safety.
- **NutriDash**, which provides a common nutrition monitoring system for internal and child nutrition programming and reporting.
- The **Effective Vaccine Management Initiative and Maturity Model**, which have both been instrumental in identifying supply chain development needs, shaping improvement plans and directing resource allocations.
- **People that Deliver**, UNICEF's supply chain workforce arm, which, through its coalition of public and private partners, supports countries to develop, empower and equip the supply chain workforce.

These partnerships have also been pivotal to support and scale-up UNICEF's unique supply chain management expertise for the benefit of children, their families and communities.

- As the largest UN procurement agency, UNICEF provides, stores and transports critical vaccines, medicines, nutrition, education products and many other critical supplies to children across

the globe – including in emergency settings. In 2021 alone, **UNICEF procured a record \$7.2 billion worth of supplies and services.**

- UNICEF leverages its purchasing power to diversify and bolster the local production of vaccines, nutrition products and other essential commodities. In 2021, **UNICEF procured RUTF from 22 different suppliers, of whom 18 were located in or close to countries with high levels of child wasting.** Around two-thirds of UNICEF RUTF programme demand was satisfied through local RUTF production.
- UNICEF lends its technical expertise and strengthens the capacity of governments to run and manage their own health, nutrition, education and WASH supply chains. Since 2019, **UNICEF has been leading 639 technical cooperation projects across 20 areas in 66 countries**, from supporting domestic resource mobilization for supplies and deploying cutting-edge last mile innovation to building the skills of the supply chain workforce and improving product visibility from manufacturer to child.

**Accelerating the implementation of the eight recommendations will require all partners to work in collaboration and share good practices.** Case studies from Malawi, Mozambique, Nepal and Pakistan testify to the added-value of strengthening supply chains to achieve programme outcomes and make a difference in children's lives, from determining when to deploy drones to increase the availability of health commodities or steering a coordinated COVID-19 vaccine roll out, to working with the private sector to improve the supply of clean water for remote communities.

Although remarkable progress in child survival has been achieved over the last three decades, more needs to be done. In 2021, five million children were still missing out on basic vaccines while 13.6 million under the age of 5 suffered from severe wasting and 698 million lacked basic sanitation services at school. As social welfare systems rebuild after the COVID-19 pandemic, UNICEF and partners have an opportunity to make supply chains more resilient, more sustainable and more efficient. **This report is a call to action to leverage best practices and ensure the global development community is better positioned to achieve our mutual goals together.**





# 02

## **THE STATE OF SUPPLY CHAINS**

Understanding their role  
and identifying barriers  
to access









# WHAT ARE SUPPLY CHAINS AND WHY ARE THEY IMPORTANT?

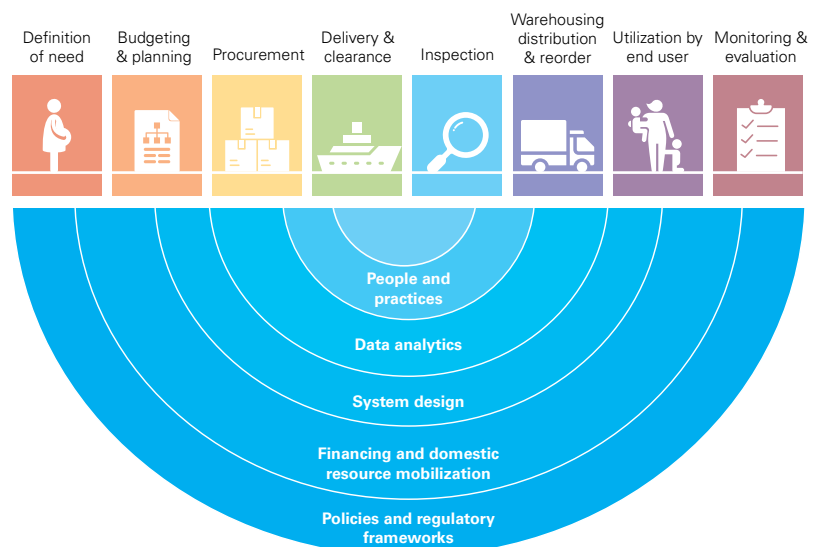
## What are supply chains?

Supply chains are made up of the people, processes, operations, infrastructures, innovations and capabilities that are necessary to source, produce and deliver products, from the early stages of sourcing raw materials to reaching children, families and communities.

Supply chains comprise a network of all the individuals, organizations, resources, assets and technologies that have a role in identifying the demand for essential products, understanding the factors that influence this demand, and matching needs with appropriate services. End-to-end supply chains include manufacturers and suppliers, transporters, warehouses, retailers, social workers, policymakers, digital service providers and the end user.

Supply chains are dynamic and involve the constant flow of information, products and funds between different stages. The supply chain rainbow (Figure 1) illustrates the different components of the supply chain, beginning with a definition of need and ending with monitoring and evaluation. It sets out the 'enablers' – the core supportive capability functions that are required to effectively manage supply chains (including people and policy, data analytics, system design, financing and regulations) and shows how they come together to form an end-to-end supply chain.

Figure 1. The UNICEF supply chain rainbow





## Why do we need to strengthen supply chains?

Supply chains play a fundamental role in products reaching the beneficiary – even in hard-to-reach areas – and ensuring access to life-saving vaccines, medicines and other health technologies, as well as education and water, sanitation and hygiene (WASH) supplies. Supply chain blockages can prevent products from reaching children.

For children to thrive, they require timely, continuous and equitable access to health, nutrition and education products and services from the moment they are born. Resilient and agile supply chains are a fundamental building block of national health, nutrition, and education and other child-centred programmes and necessary to attain the SDGs.

UNICEF and partners have made systems-strengthening a priority and joined forces to build well-functioning, environmentally sustainable, responsive, accountable and resilient systems that better support communities, children and their families. Only with fit-for-purpose supply chain systems can we guarantee access to timely, high-quality essential supplies and ensure they are used without discrimination.

Developing resilient and well-functioning health systems entails strengthening each component of the supply chain. Strengthening national statistical and data systems is central to UNICEF's work as it strives to boost education systems and build the capacities of the social service workforce to ensure that health, nutrition, WASH, education and social protection systems can deliver for children.

## The challenge in low- and middle-income countries

There are numerous reasons why low- and middle-income countries (LMICs) often lack the capacity and resources to build and manage agile and resilient supply chains.

They face upstream challenges, such as limited visibility of data, a lack of analytic insight of demand behaviour, limited fiscal space and fragmented procurement processes. They also face downstream supply chain challenges, including limited warehousing, storage and distribution capacity. They often lack an adequately staffed and skilled supply chain workforce. The challenges are often further compounded by the absence of local manufacturing capacity and an over-reliance on offshore manufacturers, active pharmaceutical ingredients (API) vendors, and suppliers.

Supply chain barriers can limit the availability of health products and other supplies, and trigger service interruptions that compromise the quality of products and undermine the safety of patients. Such barriers sometimes lead to prohibitively expensive operational costs resulting in unequal distribution and coverage.

UNICEF and partners have made great strides towards improving equitable access to life-saving products and services with the support of development agencies including Gavi, the Vaccine Alliance; the Global Fund to Fight AIDS, Tuberculosis and Malaria; the United States Agency for International Development (USAID); and the United Kingdom Foreign Commonwealth & Development Office (FCDO), the European Union, and with global, regional and local private sector companies, academia and local/regional institutions.

The COVID-19 pandemic has pointed a spotlight on the structural and operational limitations of existing supply chain systems and highlighted the importance of investing in strengthening systems. At the same time, the world's pandemic response has underscored our collective commitment and shared vision to support countries as they address immediate needs related to COVID-19 and build stronger primary health care systems, including supply chains that are resilient to shocks.



# WHAT IS ACCESS?

Disease, injury, environmental hazards and the devastating effects of conflict put children around the world in harm's way. But countless deaths can be avoided with access to vaccines, medicines and other critical health supplies.<sup>1</sup>

Access refers to the opportunity and the ability of people to obtain the supplies and services they need. While access can be measured across a multiplicity of dimensions, this report will focus specifically on three components:

## Physical accessibility

This is understood as the availability of basic health, nutrition, WASH and education services within reasonable reach of those who need them and with opening hours, appointment systems and other aspects of service organization and delivery that allow people to obtain services when they need them.

## Financial affordability

This is a measure of the ability of governments and individuals to pay for services without financial hardship. It considers not only the price of the services but also indirect and opportunity costs, such as the cost of transportation to and from facilities and the cost of taking time away from work.

## Acceptability, appropriateness and choice

This captures people's willingness to seek and make use of the supplies and services offered. Acceptability is low when populations perceive services to be ineffective or when social and cultural factors such as language or the age, sex, ethnicity or religion of the health provider discourage them from seeking services. The ability for populations to choose their products – for instance, their COVID-19 vaccines – brings stronger confidence in health and immunization services within communities. It leads to more adults, adolescents and children seeking treatment, which leads to fewer illnesses, hospitalizations and deaths.

For various reasons, existing supplies do not always reach children in need. A lack of coordination, financing or data keeps some life-saving medicines and products far from the children they are meant to protect. Especially for children in remote areas, or in countries affected by crisis, ensuring that supplies reach the last mile is essential. Strong supply chains are fundamental in overcoming obstacles to access. Supply chains are the vehicles that ensure that medicines and other supplies reach children, even in the most remote areas.

<sup>1</sup> Evans, David B et al. "Universal health coverage and universal access." *Bulletin of the World Health Organization* vol. 91,8 (2013): 546-546A. doi:10.2471/BLT.13.125450.







Much of UNICEF's work centres on technical cooperation and strengthening supply chains in countries. Adapting to global development trends and growing country demands for technical assistance, UNICEF works with governments in a number of areas, including supply forecasting, market-influencing and training of health workers.

In emergencies, UNICEF is capable of delivering pre-positioned life-saving supplies within 72 hours from a network of supply hubs<sup>2</sup> around the globe, to bring timely relief to affected populations anywhere in the world.

### Supply chains save lives

Universal health coverage – the overarching goal of the global health system – cannot be attained unless both health services and financial risk protection systems are accessible, affordable and acceptable to patients.

Universal health coverage is tied to development more broadly; improvements in education, for example, will contribute to increased average incomes, making health services more affordable and equipping people with the awareness needed to demand and obtain the health services they need.<sup>3</sup>

When it comes to education, UNICEF's work is grounded in the notion that a child's right to education entails the right to learn. Yet, for too many children across the globe, schooling does not lead to learning. This is why UNICEF and its partners strive for equitable access. In this context, access means quality education and skills development must be equitable and inclusive for all children and adolescents, regardless of who they are or where they live.<sup>4</sup>

A growing body of evidence reveals that inadequate sanitation, water, and washing facilities in schools limit girls' attendance and learning performance, notably when their menstrual hygiene needs are not met.<sup>5</sup> This illustrates how WASH and education programmes interact with health and other aspects of development to affect people's access to the supplies and services they need.

Access is fundamental to upholding the rights of children; as such, UNICEF Supply Division focuses on ensuring that supply factors are never an obstacle to access. Where supply is a barrier, these instances must be identified and overcome. The objective of this report is to identify these barriers and offer potential routes for addressing them to ensure that every child is protected, educated, healthy and well-nourished.

2 United Nations Children's Fund, 'Warehousing and distribution', <[www.unicef.org/supply/warehousing-and-distribution](http://www.unicef.org/supply/warehousing-and-distribution)>.

3 Evans, David B et al. "Universal health coverage and universal access." *Bulletin of the World Health Organization* vol. 91,8 (2013): 546-546A. doi:10.2471/BLT.13.125450

4 United Nations Children's Fund, 'Education', UNICEF, <[www.unicef.org/education#how](http://www.unicef.org/education#how)>.

5 United Nations Children's Fund, 'Universal Access to Water, Sanitation and Hygiene – 2021 priorities', UNICEF 2021, <[www.unicef.org/media/97591/file/Universal%20Access%20to%20Water,%20Sanitation%20and%20Hygiene.pdf](http://www.unicef.org/media/97591/file/Universal%20Access%20to%20Water,%20Sanitation%20and%20Hygiene.pdf)>.



# STRONG SUPPLY CHAINS: THE KEY TO EQUITABLE ACCESS

## A discussion with Aboubacar Kampo, UNICEF Director of Health Programmes

According to Aboubacar Kampo, UNICEF Director of Health Programmes, “Strong supply chains help ensure that essential vaccines, medicines and health products make it from the point of inception all the way to the most vulnerable children; every link of the supply chain counts.”

### **Working alongside governments**

UNICEF is the leading agency for the procurement and delivery of primary health care products for children and their families, including vaccines, essential medicines, sanitation and hygiene products and cold chain equipment. The world made remarkable progress in child survival in the past three decades, and millions of children have better survival chances than in 1990—1 in 27 children died before reaching age five in 2020, compared to 1 in 11 in 1990.

This is only possible owing to functioning supply chains: “We need to make sure that health supply chains are responsive and resilient, and this means making sure they are capable of adapting to shifting demands for routine products, including during emergency situations like Ebola outbreaks.”

For this reason, Kampo explains, UNICEF does not only deploy life-saving products to countries during emergency situations, but it also works with governments to strengthen health systems. “A lot of our work centres on technical cooperation and strengthening health supply chains in countries. Adapting to global development trends and growing country demands for technical assistance, we work

with governments in a number of areas, including forecasting, market-influencing and training of health workers, for instance.”

Strong and sustainable supply chains mean that patients receive the health commodities they need, of the right quality, in the right quantities, at the right time. At the same time, strong and sustainable supply chains help governments reduce costs, stock-outs and waste.

“Part of our job is to support governments throughout their supply chain strengthening journey and help them find long-lasting solutions to bridge the gaps in access to quality child health, nutrition, education and other public services,” he says.

### **Bringing the private sector, donors and civil society organizations together**

Creating synergies with civil society and development stakeholders, and leveraging the competencies, technological assets and innovation capacity of the private sector, says Kampo, has been pivotal to providing a coordinated response to national needs, developing quality medicines and vaccines, keeping prices affordable and making sure we reach patients at the last mile.

“For example,” says Kampo, “we are always working with suppliers and the private sector to secure affordable prices and the best value for money. In addition to supplying UNICEF programmes, we provide procurement services to national governments and other partner organizations with common goals.”



“By collaborating with the private sector to develop quality medicines and keep prices affordable, we bolster the sustainability of supply chains to help expand access to life-saving vaccines and medicines for every child at the district and community levels.”

### All in the name of access

Kampo is adamant that strong health supply chains are a fundamental element to ensuring patients’ access to the health, nutrition and education products they require.

“Put very simply, supply chains are responsible for vaccines reaching children in Nigeria, hygiene supplies reaching children in Haiti and nutritional supplements reaching children in Afghanistan.”

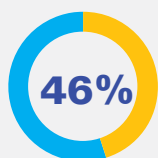
“We work hard to make sure communities at the last mile have access to life-saving products. This sometimes requires a lot of work with communities to address

concerns, and at the same time, monitoring to see if products make it to patients and have the desired effect.”

“When you follow a product throughout the whole supply chain, from development and procurement all the way to the child, you then realize not only how complex health supply chains are, but also how the health of the planet depends on them.”

“This is why we’re calling for greater investments, resources and collaboration to sustainability strengthen public supply chains.”

## UNICEF in numbers



With its partners UNICEF supplies vaccines to reach **46 per cent of the world’s children under 5.**



**335.9  
MILLION  
CHILDREN**

**335.9 million children were reached** with services to prevent stunting and other forms of malnutrition and 5.4 million children received treatment for life-threatening wasting in 2021.



**1.9  
BILLION  
DOSES**

As of February 2023, COVAX and UNICEF had delivered more than **1.9 billion** doses of COVID-19 vaccines to **146 countries.**



**2.8  
MILLION GIRLS**

**2.8 million girls** in target countries received their final dose of the human papillomavirus (HPV) vaccine in 2021.



**105.5  
MILLION  
CHILDREN**

UNICEF and partners supported the vaccination of **105.5 million children** with three doses of the diphtheria, tetanus toxoid and pertussis (DTP) vaccine in 2021.

# HEALTH SUPPLY CHAIN BARRIERS TO ACCESS

Strong supply chains adaptable to the changing needs of health programmes are critical to bridging the gap in access to vaccines, diagnostics and essential medicines. Many commodity-related obstacles are linked to financial and social barriers and rooted in broader health system challenges – such as poor governance, inadequate human resources, ineffective local supply chains and insufficient information systems.<sup>6</sup> Such obstacles are part of the reason why some children cannot access critical health supplies.

Globally, infectious diseases, including pneumonia, diarrhoea and malaria, remain the leading causes of death in children under 5. Of the nearly 6 million children who do not live beyond the age of 5, nearly 30 per cent die from malaria, pneumonia or diarrhoea.<sup>7</sup> More than half of these early child deaths are due to conditions that could be prevented or treated with access to simple, affordable interventions.<sup>8</sup>

According to 2022 WHO and UNICEF estimates of national immunization coverage, **25 million children missed out on basic vaccines** in 2021 – the highest number since 2006. Further, **18 million children missed out on any vaccination** (zero-dose children) – a number not seen since 2008. In addition, an **increasing number of measles and polio outbreaks** have been reported, with first dose measles coverage dropping to 81 per cent in 2021, the lowest level since 2008.

According to an in-depth analysis conducted by UNICEF, an increasing proportion of under-immunized children are clustered in the following three types of communities:

- Remote rural communities, which face challenges related to access and infrastructure;
- Urban slums, where challenges are more often related to trust, social distance and legality; and
- Conflict-affected and insecure settings where there may be an interruption or breakdown in services, as well as constrained access.<sup>9</sup>

UNICEF strives to ensure gender equitable immunization programmes. Immunization is widely perceived as gender-neutral; however, in many countries, gender barriers and underlying power dynamics at household and community level can make it challenging for mothers and caregivers to access immunization services for their children. Gender barriers vary by context and can influence resource allocation, constrain women's decision-making and limit their mobility. The unequal division of labour means that women often shoulder the majority of household and caregiving tasks, presenting important time challenges and limiting their ability to bring their children to health centres. Lack of trained

6 EveryWoman, Every Child, 'UN Commission on Life-saving Commodities for Women and Children – Commissioners' Report', September 2021, <[www.unfpa.org/sites/default/files/pub-pdf/Final%20UN%20Commission%20Report\\_14sept2012.pdf](http://www.unfpa.org/sites/default/files/pub-pdf/Final%20UN%20Commission%20Report_14sept2012.pdf)>.

7 United Nations Children's Fund, 'Under-five mortality', UNICEF, <<https://data.unicef.org/topic/child-survival/under-five-mortality/#>>.

8 World Health Organization, Regional Office for Africa, 'Child health fact sheet: Pneumonia', WHO, <[www.afro.who.int/health-topics/child-health](http://www.afro.who.int/health-topics/child-health)>.

9 United Nations Children's Fund, 'UNICEF Immunization Roadmap 2018–2030', UNICEF, September 2018, <[www.unicef.org/sites/default/files/2019-01/UNICEF\\_Immunization\\_Roadmap\\_2018.pdf](http://www.unicef.org/sites/default/files/2019-01/UNICEF_Immunization_Roadmap_2018.pdf)>.





female vaccinators can also have an indirect impact on immunization services and coverage, reducing the chances of both boys and girls being vaccinated.<sup>10</sup>

## Key health supply chain barriers

### 1. Governments lack appropriate data and information systems to make supply chain management decisions

Data analytics is the collection, exploitation, harnessing and management of data to transform it into actionable evidence. This transformation enables governments to make informed decisions that will affect policy, strategy and tactical-level endeavours that enable children to access health supplies and services.

Forty per cent of global health resources are lost owing to preventable strategic and operational inefficiencies,<sup>11</sup> which are often linked to countries' limited capacity to generate and act on evidence. Currently 86 per cent of reported supply chain data are not used to inform decision-making or monitor performance.<sup>12</sup> These unused data must be harnessed to shape well-performing supply chains that are driven by needs, and are resilient and cost-efficient. Supply chains with these features can increase access to all required health products and services for children in need.

Inadequate planning, distribution, temperature monitoring, human resources and data management, coupled with limited product visibility, availability and use of electronic logistics management information systems (eLMIS) at national and subnational levels, are all among the key causes of supply stock outs. Sub-optimal stock management creates distrust in the health system. Stock outs not only increase the operational and opportunity costs but can also play a significant role in broadening inequities and stagnating demand, specifically affecting under-served, urban poor, insecure and hard-to-reach populations.

Analysis from UNICEF and WHO<sup>13</sup> indicates that 50 per cent of LMICs suffered stock-outs of at least one routine immunization vaccine at the national level, in 2021. Additionally, there are few mechanisms in place to monitor

stocks at subnational level. Over the last ten years, at least one-third of countries have experienced one or more vaccine stock-outs lasting for one month or more. In addition, LMICs have seen the number of stock-outs increase from 30 per cent in 2010 to around 50 per cent in 2021. Almost half of these countries experienced service interruptions owing to stock-outs in 2020, representing a 30 per cent increase from 2014.

### 2. Supply chain management systems do not sufficiently embrace modern technology

Many countries lack strong health supply chain information systems to inform the development of social protection and welfare policies. Two systems are particularly important: (i) national information systems identify the number of beneficiaries that require access to health services and the associated financial needs; (ii) product traceability systems enable the tracking and tracing of products; improve controls against falsified labelling and substandard, diverted and counterfeit medicines; and protect patient safety.

On average, LMICs have reported using as many as 34 different supply chain related information systems simultaneously.<sup>14</sup> They tend to be poorly connected or harmonized, making it hard to make informed decisions. This lack of insight contributes directly to wastage in health spending and high numbers of supply stock-outs in LMICs.

Verification of product quality and the ability to track and trace a product in a supply chain are also crucial to inform planning and ensure the right supplies are delivered at the right time, particularly in the national supply chains of LMICs, where governance structures, tools and technical capacity for active monitoring for falsification are limited and traceability systems are either non-existent or in the early stages of development.<sup>15</sup>

The COVID-19 pandemic highlighted this critical gap, as there was an upsurge in the production and distribution of falsified and substandard vaccines and related COVID-19 supplies.<sup>16</sup> However, the need for product quality verification and traceability extends beyond COVID-19 vaccines to all health products.<sup>17</sup>

10 United Nations Children's Fund, 'Immunization and Gender – A practical guide to integrate a gender lens into immunization programmes', UNICEF Regional Office for South Asia, July 2019, <[www.unicef.org/rosa/media/12346/file](http://www.unicef.org/rosa/media/12346/file)>.

11 World Health Organization, 'The World Health Report: Health systems financing- The path to universal coverage', WHO, 2010, <<https://apps.who.int/iris/handle/10665/44371>>.

12 Data collected by UNICEF experts in the field, 2020

13 Joint Reporting Form, 2021

14 UNICEF digital mapping exercise, 2022

15 UNICEF digital mapping exercise, 2022

16 Infectious Diseases Data Observatory, 'Medical Product Quality Report – COVID-19 vaccines', IDDO, <[www.iddo.org/mq/research/medical-product-quality-report-covid-19-vaccines](http://www.iddo.org/mq/research/medical-product-quality-report-covid-19-vaccines)>.

17 World Health Organization, 'A Study on the Public Health and Socioeconomic Impact of Substandard and Falsified Medical Products', WHO, 2017.

Product integrity and ethical distribution are vital to ensuring trust in vaccines and pharmaceuticals and applying Global Standard 1<sup>18</sup> is one of the tools to address this important building block in reducing the risk of falsified and substandard vaccines and pharmaceuticals in health supply chains.

### 3. The supply chain workforce lacks the required skills and capacity

The supply chain workforce often lacks the technical and managerial competencies to perform optimally or lacks the empowerment to affect supply decisions and policies.<sup>19</sup> Many LMICs have insufficient numbers of adequately trained staff – particularly logistics staff – to manage health supply chains. This hinders planning and limits managers in mobilizing their limited resources, including the workforce. The technical capacity and knowledge of existing health supply chain staff are constrained by a lack of experience or formal training, either through supply chain and logistics degree programmes or in-service training for staff. Meanwhile, salaries are inequitable, staff lack job descriptions, the available tools and working conditions

are inadequate, and there is often no career plan, regular performance review or recognition. Furthermore, there may be duplication in roles and in the chain of command, making it challenging to attract and retain capable and motivated staff.

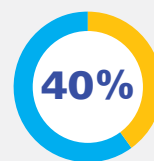
Many LMICs lack a professionalized supply chain occupational category, formed through formal education or the civil service structure, with clear roles and responsibilities. This means that a desirable career path often does not exist for supply chain professionals.

Primary health care professionals are essential to manage public health emergencies, such as the COVID-19 pandemic and Ebola and outbreaks and other health emergencies. Shortages of qualified staff are endemic in LMICs. In some of these countries, the lack of educators, infrastructure and equipment, and clinical training sites, prevents children from accessing supplies and receiving quality treatment. In humanitarian settings, where needs are escalating and children's survival is at greater risk, the situation is even more challenging.

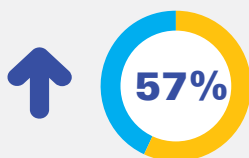
## Why is it important to invest in the supply chain workforce?



**80 million health workers** will be required by 2030 to ensure the world's population has equitable access to medicines.<sup>20</sup>



**40 per cent** of logistics professionals in emerging economies lack logistics skills at operative, administrative and supervisory levels.<sup>21</sup>



The workload for the supply chain workforce will continue to increase owing to changing disease profiles and accelerated efforts to achieve universal access to health. Spending on medicines in emerging economies, including in LMICs, is expected to increase **by 22 to 57 percent by 2023**.<sup>22</sup>

18 See: GS1, <<https://www.gs1.org/>>.

19 World Health Organization, 'WHO Roadmap for Access to Medicines, Vaccines and Health Products 2019-2023', 2019, <<https://apps.who.int/iris/handle/10665/330145>>.

20 Liu, J.X., Goryakin, Y., Maeda, A. et al., 'Global Health Workforce Labor Market Projections for 2030', Human Resources for Health, vol. 15, issue 11, 2017, <<https://doi.org/10.1186/s12960-017-0187-2>>.

21 McKinnon, Alan; Flöthmann, Christoph; Hoberg, Kai; Busch, Christina, 'Logistics Competencies, Skills, and Training: A Global Overview', Washington, DC: World Bank, 2017, <<https://openknowledge.worldbank.org/handle/10986/27723>>.

22 IQVIA, 2019





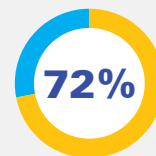
#### 4. Supply chains are large emitters of greenhouse gases

Up to 90 per cent of an organization's environmental impact lies in the supply chain, either upstream (suppliers, manufacturing phase) or downstream (consumers, product use phase).<sup>23</sup> This impact is exacerbated during climate related events and other emergency contexts where the amount of greenhouse gases produced by supply chains can be considerably higher and places a greater burden on the environment and natural resources.

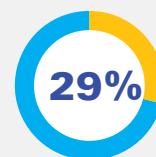
#### 5. Last-mile delivery systems and sustainable health care infrastructures are underdeveloped

Health supplies do not always reach their intended clients in primary health care centres or through community-based services delivered by community health workers. In some cases, this is because of poor transportation systems or road infrastructure, inadequate involvement of local private sector partners or shortages of products as a result of limited planning and/or decision-making capacity or leakage between national and district warehouses and the last mile. Health supplies may also fail to reach their intended beneficiaries due to shortages in trained and dedicated personnel with knowledge of the local area.

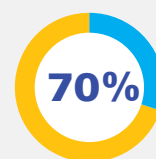
### Why is it crucial to invest in last-mile delivery systems?



**72 per cent of countries** could reduce their supply chain operating costs through simplified structures and operations<sup>24</sup>



**29 per cent of the population of sub-Saharan Africa** live more than two hours from the nearest public hospital<sup>25</sup>



**70 per cent of subnational health facilities and 50 per cent of national health facilities** assessed by UNICEF were unable to provide the right number of supplies to public health care facilities in 2021<sup>26</sup>

23 Shaw, K.; Shankar, R.; Yadav, S.S.; Thakur, L.S. Supplier selection using fuzzy AHP and fuzzy multi-objective linear programming for developing low carbon supply chain. *Expert Syst. Appl.* 2012, 39, 8182–8192.

24 Lee et al, 2015 "Landscaping the structures of GAVI country vaccine supply chains and testing the effects of radical redesign", *Vaccine*, Volume 33, Issue 36, 2015, pp. 4451-4458.

25 Ouma et al., 'Access to emergency hospital care provided by the public sector in sub-Saharan Africa in 2015: A geocoded inventory and spatial analysis', *Lancet Glob Health*, 2018, Mar;6(3):e342-e350.

26 Global Effective Vaccine Management Analysis (2009-2020), based on 93 countries assessed.





Cold chain investments are vital for essential heat-sensitive vaccines and medicines delivery and to ensure the quality of supplies and treatment. Delivering vaccines, insulin and other medicines to all corners of the world is complex and involves a chain of precisely coordinated events in temperature-controlled environments to store, manage and transport these life-saving products. Although cold chain equipment to store heat-sensitive health care products has existed for decades, the equipment standards in countries often do not match the pace of vaccine development and demand.

Primary health care centres at the last mile must improve waste management and seek ways to improve their electricity usage in ways that do not increase their carbon footprint. The lack of health care waste management at primary health care centres poses a serious risk to the lives and well-being of children. Small-scale facilities require a sound health care waste management system, comprising adequate financial resources and suitable management and monitoring capacity to minimize the potential health and environmental impacts.

At least 5.2 million people, including 4 million children, die each year from diseases originating from unmanaged medical waste. More than two-thirds of health facilities in low- and middle-income economies do not practice safe and environmentally sustainable health care waste management practices. This is primarily because of a lack of resources and the non-prioritization of resource allocations – financial and technical – to acquire and employ the best available techniques and technologies.<sup>27</sup>

27 United Nations Department of Economic and Social Affairs, Division for Sustainable Development, 'Core publications – Agenda 21', United Nations, <[www.un.org/esa/dsd/agenda21/res\\_agenda21\\_21.shtml](http://www.un.org/esa/dsd/agenda21/res_agenda21_21.shtml)>.

More than 1 billion people in the world lack access to electricity, particularly in LMICs where this has serious consequences for health care delivery.<sup>28</sup> A 2018 survey of 78 countries found that only 41 per cent of health care facilities in LMICs have reliable electricity. In sub-Saharan Africa, one in four health facilities lacks a source of electricity and three out of four facilities lack reliable power.<sup>29</sup> This leaves many health care facilities with inadequate power for both basic and emergency services. Moreover, an estimated 70 per cent of medical devices in the least developed countries (LDCs) regularly fail or are unavailable, with poor power quality being a major contributing factor.<sup>30</sup> The COVID-19 pandemic further increased pressure on the health care system in LMICs and highlighted the importance of energy access in delivering reliable primary health care services to the last mile.

Reliable access to electricity will drastically improve the quality of services provided at health facilities, including life-saving interventions related to maternal and newborn care, as well as the storage and distribution of vaccines, essential medicines, and the uninterrupted functioning of critical equipment such as oxygen concentrators. Many necessary components of a health facility, such as lights and imaging equipment, become effective and usable, especially in times of urgent medical need.

## Why is it crucial to invest in sustainable energy?



More than **186 million students** are in primary schools with no access to electricity.<sup>31</sup>



Children living in households with electricity spent an average of **274 more days at school** than children living in households without electricity.<sup>32</sup>



**600,000 children under age 5** die each year from respiratory infections due to indoor and outdoor air pollution and second-hand smoke resulting from unsustainable energy practices.<sup>33</sup>

28 Africa Energy Portal, 'Lasting impact: Sustainable off-grid solar delivery models to power health and education', AEP, 29 April 2019, <<https://africa-energy-portal.org/reports/lasting-impactsustainable-grid-solar-delivery-models-power-health-and-education>>.

29 World Health Organization and World Bank, 'Access to Modern Energy Services for Health Facilities in Resource-Constrained Settings: A Review of Status, Significance, Challenges and Measurement', WHO, reprinted in 2015, <<https://apps.who.int/iris/handle/10665/156847>>.

30 Sustainable energy for All Powering health care. 2020

31 United Nations Development Programme, 2020 Global Multidimensional Poverty Index (MPI): Charting pathways out of multidimensional poverty: Achieving the SDGs', New York, 2020, <<https://hdr.undp.org/content/2020-global-multidimensional-poverty-index-mpi>>.

32 United Nations Children's Fund, 'Key asks for 2020 – SDG Voluntary National Reviews: SDG 7', <[www.unicef.org/documents/sdg-issue-brief-7](http://www.unicef.org/documents/sdg-issue-brief-7)>.

33 Ibid.







## 6. Insufficient and inequitable primary health care financing restricts access to supplies

Financial resources for the health sector – and particularly for primary health care – remain insufficient in many countries. Annual government spending on primary health care (\$3 per capita in low-income countries and \$16 per capita in LMICs) falls far short of standard benchmarks for the minimum spending needed to ensure universal health coverage (between \$65 to \$95 per capita)<sup>34</sup>. This means that household out-of-pocket expenditures on health supplies and services are unacceptably high for families and can have catastrophic and impoverishing consequences.

In 2019, in countries where children and families were already lacking the resources to meet their daily needs, 60–79 per cent of health costs came directly out of their pockets rather than from insurance or government spending. These included low-income countries such as Afghanistan, African Republic, Guinea-Bissau and the Central, Sudan, Togo.<sup>35</sup> Against this backdrop, the reallocation of regular government health funding to respond to COVID-19 has been particularly damaging, further straining the already poorly resourced health sector.

Public finance management<sup>36</sup> obstacles often impact governments' ability to mobilize the required resources and/or maximize investments for children. These challenges take many forms, including:<sup>37</sup>

- low budget priority owing to a lack of awareness among financial decision-makers of the need to invest in children;
- insufficient budget allocation to implement child-related programmes;
- inefficient expenditure due to delayed disbursements, leakages and procurement issues;
- ineffective expenditure by funding high-cost, low-impact interventions, or fragmented spending where multisectoral interventions are required;
- inequitable allocations resulting in lower investment and poorer services for disadvantaged areas or populations; and
- limited financial accountability, compounded by limited budget transparency or citizen participation.

The decisions governments make about how to fund social services are critical to children and to equitable development. In some countries, these challenges are compounded by shifts in external financing trends, such as a reduction in official development assistance, which further raises the importance of domestic public resources for social policies and services.

34 The Global Health Observatory, 'Out-of-pocket expenditure as percentage of current health expenditure', World Health Organization, <[www.who.int/data/gho/indicator-metadata-registry/indicator/4965](http://www.who.int/data/gho/indicator-metadata-registry/indicator/4965)>.

35 Figures from WHO, Global Health Expenditure Database, <<https://apps.who.int/nha/database/ViewData/Indicators/en>>, accessed 26 April 2022.

36 Public financial management refers to the way (budget process) governments manage public resources (revenue and expenditure) and the impact of such resources on the economy or society.

37 United Nations Children's Fund, 'UNICEF's Engagements in Influencing Domestic Public Financing for Children', UNICEF, December 2017, <[www.unicef.org/sites/default/files/2019-12/UNICEF\\_Public\\_Finance\\_for\\_Children.pdf](http://www.unicef.org/sites/default/files/2019-12/UNICEF_Public_Finance_for_Children.pdf)>.

## 7. Poor governance of primary health care hinders access to supplies

Government policy and strategy choices affect all children. Countries with poor governance have weak or limited policies, programmes and accountability mechanisms that protect children's rights and meet the needs of children, their families and communities. Decision-making may be influenced by political or private interests. In these settings, the most vulnerable are often the least able to exercise their rights and contribute to the decisions that affect them. This is especially pronounced for local governments and health administrations struggling with limited staff and budgets without the mechanisms to engage with communities, civil society and the private sector.

A supply chain can be defined as an ecosystem of organizations, people, technology, activities, information and resources that have to come together to ensure the delivery of the product from the point where it is manufactured to the final customer in a cost-effective way.<sup>38</sup> In this regard, a national public health supply chain should operate within a defined policy and regulatory framework to ensure the highest levels of patient safety or be supported by private sector regulations to improve equitable access to life-saving supplies.

Governments are responsible for ensuring the quality and safety of essential supplies for children and for designing and implementing quality assurance policies and mechanisms that ensure that safe and effective products reach their intended end user. Absent or weak regulations are a major cause of illicit and poor-quality drugs in both legitimate and informal supply chains (internet, unregistered pharmacies) posing a serious threat to public health, especially where there is no stringent national medicine regulatory authority.

It is estimated that 1 in 10 medicines in LMICs is falsified or substandard, causing serious risks of illness or even death.<sup>39</sup> Since 2013, antimalarials and antibiotics have been the products most commonly reported to be substandard or falsified, according to the WHO. The WHO African Region was the most affected (42 per cent), followed by the Americas and the European Region (21 per cent each).<sup>40</sup>

## 8. National immunization supply chain activities and investments lack coordination and inter-operability with primary health care

National immunization programmes in developing countries face several challenges in ensuring equitable access to vaccines against preventable diseases through the Expanded Programme on Immunization (EPI). Safely storing and transporting large volumes of vaccines and other immunization commodities to immunization service points has become increasingly difficult, especially in remote and hard-to-reach areas. Critical barriers include lack of inventory, inadequate cold chain capacity, insufficient funding, insufficient coordination of interventions, and low interest in immunization supply chain and logistics policies.<sup>41</sup>

38 Prashant Yadav, 'Health Product Supply Chains in Developing Countries: Diagnosis of the Root Causes of Underperformance and an Agenda for Reform', *Health Systems & Reform*, 2015, vol. 1, issue 2, pp.142-154, DOI: 10.4161/23288604.2014.968005.

39 World Health Organization, '1 in 10 medical products in developing countries is substandard or falsified', WHO, 28 November 2017, <[www.who.int/news/item/28-11-2017-1-in-10-medical-products-in-developing-countries-is-substandard-or-falsified](http://www.who.int/news/item/28-11-2017-1-in-10-medical-products-in-developing-countries-is-substandard-or-falsified)>

40 Ibid.

41 TechNet21, 'NLWGs', June 2018, <<https://technet-21.com/fr/chapter-4-antibody-detection-methods-for-laboratory-confirmation-of-measles-rubella-and-crs/itemlist/category/258-nlwg&format=feed&itemid=3683&type=atom>>.







National logistics working groups (NLWGs), comprising representatives from the EPI, UNICEF, WHO, ministry of health departments responsible for pharmaceuticals, can address impediments to accessing life-saving vaccines by uniting national stakeholders and decision-makers to rally behind a shared vision for the country's immunization supply chain. The key challenges facing such coordinating groups include low levels of engagement among logistics managers and lack of understanding of the roles and values of NLWGs. Other barriers include the lack of specialized human resources and capacity at the national level, the lack of a systematic and clear modes of functioning, the size and complexity of countries and the few numbers of partners.<sup>42</sup>

Immunization services are integral to primary health care and can be used as an entry-point to strengthen service delivery where access barriers exist. Integrated and more people-centred care has been shown to improve health outcomes and the attainment of universal health coverage. Efficiency gains can be derived from reducing the duplication of resourcing through use of common infrastructure, human resources, and financing, service delivery and information platforms. Equity gains can be derived from reducing missed opportunities for immunization through increased interaction with the health care system, including through the private sector.<sup>43</sup>

### 9. Restricted access to supplies negatively impacts the quality of primary health care

When primary health care is implemented as an ad hoc set of minimal and under-resourced services, or by a workforce with limited training and competence, it will fail to deliver the expected results and can undermine public confidence.<sup>44</sup> This can happen owing to multiple challenges, including low capacity of health care providers, lack of water and sanitation, and fragmented health systems. As a result, health facilities and community

health workers often struggle to provide the care needed to treat newborns, children and women, and manage acute but easily treatable conditions, including maternal complications during delivery or acute childhood illness. Without such care, many at-risk infants will not survive their first month of life.<sup>45</sup> Quality health care delivery across the full range of primary health care services is compromised if care is not safe, people-centred, timely, equitable and efficient; when it is not effectively supervised, mentored and supported and when it lacks a good referral system.<sup>46</sup> Having all the building blocks of primary health care in place is essential to ensuring access to life-saving supplies.

The private sector provides more than 40 per cent of health services globally and more than 80 per cent in South Asia.<sup>47</sup> However, the potential for better performance is restricted due to little state and civil society oversight in applying regulations and quality control. In many cases, legal and regulatory frameworks for primary health care are not applied in private health care settings. Data from private primary health care providers may not be incorporated in national health information systems, thus skewing the information available about health conditions and coverage of care.

**Prescription drug abuse is a growing global health challenge in sub-Saharan Africa.** Effective supply chain regulations on dispensing and stock control are important for controlling this epidemic. Since compliance with these regulations in resource-limited countries is poor, there is a need to understand its predictors in order to reduce the risk.<sup>48</sup> In Uganda, the pharmacy business became a regulated professional business in 2018 under the National Drug Policy and Authority Act to address this issue and advance the national health strategy.

42 Ibid.

43 United Nations Children's Fund, 'Primary Health Care and Universal Health Coverage', UNICEF Regional Office for South Asia, 2019, <[www.immunizationagenda2030.org/images/documents/BLS20116\\_IA\\_Global\\_strategy\\_document\\_SP\\_1\\_003.pdf](http://www.immunizationagenda2030.org/images/documents/BLS20116_IA_Global_strategy_document_SP_1_003.pdf)>.

44 Bitton, A. et al., 'Primary health care as a foundation for strengthening health systems in low- and middle-income countries', *J Gen Intern Med*, 2017, vol. 32, no.5, pp. 566-571.

45 United Nations Children's Fund, 'Quality of care', <<https://www.unicef.org/health/quality-care>>, accessed 20 May 2022.

46 World Health Organization and UNICEF, *A vision for primary health care in the 21st century: Towards universal health coverage and the Sustainable Development Goals*, WHO, Geneva, 2018..

47 World Health Organization, 2019.

48 Fadhiru Kamba, P., 'Compliance of private pharmacies in Uganda with controlled prescription drugs regulations: A mixed-methods study', *BMC*, vol.15, no. 5, 2020, <<https://substanceabusepolicy.biomedcentral.com/articles/10.1186/s13011-020-00261-x>>.



# NUTRITION SUPPLY CHAIN BARRIERS TO ACCESS

## The case of ready-to-use therapeutic food

According to the [2022 Global Report on Food Crises](#), there are currently 193 million people living in severely food insecure contexts in 42 countries, with children under five accounting for at least 27 million. These children are particularly vulnerable to wasting – the most life-threatening form of undernutrition in early childhood, which increases children's risk of death by up to 12 times.

Before the global food and nutrition crisis in 2022, there were an estimated 47 million children suffering from wasting globally, 13.6 million of whom suffered from severe wasting. In 2022, the number of children suffering from severe wasting in the 15 worst affected countries increased at an unprecedented speed – one additional child with severe wasting every minute. Only 1 in 3 children with severe wasting receives treatment.

In the last two decades, significant progress in national policies, strategies, and programmes to prevent malnutrition in children resulted in the reduction in the global prevalence of child stunting by one third (55 million children). This achievement demonstrates that positive change for nutrition is possible and is happening at scale, across countries and regions<sup>49</sup>.

However, in the countries most severely affected by the current global food and nutrition crisis, programmes and interventions are not addressing the determinants and drivers of the more life-threatening forms of child wasting. Many of the current global efforts focus on food assistance with little or no attention to the direct, underlying and enabling interventions for the early prevention, detection and treatment of child wasting, which are: nutritious and safe foods for children, essential nutrition services, positive nutrition and care practices, and financial resources in the hands of women to prevent malnutrition in children, particularly among the most vulnerable.

The coverage and impact of early detection and treatment services for the most severe forms of child wasting remain hampered by a lack of predictable, commensurate and sustainable access to funding for programme scale up and life-saving nutrition commodities, particularly ready-to-use therapeutic food (RUTF).

49 UNICEF, UNICEF Nutrition Strategy 2020-2030, <https://www.unicef.org/reports/nutrition-strategy-2020-2030>



The financing landscape for maternal and child nutrition further makes the implementation of an appropriate response even more challenging. Resources for the implementation of a comprehensive package of actions for the early prevention of child wasting in the countries most vulnerable to the food and nutrition crisis are severely lacking, putting increasing numbers of young children at high risk of severe wasting and death. To make matters worse, the cost of treatment is increasing as a result of the global crisis: recent data shows that the price of RUTF – the primary nutrition commodity for the successful treatment of child wasting – increased by 16 per cent in 2022 resulting in a potential 660,000 fewer children treated globally with available resources.<sup>50</sup>

At a global level, the conditions are ideal for mounting a concerted effort to support the most vulnerable children. In 2020, the United Nations Secretary-General launched the [Global Action Plan \(GAP\) on Child Wasting](#) – the first-ever global plan to achieve the SDG targets for the prevention of child wasting and to scale up timely treatment for children with the more severe forms of wasting.

In 2021, UNICEF launched [Nutrition, for Every Child: UNICEF Nutrition Strategy 2030](#), setting forth UNICEF's strategic intent to support national governments and partners in upholding children's right to nutrition and ending child malnutrition in all its forms. The Strategy lays out UNICEF's vision of a world where all children realize their right to nutrition, a vision guided by the Convention on the Rights of the Child, which recognizes the right of every child to adequate nutrition.

As elaborated in the UNICEF Nutrition Strategy 2030, prevention of all forms of malnutrition should be the priority in all contexts. UNICEF nutrition programmes aim to prevent child malnutrition in all its forms across the life cycle, however, if prevention fails, treatment is a must. When efforts to prevent malnutrition fall short, our programmes aim to ensure the early detection and treatment of children suffering from life-threatening malnutrition, both in development and humanitarian contexts.

Guided by the strategy, No Time to Waste, our approach is based on scaling up prevention, early detection, and the treatment of wasting for the most vulnerable children.

The Strategy recognizes the importance of protecting children from wasting and offers concrete actions and commitments to do so in a way that is commensurate to the scale and urgency of their needs.

Effective supply chains play a key role in our approach to ensure access to the key life-saving treatment of RUTF for all children in need, in the right place at the right time. Supply chains are a key pillar of UNICEF's plan to accelerate the delivery of proven essential actions for the treatment of child wasting.

## Key RUTF supply chain barriers

### 1. The global production capacity of therapeutic foods does not meet demand

In 2020, nearly 10 million children who needed RUTF for the treatment of severe wasting were unable to access it.<sup>51</sup> UNICEF procures an estimated 75 to 80 per cent of the global demand for RUTF, averaging 49,000 metric tons (MT) per year over the last four years – enough to treat 3.5 million children. Despite the high volumes of RUTF procured through UNICEF, this still only covers 25 per cent of the global estimated number of children suffering from severe wasting. RUTF procured by governments, non-governmental organizations (NGOs) and other United Nations agencies cover an additional 5 to 10 per cent. As such, approximately 65 to 70 per cent of children suffering from severe wasting globally do not have access to treatment. Most of these children live in non-humanitarian contexts, which receive less attention.<sup>52</sup>

### 2. There are inconsistent investments for effective and responsive RUTF supply chains

The continued reliance on humanitarian funding to address child wasting has fuelled a cycle of weak systems, inefficiencies and unnecessarily high costs. According to a World Bank analysis<sup>53</sup>, it will cost \$7 billion per year over the next 10 years to fully scale up treatment for children with severe wasting. However, countries with a high burden of wasting currently spend less than 1 per cent of their public health budgets on nutrition services. The question of how services should be financed as part of health systems strengthening, and what role global funds and domestic resource mobilization should play, remain critically important.

50 UNICEF Supply Division, 'Ready-To-Use Therapeutic Food (RUTF) Supply Alert June 2022 and outlooks', <https://www.unicef.org/supply/reports/ready-use-therapeutic-food-rutf-supply-alert-june-2022-and-outlooks>

51 United Nations Children's Fund, 'UNICEF Child Alert: Severe Wasting: An Overlooked Child Survival Emergency', UNICEF, May 2022, <[www.unicef.org/media/121891/file/English.pdf](http://www.unicef.org/media/121891/file/English.pdf)>.

52 United Nations Children's Fund, 'Market Outlook: Ready-To-Use Therapeutic Food', UNICEF, March 2021, <<https://www.unicef.org/supply/media/7256/file/RUTF-Supply-Update-March-2021.pdf>>.

53 Kakiyetech, S. et al., 'Investing in Nutrition, The Foundation for Development: An Investment Framework to Reach The Global Nutrition Targets', World Bank, 2016, <<https://documents1.worldbank.org/curated/en/963161467989517289/pdf/104865-REVISED-Investing-in-Nutrition-FINAL.pdf>>.

This lack of predictable and sustained investment in treatment has limited opportunities to drive down costs – especially those associated with the supply of RUTF to treat children with wasting. However, there is room for optimism with the development of the recently created catalytic Nutrition Match Instrument (NMI), which incentivizes the investment of domestic resources to scale up wasting prevention and treatment services, including the supply of ready-to-use therapeutic food (RUTF). The NMI is supported by supported by the United Kingdom’s Foreign Commonwealth and Development Office (FCDO), the Bill & Melinda Gates Foundation and the Children’s Investment Fund Foundation

### 3. Therapeutic nutrition products are not integrated into health system supply chains

Unlike vaccines, many countries do not include RUTF and other life-saving supplies on their essential medicines and commodities lists. As such, these countries do not routinely budget for or procure nutrition therapeutic supplies and cannot plan or manage their delivery within national supply chains.

The integration of treatment for child wasting within national health services is key to improving treatment efficiency and effectiveness. In emergency-prone countries, there is often a lack of coordination between health and nutrition partners who duplicate activities and costs. Services are often delivered through the same facilities using different funding streams, which involve two sets of operating costs, two reporting lines and two sets of staff. It also means that opportunities are missed to maximize treatment coverage and streamline supply chains for health and nutrition commodities. Consequently, ongoing efforts to integrate the treatment of severe wasting into routine services need to continue for sustainable programmes.

### 4. Therapeutic nutrition products are subject to price hikes

Owing to the ongoing global food and nutrition crisis, UNICEF has indicated that the average price of lifesaving RUTF may increase by up to 16 per cent in the second half of 2022<sup>54</sup>, which risks reducing access to RUTF and placing more children’s lives at risk. More immediate and flexible funding is essential to ensure a continuous pipeline of RUTF supplies to save children’s lives.

In addition, support to suppliers across the global south to access financing for the purchase of quality raw ingredients is required to ensure their ability to scale up and meet the increasing demands. In addition, alternative cost-effective RUTF products are another key strategy to reduce cost, a number of which are being tested in a variety of settings across the globe. These new formulas explore the use of cheaper, locally available ingredients for longer-term benefits in both locally produced. UNICEF aims to build evidence on the acceptability, palatability, and effectiveness of RUTF formulations and support the roll-out and uptake of these formulations across the world.

54 United Nations Children’s Fund, ‘Ready-To-Use Therapeutic Food: A Supply Alert’, UNICEF, June 2022, <[www.unicef.org/supply/media/12591/file/ready-to-use-therapeutic-food-supply-alert-June-2022.pdf](http://www.unicef.org/supply/media/12591/file/ready-to-use-therapeutic-food-supply-alert-June-2022.pdf)>.







## 5. Supply chain distribution networks are inefficient and storage facilities are insufficient

RUTF stock-outs are frequent: inefficient distribution systems between the national stores and health districts, and between the district level and other health facilities, mean that often RUTF does not make it to the last mile. This is caused, in part, by a lack of infrastructure and storage at the district level.

RUTF is a bulky product and requires more transport and storage space than pharmaceuticals; this increases the costs of management at the peripheral level and causes stock shortages if it is not replenished proactively. To compound this problem, inoperative logistics information systems do not allow for the visibility of the product at the district levels and the last-mile distribution points.

There can often be a lack of storage capacity at subnational levels especially for RUTF. This can create delays in delivery given orders can take longer to process, which can be exacerbated by local or regional suppliers who often also do not have adequate room to store RUTF at their premises.

### Life-saving nutrition supplies for every child in need

**Ready-to-use therapeutic food** – or RUTF – has been specifically designed to treat severe wasting, also known as severe acute malnutrition. RUTF is a portable, shelf-stable, single-serving food.

RUTF is a simple, effective, affordable solution for treating children under the age of five with severe wasting.

# WATER, SANITATION AND HYGIENE SUPPLY CHAIN BARRIERS TO ACCESS

SDG 6 calls for the global community to achieve access to hygiene for all by 2030. Good hygiene is critical to preventing the spread of infectious diseases and helping children lead healthy lives. Access to WASH at home and in schools also prevents them from missing school and contributes to better learning outcomes. Proper hand hygiene has been proven to reduce deaths from respiratory and diarrhoeal diseases in children under 5 by 21 per cent and 30 per cent respectively.

Yet in 2021, an estimated 2.3 billion people globally did not have access to soap and water at home. While 51 per cent of health facilities globally have basic hygiene services, this drops to 32 per cent in lesser-developed countries.<sup>55</sup> More than 1 million deaths each year are associated with unclean births, while infections account for 26 per cent of neonatal deaths and 11 per cent of maternal mortality. An estimated 15 per cent of patients in LMICs develop one or more infections during a hospital stay, which are often preventable by improved hand hygiene practices.

Similarly, almost half (43 per cent) of schools lack basic hygiene services, leaving 802 million children without soap and/or water to wash their hands while at school. Of these students, 480 million had no hygiene services at all.

Of the 73 countries that had not achieved universal access to basic hygiene services by 2020, only six are on track to achieve universal coverage (defined as over 99 per cent coverage)

by 2030. At the current rate of progress, 1.9 billion people will still lack facilities to wash their hands at home by 2030, the SDG target for reaching universal hand hygiene.

The COVID-19 pandemic drew public focus to the life-saving benefits of hand hygiene practice and created new demand for hand hygiene products such as soap and hand sanitizer and services. This increased demand, coupled with national hand hygiene measures to control the virus, and resulted in great strains on the markets and systems to meet demand.

**Sanitation** is a human right. Everyone is entitled to sanitation services that provide privacy, ensure dignity and safety, and are physically accessible and affordable. Sanitation is also a public good, providing benefits across society in improved health as well as economic and social development. The lack of safe sanitation leads to illness and disease that disproportionately affect children, including diarrhoea, worm infections and stunting.<sup>56</sup>

Progress towards universal sanitation is alarmingly off track and coverage is uneven, resulting in inequalities and the further marginalization of the most vulnerable. The rate of progress in improving sanitation will need to quadruple to achieve SDG 6.2, access to adequate and equitable sanitation and hygiene for all, by 2030.

55 United Nations Children's Fund and World Health Organization, 'State of the World's Hand Hygiene. A global call to action to make hand hygiene a priority in policy and practice', UNICEF and WHO, 2021, <[www.unicef.org/media/108356/file/State%20of%20the%20World%E2%80%99s%20Hand%20Hygiene.pdf](http://www.unicef.org/media/108356/file/State%20of%20the%20World%E2%80%99s%20Hand%20Hygiene.pdf)>.

56 United Nations Children's Fund, 'State of the World's Sanitation. An urgent call to transform sanitation for better health, environments, economies and societies', UNICEF and WHO, 2020, <[www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf](http://www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf)>.



Between 2000 and 2017, the number of people practicing open defecation was cut in half, from 1.3 billion to 673 million. However much of the progress in eliminating open defecation is being driven by gains in a few high population countries. Despite progress, 2 billion people still lack even a basic level of sanitation service, while nearly 698 million school-age children lacked basic sanitation services at their school.<sup>57</sup> An estimated 367 million children, meanwhile, attend a school in which there is no sanitation facility at all. Over half of these children live in two regions: sub-Saharan Africa (213 million children) and Central and Southern Asia (200 million children). Globally, less than two-thirds of schools have basic sanitation and 4.2 billion people use sanitation services that leave human waste untreated, threatening human and environmental health.<sup>58</sup>

The COVID-19 pandemic has exacerbated many sanitation challenges.<sup>59</sup> People have been isolated at home, where they may have unsafe sanitation facilities or are forced by their lack of sanitation facilities into unsafe, communal areas, such as poorly managed public latrines or open defecation areas.

WASH programmes and services require strong national policies, supply chain management, financial systems, and monitoring mechanisms to be sustainable, resilient and accountable. To provide quality care, health care facilities need to have a safe and accessible water supply; clean and safe sanitation facilities; hand hygiene facilities at points of care and at toilets; and appropriate waste disposal systems. Health care facilities in resource limited settings lack essential WASH and health care waste services. Infrastructure that supports WASH and health care waste management practices helps prevent the spread of diseases within the health care facility and to the surrounding community. According to the Centers for Disease Control and Prevention, 50 per cent of health care facilities lack access to piped water; 33 per cent lack improved sanitation; 39 per cent lack soap for handwashing and 39 per cent lack adequate infectious waste disposal.<sup>60</sup>

## Key WASH supply chain barriers

### 1. There is a lack of data to inform decisions and track progress

In many countries, WASH services are planned without timely or accurate data, which affects their supply forecasting, budgeting, product selection and other supply planning dimensions. This in turn adversely impacts equitable access to WASH supplies by children and communities.

In LMICs, the availability of hygiene-related data has steadily improved over the last few years, with large increases at the regional level as populous countries collected data for the first time. However, some countries do not collect data on basic hygiene and only four regions had enough data to allow the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene to produce regional estimates for basic hygiene in 2020.

Data availability for monitoring progress towards the SDG targets on sanitation also remains limited in many countries. Fewer than half of countries have estimates for coverage of safely-managed sanitation services. Estimates for open defecation and access to basic services can be disaggregated by rural and urban settings, subnational region and wealth quintile, but very few countries have the disaggregated data needed to identify and address inequalities in safely-managed sanitation services. The limited availability of time-series data makes it difficult to determine rates of progress.

An estimated 60 to 70 per cent of forcibly displaced persons live outside of camps and settlements<sup>61</sup>. Very few countries have disaggregated sanitation data for displaced populations, which makes it difficult to track whether they are being left behind the rest of the population.

57 Ibid.

58 Ibid.

59 United Nations Children's Fund, 'Returning to school safe and healthy', UNICEF, October 2021, <<https://www.unicef.org/afghanistan/stories/returning-school-safe-and-healthy>>, accessed 18 October 2022.

60 Centers for Disease Control and Prevention, 'Water, Sanitation and Hygiene in Healthcare Facilities', CDC, <<https://www.cdc.gov/healthywater/global/healthcare-facilities/overview.html#>>.

61 United Nations Children's Fund, 'State of the World's Sanitation. An urgent call to transform sanitation for better health, environments, economies and societies', UNICEF and WHO, 2020, <[www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf](https://www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf)>.

## 2. The lack of domestic and international investments is holding back progress

Government budgets for financing WASH, especially WASH infrastructure, and for expanding services to those in need remain low. Private sector investment is also insufficient, given the lack of legal frameworks, associated risks, and low returns in the water and sanitation business. As a result, one of the greatest barriers to achieving WASH-related targets is the large spending gap.<sup>62</sup>

In August 2021, UNICEF and WHO published a study<sup>63</sup> that estimated the cost of hand hygiene for all in household settings in 46 of the least developed countries of the world. In these countries it was estimated that achieving universal hand hygiene by 2030 in all domestic settings would cost \$11 billion, averaging just over \$1 billion a year. This estimate assumes that governments would contribute 27 per cent of the cost of achieving universal hand hygiene at home, and more than two and a half times this amount would be invested by households, comprising the remaining 73 per cent.<sup>64</sup>

The cost of implementing hand hygiene strategies in health care facilities is low – estimated between \$0.90 and \$2.50 per capita per year, depending on the country.<sup>65</sup>

Donors tend to prioritize water over sanitation and hygiene. In fact, aid disbursements for sanitation were half that of drinking water between 2010 and 2018.<sup>66</sup> The total investment in sanitation from governments and donors is not enough to provide the sustainable, resilient, safely-managed services that will bring about substantive benefits to health, the economy and the environment.<sup>67</sup>

Most countries report insufficient resources to meet their national sanitation targets.<sup>68</sup> Eighty per cent of countries that responded the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water

(GLAAS) 'Support drinking water, sanitation and hygiene' (2019 report) reported insufficient funding to meet their national sanitation targets.

Even where policies are in place, few countries have adequate human and financial resources to support them. While more than two-thirds of countries reported they had policies in place to achieve SDG 6, only one-quarter identified their means of funding these policies.<sup>69</sup>

Sanitation is a public good in need of public funding. While government WASH budgets are increasing at an average rate of 11.1 per cent per year,<sup>70</sup> detailed data on government sanitation budgets over time is very limited. Only nine countries reported comparable sanitation-specific government budget data in the last two GLAAS surveys. Five of those nine reported decreased sanitation budgets between surveys, with an average decrease of 1.2 per cent per year. Investments from external sources, such as donor grants and funds from NGOs and foundations, amounted to only 1 per cent of the total investment in sanitation. However, they contribute, on average, 42 per cent of non-household expenditures in the 11 low-income countries that reported sanitation expenditure data.

## 3. Weak governance is limiting the demand for sanitation and hygiene services

Many countries have significant WASH policy gaps. For instance, in countries where open defecation is still practiced, about one-quarter lack specific policies and plans to address it.<sup>71</sup> Similarly, the critical issue of faecal sludge management is not addressed in one-quarter of urban sanitation policies and plans.

While 77 per cent of countries have a formal national standard for wastewater treatment, only 36 per cent of countries have a standard for the safe use of wastewater and sludge for agriculture and other productive purposes.<sup>72</sup>

62 United Nations Children's Fund, 'Universal access to water, sanitation and hygiene', UNICEF, <[www.unicef.org/documents/universal-access-water-sanitation-and-hygiene](http://www.unicef.org/documents/universal-access-water-sanitation-and-hygiene)>.

63 United Nations Children's Fund and World Health Organization, *State of the World's Hand Hygiene: A global call to action to make hand hygiene a priority in policy and practice*, UNICEF, New York, 2021.

64 Ibid.

65 World Health Organization and United Nations Children's Fund, 'Hand hygiene for all', UNICEF, New York, 2020.

66 United Nations Children's Fund, 'State of the World's Sanitation. An urgent call to transform sanitation for better health, environments, economies and societies', UNICEF and WHO, 2020, <[www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf](http://www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf)>.

67 Ibid.

68 Ibid.

69 World Health Organization and UN-Water, 'National Systems to Support Drinking-water, Sanitation and Hygiene: Global Status Report 2019' (GLAAS 2019 Report), WHO, Geneva, 2019.

70 United Nations Children's Fund, 'State of the World's Sanitation. An urgent call to transform sanitation for better health, environments, economies and societies', UNICEF and WHO, 2020, <[www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf](http://www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf)>.

71 Ibid.

72 Ibid.



The institutions tasked with oversight of sanitation standards are stretched, lacking sufficient funds and sufficient human resources to undertake the necessary surveillance and enforcement. Only 32 per cent of countries reported having sanitation/wastewater regulatory authorities that fully take corrective action in urban areas and only 23 per cent in rural areas.<sup>73</sup> Two-thirds of countries reported that they have less than 50 per cent of the human resources they need for wastewater surveillance in urban areas.

While more than two-thirds of countries report they have policy measures to reach poor populations with sanitation, only one-quarter have ways of financing them.<sup>74</sup>

In 2020, UNICEF and WHO came together with a number of global partners to launch the global Hand Hygiene for All Initiative, with the aim of supporting country governments to bridge the national COVID-19 response plans with long-term national development plans, strengthening governance measures to drive progress, strengthen markets, hold institutions and stakeholders accountable, and build data and information around hand hygiene across settings. Since the Hand Hygiene for All call to action, almost 60 countries have committed and taken action to strengthen hand hygiene policies and action plans.

In South Africa, where a handwashing policy was developed in 2015, institutional arrangements were clearly spelled out, so that when the COVID-19 pandemic hit, roles and responsibilities for hand hygiene were known and followed. These strong lines optimized performance in ensuring that hand hygiene services and supplies were available during the height of the pandemic.<sup>75</sup>

73 Ibid.

74 United Nations Children's Fund, 'State of the World's Sanitation. An urgent call to transform sanitation for better health, environments, economies and societies', UNICEF and WHO, 2020, <[www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf](http://www.unicef.org/media/86836/file/State-of-the-world%E2%80%99s-sanitation-2020.pdf)>.

Ibid.

75 Ibid.



# EDUCATION SUPPLY CHAIN BARRIERS TO ACCESS

## UNICEF's lessons learned from the education response to the COVID-19 crisis

About 244 million children and adolescents between the ages of 6 and 18 are out of school in 2022, according to UNESCO.<sup>76</sup> More than 75 million children aged 3 to 18 are in urgent need of educational support in 35 crisis-affected countries, and children in conflict-affected countries are 30 per cent less likely to complete primary school and half as likely to complete lower-secondary school.<sup>77</sup>

For the past two years, the COVID-19 pandemic has been disrupting education systems around the world, particularly affecting the most vulnerable learners. At its peak at the end of April 2020, schools sent home nearly 1.6 billion students: 94 per cent of those enrolled worldwide and up to 99 per cent of the student population in low- and lower-middle-income countries. Although this latter figure had fallen to 17.9 per cent by the end of November 2020, more than half of countries surveyed in October 2020 reported combining remote learning and in-person education as schools reopened.

Some of the key challenges brought on and revealed by the pandemic included:

- limited access of the most vulnerable children to online learning platforms;
- lack of online national curricula and lack of content adapted to children and adolescents with disabilities, indigenous children, migrants and refugees;
- limited knowledge and capacity of teachers to use online platforms and distance learning resources;
- limited offline initiatives to respond to the educational needs of the most vulnerable children without internet access;
- lack of educational materials that are culturally sensitive and adapted to all languages spoken; and
- lack of tools to monitor and evaluate progress of learning outcomes.

The closure of schools also interrupted access to other important basic services provided by schools such as school feeding, recreational programmes, extracurricular activities, pedagogical and psychosocial support, as well as those related to health, water, sanitation and hygiene.

### Monitoring children's learning needs

UNICEF's initial data and analysis from the pandemic have focused largely on the question of access. This has been useful, particularly in identifying the gaps; 463 million schoolchildren, for example, were not reached with digital and broadcast remote learning,<sup>78</sup> sparking a push towards expanding partnerships, particularly with technology and telecommunications companies to find solutions.

### Modernizing how data is collected, analyzed and shared

The pandemic underlined the need to close existing data gaps on pre-primary education, technical and vocational education, non-formal education, learners with disabilities or learners in crisis-affected settings, as well as we as anticipate emerging needs such as how to track students in blended-learning scenarios. The COVID-19 crisis also provided an impetus to modernize how data is collected, analyzed and shared, catalyzing the transition to faster systems and investments in institutional capacity so that data is not just collected but acted upon in a timely manner to make a real difference to children's education.<sup>79</sup>

COVID-19 triggered mass innovation to develop flexible learning methods that can be built upon to make education systems more resilient. These tools must be paired with investments in the people that use them and investments to strengthen data systems. To ensure plans are rooted in ever-pressurized budgets, education ministers will increasingly need to turn to economic analyses.

76 United Nations Educational, Scientific and Cultural Organization, '244M children won't start the new school year', UNESCO, 9 September 2022, <<https://www.unesco.org/en/articles/244m-children-wont-start-new-school-year-unesco>>.

77 United Nations Children's Fund, 'Every Child Learns: UNICEF Education Strategy 2019–2030', UNICEF, 2019

78 UNICEF's lessons learned from the education response to the COVID-19 crisis and reflections on the implications for education policy [Sciencedirect.com/science/article/pii/S0738059321000821](https://www.sciencedirect.com/science/article/pii/S0738059321000821)

79 Ibid.





The expansion of partnerships – such those between public and private organizations – will be necessary to secure greater and more innovative forms of finance and affordable digital learning solutions. If these opportunities are seized, they can equalize opportunities and accelerate progress.<sup>80</sup>

### Transportation restrictions and price hikes

The pandemic had a global impact on UNICEF's freight operations, particularly sea shipments. Many countries, regions and territories imposed strong restrictions on international transport, which affected air freight, sea freight and logistics services, and had an adverse impact on international supply chains, including those UNICEF use to deliver education supplies.

UNICEF has been receiving unprecedented requests from suppliers of educational materials for price increases owing to compounded challenges in supplying countries. Sporadic power supply is a barrier to timely production and also has financial implications for suppliers who, in some cases, are struggling to meet supply demand. The conflict in Ukraine has further increased demand to meet competing emergencies, and this has led to price increases. Such price increases come at very short notice owing to unpredictable market challenges. Product price increases also emanate from long shipment delays; these force suppliers to store their goods for four to ten months beyond normal delivery times.

## UNICEF: Providing education supplies

In emergency and development contexts UNICEF strives to develop accessible schools and to enable children – especially girls and children with disabilities – to learn. UNICEF provides education supplies and services which include the procurement of stationery and furniture as well as the construction and rehabilitation of schools. In emergency contexts UNICEF's objective is to minimize the disruption caused by school closures or forcible displacement. In emergencies, children can continue to learn in durable, high-performance tents that serve as safe spaces and temporary classrooms. Pre-selected, inclusive items packed in kits, such UNICEF's school-in-a-box, early childhood development (ECD) kits, and recreation kits, help ensure that children can continue to learn and play.

80 Ibid.





# 03

## UNICEF SUPPLY CHAINS IN ACTION

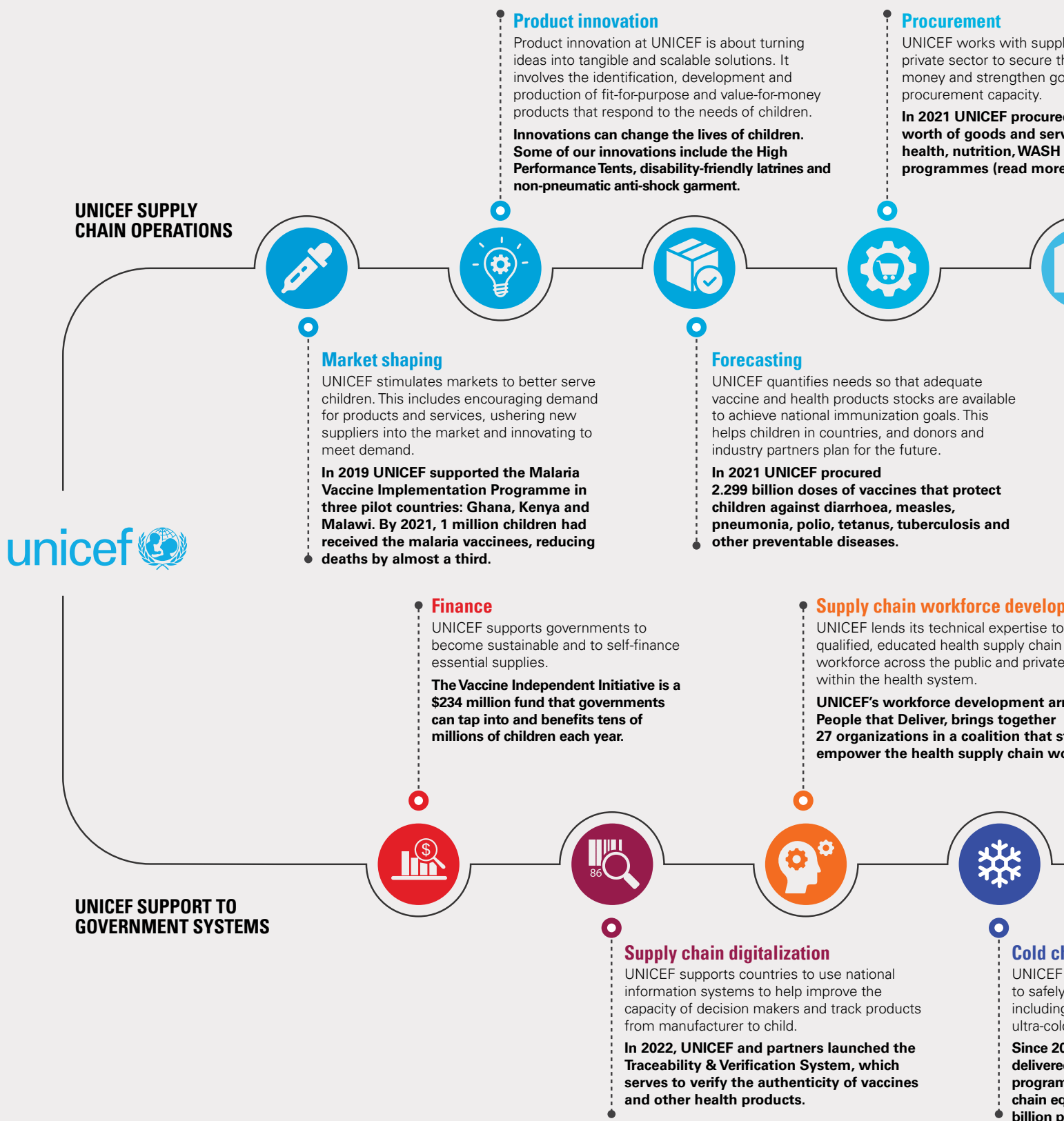
What we do best





# Transforming end-to-end supply chains

UNICEF uses its global reach and local knowledge to deliver supplies to children in more than 160 countries and territories, including in situations of conflict and disaster. We work closely with partners and governments to ensure we reach children, their families and communities at the right time, in the right place, with the right supplies at the right price. To achieve this, we rely on a **unique set of skills**, described below.





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### Global transport

UNICEF arranges shipments directly from suppliers to destination countries by air, sea and land.

**In 2021 UNICEF spent \$226.3 million on international freight services representing 12,968 shipments.**

### Warehousing & distribution

UNICEF's global hub in Copenhagen is the world's largest humanitarian warehouse and is complemented by hubs in Accra, Brindisi, Dubai, Guangzhou and Panama. These are strategically located to dispatch supplies swiftly in emergencies.

**The global hubs combined contain sufficient emergency supplies to meet the needs of 250,000 people for three months.**

### In-country logistics

To put supplies in the hands of children, we contract local road cargo transporters, aircraft charters, and customs and warehousing services.

**In 2021 UNICEF injected \$91.4 million into the local economies by partnering with in-country logistics and warehousing services companies.**

### Monitoring & evaluation

Through community-focused surveys, UNICEF monitors whether health, nutrition and education services and products are reaching the last mile, administered adequately and aiding children's recovery.

**UNICEF's flagship end-user monitoring assessment has been rolled out in 20 countries and helped to address supply chain management bottlenecks and increase product availability.**



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### Frontline health workers and community outreach

UNICEF trains and equips frontline workers with essential knowledge and skills to address local drivers of inequity and increase demand for vaccines and other health products.

**Through the essential contribution of frontline health workers and community outreach, the number of children paralyzed by polio has fallen by over 99% since 1988.**



### Cold chain management

strengthens cold chain infrastructure to store and transport vaccines, and the delivery and installation of cold chain units.

**In 2017, UNICEF has procured and delivered more than 150,000 refrigerators to some countries securing vaccine cold chain equipment benefitting close to one billion people.**

### Solarization & waste management

UNICEF strengthens energy sustainability along the cold chain by supporting the replacement of fridges with solar technology and making use of environmentally-friendly products.

**In 2020-2021, UNICEF's Global Solar Water Pumping Programme — active in 51 countries — installed nearly 3,000 solar-powered water systems in schools, healthcare facilities and communities.**

# Buying and delivering life-saving supplies and services to all corners of the globe

UNICEF procured **\$7.181 billion** worth of goods (\$5.657 billion) and services (\$1.524 billion) in 2021.

The largest commodity groups, and examples of supplies procured or delivered, are highlighted below.



## **\$4.121 billion** Vaccines/biologicals

UNICEF procured 2.299 billion doses of paediatric vaccines for 109 countries to reach 46 per cent of the world's children under 5 years old. 48.5 per cent of these vaccines went to routine immunization programmes. The remainder supported supplementary immunization activities, outbreak response, and humanitarian situations.

In 2021, COVAX delivered more than **957.7 million** doses of COVID-19 vaccine to 144 countries.

UNICEF managed the delivery of more than **884.2 million** COVID-19 vaccine doses to 110 countries.



## **\$397.5 million** Medical supplies and equipment

**2 billion syringes for immunization**, including **1.9 billion** auto-disable syringes:

- **82.4 million** re-use prevention syringes delivered
- **\$72.8 million** worth of safe injection equipment (SIE) delivered to 111 countries
- **18.4 million** safety boxes delivered
- **4.6 million** malaria rapid diagnostic tests delivered to 18 countries
- **1.8 million** HIV rapid diagnostic tests delivered to 26 countries, including 0.7 million HIV/syphilis combination diagnostic tests to 13 countries and 58,250 HIV self-tests to 5 countries
- **40,748** medical kits delivered from UNICEF global supply hubs for 18 countries



## **\$204.9 million** Cold chain equipment

- **\$73.2 million** in solar-powered systems procured for 63 countries



## **\$175.6 million** Nutrition supplies

67 per cent of ready-to-use therapeutic food (RUTF) was sourced from programme countries.

- **44,554 metric tons** of RUTF delivered to 59 countries. An additional **7,206 metric tons** was delivered to 12 countries as contributions in kind (CIK)
- **433.2 million** vitamin A capsules, including 383.8 million capsules as CIK to 68 countries
- **119.3 million** deworming tablets delivered to 44 countries
- **665 million** sachets of multiple micronutrient powder delivered to 38 countries
- **566 million** iron and folic acid tablets delivered to 28 countries



## **\$155.3 million** Education supplies

UNICEF procured education supplies for 105 countries in 2021, including laptops for a large digital education project in El Salvador.

**86,780** education kits were delivered from UNICEF global supply hubs for 64 countries, including:

- **42,968** standard classroom kits
- **20,820** early childhood development kits
- **18,781** recreation kits
- **4,211** country-specific classroom kits





## **\$145.4 million** **Water and sanitation supplies**

- **468.8 million** water purification tablets and chlorination/flocculation sachets, which could treat 10.6 billion litres of water delivered to support 45 countries
- **2.6 million** hygiene kits delivered to 55 countries



## **\$99.1 million** **Pharmaceuticals**

- **350.8 million** amoxicillin pneumonia treatments for children under 5 years old, reaching 54 countries
- **1.6 million** packs of antiretroviral medicine to treat 54,333 adults and 21,601 children with first-line therapy for one year delivered to 37 countries
- **20.6 million** artemisinin-based combination therapy (ACT) malaria treatments delivered to 29 countries
- **52.5 million** cotrimoxazole tablets to treat bacterial infections, including pneumonia and bronchitis, delivered to 16 countries
- **34.6 million** sachets of oral rehydration salts (ORS), including 5.9 million co-packaged ORS/zinc, delivered to 43 countries
- **93 million** zinc tablets, including 26 million co-packaged ORS/zinc, delivered to 42 countries
- **7.5 million** treatments for seasonal malaria chemoprevention delivered to protect 1.9 million children
- **15.2 million** courses of sulfadoxine-pyrimethamine chemoprevention delivered to protect 5.1 million pregnant women



## **\$81.5 million** **Bed nets/insecticides**

- **18.6 million** long-lasting insecticidal nets (LLINs) were delivered to 21 countries

## **\$352.2 million** **COVID-19 non-immunization supplies** reached 130 countries



**434 million**  
items of personal protective equipment (PPE) delivered to 115 countries



**6.7 million**  
COVID-19 antigen rapid diagnostic tests delivered



**5.4 million**  
molecular diagnostics delivered



**299,775**  
COVID-19 rapid tests delivered



**28,916**  
oxygen concentrators procured

The six largest categories account for 69 per cent of the total value of contracting for services.



**\$257.1 million**

### Construction services

Most construction services were procured in the Middle East and North Africa region (\$106.7 million), the West and Central Africa region (\$64.6 million), and the Eastern and Southern Africa region (\$64.1 million),

and included support for:

- water supply and water and sanitation facilities in schools for WASH programmes
- construction and rehabilitation of schools and learning facilities
- construction related to health facilities



**\$118.5 million**

### Research, surveys, monitoring and evaluation services

Includes programmatic research and surveys, market and supply chain analysis, and research and monitoring and evaluation of programme implementation.



**\$91.4 million**

### In-country logistics and warehousing services

Support to programmes includes road cargo transport, storage, local aircraft charters, and customs brokerage and clearance services, as well as warehousing services.



**\$226.3 million**

### International freight services

This figure is the highest ever reported. It is a 71.6 per cent increase from 2020, and represents 12,968 international shipments in 2021.



**\$184.1 million**

### Local technical workforce

Human resources required for programme support included working in countries to:

- share expertise with partner governments
- implement social mobilization campaigns
- provide temporary labour for programme



**\$173.0 million**

### Cash and voucher assistance

Includes programmes in which cash transfers or vouchers are directly provided to beneficiaries and can be used for goods or services.

## Reaching the last mile

Through long term agreements, UNICEF has built a large network of local transport, handling and storage service providers, which has proven instrumental to planning and managing the efficient flow of supplies from ports of entry to the final destination, prepositioning commodities in strategic locations ahead of potential crisis, coordinating agile responses to (high-scale) emergencies, and ensuring regular immunisation, health, nutrition, education and WASH programmes globally. The competencies and technological assets of our in-country logistics partners and sub-contractors have been key supply chain strengthening components and have enabled UNICEF to track warehouse inventory, shipments and deliveries, keep vaccines safe through the last mile of the journey using solar powered cold storage equipment and dispatch supplies to isolated communities including in hard-to-reach areas.





unicef 

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# DRIVING INNOVATION AT SCALE

## UNICEF works with industry to devise tailor-made solutions to improve the lives of children

Innovative solutions, tailored to context, are often required to improve children's well-being and overcome barriers to accessing health care, sanitation services, shelter and education.

UNICEF works with partners and experts to understand unmet product needs from the field and communicate these needs to businesses and academia. It then helps to guide industry to develop products that meet those needs and are suitable for the challenging contexts in which UNICEF works.

Through a competitive co-creation process, interested industry suppliers work to create suitable products that can make a difference in the lives of children. UNICEF's influence – which spans innovation and its purchasing and procurement power – helps drive the development of these new products and ensures they reach scale.

This section explores three examples of innovative UNICEF products that have made a difference to the lives of children.

## Innovations to uphold the rights of children with disabilities

UNICEF's work is guided by the social model and human rights-based approach to disability. We work to ensure that children with disabilities and their families have access to all the services and support they need in their communities. UNICEF advocates disability-inclusive policies and legislation, along with adequate investments to put them into practice. In 2022 UNICEF introduced 24 new assistive products, plus accessories, to its [Supply Catalogue](#) to support children with disabilities, including child-sized active wheelchairs and hearing aids.

## Disability-friendly squatting plate add-on in emergencies

There are nearly 240 million children with disabilities worldwide, and for many of them, humanitarian crises make daily tasks even more challenging. During a humanitarian response, sanitation facilities in displacement and refugee camps typically involve squat latrines. Unfortunately, these are not suitable for children with mobility or vision impairments and have difficulty squatting or balancing.

After consulting with field partners and beneficiaries to understand their needs, UNICEF began working with industry in 2016 to develop the first ever disability-inclusive latrine. Prototypes were initially tested in Angola, Bangladesh and Mozambique, and organizations of persons with disabilities were involved in every phase of the design, development and testing.

The role of UNICEF was to understand unmet needs from the field, communicate them to industry and then drive the development of products, testing and refinement with industry partners before working to scale up their use.

Two products are now available: The first is a device that screws onto the squatting plate with a supportive frame. The second is a similar device that fits over the squatting plate with a supportive frame, in addition to a transfer point to move onto the seat. Both products were developed to offer simplicity in terms of transportation and assembly so that implementation during emergencies is quick and seamless.

The products were piloted in refugee camps in Bangladesh in 2019, directly supporting 33 per cent of those with disabilities in Cox's Bazar. Additionally, people with chronic illnesses, older people and pregnant women have also benefited from the squatting plates. Feedback during monthly community engagement meetings was positive; caregivers noted that the innovative squatting plate enabled many children with disabilities to use a latrine independently.





Providing children with disabilities a chance to live independently and with dignity is at the core of UNICEF's work. UNICEF aims to include the new add-on component to 10 per cent of all squatting plates dispatched in emergencies, which equates to approximately 2,500 disability-friendly latrines each year, reaching thousands of children with disabilities worldwide.

### High Performance Tent

For years, UNICEF has delivered tents that have been used in emergencies as health clinics, nutrition facilities, distribution points and schools child-friendly spaces. On occasion, there have been challenges in transportation and installation, collapsing of the tents due to strong winds and rain, and a poor internal climate that is not suitable in extremely hot or cold environments.

With no solutions available on the market, in 2016, UNICEF decided to drive product development through an innovation process. First, UNICEF communicated its needs to industry through consultations and the launch of a target product profile and interested manufacturers engaged with UNICEF to create a more durable and more appropriate emergency tent.

Through a trial-and-error approach, prototypes were developed by selected manufacturers and tested in labs and the field to assess them in emergency contexts in different climates: Uganda for hot and dry, the Philippines for wet and humid, and Afghanistan for cold.

Following \$3 million of industry investment and \$526,000 from UNICEF, the final product – UNICEF's High Performance Tent – includes a series of innovations: it can withstand winds of up to 80km/h and is compact for easier transportation to hard-to-reach locations. In addition, there are a number of add-ons to suit various programmatic needs and climatic conditions, including hard flooring, electrical and solar kits, and a winter liner.

**“ He can hold the handles on the sides when he sits so I don't have to hold him. I just watch and make sure he's okay.**

*Monira, Hashim's mother*

Hashim, 14, who is cognitively impaired and cannot speak, is assisted by his mother, Monira, as he uses a newly built disability-friendly latrine next to his home in the Cox's Bazar refugee camp, Bangladesh.

The new tents provide safe environments for children coming from devastating situations, such as conflict, earthquakes or extreme weather events like cyclones and heatwaves.

The High Performance Tent is now being dispatched in emergencies in response to conflict and disasters. In 2021, more than 4,500 tents were ordered, including in Afghanistan, Fiji, Uganda and Yemen.

### Oxygen Plant-in-a-Box

Access to oxygen can mean the difference between life and death for patients with severe COVID-19. It is also a critical treatment for children with pneumonia, which remains the leading infectious killer of children under 5 years of age, claiming an estimated 700,000 lives every year.

Since the start of the COVID-19 outbreak, UNICEF has shipped more than 59,926 oxygen concentrators in support of 111 countries as they respond to the pandemic (December 2022). Although these devices are critical in treating COVID-19, they are limited in the number of patients they can reach at one time. Large-scale oxygen sources are needed to serve health facilities with hundreds of patients at a time. As such, UNICEF worked with industry to rapidly develop an innovative emergency solution: the Oxygen Plant-in-a-Box.

The Oxygen Plant-in-a-Box is a fully functional pressure swing absorption oxygen plant; the package includes everything needed to produce large volumes of medical-grade oxygen. Easily procured and rapidly deployed, plants can be operational within days of arriving at a facility. The plants are designed for health facilities in low-resource settings and those faced with a sudden emergency, such as rising COVID-19 cases.

UNICEF also trains workers – including biomedical engineers and technicians – to use and maintain newly installed oxygen plants. It has also signed agreements with three private sector providers to provide support to health facilities globally on maintenance and the correct use of oxygen plants.

UNICEF's Plant-in-a-Box will also help countries build back better after the pandemic; each plant can support up to 50 COVID-19 patients or 100 children with pneumonia at a time.

### Reaching remote communities with life-saving oxygen care

To help indigenous communities cope during the COVID-19 pandemic, UNICEF delivered 40 oxygen concentrators to Peru's Ministry of Health for distribution to local health centres in Amazonas, Loreto and Ucayali regions. The equipment not only provides life-saving oxygen therapy, but also enables patients to receive treatment closer to home.







# Meeting children's humanitarian and development needs

With our dual mandate UNICEF works all over the world to help children survive and thrive. We work for children's rights, the fulfilment of their basic needs and to improve their prospects. We deliver a vast variety and amount of supplies within hours when needed, and by working with local industry partners and governments to strengthen country capacity we are able to share our skills and expertise to improve the lives of children.

Supply and logistics staff around the world support the planning, procurement and delivery of essential products for children's health, education and protection. More than 1,200 staff based in 119 countries representing 147 nationalities are coordinating the procurement and delivery of supplies every day to equip children and families for a healthier, safer and more hopeful future.

Our national supply chain strengthening investments are critical for countries to create sustainable supply chains that are resilient to shocks and agile enough to handle changes in demand and sudden crises.

By transferring our know-know, empowering national responders and fostering partnerships with local private sector partners in post-emergency, recovery and development contexts, we work towards greater government supply chain preparedness and response planning capacity. With recent studies demonstrating<sup>81</sup> that an average of 73 percent of humanitarian costs are supply chain related, UNICEF's system strengthening work is central to bridge the humanitarian-development divide and reduce need, risk and vulnerability.

**“ Our classroom is no longer hot under the sun. I am now very happy.**

*Rasid, 12, who was displaced from his home by typhoons in the Philippines. The newly designed tents keep classrooms cool so children can focus on learning.*

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

# Delivering supplies in emergencies

In 2021, UNICEF procured **\$687.4 million** in emergency supplies for 139 countries and areas. The four largest commodity groups account for 80 per cent of the total value of emergency supplies procured.

In 2021, UNICEF determined that 13 countries (see map) faced crises that required a Level 2 or Level 3 emergency response\*. A Level 2 or Level 3 emergency response is activated in urgent large-scale situations when the UNICEF country office requires additional support. For each of these affected countries or areas, the map indicates the total procurement value of emergency supplies, and the largest commodity groups.

**139 countries and areas**

**\$687.4 million**  
Total procurement



**\$399 million**  
Medical supplies and equipment



**\$57.9 million**  
Water and sanitation supplies



**\$54.4 million**  
Vaccines/biologicals



**\$45.1 million**  
Pharmaceuticals

**Haiti**

**\$7.8 million**  
Total procurement



**\$2.0 million**



**\$0.9 million**



**\$0.8 million**

## Legend: Commodity groups



Vaccines/biologicals



Medical supplies and equipment



Pharmaceuticals



Nutrition supplies



Education supplies



Water and sanitation supplies

\* **Level-2 emergency response:** The affected UNICEF country office (CO) needs additional support from UNICEF headquarters, the relevant regional office (RO) and other COs to scale up and respond to the crisis. The Regional Director provides leadership and RO support is enhanced.




**Level-3 emergency response:** UNICEF's Executive Director declares that organization-wide mobilisation is needed to scale up and respond, and appoints a Global Emergency Coordinator. RO support to the CO is enhanced.



## The Syrian Arab Republic

**\$34.5 million**



Total procurement

-  \$6.0 million
-  \$5.1 million
-  \$3.7 million

## Yemen

**\$104.3 million**

Total procurement

-  \$28.2 million
-  \$20.4 million
-  \$17.6 million

## Central Sahel (Burkina Faso, Mali, Niger)

**\$3 million**




Total procurement

- 0.1 million
- 0.9 million
- 0.0 million
- 0.0 million

## Afghanistan

**\$26.2 million**

Total procurement

-  \$7.5 million
-  \$6.5 million
-  \$4.4 million

## Democratic Republic of Congo

**\$12 million**



Total procurement

- 4.0 million
- 7.7 million
- 0.8 million

## Northern Ethiopia

**\$25.7 million**

Total procurement

-  \$19.6 million
-  \$2.0 million
-  \$1.8 million

## Myanmar

**\$21.8 million**

Total procurement

-  \$7.7 million
-  \$7.6 million
-  \$3.0 million

## Mozambique

**\$21.2 million**

Total procurement

-  \$17.2 million
-  \$1.8 million
-  \$1.0 million

## Southern Madagascar

**\$7.2 million**

Total procurement

-  \$3.7 million
-  \$2.4 million
-  \$0.3 million

Disclaimer: the boundaries and names shown, and the designations used on the maps do not imply official endorsement or acceptance by UNICEF.

# Working with governments to strengthen public supply chains

Complementing our operational supply chain management efforts to reach every child in need, UNICEF lends its technical expertise and strengthens the capacity of governments to run and manage their own supply chains.

In particular, we help them to: assess performance gaps and identify priority investment areas; support domestic resource mobilization for supplies; deploy cutting-edge last mile innovation; improve product visibility from manufacturer to child; digitalize supply chains; and shape capacity building mechanisms to ensure long-term ownership and sustainability. Since 2019, UNICEF has been leading **639 technical cooperation projects across 20 areas in 66 countries** including Cambodia, Kazakhstan, Nicaragua and Nigeria.

## Number of systems strengthening projects

- 0- 15 projects
- 16- 30 projects
- 31- 45 projects
- 46- 60 projects

## UNICEF's areas of technical expertise

- |   |   |
|---|---|
| <span style="color: #90EE90;">■</span> Policy and regulatory frameworks           | <span style="color: #008080;">■</span> Data analytics             |
| <span style="color: #DAA520;">■</span> Inspection                                 | <span style="color: #ADD8E6;">■</span> Programme management       |
| <span style="color: #6495ED;">■</span> Leadership training                        | <span style="color: #800080;">■</span> Health information systems |
| <span style="color: #FFD700;">■</span> Customs clearance                          | <span style="color: #008080;">■</span> Budgeting and planning     |
| <span style="color: #90EE90;">■</span> Human resources for health                 | <span style="color: #D2B48C;">■</span> Needs assessments          |
| <span style="color: #000080;">■</span> Warehousing and distribution               | <span style="color: #404040;">■</span> Monitoring and evaluation  |
| <span style="color: #D2691E;">■</span> Vaccine management                         | <span style="color: #FFD700;">■</span> Network optimization       |
| <span style="color: #40E0D0;">■</span> Utilization by end user                    | <span style="color: #FF8C00;">■</span> Service delivery           |
| <span style="color: #A52A2A;">■</span> Supply chain workforce development         | <span style="color: #FF0000;">■</span> Demand promotion           |
| <span style="color: #A9A9A9;">■</span> Finance and domestic resource mobilization | <span style="color: #00CED1;">■</span> Procurement                |

## Mauritania

- |  |  |
|--|--|
| <span style="color: #FFA500;">■</span> 9 | <span style="color: #90EE90;">■</span> 2 |
| <span style="color: #008080;">■</span> 4 | <span style="color: #40E0D0;">■</span> 2 |
| <span style="color: #90EE90;">■</span> 3 | <span style="color: #000080;">■</span> 2 |
| <span style="color: #A9A9A9;">■</span> 3 | <span style="color: #00AEEF;">■</span> 1 |
| <span style="color: #D2B48C;">■</span> 3 | <span style="color: #DAA520;">■</span> 1 |
| <span style="color: #00CED1;">■</span> 2 | <span style="color: #FFD700;">■</span> 1 |
| <span style="color: #404040;">■</span> 2 |  |

## Nicaragua

- 1
- 1
- 1

## Burkina Faso

- 4
- 4
- 3
- 3
- 3
- 2
- 2

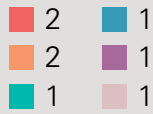
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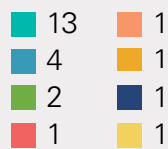
## Nigeria



## Kazakhstan



## Democratic Republic of Congo



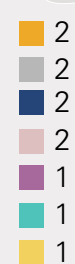
## Cambodia



## Mozambique



## Mali Faso



Our publication **“Leveraging the Power of Public Supply Chains to Drive Change for Children”** provides more detailed information on UNICEF’s unique value proposition in supply chain strengthening.

To discover where UNICEF deploys its technical assistance, scan this QR code.



# CREATING LONG-LASTING CHANGE FOR LOCAL ECONOMIES

UNICEF contracts a wide array of local actors, from soap manufacturers to haulage companies

UNICEF has a wide network of global, regional and local warehouses, distribution centres and civil society and third-party logistics partners, all of whom are instrumental to the planning and management, and efficient flow and storage of supplies from ports of entry to the final destination. They are also essential to coordinating agile responses to emergencies, including the COVID-19 pandemic, and to ensuring the functioning of regular immunization, health, nutrition, WASH and education programmes globally.

In all contexts, UNICEF procures a variety of services from local businesses, including transporters, construction companies and water and sanitation suppliers. Working with local partners has other sustainable benefits, such as:

- **Boosting local employment**

Working with local companies provides steady employment for local personnel and their families.

- **Stimulating the local economy**

UNICEF's purchasing power and resultant procurement activities guarantee revenue for local economies, helping businesses, regions and communities grow and develop. This kind of security enables local businesses to invest in their operations.

- **Strengthening sustainable supply chains**

UNICEF has an opportunity to share its expertise with local organizations, and these organizations can in turn impart their knowledge of the local context.

- **Overcoming economic barriers to access**

Through targeted catalytic interventions tailored to the local market context, UNICEF seeks to reduce market barriers and foster local healthy markets. By encouraging businesses to engage more actively in the





market, including smallholder and woman-owned companies, UNICEF can influence the access, production, storage and delivery of products for the benefit of the children who need them.

- **Shorter transport lead times**

Stimulating local production and pre-positioning of supplies in strategic locations means that products arrive in distribution centres – and therefore to children – more quickly.

### Increasing access to soap in Burundi

During the COVID-19 pandemic, UNICEF entered into a partnership with the largest soap manufacturer in Burundi to rapidly increase people's access to soap. This allowed UNICEF to leverage the manufacturer's production capacity and distribution network to reach vulnerable households with low purchasing power, especially in rural areas. UNICEF supported the manufacturer to switch one of its production lines to produce generic soap in compliance with UNICEF requirements.

Branded *Blue Soap*, the soap was subsidized by UNICEF, USAID, the United Nations Office for the Coordination of Humanitarian Affairs, and the World Bank, and had a standardized price engraved on its surface to discourage bulk buying and price grouping.

Through this partnership, 43 million soap bars at half the price of non-subsidized soap were produced between June and October 2020. All soap bars were distributed and made available at retailers across the country within that same period.

### Diversifying RUTF production

Until 2009, ready-to-use therapeutic food (RUTF) was produced by one sole supplier. Recognising the need to diversify, that same year UNICEF took steps to diversify production and has since shifted towards a local sourcing model, expanding the production of RUTF both in terms of volumes and geographic diversification of production. This has enabled faster responses to malnutrition, reduced shipping lead times and complexity, and significantly reduced fossil fuel emissions.

UNICEF now procures RUTF from 22 different suppliers, of whom 18 are located in or close to countries with high levels of child wasting. Around two-thirds of UNICEF RUTF programme demand is now satisfied through local RUTF production.

Given its bulky size, shipping options for RUTF are often limited to sea freight with long lead times. Local RUTF production contributes to shorter lead times, a lower weighted total loaded cost, reduced storage and transportation costs, and shorter, more resilient and sustainable supply chains.

Throughout the COVID-19 pandemic, and despite complex global freight disruptions, established RUTF suppliers that were nearer to the point of demand ensured uninterrupted access to RUTF for many countries. Diversifying the RUTF supplier base is an example of how UNICEF is working to influence its supplier base to increase regional and local procurement and production to ensure equitable and inclusive access to essential supplies.

**In 2022**, due to an unprecedented increase in RUTF demand owing to the prevailing global food and nutrition crisis, UNICEF increased its RUTF supply to 85,000 MT. Over 30,000 MT was procured from African suppliers, representing a 300 per cent increase in a decade.

According to the 2022 Global Report on Food Crises, 42 countries are experiencing high levels of food and nutrition insecurity; 15 of these countries account for 8 million children with severe wasting and 27 million children living in severe food insecurity: Afghanistan, Burkina Faso, Chad, DR-Congo, Ethiopia, Haiti, Kenya, Madagascar, Mali, Niger, Nigeria, Somalia, South Sudan, Sudan and Yemen.

This is why UNICEF has developed the [No Time to Waste acceleration plan](#), which is based on scaling up prevention, early detection and the treatment of wasting for the most vulnerable children in these countries.

See pages 58-59 and 93-95 on how UNICEF is stimulating RUTF production in Africa and LMICs at large.

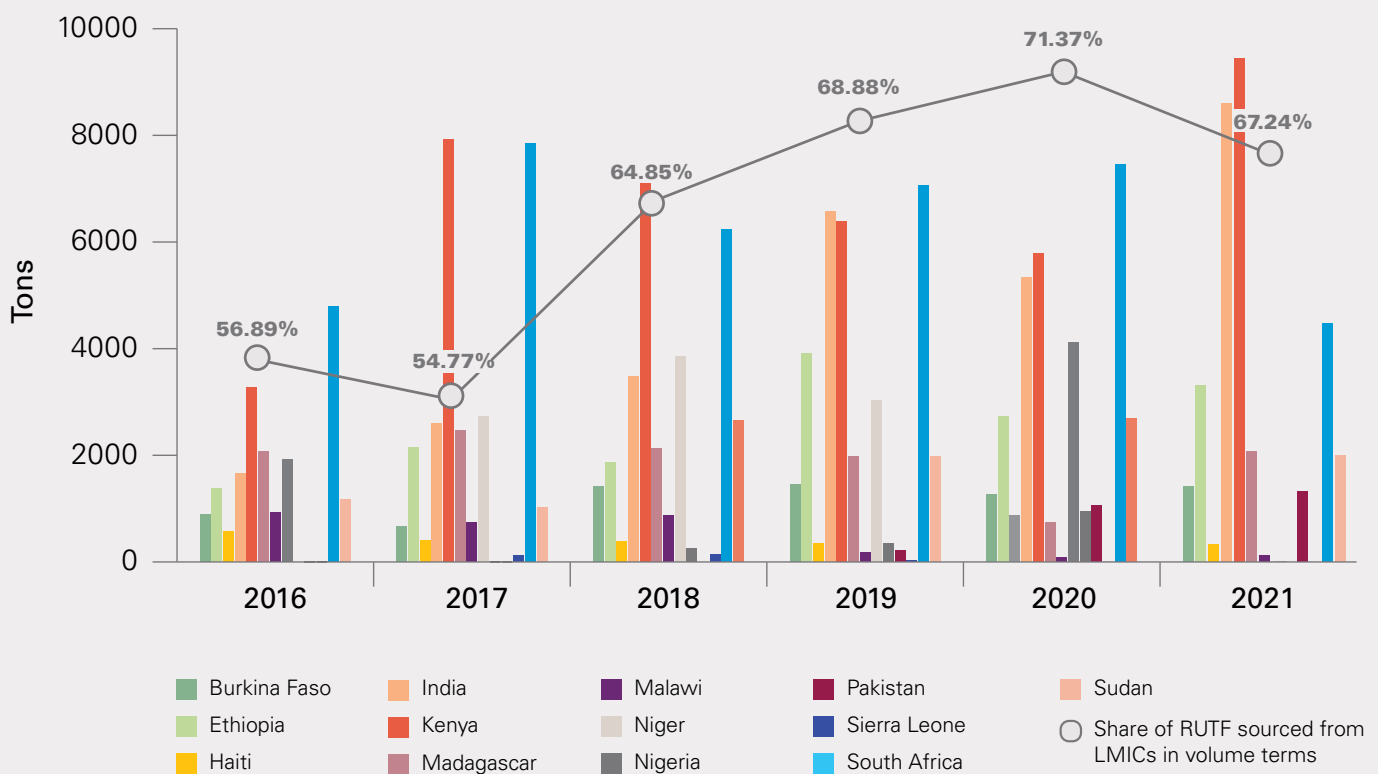
# Stimulating local RUTF production

For the last four years, UNICEF has been procuring almost 80 per cent of the world's RUTF, a life-saving essential supply that treats severe wasting in children under five years old.

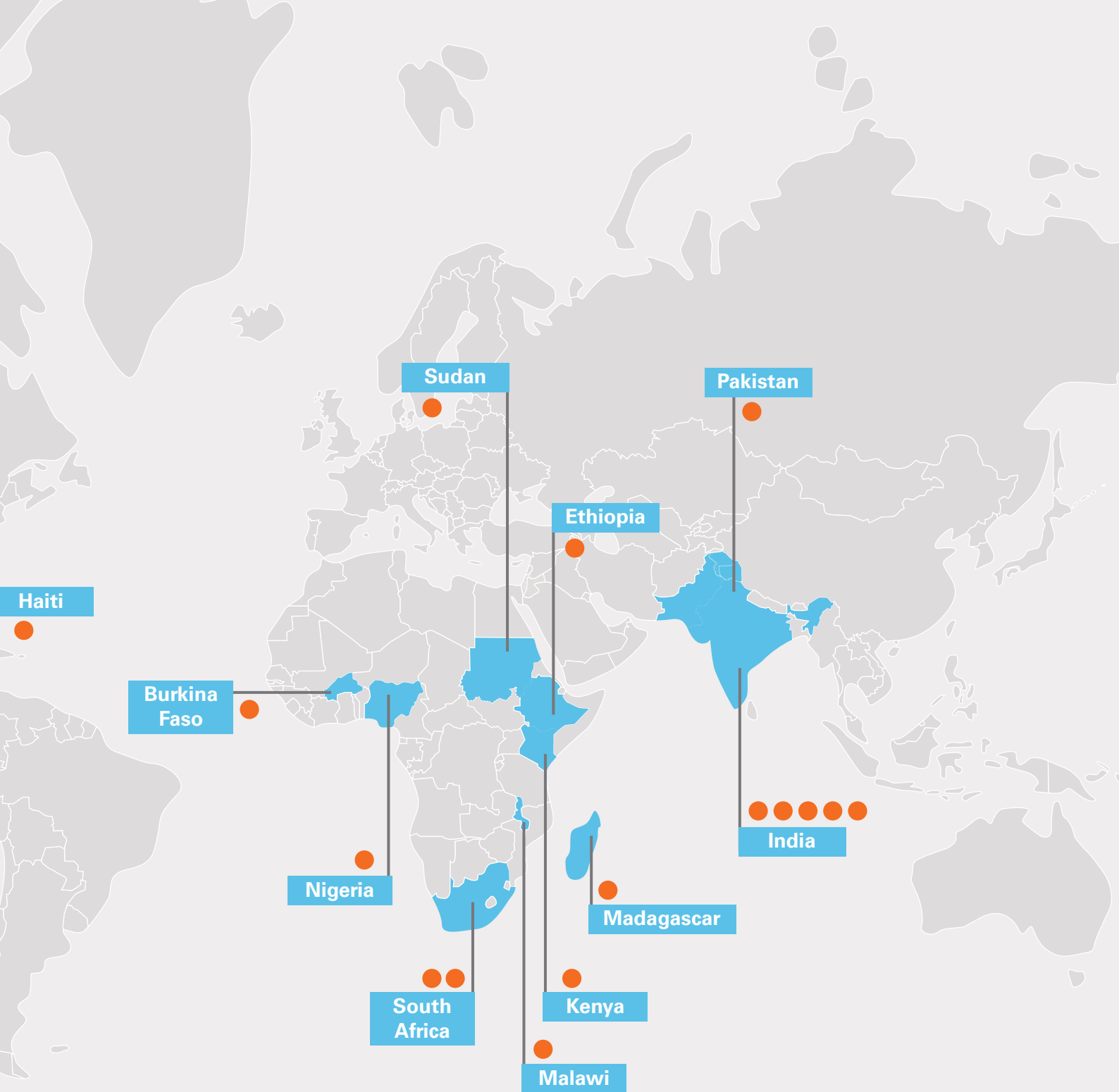
**More than two in three products were sourced from low- and middle-income countries (LMICs).**

● 1 dot represents 1 RUTF supplier (2021)

UNICEF's RUTF supplier base in LMICs  
Volumes of commodities procured







UNICEF procurement of RUTF in LMICs increased from **6 to 67 per cent between 2006 and 2021** with the average price decreasing by **more than 20 per cent.**

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# 04

## GLOBAL GOODS

Shaping the future of  
public supply chains





12 Nos  
8 Nos  
4 Nos  
1 Kg  
2 No  
2 No  
1 No  
No  
No  
No



# UNICEF SUPPLY CHAIN MATURITY MODEL

## A tool to measure the performance of countries' supply chains and shape improvement plans

Launched in 2019, the UNICEF Supply Chain Maturity Model is a participatory and government-led assessment tool that allows countries to determine whether supply chain management is a barrier to access across health, immunization and nutrition programmes. The tool enables government to review the performance of 13 critical operational and technical supply chain functions. Performance is ranked between 1 (minimum development) and 5 (best practice in supply chain management).

The Maturity Model serves three main purposes:

1. Assess and quantify the strengths, gaps and priorities for improvement across all areas of the public supply chains. This information helps to develop evidence-driven supply chain strengthening plans that will ensure children have greater access to products and services;
2. Provide a common framework to help governments and partners coordinate their activities and measure impact, avoid duplication and maximize the strengths of each partner;
3. Identify gaps in funding and technical expertise and link government supply chain development needs with private sector resources and expertise where appropriate.

Since 2019, the UNICEF Supply Chain Maturity Model has been used by 35 governments to identify their investment and technical needs and execute appropriate responses. Knowing the areas where they are lacking and then acting to address these gaps helps countries ensure that children enjoy higher levels of access to products and services across various public programmes (health, nutrition, education and WASH).

### The Maturity Model in Malawi<sup>82</sup>

With funding and technical support from UNICEF, Malawi's Ministry of Health used the Maturity Model to evaluate progress, highlight gaps and provide recommendations to improve the efficiency of the supply chain in bringing essential medicines and health commodities to districts and communities across the country.

The results helped determine Malawi's readiness level and management capacity for the deployment of COVID-19 tests, treatments and vaccines, and helped the Ministry of Health develop a National Supply Chain Transformational Master Plan (2021–2026). Through clear and measurable targets, the plan will assist the government as it strives to achieve better health outcomes. The Government of Malawi praised the UNICEF Maturity Model for facilitating collecting evidence to drive improvement plans, leveraging partner resources and technical cooperation, and bridging the gap in access to health care.

**“ The Maturity Model assessment was a timely exercise that has assisted the country in highlighting key bottlenecks in the supply chain and to prioritize areas of improvement. We will continue to use the tool to evaluate progress made towards reaching our goal of ensuring the availability of essential medicines at all times in Malawi.**

*Godfrey Kadewele, Director of Health Technical Support Services, Malawi Ministry of Health*

<sup>82</sup> Read the full story here: <https://www.unicef.org/supply/stories/strengthening-malawi-health-supply-chain-improve-access-health-care-children>





# THE EFFECTIVE VACCINE MANAGEMENT INITIATIVE

## Robust vaccine supply chains save lives

Vaccines save millions of lives each year by protecting vulnerable populations against serious and preventable diseases. Each successful vaccination requires a strong immunization supply chain (ISC) to ensure that the right vaccine is administered at the right time, place and cost. But how do countries ensure their ISCs are fit for purpose?

Complementing the Maturity Model assessment, the Effective Vaccine Management (EVM) initiative goes a long way to strengthening ISCs by pointing to areas that require strengthening.

### What is EVM?

Co-developed by WHO and UNICEF, [EVM](#) is a tool and process that assesses each component of the ISC, to identify strengths and weaknesses. Understanding these strengths and weaknesses allows countries to develop plans and allocate resources to implement improvements where they are needed most.

EVM brings together immunization professionals with the common goal of increasing immunization coverage. What makes EVM unique is that it analyses 19 critical supply chain functions, such as vaccine arrival, storage and management, and identifies those that are underperforming. Armed with information about which areas require attention, donor organizations, development agencies and governments are then able to target their investments and shape national continuous improvement plans.

“ **The EVM identifies which areas require attention, allowing donor organizations, development agencies and governments to target their investments and shape national continuous improvement plans.** ”

*Michelle Seidel, Senior Advisor on Immunization, UNICEF Programme Group*

## More than two decades of adoption and scale

Since it was first launched in 2010, UNICEF and WHO have deployed the EVM in up to 95 countries to assess their iSCs; 66 countries have conducted two assessments and another 22 countries have conducted three. It is important that countries conduct multiple assessments to allow decision-makers to review the performance of their interventions over time.

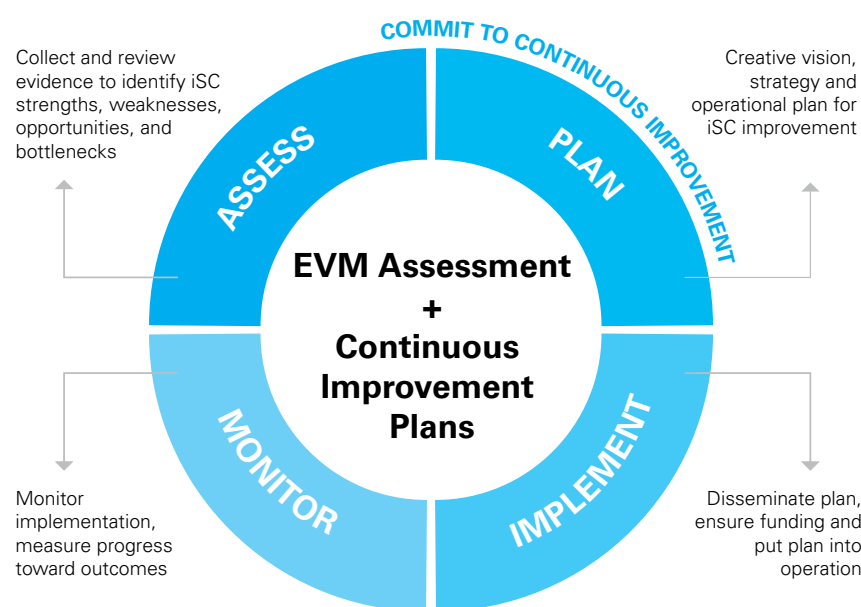
Over this time, the average global EVM composite scores have improved, from 64 (2012) to 67 (2015) and to 71 in 2020. An area of vaccine management is considered 'Effective' if its criterion score is greater than or equal to 80 per cent.

The number of countries with a national EVM composite score greater than 80 per cent has increased from four in 2011, to ten in 2013, to 18 in 2017, to 21 in 2020, demonstrating steady improvements in vaccine supply chain performance.

With the new web-based [EVM 2.0](#), countries benefit from a more robust and automated dataset, which they can use to assess a wide range of supply chain functions and conduct dedicated supply chain function or level assessments to monitor progress at both national and subnational levels.

Around 25 countries have conducted EVM assessments since the launch of EVM 2.0 in 2019, enabling countries to conduct targeted EVM assessments in specific parts of the country or in specific supply chain functions. Regular assessments (ideally every three to five years) help to monitor supply chain performance, in addition to developing and implementing dynamic continuous improvement plans.

Figure 2. Components of an EVM assessment

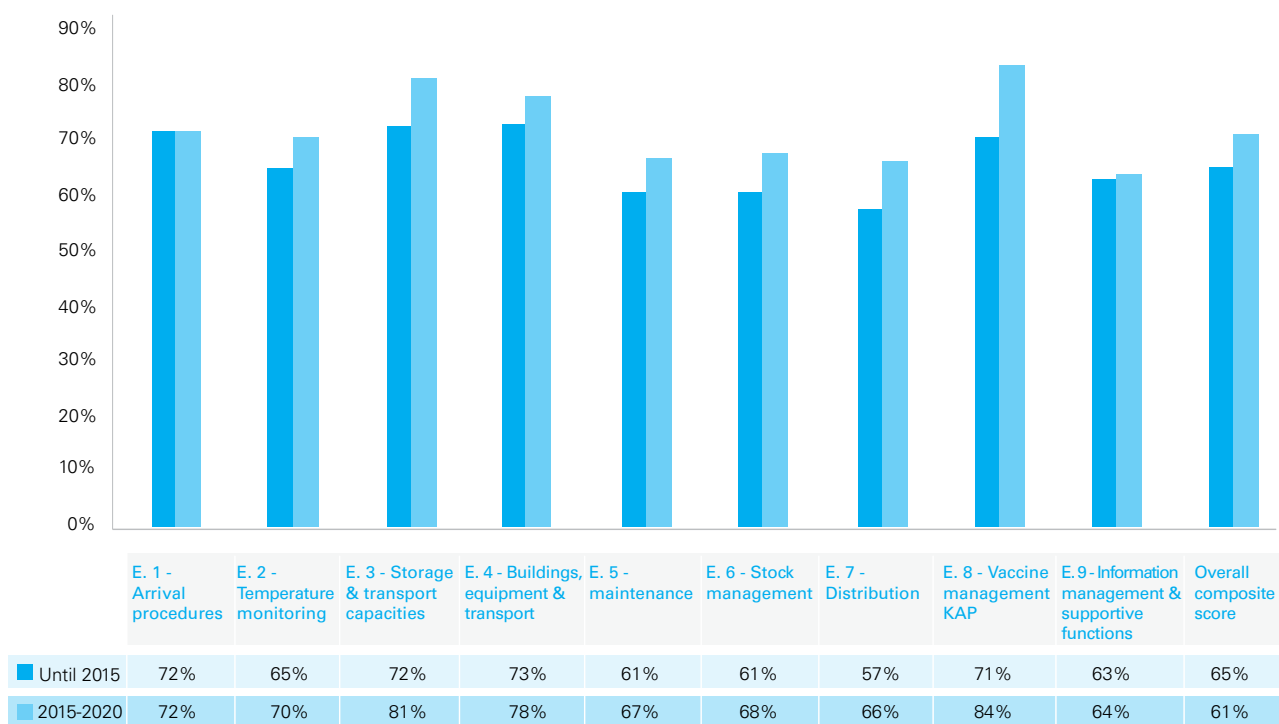


## The results

On average, EVM scores have improved significantly for the countries that conducted EVM analyses before and after 2015. Improvements have been seen in every area, with particularly impressive strides made in vaccine management, distribution, storage and transport capacities. In tandem, global DTP3 coverage jumped from 72 per cent in 2000 to 86 per cent in 2019.<sup>98</sup>

With an understanding of the areas that needed improvement, UNICEF, WHO, donor agencies (including Gavi and the Bill & Melinda Gates Foundation) and other partners (such as the Clinton Health Access Initiative, JSI, PATH and VillageReach) have been able to provide targeted technical assistance.

Figure 3. EVM average per criterion, for 44 countries with EVMs pre-2015 and post-2015



**In Bangladesh**, since the country's first EVM assessment in 2011, when it scored 72 per cent, its overall score has improved substantially. In its most-recent assessment in 2021 it scored 84 per cent – above the minimum requirement (80 per cent) across eight of nine EVM criteria. Meanwhile, Bangladesh's DTP3 immunization coverage among one-year-olds increased from 82 per cent in 2000 to 98 per cent in 2021.<sup>99</sup>

Following this most-recent EVM assessment, Bangladesh developed a national continuous supply chain improvement plan and a strategic vision for the following five years. In addition to planning activities to sustain progress in key areas, improvement activities have also been planned for vaccine arrivals, waste management and the storage of vaccines and dry goods.

83 <https://data.unicef.org/topic/child-health/immunization/>

84 [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/diphtheria-tetanus-toxoid-and-pertussis-\(dtp3\)-immunization-coverage-among-1-year-olds-\(-\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/diphtheria-tetanus-toxoid-and-pertussis-(dtp3)-immunization-coverage-among-1-year-olds-(-))



# THE TRACEABILITY AND VERIFICATION SYSTEM

## Protecting patients from counterfeit medicines

### What is the problem?

As the distribution of the COVID-19 vaccine ramped up worldwide, so did the production and distribution of falsified and sub-standard vaccines and COVID-19 supplies.

Even before the pandemic, one in 10 medical products in LMICs was already substandard or falsified.<sup>85</sup> Falsified vaccines and medicines alone cost LMICs \$30 billion each year and over \$200 billion globally.<sup>86</sup>

Counterfeit medicines are estimated to have caused up to 169,000 deaths of children under 5 suffering from pneumonia and up to 116,000 deaths from falsified medicines to treat malaria.<sup>87</sup> Not only do substandard and falsified medical products cause harm to patients and fail to treat the diseases for which they were intended, but they also lead to a loss of confidence in medicines, health care providers and health systems.<sup>88</sup> What's more, falsified medicines can promote drug resistance.

National supply chains in LMICs are at highest risk – those in which the governance structures, tools and technical capacity to actively monitor falsified products are limited or traceability systems are either non-existent or in the early stages of development. And the need to trace products and verify their quality extends beyond COVID-19 vaccines to all health products.

### What is the solution?

The Traceability & Verification System, or TRVST, is the fruit of a multi-stakeholder consortium comprising national regulatory authorities in LMICs, vaccine manufacturers, private businesses and development partners, including WHO, the World Bank, the Global Fund, GAVI, USAID and the Bill & Melinda Gates Foundation.

85 World Health Organization, 'Substandard and falsified medical products', WHO, January 2018, <[www.who.int/news-room/fact-sheets/detail/substandard-and-falsified-medical-products](http://www.who.int/news-room/fact-sheets/detail/substandard-and-falsified-medical-products)>.

86 World Health Organization, 'A Study on the Public Health and Socioeconomic Impact of Substandard and Falsified Medical Products', WHO, Geneva, 2017.

87 World Health Organization, 'The WHO Member State Mechanism on Substandard and Falsified Medical Products', WHO, Geneva, 24 June 2020, <<https://www.who.int/publications/item/WHO-MVP-EMP-SAV-2019.04>>.

88 World Health Organization, 'Substandard and falsified medical products', WHO, January 2018, <[www.who.int/news-room/fact-sheets/detail/substandard-and-falsified-medical-products](http://www.who.int/news-room/fact-sheets/detail/substandard-and-falsified-medical-products)>.



The initiative, which is **the first GS1-enabled verification and traceability system to be used in Africa**, offers a repository to store traceability and verification data. First and foremost, the TRVST verifies the authenticity of vaccines and other health products on the market. The system allows users, such as health care workers, regulatory authorities and customs agents to use a smart phone app to scan medical product barcodes and verify their authenticity in real time. Any verification failure or suspect activities trigger an alert that is sent to respective manufacturers and regulatory authorities.

Using the existing GS1 barcoding technology, which is already being deployed in high-income countries, the TRVST has been implemented since July 2022 in Nigeria and Rwanda. GS1-enabled vaccines are being scanned to confirm if they are authentic, thereby ensuring patient safety while improving supply chain efficiency.

### **The path towards digitalizing health product supply chain systems**

This initiative complements other global efforts led by UNICEF and partners to digitalize public health supply chain systems in LMICs and strengthen countries' supply planning and demand capacity to ensure higher levels of equitable access to health products and treatments.

Initially the global repository has been loaded with COVID-19 vaccine data from manufacturers to address the urgent risk of falsified or diverted COVID-19 vaccines. Its successful implementation is the first step towards a fully-fledged end-to-end traceability system for all health products, including vaccines, medicines for HIV, tuberculosis and malaria, and supports country efforts to achieve universal health coverage.

## **Five basic elements of the TRVST**

- 1. An interface** that allows manufacturers to upload product master data using an application programming interface (API) or via a global data synchronization network.
- 2. The TRVST repository**, which securely holds all the product and event data (verification and traceability).
- 3. Verification smart phone app and API:** Users are able to verify products by scanning a barcode on the packaging using a phone application, which is available on both Android and iOS platforms. The TRVST comes with a global phone application, but national versions may be made available at the request of national authorities.
- 4. TRVST API interface linking with national systems:** Countries' national traceability systems – and the data in these systems – can be connected to the TRVST, providing supply chain visibility to donor organizations.
- 5. The TRVST dashboard** allows users to view verification and traceability data.

## **GS1: The gold standard for tracking**

The global repository adopts the GS1 supply chain standards, a set of global data standards that provide a harmonized framework for supply chain visibility.

GS1 standards refer to a barcode system that allows supply chain professionals to track products throughout the whole supply chain and across the continuum of care, identify the root causes of supply chain issues or adverse events and, when necessary, recall products.

Since 2015, UNICEF has recommended the use of GS1 standards outer box (secondary packaging) of vaccines and since 31 December 2021, UNICEF vaccine tenders backed by Gavi financing have been required to include GS1 barcoding on secondary packaging.



**“ TRVST is supported by the Verification and Traceability Initiative, a multi-stakeholder consortium led by UNICEF, the World Bank, USAID, the Global Fund, GAVI, Bill & Melinda Gates Foundation and Vital Wave.**

*Ken Legins, Chief, Supply Chain Strengthening Centre, UNICEF Supply Division*

### **Participation & partnerships: The key to success**

TRVST is expected to be scaled up and expanded to vaccines for routine immunization programmes and health products to treat HIV and tuberculosis, as well as to reproductive health supplies, anti-malarial items and other essential medicines.

The success, scalability and sustainability of the TRVST are contingent upon participation and partnerships. UNICEF is calling on additional governments to join the initiative, donors to provide resources to support country-level implementation, and manufacturers to serialize their products in emerging markets and register them in the global repository.



# VACCINE INDEPENDENCE INITIATIVE AND OTHER SUPPLY FINANCING SOLUTIONS

## Unblocking supply financing obstacles to children's vaccines

Over the past decade, routine immunization services for children have expanded significantly, especially in Africa and South-East Asia. However, the COVID-19 pandemic, subsequent national lockdowns and worldwide supply chain disruptions have strained health systems, contributing to a global drop in the coverage of routine childhood immunizations, from 86 per cent in 2019 to 81 per cent in 2021.<sup>89</sup>

Currently, there are more than 25 million unvaccinated or under-vaccinated children in the world.<sup>90</sup> One reason is disrupted supplies. LMICs often face obstacles to quickly and sufficiently mobilizing funds to buy vaccines and other essential commodities when they are needed the most.

### The Vaccine Independence Initiative (VII)

Launched in 1991, UNICEF's main tool for supply pre-financing is the [Vaccine Independence Initiative Revolving Fund](#), which accelerates access to life-saving supplies, including vaccines and other non-immunization commodities, while providing a platform for ensuring a systematic and sustainable supply for country partners facing temporary budget shortfalls.

### Helping countries procure vaccines and other life-saving supplies

Bridging funding gaps is crucial so that children are not put at greater risk of preventable diseases. In parallel, the underlying causes of insufficient budget allocation, and delays in budget disbursements, must also be addressed to improve a country's long-term, self-financing capacity. Through the VII platform, technical support is provided to country partners in areas of supply budgeting and

financing, with the objective of supporting longer-term, sustainable self-financing of these supplies.

Originally focused on vaccines, the VII has evolved to support the procurement of other non-immunization commodities, such as medicines, bed nets, nutrition products and cold chain equipment.

Tens of millions of children benefit from VII support to countries each year. Between 2015 and 2021, the VII facilitated the on-time delivery of more than 1 billion doses of vaccines, almost 500,000 cartons of RUTF, nearly 400,000 packs of antiretroviral drugs, as well as COVID-19 supplies such as personal protective equipment (PPE), diagnostic tests and oxygen therapy equipment during the pandemic.

### Increased access to vaccines in the Democratic Republic of the Congo

In 2019, \$3 million in pre-financing allowed for the procurement of 15 million doses of vaccines and syringes in the Democratic Republic of the Congo (DRC). This helped the country boost coverage of DPT3<sup>91</sup> from 69 per cent in 2017 to over 79 per cent by the end of 2019.

In 2020, the late availability of donor funding created a \$5.8 million funding gap to procure and deliver 10 million doses of childhood vaccines. A shortfall of \$6.1 for 13 million doses had to be covered for 2021. This pre-financing was initiated to bridge the gap until an existing World Bank loan was disbursed; it helped avoid stock-outs and played a part in increasing vaccine coverage in the country from 35 per cent in 2018 to 53 per cent in 2020.

89 United Nations Children's Fund, 'Immunization country profile', UNICEF, <[www.unicef.org/supply/immunization-country-profile](http://www.unicef.org/supply/immunization-country-profile)>

90 <<https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>>.

91 The percentage of children aged 12-59 months who have received three doses of the combined diphtheria pertussis tetanus vaccine (DPT3) is a widely used indicator of the performance of countries' routine immunization service.

## A growing need

To date more than 30 countries have subscribed to the VII, with some successfully graduating (no longer needing access to the facility). More than 100 countries have used VII for ad hoc pre-financing. However, the COVID-19 pandemic has strained health budgets and many countries are struggling to mobilize sufficient domestic funding to fund their traditional vaccines and the co-financing portion of their Gavi-funded vaccines.

UNICEF continues to receive an increasing amount of pre-financing requests from countries driven by COVID-19-related needs during 2021, and more recently, during 2022, in the context of the food and nutrition crisis. During the transition from Gavi and become self-financing, countries are required to raise their own domestic resources to fund vaccine programmes. In these contexts, VII can help countries with their vaccine financing.

## The Nutrition Match Instrument

Launched in 2020 to support governments in mobilizing domestic resources for nutrition, the Nutrition Match Instrument (NMI) was established and is managed by UNICEF. The NMI supplements government spending on RUTF and other essential nutrition supplies. To qualify for the NMI, governments must: (1) include overall RUTF needs and costs, which are already approved or estimated; (2) cover a portion of those total costs with domestically mobilized resources; and (3) ensure that the domestic allocation to RUTF does not negatively impact life-saving nutrition or health interventions.

Complementary to NMI support, countries can access VII and technical assistance to enable a sustainable introduction of budget lines for nutrition. Read more about the NMI on page 93.

## Mauritania: Self-financing to prevent malnutrition

In April 2022, UNICEF and partners delivered more than 36,300 boxes of RUTF to Mauritania to treat more than 35,000 children suffering from severe wasting. Half of the total RUTF consignment was paid for by the Government of Mauritania, and the remainder was covered by the NMI. These nutrition supplies were part of a consignment of 155,000 cartons ordered in October 2021.

“The NMI increases collaboration between UNICEF and Ministries of Health and Finance on budgeting and financing health supplies and also extends partnerships with private sector supply chain services,” said UNICEF Chief of Nutrition in Mauritania, Christian Tendeng.

“The NMI increases opportunities for national governments to access innovative financing for nutrition commodities to achieve an optimized, efficient, and timely humanitarian response and provides comparative advantages in product sourcing”, he added.



# NUTRIDASH

## Improving coverage and equity of nutrition supplies and treatment

NutriDash is UNICEF's global nutrition monitoring system for maternal and child nutrition programming. With its interactive data and reporting platform, NutriDash provides an avenue for both UNICEF and partners at all levels to collect data that allows them to collaborate in identifying gaps, opportunities and resources for strengthening evidence-based national nutrition responses.

The platform not only collects and stores data from more than 120 countries, but it also analyses and visualizes these data to inform decision-making.

### Data means the ability to forecast

The data stored in NutriDash relates to programme coverage and performance, governance knowledge and nutrition supply needs. Data are mainly used to monitor progress against defined targets, allowing decision makers – including donors – to prioritize actions.

NutriDash is a key tool to strengthen routine monitoring and reporting at country level. Importantly, the data that NutriDash collects on nutrition supply requirements support the global planning and procurement of nutrition supplies. These supply data have many uses, including initiating dialogue between governments, donors and development partners, such as UNICEF, to commit to and invest in key nutrition interventions.

Through NutriDash, UNICEF collects data for vitamin A capsules from about 58 countries each year. Owing to this information, about 500 million vitamin A capsules are sent to eligible countries each year from the vitamin A in-kind donation programme (see Box). Through this process, UNICEF works with countries to project future needs and strengthen national demand planning capacity.

### What is the added value of NutriDash?

By collecting all maternal and child nutrition data in one place, governments and partners, including UNICEF, are given a snapshot of the state of nutrition globally, which helps:

- **Inform decision making** by monitoring progress against targets and identifying bottlenecks
- **Strengthen reporting capacity** by tracking country progress towards global and national

nutrition targets and making global-, regional- and country-level data accessible to all stakeholders

- **Identify key programme and supply trends** by generating reports on key indicators
- **Strengthen nutrition information response** by supporting countries to routinely track nutrition data
- **Build political will** using evidence-based advocacy to spark dialogue with governments

### Improved demand planning data for life-saving vitamin A supplementation

Every year, vitamin A capsules are provided to eligible countries through the in-kind donation programme, implemented in partnership between UNICEF and Nutrition International, with support from the Government of Canada.

Using the data collected by countries, NutriDash allows donors and development partners to better understand programme coverage gaps and therefore estimate countries' additional vitamin A requirements and funding needs.

For example, Nigeria has received over 1 billion vitamin A capsules since 2005. Over the last five years, the country's needs for vitamin A have increased with the growth in its population. Despite this population increase, however, the quantity of new supplies needed by Nigeria declined because NutriDash, as a central repository platform uniting data across districts, regions and states, had allowed decision makers to holistically analyse programme needs, and plan accordingly. Since 2017, more than 110 million capsules remained unused in Nigeria during the year they were provided, and were therefore saved to be used the following year to fulfil needs. The enhanced monitoring of programme data provided by NutriDash has translated into around \$2.2 million in savings and improved donor value for money.







# PEOPLE THAT DELIVER

## Standing up for the health supply chain workforce

People that Deliver (PtD) is UNICEF's supply chain workforce arm: a 27-member strong coalition of governments, donors, development partners, academic institutions, professional associations and private sector companies that works to ensure that the supply chain workforce is competent, professionally skilled and adequately staffed.

Through PtD, UNICEF has developed dozens of tools over the last decade, all of which are freely accessible to support countries' supply chain workforce in becoming empowered, skilled and properly equipped to improve the delivery of health commodities.

The supply chain workforce is integral to functioning health supply chains: through which health commodities – such as vaccines, essential medicines and nutrition products – reach children. Given that strong and efficient supply chains give children access to these products, it is critical to support the human resources running them.

### **Building human resources for supply chain management: Theory of Change**

In LMICs, often the supply chain workforce lacks the technical and managerial competencies to perform optimally or is not empowered to positively influence supply decisions and policies. Further, insufficient numbers of competent staff can cause breakdowns in supply chain systems and lead to poor system performance. The PtD's Theory of Change (ToC) is an tool to help enable health supply chain organizations reach their human resources potential.

PtD's ToC analyses the conditions needed to ensure that workers at every level in a supply chain perform optimally. It centres on four pathways: staffing, skills, working conditions and motivation. Addressing these is necessary to make commodities available in the most cost-effective way to improve health outcomes.

### **People that Deliver in action in Ethiopia**

People that Deliver implemented the ToC in Ethiopia's pharmaceutical supply chain in 2019 to identify human resources and competency gaps. This led to the development of a competency framework and a training plan by the Ethiopian Pharmaceuticals Supply Agency (EPSA). In the months that followed, measurable supply chain efficiencies were gained: EPSA's procurement lead time decreased by 25 per cent, contract signing lead time decreased by 35 per cent, and tender lead time decreased by 5.5 per cent between 2018 and 2020.



Through PtD, EPSA developed a work culture transformation strategy using the diagnostic results. For example, a code of conduct was developed, a gender audit was conducted, and as a result, EPSA produced a manual on gender mainstreaming and women's empowerment manual, as well as a five-year strategic plan for EPSA's women, youth, children and people with disabilities.

**“ It was in Ethiopia’s pharmaceutical supply chain that we implemented the ToC. The tool was extremely useful. We were able to identify gaps in human resources management and competency, and conducted training needs analyses in order to provide targeted solutions in each of the pathways, particularly the skills pathway.**

**This comprehensive approach led to great results, starting with leadership awareness of the importance of human resources for supply chain management and the need for them to be skilled, adequate in number and provided with an enabling environment.**

*Pamela Steele, founder & CEO, Pamela Steele and Associates, implementer of PtD’s Theory of Change in Ethiopia*

### **The professionalisation framework**

Developed in 2020, PtD’s professionalisation framework is a set of global standards that align career path, education and professional growth in health supply chain management. It is a tool that can help to transform supply chain management into a recognized profession of the highest integrity.

The professionalisation framework centres on the library of competencies and designations – a detailed framework that defines the knowledge, skills and attributes needed for people working in health supply chain management to fulfil their roles.

PtD is the central coordinating hub of a group of partners that work collaboratively to promote health supply chain professionalization. The hub is a platform for partners to network, exchange information and engage practitioners working on or interested in supply chain professionalisation.

### **Health supply chain professionalism in action in Rwanda**

The Rwanda Medical Supply Limited, owned by the Government of Rwanda and the University of Rwanda, alongside PtD and USAID’s Global Health Supply Chain Program, Procurement and Supply Management (GHSC-PSM) project, began implementing the supply chain management professionalization framework in Rwanda in 2021.

The project is currently at phase three of five: the development of a mapping tool. This tool will be used to highlight competency gaps in the Rwandan workforce. The results of this exercise will influence educational course offerings and help map out a career path for the public sector health supply chain management workforce in the country.





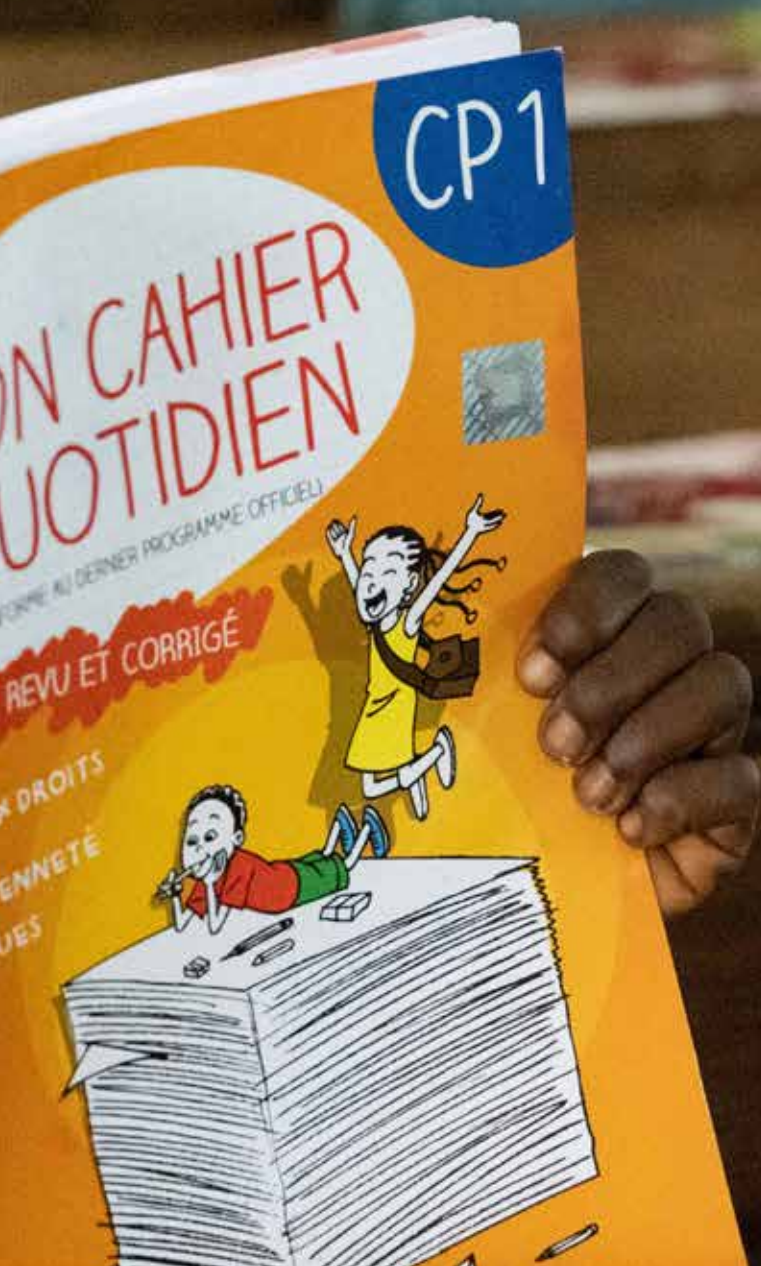


05

## GLOBAL SUPPLY AND PROGRAMME PARTNERSHIPS

Unlocking access  
for children







UNICEF uses its global reach, supply hubs, expertise and local knowledge to deliver supplies to children in more than 160 countries and territories, including in situations of conflict and disaster. This is achieved by leveraging a wide range of partnerships, which enable UNICEF to save lives by providing those in need with the right supplies, at the right time and in the right place. Partnerships also allow UNICEF to strengthen countries' supply chain management, preparedness and response capacity, with a view to shaping sustainable transitions from emergency response to programme delivery for children.

## GLOBAL HEALTH PARTNERSHIPS

UNICEF is the leading agency for comprehensive primary health care procurement and delivery for children, their families and communities. UNICEF operates global end-to-end supply chains (see page 42), from the point of procurement – where we secure affordable prices and achieve the best value for money – to the last mile, where we reach local communities. Operating and supporting end-to-end supply chains gives us an understanding of the weakest links – and where technical and financial investments are needed to save lives.

UNICEF strengthens primary health care systems by taking a holistic approach, addressing both upstream (product selection, forecasting, procurement, market-shaping, international transport and customs clearance) and downstream (transport, warehousing and end-user monitoring) supply chain management functions to improve quality and equitable access to health care services.

### Strengthening primary health care through supply chain management

In 2021 through its global health partnerships, UNICEF procured a record \$6.3 billion worth of supplies, including 2.7 billion doses of COVID-19 vaccines and vaccines against diarrhea, measles, pneumonia, polio, tetanus and tuberculosis. Other key primary health care commodities included oral rehydration solution, zinc, antibiotics, antiretroviral drugs, long-lasting insecticidal nets, RUTF, point-of-care diagnostics, sanitation and hygiene products, and cold chain equipment. This was complemented by another \$317 million invested in transportation, including \$226 million on international freight service and \$91 million on in-country logistics and warehousing services.

As the world's biggest buyer and supplier of children's vaccines, UNICEF has a pivotal role in implementing immunization programmes in Gavi-supported countries and beyond. In 2021, UNICEF procured 2.299 billion doses of paediatric vaccines for 109 countries to reach 46 per cent of the world's children under 5 years of age. Of these vaccines, 48.5 per cent supported routine immunization programmes, while the remainder supported supplementary immunization activities, outbreak responses and humanitarian situations.

Complementing its procurement function, UNICEF serves as one of 28 members of the Gavi Board, providing technical leadership to shape Gavi's [strategies, priorities and investments](#), resulting in policies centred on meeting the goals of the immunization agenda to reach 'zero-dose children'.

The Gavi Secretariat, UNICEF and WHO lead a multi-partner technical committee tasked with implementing strategies, developing global goods to address identified obstacles and supporting governments in their systems-strengthening journey by leveraging Gavi's resources. With financial support from Gavi, UNICEF provides technical assistance to all 54 Gavi-eligible countries, working with manufacturers to ensure a reliable supply of quality and affordable vaccines, and with governments to identify and address potential barriers to equitable access for all. This is done in collaboration with Gavi's Immunization Supply Chain Steering Committee members, co-chaired by UNICEF and the Gavi Secretariat and comprising the Bill & Melinda Gates Foundation, VillageReach, Path, JSI and the Clinton Health Access Initiative.

**The Immunization Supply Chain Steering Committee Alliance**, co-chaired by UNICEF and WHO, was established in 2015 as a cross-partner mechanism to provide a coordinated response to supply chain gaps in countries. This integrated approach, which supports the alignment of partners' resources, investments and expertise, has yielded positive results as evidenced by the increase of EVM overall composite scores for 44 countries between 2015 and 2020.

**UNICEF, in partnership with Gavi, the Global Fund, USAID and other partners** works to improve the efficiency, performance and maturity of immunization supply chains in countries. Areas of technical cooperation and assistance include the strengthening of supply chain management decision making and product visibility as part of wider national digital health transformation efforts. This work is undertaken in partnership with the **Digital Health Centre of Excellence**, which serves as a multi-agency consortium co-led by UNICEF and WHO with membership from the World Bank, Gavi, the Global Fund and the Bill & Melinda Gates Foundation. Established in 2021, the Centre of Excellence works to improve donor coordination, ensure alignment with digital investment principles, guide



investments in digital public goods and global goods, and provide targeted technical assistance and quality assurance to countries.

The Centre of Excellence works within existing UNICEF and WHO regional and country structures, bolstering their capacity to identify, develop and scale digital solutions in support of national health priorities. Its goal is to make health services, such as vaccines, maternal and child health, and nutrition, more equitable and attainable through a data-driven approach and by harnessing the power of sustainable and scalable digital health solutions.

## Partnerships with the African Union and Africa Centres for Disease Control and Prevention

**UNICEF's partnership with the African Union** is based on the development and accelerated implementation of child-responsive policies and programmes to achieve the goals of the Agenda 2063: The Africa We Want and Africa's Agenda for Children 2040: Fostering an Africa Fit for Children. UNICEF is working with the African Union and the Africa Centre for Disease Control and Prevention (Africa CDC) to advance local procurement, market intelligence to inform local manufacturing and market-shaping, traceability and verification of health products, and supply chain systems strengthening.

UNICEF is a significant procurement and supply chain partner in the Africa CDC's COVID-19 response. UNICEF supported the procurement and delivery of close to 1 billion doses of COVID-19 vaccines to Member States through the COVAX Facility and directly, in addition to providing \$800 million worth of vaccines, ancillary supplies, cold chain equipment and personal protective equipment.

UNICEF and Africa CDC have also recently expanded their cooperation through a partnership framework (2022–2024), which centres on public health emergency preparedness and response and strengthening immunization, procurement and supply chain systems. The Saving Lives and Livelihood programme, the African Medical Supplies Platform and the Partnership for African Vaccine Manufacturing are just a few of the African Union and Africa CDC's ongoing initiatives.

UNICEF is also an active member of the **Child Health Task Force** – a network of global and country-based organizations and individuals working to design and implement child health programmes that take a life-course approach. Created in 2017 and funded by USAID and the Bill & Melinda Gates Foundation, the Task Force aims to generate and share evidence on how to implement equitable, comprehensive and integrated programmes that translate into better outcomes for

children. The Task Force facilitates learning and sharing, provides countries and child health stakeholders with access to a pool of technical experts, tested implementation tools and approaches, and engages members to translate knowledge into better practices. To date, the Task Force comprises over 2,000 individuals representing donors, governments and implementing partners at global and country levels. Members of the Task Force work together in 10 subgroups addressing various elements of child health programming, such as implementation science, monitoring and evaluation, commodities and supplies, and fostering multisectoral linkages with nutrition, emergencies and humanitarian response. Through the subgroups, members work towards achieving their objectives by advocating, coordinating and providing technical support to countries to implement programmes.

UNICEF collaborates with industry and partners to drive the development of innovative products that meet specific needs and bring products to market. Leveraging the assets of the private sector, UNICEF is spearheading and scaling innovations to better serve children, young people and their families. UNICEF's annual **Vaccine Industry Consultation** brings together vaccine manufacturers, partners and donors striving to realize the right of every woman and every child to immunization and access to life-saving vaccines. These consultations provide a platform for sharing lessons learned and the sector's latest updates with a view to coordinating actions and leveraging cross-agency synergies and investments. UNICEF also conducts the **Medicines and Nutrition Industry Consultation** with the same objectives aimed at different manufacturers.

The **Vaccine Procurement Practitioners Exchange Forum** brings together government procurement practitioners and development partners to exchange best practices on countries' timely access to affordable vaccines, spanning the COVID-19 response, procurement forecasting and planning, and sustainable financing. The forum is now supported by an online network where procurement practitioners can interact and strengthen south-to-south cooperation.

During times of crisis the capacities of systems are strained and vulnerabilities are exposed. Organizations involved in ensuring access to essential supplies face bottlenecks related to infrastructure – ports and airports may be congested and roads may be blocked. Investing in key infrastructure, systems and processes enables trade and creates more resilience in supply systems, benefitting all stakeholders. UNICEF is working with the **Global Alliance for Trade Facilitation**, a public-private partnership for trade-led growth, to strengthen country-level systems and to ensure more streamlined processes through the simplification, modernization and digitalization

of importation and clearance procedures. UNICEF is also working with the Port of Antwerp and the Port of Cotonou to optimize corridors in West Africa to enhance access to essential supplies.

To ensure quality assurance of key products, and as one of the leading procurers of long-lasting insecticidal nets for children and families, UNICEF collaborates with the WHO **Vector Control Prequalification Programme for Long-Lasting Insecticidal Nets and Indoor Residual Spraying**, supporting manufacturer site inspections.

Jointly established by WHO and UNICEF, TechNet-21 is a global network of immunization professionals committed to strengthening immunization services by building relationships, sharing knowledge, coordinating activities and aligning priorities and goals. TechNet-21 members are immunization professionals working to improve immunization services in every country and at all levels – from global policy formulation and national programme management to service delivery at subnational levels. TechNet-21 is managed with the support of the Bill & Melinda Gates Foundation and in coordination with the **Gavi Alliance's Immunization Supply Chain Steering Committee**.

The **Interagency Supply Chain Group** plays an instrumental role in encouraging countries and organizations to adopt global standards, such as GS1, and provides technical assistance to implement product traceability systems. The Interagency Supply Chain Group, which comprises 16 global agencies, is committed to improving coordination to identify areas of convergence, optimize synergies across programmes and identify a critical path for aligning supply chain strengthening efforts.

Launched in 2017 by WHO, UNICEF, Médecins Sans Frontières and Save the Children, the **Humanitarian Mechanism** seeks to facilitate the timely access to affordable vaccines for a wide array of governments and organizations.

## Responding to the COVID-19 pandemic

UNICEF is one of 10 leading health and development agencies that form the Access to **COVID-19 Tools Accelerator (ACT-A)**, a global collaboration that aims to accelerate the development, production and equitable access to COVID-19 tests, treatments and vaccines. As a key cross-cutting partner in all of the four ACT-A pillars – vaccines (COVAX), therapeutics, diagnostics and health systems and response connector – UNICEF plays an end-to-end role in procuring, shipping and preparing countries for the rollout of critical supplies including vaccines, treatments, tests, injection devices, cold chain equipment, and personal protective equipment for health workers.





COVID-19 was the worst global health crisis since the 1918–1919 influenza pandemic and the magnitude of the response was unprecedented. As a key partner of **COVAX**, UNICEF applied innovative approaches to ensure that all countries had access to tools to curb the COVID-19 pandemic. In 2021 and 2022, through the COVAX Facility, a global risk-sharing mechanism for pooled procurement and equitable distribution of COVID-19 vaccines, UNICEF managed the delivery of more than 1.8 billion vaccine doses to more than 100 countries.

UNICEF managed 90 per cent of all COVAX deliveries (1.557 million doses to 146 countries). UNICEF and the Pan American Health Organization worked together to ensure quality-assured vaccines were shipped to countries as soon as possible to protect high-risk and vulnerable groups and front-line health workers. As soon as vaccines touched down at airports, both agencies supported governments in rolling out their vaccination campaigns, including in difficult-to-reach areas such as mountain villages. As part of this support in 2021 UNICEF shipped 52,000 vaccine refrigerators and 800 ultra-cold chain freezers – the largest and fastest expansion of the cold chain globally.<sup>92</sup>

UNICEF's supply contribution to the global COVID-19 response was carried out in partnership with the Expanded Programme on Immunization, ministries of health and in-country coordination groups like the COVID-19 response committees and National Logistics Working Groups (NLWGs).<sup>93</sup>

Since the start of COVID-19 pandemic, in-country logistics coordination groups have played a crucial role in mitigating the impact of the pandemic and ensuring minimal disruption to routine immunization programmes. Such coordination groups also oversaw the upgrade of in-country cold chain capacity.

The magnitude of the pandemic required innovative and bold collective action from multinational organizations, governments and industries for the inclusive and efficient distribution of safe vaccines. With the lives and the livelihoods of millions across the globe depending on multiple stakeholders harnessing the power of collective action – whether in the field of health delivery, goods delivery or humanitarian service delivery, the logistics sector and UNICEF played a central role in the distribution of vaccines and other immunization devices.

Safe, timely and efficient transportation of COVID-19 supplies was pivotal to providing access to essential services for children and families. Recognizing the size of the task, UNICEF partnered with the logistics industry through several initiatives. The **COVAX Charter**, co-signed by the World Economic Forum, committed 20 air and sea carriers, port authorities and freight forwarders to supporting UNICEF's vaccine delivery capacity. **The Humanitarian Airfreight Initiative** united 16 major airlines to secure the transport of COVID-19 vaccines, essential medicines, medical devices and other critical supplies worldwide. In addition, DP World supported UNICEF with additional storage and operational capacity in Dubai, which proved critical to pre-position and rapidly distribute COVID-19 supplies across more

<sup>92</sup> United Nations Children's Fund, 'Supply Annual Report 2021', UNICEF, Copenhagen, 2021, <[www.unicef.org/supply/media/12776/file/Supply\\_Annual\\_Report\\_2021.pdf](http://www.unicef.org/supply/media/12776/file/Supply_Annual_Report_2021.pdf)>.

<sup>93</sup> Ibid.

than 100 countries. These partnerships helped to increase instrumental freight, warehousing, transport and human resources capacity to scale-up the international community's COVID-19 response.

Since the onset of the pandemic, UNICEF has established new agreements with other global logistics service providers and supply chain management companies to proactively support humanitarian response efforts, including the Horn of Africa and Sahel nutrition crisis, the Ukraine conflict and the Pakistan floods (2022). Partners include the UPS Foundation, Flexport, TUI, Kuehne+Nagel, Virgin, Scan Global and CMA-CGM.

This collaboration with industry has continued beyond the pandemic and has been especially important in the face of continued disruption of global supply chains, which can limit the availability of life-saving supplies.

The prioritization of humanitarian supplies by industry is critical to ensure access to essential supplies in times of disruption and constrained capacity. Establishing principles and a functioning system now will enable the resilience of humanitarian supply chains to withstand future shocks and disruptions and protect vulnerable populations.

At the onset of the COVID-19 pandemic, UNICEF leveraged the Vaccine Independence Initiative (VII) to give countries increased access to auto-disable (AD) syringes. The VII was crucial to stimulating production of syringes at a time when funding was limited and needs were skyrocketing. These efforts enabled UNICEF to increase its procurement capacity of AD syringes fivefold in a matter of weeks and thereby vaccinate populations.

UNICEF developed and launched the [COVID-19 Market Dashboard](#), in November 2020, which serves as an interactive, publicly accessible tool for partners, manufacturers and countries with the latest available information on the COVID-19 vaccine and therapeutics markets. From a global vaccine market perspective, the dashboard provides an overview of all COVID-19 vaccine development and progress towards vaccine approvals and includes information on global vaccine production capacity, manufacturing agreements and the vaccines secured and optioned through bilateral and multilateral supply agreements. The dashboard also includes vaccine prices and UNICEF deliveries of immunization devices since 2021. Along with the dashboard, in January 2021, UNICEF launched the [COVID-19 Market Newsletter](#), which informed subscribers about critical market updates and provided key insights on different topics such as manufacturing of vaccines in Africa, children and COVID-19, the COVID-19 syringes market.

As distribution of the COVID-19 vaccine ramped up worldwide, so did the production and distribution of falsified and sub-standard vaccines and related COVID-19 supplies. Recognizing these challenges, UNICEF and partners – including WHO, the World Bank, the Global Fund, Gavi, USAID and the Bill & Melinda Gates Foundation – joined forces and expertise to set up a [Global Traceability and Verification System \(TRVST\)](#) with a view to accelerating LMIC efforts to build health product verification and traceability capabilities. The first GS1-barcode scans to verify the authenticity of vaccines were conducted in Africa in July 2022 by the regulatory agencies in Nigeria and Rwanda. COVID-19 vaccines were the first products scanned using the TRVST thanks to the collaboration of Johnson & Johnson, which provided the first batches of data for the TRVST. The initiative is expected to be rolled out in other LMICs and expand to other health commodities, including pharmaceuticals, and HIV, tuberculosis and malaria products. Read more about the TRVST in the Global goods section.

Read more about [UNICEF's historic push to provide ultra-cold chain freezers around the world during the COVID-19 pandemic.](#)



## Humanitarian Transport and Logistics Alliance

Building on the successful Humanitarian Logistics & Transport Consultation and Expert Sharing Forum organized by UNICEF in March 2022, UNICEF led the establishment of a new Humanitarian Transport and Logistics Alliance to leverage the assets of the transport and logistics industry to prepare for, and respond to, ongoing and future humanitarian responses. The Alliance takes the form of a sustainable public-private partnership mechanism connecting the wider humanitarian community and industry to support humanitarian logistics operations and the transportation of essential supplies to countries affected by crises or at risk of an emergency. The mechanism brings together a vast number of airlines, shipping companies and UN partners, including FAO, UNFCCC, UNOPS, UNFPA, UNHCR, UNDP, UNRWA and WHO. Through this initiative, participating industry partners have committed to providing sustainable, reliable, long-term solutions to transport essential humanitarian supplies as part of UN and other humanitarian partners' response operations. These services include increased airfreight capacity, preferential pricing and the certification of cold storage, and free demurrage.

for all children and women. UNICEF convenes and supports strategic partnerships with a range of partners – including to strengthen supply chains for the prevention and treatment of malnutrition in children and women.

UNICEF is driving a concerted effort with donors and governments to leverage financial resources to address child wasting. Working with the United Kingdom Foreign Commonwealth and Development Office (FCDO), the Bill & Melinda Gates Foundation and the Children's Investment Fund Foundation, UNICEF has launched a catalytic Nutrition Match Instrument that incentivizes the investment of domestic resources to scale up wasting prevention and treatment services, including the supply of RUTF to treat severe wasting. In addition, UNICEF also lends its technical expertise to strengthen the capacity of countries to increase their fiscal space and improve the use of public finances to deliver more equitable and sustainable nutrition services for greater, more equitable results for children.

UNICEF engages strategically with the private sector to leverage business technology and innovation (for example, strengthening supply chains to support reliable access to low-cost RUTF for children with wasting). UNICEF also engages with the private sector as a provider of appropriate nutritious foods (for example, industry support for large-scale food fortification).

# GLOBAL NUTRITION PARTNERSHIPS

UNICEF's latest data indicate that one in three children under 5 is not growing well because of malnutrition. Globally, 149 million children under 5 experience stunted growth and development due to malnutrition in early childhood and about 45 million suffer from wasting, the most life-threatening form of malnutrition, which increases children's risk of death up to twelvefold.<sup>94</sup> UNICEF's response is guided by the UNICEF Nutrition Strategy 2020–2030, which provides the framework for accelerating actions to deliver nutritious diets, essential nutrition services and positive nutrition practices that support good nutrition

## Improving the production and supply of RUTF to treat children with wasting

In 2021, 5.4 million children aged 6–59 months received treatment for life-threatening wasting through UNICEF-supported programmes. In parallel, UNICEF deployed a set of technical cooperation programmes to strengthen the performance, accountability and sustainability of national systems. Working with manufacturers, UNICEF is promoting the regionalization and local sourcing of RUTF to bring costs down, reduce transport lead time, pre-position supplies in strategic locations, inject liquidities into local markets and support the social and economic development of host-countries. Around two-thirds of the RUTF purchased in 2021 was sourced locally, the fruit of partnerships with local manufacturers.

94 United Nations Children's Fund (UNICEF), World Health Organization, International Bank for Reconstruction and Development/The World Bank. *Levels and trends in child malnutrition: key findings of the 2021 edition of the joint child malnutrition estimates*. New York: United Nations Children's Fund; 2021



With support from the Government of Canada, UNICEF and Nutrition International work in partnership to provide vitamin A capsules to eligible countries and build in-country capacity for supply management through the annual in-kind donation programme. Every year, 500 million capsules are provided to countries free of charge, contributing to more than 200 million children being reached with two doses of life-saving vitamin A supplementation.

UNICEF partners with research institutions to create and test innovative solutions for maternal and child malnutrition. For example, research conducted by UNICEF in partnership with research institutions in Africa and South Asia established that multiple micronutrient supplementation during pregnancy is more effective than iron and folic acid supplementation in preventing low birthweight. Since, then, UNICEF has collaborated with Sight and Life, a nutrition think tank, to improve the packaging of multiple micronutrient supplements and establish the feasibility of local production.

Through its various partnerships, UNICEF seeks opportunities and deploys technical cooperation to support the physical and digital integration of nutrition and health supply chains, with a view to increasing operational management efficiencies.

Technical cooperation on nutrition supply chain-strengthening is a fundamental pillar of UNICEF's nutrition programme, paving the way for increased government ownership and accountability. UNICEF supports governments to design evidence-informed policies, programmes and strategies. We achieve this by deploying a range of tested tools and methodologies, covering all programmatic and supply chain management aspects. The [Supply Chain Maturity Model](#) enables the measurement of the performance of national health and nutrition supply chains and identification of priority investment areas (see page 62). The results are complemented by UNICEF's Child Service Outcome evaluation tool, formerly known as end-user monitoring, which assesses whether nutrition services and products are reaching the last mile and having the intended impact on children's recovery. With the support of USAID, FCDO, ECHO and other partners, the application of these tools has supported the supply chain transformation efforts of 35 countries across health and nutrition programmes. UNICEF's NutriDash platform collects data on the performance of nutrition programmes globally to inform programme planning and monitor progress in improving maternal and child nutrition.

UNICEF partners with civil society organizations to increase the coverage, quality and equity of nutrition services, particularly in hard-to-reach areas and in response to humanitarian crises. Such partnerships can

also help strengthen end-user monitoring of nutrition supplies, such as RUTF and vitamin A supplements.

Owing in part to global partnerships and cooperation efforts, important progress has been made to improve maternal and child nutrition over the past two decades: the proportion of children under 5 suffering from undernutrition has fallen by one third since 2000, and the number of children who are undernourished has declined by 55 million. Yet, faster progress is needed to reach the 2030 SDG target to reduce stunting and address other forms of malnutrition, including wasting and micronutrient deficiencies.

## GLOBAL WASH PARTNERSHIPS

As a key player in the WASH sector, UNICEF participates in many global, regional and national partnerships. UNICEF hosts [Sanitation and Water for All](#), a global partnership of governments, donors, civil society organizations and other development stakeholders that coordinates on improved accountability and resource allocation.

UNICEF is also an active participant in [UN Water](#), which coordinates the work of the United Nations in the areas of water and sanitation. We are a founding member of [WASH4WORK](#), and play a leading role in the WASH Working Group and the [Grand Menstrual Health and Hygiene Management Collective](#).

UNICEF offers face-to-face training for governments as well as online courses for partners and staff in strengthening WASH systems. Our work in countries helps build local government capacities for emergency planning, the collection and use of child services data, and coordination with the private sector and civil society.

## GLOBAL EDUCATION PARTNERSHIPS

As a member of the [Global Book Alliance](#), a partnership of donor agencies, multilateral institutions, and civil society organizations, UNICEF and partners are committed to bringing books to every child in the world by 2030. The Alliance was formed in 2018 to bring together global education partners to end illiteracy through a coordinated effort to shape the book market to better address the growing book gap challenge.



Investing effectively in learners' health, nutrition and well-being through programmes that link the education, health and food systems, is at the heart of the 2030 agenda. It contributes to achieving at least 10 of the SDGs related to poverty (SDG1), hunger (SDG2), health (SDG3), education (SDG4), gender equality (SDG5), clean water and sanitation (SDG 6), economic growth (SDG8), reduced inequalities (SDG10), peace, justice and strong institutions (SDG16), and strengthened partnerships (SDG17). Stepping-up effective school health and nutrition is a renewed and collective commitment to advance effective integrated school health and nutrition programmes, so that children and young people are ready to learn and thrive and can contribute meaningfully to the future of their communities and countries.

**The Global Education Coalition** (includes UNICEF, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Food and Agriculture Organization of the United Nations (FAO), the Global Partnership for Education, the World Bank, the World Food Programme (WFP) and the World Health Organization (WHO) and supports countries in their efforts to advance institutionalized and adequately financed multi-component school health and nutrition policies and programmes, and ensure that children have access to the integrated programmes they need.

**The Global Partnerships for Education (GPE)** is the largest global fund solely dedicated to transforming education in lower-income countries, and a unique, multi-stakeholder partnership. It brings together lower-income countries, donors, international organizations, civil society, including youth and teacher organizations, the private sector and private foundations to transform education systems so that all girls and boys, especially those who are marginalized by poverty, displacement or disability, can get a quality education.

The COVID-19 outbreak has created a climate that poses a colossal threat, now and in the future, to children and their families —a grim reality especially compounded among children already affected by poverty, disability, or social exclusion.

The global school shutdowns and health crisis have exacerbated already challenging realities for lower-income countries: with the limited or non-existent infrastructure to connect to distance learning and essential services, their current education and economic stability as well as future opportunities and welfare are significantly set back. This current situation proves how critical it is to now accelerate connectivity, online learning and other initiatives for children and their communities, and drive economic stimulus.

**Giga**, an initiative launched by UNICEF and International Telecommunication Union (ITU) in September 2019 to connect every school to the Internet and every young person to information, opportunity and choice, is supporting the response to COVID-19, as well as looking at how connectivity can create stronger infrastructures of hope and opportunity in the "time after COVID."

Working with 14 corporate and non-profit partners, Giga maps schools' Internet access in real time, creates models for innovative financing, and supports governments contracting for connectivity. It is part of ITU's **Partner2Connect** Coalition, UNICEF's **Reimagine Education** initiative, and the UN Secretary-General's **Common Agenda** and **Roadmap for Digital Cooperation**.



06

**CASE STUDIES**

Bridging the access gap







# THE LIFE-SAVING POWER OF DATA IN NIGERIA

## Volunteer health workers and data prove the key to eradicating polio

Since being trained by UNICEF and Nigerian Government to become volunteer community mobilizer (VCM), Zahariyya Hamza, a 31-year-old mother of six, has a new-found purpose in life.

“I hold my head high and feel so much pride when young mothers call out to me as I pass by and ask me to visit their homes,” she says. For more than eight years, she has been vaccinating children and counselling families on childcare practices.

Zahariyya is one of the more than 20,000 UNICEF-trained VCMs – of whom over 90 per cent are women – working within their own neighbourhoods in pockets of northern Nigeria vulnerable to the poliovirus outbreaks.

She and other trained VCMs ensure that children receive vaccines against polio and other preventable childhood diseases. And VCMs in northern Nigeria have the greatest tool at their disposal: data. Until recently, manual data collection and analysis had resulted in thousands of children missing vaccination campaigns. But since 2016, VCM network supervisors have been using the Open Data Kit to collect detailed information on newborns, mothers and children under the age of 5.

The real-time data provided by the software alerts the VCMs to every child who still requires vaccinations. Crucially, the Open Data Kit enables the VCM network to forecast future vaccination needs, ensuring that vaccines are available when they are needed.

The network has been instrumental in polio eradication and strengthening community health systems by ensuring equitable and timely distribution of vaccines. Real-time data reporting of operational and logistical challenges and close case-by-case follow-up with vaccine-hesitant families and children who missed vaccination helped ensure that no-one is left behind.

The network is deployed in some of the hardest to reach, conflict-affected, urban poor and remote rural areas and has played a significant role in reaching zero-dose, under-served and displaced children and families.

### Reassessing the vaccination strategy

Wherever Zahariyya goes she is welcomed with open arms. However, this hasn't always been the case. In the past, members of her own community in Katsina State's Keita local government area used to chase away health workers who would come to their homes to vaccinate their children against polio.

The negative perceptions of volunteers like Zahariyya were just part of the problem; the eradication of wild polio faced a number of other key obstacles, including false perceptions of the potential side effects of vaccination and the risks posed by polio. The VCMs, though, gradually earned the trust of caregivers and were eventually able to address their concerns.





Aware of which communities to target and equipped with up-to-date digital records, the VCMs have been able to capitalize on existing community events and cultural activities to develop relationships with parents and children and educate them on the importance of vaccination.

### A polio-free future

Owing to this approach, over 4 million newborns have received their first dose of the oral polio vaccine, in addition to more than the 12 million doses given to children under 5 years of age present at the ceremonies over the past four years.

Supported by fit-for-purpose data systems, the mission of the VCMs is to keep Nigeria polio-free, although their role goes far beyond simply vaccinating children against polio. “I try to address their fears or misconceptions, encourage [pregnant women] to go for antenatal care and convince them to make sure their children follow the full immunization schedule.”

“It is not easy at first, but over time they see the benefits of our maternal and neonatal and child health services and become change agents themselves, encouraging others,” says Zahariyya who gradually developed the trust of parents in the area .

On top of the polio success, over the last five years Nigeria has achieved a 13 per cent increase in its vaccination coverage of a key indicative vaccine – DTP3 – which has shot up from 44 per cent in 2015 to 57 per cent in 2020.

The success of this project has led to the development of an even more ambitious programme: under the community health influencers, promoters and services (CHIPS) programme (community health influencers, promoters and services), 100,000 health workers are planned for deployment across Nigeria in low-performing districts in the coming years.

### Open Data Kit

Open Data Kit is as an open-source software for collecting, managing and using real-time data. In Nigeria it has allowed for medical records to be digitalized and has helped to strengthen information health systems, enabling the VCM network to identify which children have not been vaccinated.

### Key stats

UNICEF trained over 20,000 VCMs

- Polio has been eradicated in the country
- 4 million newborns have received their first dose of the oral polio vaccine

**“ I hold my head high and feel so much pride when young mothers call out to me as I am passing by and ask me to come over to their homes.**

*Zahariyya Hamza, volunteer community mobilizer in Nigeria*

Find more information [here](#)





# DRONES: THE MISSING LINK IN MALAWI

## How drones are increasing the availability of health commodities

UNICEF and the Government of Malawi set up a drone corridor in Malawi in 2017, and since then, uncrewed aircraft systems – or drones – have been improving the lives of people who live in hard-to-reach areas in the country with the help of partners, including the United Kingdom’s Foreign, Commonwealth & Development Office (FCDO), the German Development Agency (GIZ) and USAID.

Drones are being used to transport medical supplies to the last mile, granting patients quicker access to the treatment they require. Before drones were introduced, it took up to 13 weeks to get results when blood samples were transported to diagnostic centres to test for HIV or tuberculosis. With drones in place, test results became available to patients within two weeks. Following the introduction of drones, however, test results were consistently returned to patients. Drones enabled faster diagnosis and as patients were able to begin treatment regimens sooner.

### Many heads are better than one

The drone corridor – an area reserved for the trialling of drones – serves as a gateway for all drone delivery projects in Malawi. Drone organizations can showcase in the corridor that they are able to operate safely before obtaining regulatory approvals to fly in an integrated airspace.

Since UNICEF worked with the government to establish the drone corridor, and invited public and private sector organizations to test their drone-related solutions, the number drone activities in the country has rocketed. There are currently more drone companies in the country than ever before, from abroad and from Malawi.

Now, in 2022, drones are an integral part of the health supply chain in remote areas of Malawi, as are the private drone companies that have thrived in the innovative climate the corridor provided.

Drones are now also used to support the transportation of HIV specimens and compliment emergency obstetrics procedures.





The availability of local personnel can also greatly improve the financial sustainability of drone delivery. Further, ensuring their permanent integration into health supply chains will require more drone specialists. This is why UNICEF established the first [African Drone and Data Academy \(ADDA\)](#) in 2020, alongside its partner Virginia Tech university: to build the capacity of youth in Malawi and the region more broadly.

Phyllis Chibisa, a recent graduate of ADDA, learned a variety of skills during her course, including emergency response, mapping, and search and rescue and surveillance. Having known little about drones previously, she now works for drone operator Wingcopter and sees them as indispensable.

“A lot of our work involves transferring health commodities from district hospitals to smaller health facilities, which are often difficult to reach. If roads are unusable, you can always send a drone and we’ve seen how useful they can be, especially in emergency situations.”

She emphasizes the value of the academy in ensuring the longevity of drone projects in the country: “After graduating from ADDA, I was offered a job with Wingcopter, and it’s been the case for many other graduates.”

“It’s easier to sustain these programmes if there are trained professionals within the country. That’s why the academy and the developing drone industry are so important.”

“And it’s not just in the health sector that drones are being used,” she says.

“They’re playing a role in agriculture, urban planning and disaster response, and in each area, these drone projects are benefiting Malawians.”

Such has been the success of the academy, the development of a new academy in Niger is currently being planned, while academies in Ethiopia and Sierra Leone are also in the pipeline.

As for the ADDA in Malawi, in 2022, it is launching a social enterprise incubator to develop and support local entrepreneurs in the drone and data sector as well as a technical and vocational education and training programme in partnership with the Government of Malawi. And from 2023, ADDA Malawi is even planning to offer a Master’s degree programme.

Drones can quickly travel and land close to health facilities to collect lab samples and pick up and deliver other health commodities.

“ Owing to the country’s lack of infrastructure and the weather-induced transportation challenges, UNICEF identified drones as key to reducing lengthy turnaround times for testing and increasing the availability of medical commodities at health facilities, including blood products, vaccines and emergency medicines.

*Fredrick Sheshe, Supply Manager, UNICEF Malawi*

## Key stats

*Following a USAID and UNICEF-funded activity between July 2019 and February 2020 in the north of Malawi:*

- There was a 65 per cent reduction in the time it took for diagnostic samples to be analyzed
- The number of these samples collected and analyzed increased by 130 per cent







# BEATING MALNUTRITION IN AFRICA

## Procurement, finance and technical expertise: The lubricant helping health supply chains to shine

UNICEF and partners reached over 5.4 million children with life-saving treatment for severe wasting in 2021, a 10 per cent increase from 2020 and are championing innovative ways to reach millions more.<sup>95</sup> Using a multi-pronged approach that includes local procurement, market-shaping, innovative financing and technical assistance, UNICEF is working with governments to build sustainable nutrition programmes.

RUTF is an important weapon in the fight against severe wasting. One sachet of RUTF provides children with 500 calories and a mix of vitamins, minerals and micronutrients that help malnourished children to quickly gain weight. It has a two-year shelf life, making it convenient to pre-position in a warehouse, and it does not need to be cooked or mixed with water: children eat it directly from the packet, making it microbiologically safer than food prepared with water. It also tastes good and is easily digestible.

### Procuring RUTF

In 2021, UNICEF procured 48,554 MT of RUTF, 67 per cent of which was sourced in countries in which UNICEF supports country programmes. Local procurement of RUTF increased from 6 per cent to 71 per cent between 2006 and 2021, with the average price of RUTF decreasing by 20 per cent.

### Supporting local RUTF production

Working with and procuring RUTF from local manufacturers, UNICEF is able to achieve a lower price, allowing the organization to buy larger quantities to feed more children. This is more important than ever, as the number of children with wasting admitted for RUTF treatment has continued to increase. Buying locally also reduces lead times; being situated closer to countries in need often means that products such as RUTF arrive at distribution centres – and therefore to children

<sup>95</sup> UNICEF, "Global Annual Results Report 2021: Every child survives and thrives", <https://www.unicef.org/reports/global-annual-results-2021-goal-area-1>

– more quickly. Procuring locally also helps to boost local employment, stimulating the local economy.

## Supporting RUTF procurement

Despite the effectiveness of RUTF in treating malnutrition, every year 10 million children suffering from severe wasting go untreated owing to a lack of resources.<sup>96</sup> Although severe wasting remains one of the top threats to children under 5 and contributes to nearly half of child deaths, the global response to the COVID-19 pandemic has diverted donor commitment away from national nutrition programmes.

The cost of treatment is increasing as a result of the global crisis; recent data shows that the price of RUTF has increased by 16% in 2022 resulting in a potential 660,000 fewer children treated globally with available resources<sup>97</sup>.

UNICEF launched the Nutrition Match Instrument (NMI) in 2020 with support from the FCDO and the Children's Investment Fund Foundation. A further commitment has also been made by the Bill & Melinda Gates Foundation.

By matching the financial value dedicated to nutrition products by countries, the NMI aims to make financing for RUTF and other critical nutrition supplies more predictable and incentivizes governments to make more robust allocations of their domestic resources towards preventing and treating malnutrition.

In 2021, four countries – Mauritania, Nigeria, Uganda and Senegal – signed up to the initiative, and between them, initiated procurement for nearly 78,000 cartons of RUTF in 2021, totalling \$3.5 million. Under the agreement, the NMI provided the same quantity of RUTF, meaning that in total, more than 155,000 cartons were delivered to these four countries, enough to treat 155,000 children.

In 2022, Kenya and Sierra Leone also subscribed to the NMI, while additional countries are at different stages in the subscription process.

<sup>96</sup> United Nations Children's Fund, 'Self-financing sustainability by governments is crucial for the prevention of malnutrition', UNICEF, 24 May 2022, <<https://www.unicef.org/supply/stories/self-financing-sustainability-governments-crucial-prevention-malnutrition>>.

<sup>97</sup> UNICEF, No Time to Waste, [www.unicef.org/media/127646/file/No%20Time%20to%20Waste.pdf](http://www.unicef.org/media/127646/file/No%20Time%20to%20Waste.pdf)





**“ The Ministry of Health sees the NMI by UNICEF as an opportunity to accelerate efforts to address wasting in children by creating a more sustainable funding mechanism for treatment.**

*Uganda's Permanent Secretary at the Ministry of Health, Diana Atwine*

### **Nutrition in Malawi and Burkina Faso**

By using its technical expertise, UNICEF is often in a position to help countries boost the performance of their health supply chains.

In 2017, a joint evaluation spearheaded by UNICEF and the Government of Malawi highlighted that critical gaps in national capacity and systems were obstructing the accessibility and delivery of quality nutrition services to affected communities. Critically, more than half of the surveyed health facilities receiving UNICEF supplies faced stock shortages.

UNICEF worked with the Government and partners to launch several initiatives to strengthen national capacity. First, RUTF was added to the national essential medicines list – a critical step in prioritizing the product and committing the Government to routinely finance and procure it. Further, nationally-owned logistics management and reporting systems were rolled out.

The national capacity-strengthening initiatives in Malawi were implemented in partnership with USAID, FCDO and the World Bank.

In Burkina Faso, UNICEF employed its [Supply Chain Maturity Model](#) to identify the supply chain related challenges behind the limited access to and uptake of RUTF in the country, which had led to high levels of wasting among children under 5.

This was further compounded by commercial exploitation and misuse of the product, which had commonly been used as an aphrodisiac. In addition, only 4 per cent of the beneficiaries interviewed reported knowing how to administer the right dosage of RUTF.

Armed with this information, which was provided by community health workers through end-user monitoring surveys, the government and partners were able to redesign the last-mile distribution of nutrition commodities. This has already led to supply chain improvements. A recent assessment found that on average, there were fewer than two stock-out days in 2022 (1.8 days), compared with the 2020 average of 11.

### **A call to action**

Despite the effectiveness of RUTF, in 2020 nearly 10 million children who needed the treatment went without.<sup>98</sup> Globally, at least 13.6 million children under the age of 5 suffer from severe wasting.<sup>99</sup>

While UNICEF procures an estimated 75 to 80 per cent of the global RUTF demand annually, the available supply only covers 25 per cent of the estimated needs of children suffering from severe wasting.<sup>100</sup> And even when RUTF is in plentiful supply, there can be problems with storage, delivery, acceptance and dosage.

Solid supply chains supported by strong financing mechanisms will play a significant role in eradicating severe wasting.

98 United Nations Children's Fund, 'UNICEF Child Alert: Severe wasting: An overlooked child survival emergency', UNICEF, May 2022, <[www.unicef.org/media/121891/file/English.pdf](http://www.unicef.org/media/121891/file/English.pdf)>.

99 United Nations Children's Fund (UNICEF), the World Health Organization, and the International Bank for Reconstruction and Development/The World Bank, 'Joint Malnutrition Estimates', 2021 edition, UNICEF, 2021.

100 United Nations Children's Fund, 'Market outlook: Ready-to-use therapeutic food', UNICEF, March 2021, <<https://www.unicef.org/supply/media/7256/file/RUTF-Supply-Update-March-2021.pdf>>.



# ONE UN FOR HEALTH SUPPLY CHAINS IN MADAGASCAR

UNICEF is driving a sustainable national supply chain transformation in Madagascar, bringing together the health authorities and the development community

A strong and resilient public health supply chain saves lives and is the cornerstone of efficient health care systems. It is also a driving force in improving equity, quality and access to essential services and products.

In Madagascar, however, not everyone has access to critical medicines and health products, with nearly one out of every three children unimmunized.<sup>101</sup>

The country's supply chain challenges, which include product stock-outs and a lack of fit-for-purpose infrastructure distribution networks and trained health care workers, have been long-standing barriers in providing the highest standard of routine interventions and reaching all under-served communities. Recurrent climate shocks, nutrition crises and other health emergencies, such as the COVID-19 pandemic, have added to the strain on health care delivery and have undermined the national response capacity to address rising requirements.

## A uniting process

Recognizing these challenges, UNICEF made use of its convening power to launch the 'UN Delivering as One for Supply Chains' initiative, which began with a comprehensive performance assessment from 30 May to 2 June 2022. The initiative looked into four areas of Madagascar's health supply chain – essential medicines, reproductive health, vaccines and nutrition – and identified investment needs. With the support of the UN Resident Coordinator Office and cooperation of other civil society and donor partners, the Ministry of Health, WHO, the United Nations Population Fund (UNFPA), and USAID co-led the initiative.

The [UNICEF Supply Chain Maturity Model](#) served as the guiding framework for this inclusive review process, laying the foundation for a shared understanding and common vision of the country's supply chain priorities. Thirteen critical operational and technical supply chain functions were qualitatively assessed as part of multi-stakeholder consultations and rated on a scale of one to five, with level one indicating minimum development and level five reflecting a sustainable and financially- and technically-independent supply chain.

**“ We are grateful to UNICEF and partners for uniting their strengths and promoting a comprehensive system strengthening approach to help us achieve the health-related Sustainable Development Goals.**

*Dr. Fanjamboloniaina Dominique Rasamoelina,  
Secretary-General at the Ministry of Health, Madagascar*

## A shared vision

The findings of the evaluation highlighted the potential for more supply chain integration and opportunities for synergies across health programmes. They highlighted the importance of streamlining resources, sharing knowledge and expertise, capitalizing on achievements and leveraging partnerships to replicate and institutionalize best supply chain management practices. They also noted that increased investments and technical cooperation are required to bring the worst-performing areas to a higher maturity level.

101 United Nations Children's Fund, 'Immunization country profile', UNICEF, <<https://www.unicef.org/supply/immunization-country-profile>>.

Find more information [here](#)





Following the consultations, all stakeholders agreed to work together towards the establishment of a national, multi-partner and evidence-driven systems-strengthening action plan, with ambitious targets and objectives. The plan will provide a harmonized framework for all health supply chain stakeholders, including UN agencies, development agencies, donors and private sector partners, to lend their technical expertise, innovation capacity and resources to bridge the gap in health products and services.

The role of the donor community is also critical in providing catalytic investments to support the implementation of nationally-owned systems-strengthening strategies.

**“ These systems-strengthening investments are critical to advance our humanitarian-development continuum efforts, as well as to better prepare for health disasters, absorbing shocks and fostering a faster return to normalcy. By pooling our assets and competencies, we can strengthen our coordination and achieve better results.**

*Issa Sanogo, UN Resident Coordinator, Madagascar*

**“ UNICEF is proud to serve as a trusted adviser to the Malagasy Government on systems-strengthening. The results of the Maturity Model are a call to action for all areas of the supply chain; a supply chain is always as strong as its weakest link.**

*Jean Francois Basse, UNICEF Representative, Madagascar*

**“ Through our Improving Market Partnership and Access to Commodities (IMPACT) project, USAID expresses its commitment to providing its financial and technical resources to advance the government’s objectives and continue transforming the lives of millions of Malagasy people throughout the country. USAID invests over \$72 million annually in integrated health activities.**

*Hajarijaona Razafindrafito, Health, Population and Nutrition Acting Deputy Director, USAID*

# ROLLING OUT VACCINES IN MOZAMBIQUE, NEPAL AND UZBEKISTAN

## Coordinating the experience and expertise of National Logistics Working Groups has saved lives during the COVID-19 pandemic

The potential of bringing together multiple stakeholders cannot be underestimated. Governments, UN agencies, NGOs and other development partners all have vast experience and expertise to share; convening them to solve a particular problem benefits all stakeholders. Through the UNICEF- and WHO-led COVAX Facility, for example, more than 1 billion doses of COVID-19 vaccines have been delivered to 144 countries and territories: a shining example of collaboration.

This achievement would not have been possible without coordination in countries. Through National Logistics Working Groups (NLWGs), UNICEF has played a pivotal role in bringing together numerous development partners, including ministries of health. Such groups been crucial in ensuring the continuation of routine immunization programmes during the COVID-19 pandemic, and in helping countries receive and distribute COVID-19 vaccines.

These coordination mechanisms were established long before the pandemic with the support of UNICEF. UNICEF often plays an advisory role in these groups, offering technical assistance and working with key partners, such as WHO, other UN agencies and donors, to build the capacity of countries to receive, store and distribute vaccines, forecast needs and analyze data, even beyond vaccines.

An example of this assistance is the 83 vaccine management specialists deployed by UNICEF to 38 high-risk countries at the beginning of 2022 to support the NLWGs in rolling out the COVID-19 vaccine. These specialists worked with their

national counterparts in the planning and implementation of campaigns, redistribution of vaccines and supportive supervision. As well as providing on-the-job training to national staff, they also they managed to ensure that no vaccines were wasted owing to expiry.

### Why are NLWGs so important?

Essentially these working groups coordinate the implementation of the supply and logistics component of national vaccine deployment plans for the COVID-19 vaccine roll out. They play a critical role in ensuring that supply chain interventions are well coordinated and inclusive. This helps to identify the resources needed to store and distribute health commodities, as well as define supply chain processes for the introduction of the COVID-19 vaccine with partners.

As COVID-19 vaccine distribution began in countries, the value of the working groups became apparent.

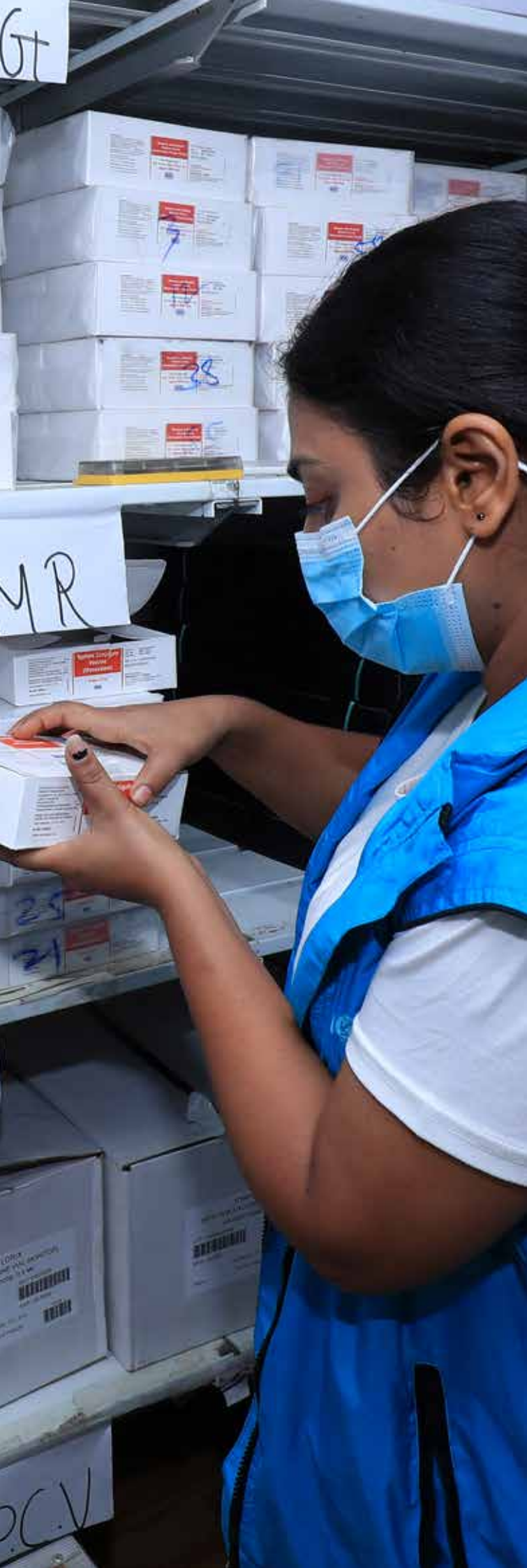
**In Nepal** the National Committee for Vaccine and Cold Chain Management is a working group supported by UNICEF that convenes partners to forecast needs and develop supply plans for the procurement of vaccines and ancillary supplies. This group, which convened partners to support the rollout of almost 45 million doses of COVID-19 vaccines thus far, helping Nepal fully vaccinate 52 per cent of its target population.

**In Uzbekistan**, a similar group managed to speed up vaccine deployment. Since the inception of the NLWG in Uzbekistan, supplies have been distributed from national

Find more information [here](#)







vaccine stores to vaccination points at the primary health care level within five days of arrival at the port of entry, whereas this had previously taken 30 days.

The support provided by the NLWG, which involved bringing together immunization and COVID-19 vaccine roll out partners to discuss the actions required to accelerate the vaccine roll out, has also helped Uzbekistan administer more than 80 per cent of the almost 48 million doses provided through COVAX and bilateral procurement.

**Mozambique** has also capitalized on the power of partnerships through the convening power of the NLWG. Facing challenges related to cold chain capacity, the group convened partners to assess supply chain capacity needs, including the funding requirements for the COVID-19 vaccine roll out.

Led by UNICEF, the NLWG was instrumental in mobilizing around \$2 million to procure and install cold chain equipment in Cabo Delgado, Niassa and Nampula provinces, and it plans to install more in Maputo, Sofala and Zambezia.

Having the capacity to store vaccines closer to communities allows for improved vaccine uptake. In 2022, the country is able to store more than 25 million doses and more-easily reach its target of 40 per cent vaccination coverage.

## NLWG members

Nepal's National Committee for Vaccine and Cold Chain Management is led by the Ministry of Health and Population and the Expanded Programme on Immunization, with support from partners including UNICEF, WHO, USAID, KfW Development Bank, the United Kingdom Foreign, Commonwealth & Development Office and FHI-360.

The NLWG in Mozambique brought together the Expanded Programme on Immunization, National Medical Stores, WHO, UNICEF, United Nations Development Programme, Clinton Health Access Initiative and VillageReach.

“ The working group in Nepal has been instrumental in not only rolling out the COVID-19 vaccinations, but also in ensuring the continuation of our routine vaccination programmes. By working alongside partners, like UNICEF, through the National Committee for Vaccine and Cold Chain Management, we’ve been able to learn from the expertise and experiences of others. In the end what this means is that the people of Nepal have greater access to the vaccines that can save their lives.

*Dr. Rudra Prasad Marasini, Director, Management Division, Nepal’s Department of Health Services*

## Key stats

- 60,475,558 doses of COVID-19 vaccines have been administered in Nepal
- 71,888,007 doses of COVID-19 vaccines have been administered in Uzbekistan
- 29,140,427 doses of COVID-19 vaccines have been administered in Mozambique

*\*As of 31 December 2022, UNICEF and WHO*



# DELIVERING ON MULTIPLE FRONTS IN HAITI

## Acting swiftly to reach more than 2 million children in need of health, nutrition and WASH assistance

In 2021, 4.1 million people needed humanitarian assistance in Haiti. More than half were children.

Following the President's assassination on 7 July 2021, gang violence in Port-au-Prince and other metropolitan centres forced an estimated 19,000 people to leave their homes. Then, on 14 August, a magnitude-7.2 earthquake struck southwest Haiti, intensifying suffering in a country already reeling from political instability, deteriorating socioeconomic conditions, rising food insecurity and malnutrition.

The earthquake killed more than 2,200 people. Some 115,000 homes, 1,250 schools and 60 per cent of the health facilities in three departments were damaged or destroyed. In total 800,000 people were affected, including 340,000 children.

### UNICEF emergency supply hubs

UNICEF Supply Division's global hub in Copenhagen and its subsidiary hubs in Accra, Brindisi, Dubai Guangzhou, and Panama, together contain sufficient emergency supplies to meet the needs of 250,000 people for three months.

When an emergency occurs, deliveries are completed within 72 hours after orders are placed by county offices.

### Immediate action

Health and nutrition supplies, WASH kits and flexible water storage tanks pre-positioned in UNICEF's Port-au-Prince warehouse enabled the first consignment to reach the hardest-hit areas within 48 hours. While waiting for donor funds to materialize, Supply Division provided \$1.7 million in bridge funding to avoid delays in dispatching life-saving supplies.

The first supplies, shipped from UNICEF's global warehouse, reached Haiti on 20 August 2021, six days after the earthquake, and included medicines, surgical

equipment, nutritional supplements and over half a million masks. Thirty tents were temporarily installed in 27 damaged health facilities while 135 medical health kits enabled 30,000 people to access primary health care for three months. On top of this, UNICEF deployed 24 mobile clinics to 18 earthquake-affected municipalities, providing child vaccines, antenatal care, nutrition and other vital services to 52,000 people.

UNICEF also repositioned emergency supplies to care for over 27,000 children under 5 suffering from wasting: nearly 22,000 were screened and 4,800 were treated. Moreover, UNICEF provided 23,198 hygiene kits (including soap, water purification tablets, menstrual hygiene products and other critical supplies) for 121,000 people, as well as an emergency supply of water to 419,000 people.

Other flights containing 30 MT of life-saving supplies landed soon after, before being delivered to the southern departments worst hit by the earthquake and tropical storm.

### Vaccinating against COVID-19

Haiti was the last country in the Americas to receive COVID-19 vaccines. Before a donation of 500,000 doses from the United States arrived on 14 July, UNICEF worked around the clock to strengthen in-country logistics and cold chain capacity. In some parts of Haiti, however, electricity is available for less than two hours a day, meaning that strengthening the country cold chain system was essential to ensure children's access to vaccines during and beyond the pandemic.

UNICEF worked alongside the Ministry of Public Health and Population to install over 960 solar-powered refrigerators and two cold rooms. And as of August 2022, almost 1.2 million doses have been shipped to Haiti through the COVAX Facility.<sup>102</sup>

Find more information [here](#)



102 United Nations Children's Fund, 'COVID-19 Market Dashboard', UNICEF, <<https://www.unicef.org/supply/covid-19-vaccine-market-dashboard>>.



## Making a trying situation even harder

Around the same time of the earthquake and the COVID-19 pandemic, shootings, kidnappings and fuel shortages threatened supply lines to vulnerable communities and health facilities. Partnerships with community-based civil society organizations were critical to delivering high impact health interventions and medical supplies – in part through mobile clinics – to internally displaced persons and seven health facilities.

In November, UNICEF warned that schools were increasingly at the mercy of gangs, with children being kidnapped and school directors becoming targets of robbery or ransom. In response, UNICEF, alongside the Ministry of Education and local private sector partners, built or rehabilitated seven schools in areas where displaced families had fled, while UNICEF and partners distributed school kits to 70,000 children of families affected by social unrest and the pandemic.

In addition, UNICEF has been working with the Ministry of Education and has so far built 38 schools in southwestern Haiti. When the earthquake hit 1,250 schools were either damaged or destroyed.

## Humanitarian services in the Syrian Arab Republic

In the Syrian Arab Republic in 2021, the number of people in need of humanitarian assistance and protection grew 21 per cent to 13.4 million people, including 6.08 million children. This increase from 2020 was largely due to the ongoing economic crisis as well as violence in the northwest and other parts of the country, mass displacement, the devastation of public services and the exacerbating impact of COVID-19.

Humanitarian services supported by UNICEF reached 11.3 million people in the country, including 7.3 million children, prioritizing 276,000 people in difficult-to-reach areas and 1.8 million in moderately accessible areas.<sup>103</sup>

103 United Nations Children's Fund, 'Whole of Syria Humanitarian Situation Report for January- December 2021' <[A photograph of a woman, likely a child or young adult, wearing a brown headscarf and a blue dress with a red floral pattern. She is smiling and waving her right hand towards the camera. The background is slightly blurred, showing what appears to be an outdoor setting with a building.](https://www.unicef.org/mena/documents/whole-syria-humanitarian-situation-report-january-december-2021#:~:text=The%20number%20of%20people%20in,with%206.08%20million%20children%20affected.>.</a></p></div><div data-bbox=)



# A NEW, CLEANER NORMAL IN PAKISTAN

UNICEF worked with the Government to increase the supply of clean water and welcome children back into classrooms

The lack of clean water and hygiene facilities is an ongoing problem in Pakistan. The country's main water source increasingly suffers from pollution, open defecation and growing saltwater intrusion. Even before the COVID-19 pandemic, the country was already one of the most water-stressed on the planet and groundwater was being dangerously depleted.

With the arrival of COVID-19, schools closed, children could no longer receive an education, and dropout rates threatened to increase. UNICEF supported the government's decision to re-open schools with special measures to prevent the spread of COVID-19; however, a third of all schools in Pakistan did not have access to drinking water or handwashing services, which were critical to limiting the transmission of the COVID-19 virus and safely welcoming children back into classrooms.

## Key stat

44 per cent of 5 – 16-year-olds in Pakistan do not attend school and boys outnumber girls at every stage of education.

## Access to running water

With support from a number of partners including the United Kingdom's Foreign, Commonwealth & Development Office and Unilever, UNICEF helped to provide safe water and handwashing stations, with appropriate gender segregation and facilities to assist disabled children and adults across the country. Not only did this help to usher children back into schools, but it has also established functioning sanitation facilities that will help to keep both children, teachers and school staff healthy for years to come.

At Hashimabad school, UNICEF installed a new water supply system, four solar-powered water chillers and three handwashing stations with running water and soap, making it possible for the 700 students to access clean water.

According to the principal of the school, Mr. Abdul Rehman, "With all the washrooms in the school now equipped with running hot and cold water, students have found it easier to adhere to hygienic practices. We are proud that we managed to retain all our students – not a single child has dropped out. Moreover, no COVID-19 case has been reported in this school among the students and staff."

### Learning to manage during a pandemic

Disseminating information to children and adults during the COVID-19 pandemic was crucial to limiting virus transmission.

Ten-year-old Sara lives in Chupriyal, a village in the Swat district of Pakistan's Khyber Pakhtunkhwa (KP) province. Limited internet connectivity in the district made it more difficult to access information on the virus and prevented children from attending online classes while schools were closed.

But information was on its way. The village was visited by hygiene promoters aiming to improve infection prevention and control practices. Supported by UNICEF and implemented by SABAWON, a civil society organization, in four hilly districts of KP, hygiene promoters visited health care facilities, schools and communities.

In Swat district, Jannat Bibi conducted door-to-door visits to educate women and children on key COVID-19 preventive behaviours. Girls are less likely to be enrolled in school than boys, twice as likely to be out of school and face greater barriers to continuing their education.

One of the houses she visited was Sara's. "When Jannat visited our compound, I was able to learn more about the virus at last. In particular, I learned the measures I could take to protect myself, my family and others from catching the virus," Sara says.

"Moreover, Jannat taught us how to manage our emotions when confronted with a new and rapidly changing situation."

More than 100,000 people benefited from the project in four districts of KP that were particularly affected by COVID-19: Swat, Malakand, Upper Dir and Lower Dir.

UNICEF has agreements with Procter & Gamble and Unilever to provide soap to Pakistan in emergencies in emergencies, all types of which are locally produced in the country.







## Giving advice to everyone

19-year-old Naseeb Gul would only wash his hands once a day, when he got home after work. He would use water but no soap, as his family did not have any.

“From sunrise to sunset, I search through roadside garbage dumps looking for metal scraps or any other item that could fetch me some money at the end of the day. This is my livelihood and my family depends on it.”

“Now I wash my hands with soap many times a day, including each time after I touch garbage. I hope that these water drums and soap will stay, even after the virus is gone,” says Naseeb.

“I noticed the large number of water drums being placed all over the city, but I didn’t know their purpose,” he says, putting on a mask. “But once I saw a banner with pictures on it, I understood that they were here to help us wash our hands with soap.”

UNICEF and Abbottabad’s Water and Sanitation Services Company have installed 54 handwashing stations at different locations in the city of Abbottabad. Equipped with running water and soap, these stations encourage citizens to wash their hands with soap more frequently in a bid to slow the spread of the virus and improve hygiene conditions. Now, over 300,000 people can access handwashing stations every day.

Perhaps most importantly, the new facilities are in the hands of local schools and government and are here to stay, providing access to clean water and reducing bacterial contamination for years to come.

## Key stats

- UNICEF rehabilitated or installed ultraviolet water filters, toilets and handwashing stations in 111 health care facilities, meaning that in 2021, more than 686,551 people gained access to safe drinking water and sanitation facilities.
- UNICEF supported the installation of 1,070 handwashing stations placed at strategic points in cities and communities granting over 2.39 million people access to handwashing facilities.
- UNICEF supported the training of 5,101 frontline sanitary and health workers and worked with high-risk communities, reaching 405,384 children in 762 schools.
- Using multiple platforms including social media, religious leaders and billboards, UNICEF managed to engage 2.2 million people to adopt effective WASH practices.

# HELPING CHILDREN TO HEAR IN RWANDA

## UNICEF supplies hundreds of children with low-cost hearing aids

Imagine hearing the voices of your parents, friends or teachers for the first time.

With the help of UNICEF, this is exactly the situation a great number of children were in this year, as a shipment of 1,200 hearing aids arrived in Rwanda.

Pascaline, 13, was diagnosed with moderate-to-severe hearing loss. "In order to communicate with my child at home, I had to shout. Otherwise, she couldn't hear me and would make me repeat what I just said," says her mother, Uwimana. However, within moments of being fitted with two UNICEF-supplied hearing aids, Pascaline and her mother could communicate with ease.

The hearing aids were provided to children in four districts, Nyagatare, Huye, Nyabihu and Nyarugenge, as part of a pilot programme in partnership with the Government of Rwanda and support from the Norwegian Agency for Development Cooperation (NORAD).

### Negotiating a price reduction

In 2022, one of these hearing aids can cost as much as \$2,000 if bought commercially in Rwanda. UNICEF, however, was able to significantly reduce the price of the devices and provide them to the Government of Rwanda for \$118. This 94 per cent price reduction means the government can reach many more children with these life-changing products.

UNICEF was able to negotiate a low price owing to strategic supplier engagement and comprehensive and transparent industry consultations. By making the process competitive and launching a tender alongside numerous suppliers and partners, including WHO, as well as stating its long-term commitment to supplying hearing aids, UNICEF was able to achieve a massive price reduction.

Long-term agreements were then awarded to the most competitive suppliers, ensuring that UNICEF is now able to offer low-cost high-quality products to governments.

### Learning to use new technology

As new technology is delivered to patients, help must also be on hand to train local communities on correct usage. UNICEF worked with the supplier to arrange screenings, test children's hearing, organize hearing aid fittings, and train local staff. Transferring knowledge and skills to local general practitioners, audiological technicians, nurses, and speech and language therapists helps to build local capacity, building a stronger health system for the future.

In Nyagatare province, 300 children previously identified as having hearing difficulties have now been screened through a series of tests at a local school. Most of those examined were found to have severe to profound loss of hearing.

They were then referred to the on-site audiologist who measured their exact degree of hearing loss. Using this data, hearing aids were programmed specifically for each child.

### The gold standard of hearing aids

Programmable hearing aids are considered the gold standard as they can be tailored to an individual's needs. However, this requires the availability of a trained audiologist, which is not always feasible in some countries. UNICEF has side-stepped this problem by making pre-programmed hearing aids available for procurement, which come with three inbuilt channels.

In late 2021, five different types of hearing aids were added to the UNICEF Supply Catalogue as part of the organization's work to increase the availability and

Find more information [here](#)





affordability of quality assistive products and services in low- and middle-income countries. All of these products have been reviewed against WHO technical specifications to ensure they are high-quality and robust.

UNICEF is fundraising to enable the pilot to be scaled up in Rwanda, while the organization is in dialogue with Zimbabwe to understand the conditions necessary for successful implementation. Hearing aids are also part of UNICEF's emergency response in Ukraine.

### Beyond hearing aids

UNICEF teams are working to ensure a range of assistive products that makes life more comfortable for children with disabilities. Recently, eight different types of wheelchairs were added to the organization's Supply Catalogue. UNICEF also worked with industry to develop an innovative add-on which makes the latrine slabs deployed in emergencies accessible for people with disabilities.

Future initiatives will include the development of a disability hygiene kit for emergencies, with products that support individuals with incontinence, a condition that disproportionately affects persons with disabilities. UNICEF also plans to introduce quality assistive vision products to the Supply Catalogue, including glasses, which will ensure children with vision challenges have an equal chance to reach their full potential.



# ENSURING CONTINUITY OF CARE IN LEBANON

## UNICEF's multi-pronged approach during the COVID-19 pandemic

Over the last decade, the Middle East and North Africa (MENA) region has been facing multiple and complex humanitarian crises characterized by protracted armed conflicts, natural disasters, social unrest, cholera outbreaks and economic turmoil, damaging vital health care, education and water infrastructure.

The onset of the COVID-19 pandemic exacerbated the vulnerabilities of an already fragile population, further compromising the health and education of the region's 185 million children. In 2020, UNICEF estimated that over 38 million of them needed humanitarian assistance, 6 million of these refugees.

Children's access to education was severely hampered by the COVID-19 outbreak, leading to a fear of generational loss and regression in learning and skills region-wide. By mid-March 2020, each of the 20 countries in which UNICEF was running operations in the region had temporarily closed all educational institutions for every age group.

But as schools closed to prevent further spread of the coronavirus, UNICEF continued to reach almost six million children with alternative solutions including online learning.

To ensure the safe opening of schools and continuity of learning, UNICEF intervened with an integrated and multisectoral approach that relied on the procurement and delivery of essential health, education, hygiene and sanitation, supplies, such as school kits, textbooks, IT equipment, soap, hand sanitizer, disinfectant, vaccines and personal protective equipment. In conjunction, strong in-country supply chain management partnerships and technical cooperation were maximized to strengthen countries' health and supply chain systems capacity to leave no one behind.

### Enhancing health care and education services across Lebanon

Lebanon's economic, social and security situation had rapidly deteriorated since protests in October 2019. The COVID-19 pandemic hit at a time of great distress, damaging the livelihoods of the Lebanese and non-Lebanese populations, exacerbating pre-existing employment and education disparities and reducing opportunities for many of the most vulnerable communities.





unicef  
for every child  
Hygiene kit

unicef



To tackle these challenges, UNICEF's response had numerous dimensions, combining the delivery of supplies, protecting and training health workers, community sensitization on best health and hygiene practices, and technical support to strengthen health systems.

Throughout 2020, UNICEF played a critical role in accelerating the promotion of vaccine awareness, boosting vaccine uptake and promoting trust in the treatments and measures required. UNICEF worked with the Ministry of Public Health, partners and experts to promote facts over fear, bringing reliable guidance to parents, caregivers and educators, and partnering with health workers to ensure they had the information and resources they needed to keep children healthy and learning.

Continued emphasis was placed on behaviour-focused messaging to break the chains of transmission, promote vaccine uptake and mitigate the impacts of the pandemic. Responding to misinformation and promoting awareness and healthy hygiene practices was central to ensuring children and their families knew how to protect themselves and seek assistance.

### **Providing locally-sourced, life-saving supplies**

In addition to COVID-19 vaccines, UNICEF leveraged its procurement power to provide essential medical supplies to 194 primary health care (PHC) centres to support frontline health workers and populations at risk. Over 2020 and 2021, this included 9.2 million pairs of gloves, 8.5 million surgical masks, 2.5 million N95 respirator masks, as well as gowns, infra-red thermometers, protective goggles, face shields and hand sanitizer. More than 80 percent of these supplies were sourced locally from Lebanese vendors, ensuring quick on-site delivery and minimizing transport lead times amid challenging supply chain disruptions marked by the lockdown and travel restrictions. UNICEF had contracts in place with third-party logistics companies to distribute the supplies and equipment to dispensaries, clinics and hospitals.

More than 1,000 schools were also supplied with critical health and sanitation supplies equipment thus

creating a safe space for learning. Personal protective equipment and hygiene kits were distributed to teachers and students who needed to be kept healthy to pursue their learning. These supplies were used in line with safe school protocols promoting regular handwashing, face mask wearing and the cleaning and disinfecting of school premises.

### **Boosting the public health system**

At the same time UNICEF supported the public health system and other frontline entities assisting at-risk populations by recruiting registered nurses and providing screening, surveillance, case detection, isolation and referral services throughout Lebanon. UNICEF supported the training of more than 2,250 non-health staff from governmental institutions, NGOs, syndicates and unions, security forces and scouts to strengthen their knowledge of the prevention measures, self-isolation and protection of sick people.

UNICEF also provided critical technical support to strengthen cold chain operations and ensure the timely and safe management of COVID-19 vaccines, including ultra-low temperature storage, stock management and transportation to 61 vaccination sites in governmental and private hospitals. To achieve this, UNICEF trained key health personnel on supply inventory management, as well as on maintenance, disinfection and rehabilitation of vaccine fridges. In addition, UNICEF supported the Ministry of Public Health to conduct an effective vaccine management assessment and develop a comprehensive improvement plan for sustainable immunization supply chain strengthening, even beyond the pandemic.

Strengthening the capacity of public health and education institutions proved to be a fundamental driving force in protecting and ensuring continuity of care for all Lebanese and refugee populations affected by the COVID-19 pandemic. These investments were pivotal to the success of the country's immunization campaign and to ensuring the fair, equitable and uninterrupted access to vaccines and other essential services.







# OXYGEN: SAVING CHILDREN'S LIVES IN CAMBODIA

The supply of oxygen plants to remote areas is already helping children to overcome infectious diseases

Two-year-old Rothana is restless. He's bored of being in 16 Makara Provincial Hospital and keeps running away from his bed to the small children's library on his ward, grabbing picture books. Far from being annoyed, his parents – mother Sreyhahk and father Sounoun – are delighted by his energy. Just 24 hours ago they rushed through the doors of this same hospital in distress carrying a barely conscious Rothana. Given that Rothana's temperature had soared over 40 degrees and he was struggling to breathe, nurses came running, fearing the worst.

The first thing the healthcare staff did was to supply Rothana with oxygen, piped directly from the new oxygen plant that had been installed, with support from UNICEF, just two months earlier. At the same time, they administered intravenous antibiotics to treat his severe throat infection, which had been triggering his symptoms. Within one hour Rothana was breathing easily again thanks to the oxygen, while his temperature had dropped considerably.

"If he hadn't received help straight away, we feared his condition would have worsened and he might have died," said Dr. Suy Kearsa, who was overseeing the children's ward. "He was at grave risk of developing pneumonia if he didn't get oxygen right away."

## The pneumonia problem

Dr. Suy had good reason to be concerned about pneumonia; he estimates that it is responsible for 1 in 20 of the child deaths in his province. Globally, infectious diseases, including pneumonia, diarrhoea and malaria remain the leading causes of death in children under 5.<sup>104</sup>

Historically, Preah Vihear's child mortality rates (79 per 1,000) have been higher than Cambodia's national average (16 per 1,000). One underlying reason is that Preah Vihear is a remote region with relatively poor infrastructure and limited access to basic services. What's more, pneumonia risk factors like malnutrition and indoor air pollution are high.

104 United Nations Children's Fund, 'Under-five mortality', UNICEF, <<https://data.unicef.org/topic/child-survival/under-five-mortality/#>>.







## Making oxygen accessible

Until UNICEF installed the new oxygen plant, with funding support of \$230,000 from USAID, the province of Preah Vihear had no oxygen plant and the nearest facility with onsite lifesaving oxygen therapy was four hours away in Siem Reap.

“I really want to thank UNICEF and USAID for helping our patients with this oxygen plant,” smiles Sok Veasna, the hospital director at 16 Makara. “Now, whenever there is a critical case, such as pulmonary disease, suspected COVID-19, or asthma, I know our team can help them right away and not only relieve symptoms but reduce deaths. Going forward, we will save more lives from strokes, pulmonary diseases, and pneumonia. I also know our patients will feel much more confident in the care we provide.”

That is certainly true for 65-year-old Vong Bobta and her children and grandchildren, who recently gathered around Mrs. Vong’s bed on another ward. Mrs. Vong was already living with diabetes and hypertension but when her family found her unconscious at her home it was clear that her condition had worsened.

They rushed her to hospital, where she was immediately diagnosed with pneumonia and provided with oxygen, without which the chances of death would have been high. Instead, by the next morning she had returned to consciousness and has now almost recovered.

“I have more peace of mind knowing that they have oxygen ready here,” she said.

“It was quite frightening waking up in the hospital, but I’m grateful to the staff for the care they have provided and making me feel better,” she added.

## Teaching staff to administer oxygen

Not only did UNICEF work closely with the Ministry of Health, the Provincial Health Department and the 16 Makara hospital staff to support the procurement, logistics and installation of the Preah Vihear oxygen plant, but UNICEF also supported the training of hospital staff in its use. In addition, UNICEF has mobilized \$5.7 million USD through ACT SFF to support the procurement and distribution of additional oxygen therapy supplies for all 35 oxygen plants in public hospitals in Cambodia, including oxygen concentrators, patient monitors and other essential accessories: this will strengthen the nation’s healthcare system for the future and support its pandemic preparedness.

Kan Phirun, a nurse at 16 Makara and a new oxygen plant operator, has benefited from UNICEF’s training: “I think we will see much better outcomes, particularly in situations where we have to intervene, as with some caesarean sections. Every second can count when it comes to oxygen so I’m certain this oxygen plant will save lives.”

We’ve already seen this in the case of Rothana. “I’m just so happy in my heart,” says Sreyhahk.”

She added, “I’m just so relieved they could help him straight away, especially with the oxygen. Seeing him not being able to breathe was so frightening. But now we will be taking him home well again.”

Find more information [here](#)







# 07

## **RECOMMENDATIONS**

OVERCOMING SUPPLY CHAIN  
BARRIERS TO TRANSFORM  
CHILDREN'S LIVES







## 1. Accelerate access to reliable supply chain data and technology to support decision-making

Strengthening countries' data analytics capacity is of crucial importance to identify access gaps and develop needs-driven, beneficiary-centred and cost-efficient health, nutrition, education and WASH policies and investment plans to leverage the potential of supply chains. Reliable data supports better decision-making and stronger accountability, and is key to increasing the coverage, equity and access of all required products and services to children in need. The lack of data on the availability and affordability of supplies makes tracking progress against national and international targets challenging, and, in turn, makes decisions about policy, programming and investment difficult for governments and development partners. Leveraging the power of evidence is a critical asset to devise transformative supply chain and programmatic solutions and ensure effective implementation of innovation.

### Deepen knowledge of demand drivers

To ensure access for all, it is important to understand and manage the factors that influence demand in the health system. Likewise, the capacity to make informed decisions that match supply with demand is essential to mitigating operational risks, as is acknowledging the ability of countries to finance supplies.

UNICEF contributes to efforts to achieve universal health coverage by supporting governments in connecting health, supply and planning data. This approach results in government decision-makers having the capacity to holistically manage their health systems and ensure the proactive identification of consumption patterns, client behaviours, product acceptability-related barriers or operational challenges that could result in access-related inefficiencies.

### Strengthen forecasting

National demand forecasting offers donors and industry partners visibility into future market needs. Demand forecasting is a crucial entry-point for strengthening the capacity of partners to analyse data. Owing to the complexity and various conditions required to produce high-quality forecasts, a systems perspective approach, whereby various programme and supply datasets across the health sector and donors are analyzed, should be employed; this will ensure greater accuracy when forecasting health products and vaccines. UNICEF advocates the standardization and institutionalization of country-owned forecasting processes.

### Invest in fit-for-purpose national information systems

Efficient national information systems are instrumental in providing end-to-end product visibility in real time and improving the capacity of decision-makers to make evidence-driven policy, strategic and operational decisions. Development partners have been working towards this goal for many years and recognize that this is a journey and not a 'quick fix'.<sup>105</sup>

Owing to the large number of information systems in place in LMICs, UNICEF sees a need for coordinated and cross-programme digital investments to provide government decision-makers with a holistic overview of international and domestic investments in the supply chain and health digital eco-systems.

<sup>105</sup> USAID Global Health Supply Chain Program, 'Guidelines: Guidance for Tracing Pharmaceuticals: Leveraging GSI Global Standards', USAID, 2019, <[www.ghsupplychain.org/implementation-guidance-pharmaceutical-traceability-leveraging-gsi-global-standards](http://www.ghsupplychain.org/implementation-guidance-pharmaceutical-traceability-leveraging-gsi-global-standards)>.







To support government decision-making, UNICEF and partners have mapped the digital solutions for health, behaviour change and supply chain management currently in use in developing countries. The [System Digitalization and Investment Portal](#) has been designed to help development partners, donors and recipient countries to join forces to better understand country digitalization needs and identify synergies across countries and health programmes, given the status of the current digital ecosystem in place; and promote inter-operability and integrator systems that do not add additional digital verticality.

Technology is, however, an enabler. Efficient supply chain systems require high-integrity and timely data to inform decisions, resulting in greater operational efficiencies, improved customer experience and mitigated risks. Considering that an information system is defined as a group of components interacting to produce actionable evidence, the ongoing trend to solely invest in the acquisition of software is bound to provide limited to no results. UNICEF provides recommendations to review and strengthen national information systems of public supply chains.<sup>106</sup>

### **Promote and expand traceability systems**

UNICEF and other global development partners are supporting countries to adopt product traceability systems that provide data pertaining to the location of the product in the end-to-end supply chain – from manufacturers to the final beneficiaries – and improve controls against falsified labelling and substandard, diverted and counterfeit medicines. Significant investments by USAID and the Global Fund to date serve as a foundation for future investments.

The newly launched TRVST Initiative (see page 66) allows national health regulatory authorities in LMICs to electronically scan health product barcodes and verify their authenticity along the supply chain. Currently loaded with COVID-19 vaccine information, the TRVST is expected to build the foundation towards fully-fledged end-to-end traceability systems for all health products, including other routine immunization vaccines, HIV, tuberculosis and malaria medicines, and support country efforts to achieve universal health coverage. The success of the TRVST expansion is contingent on participation from additional governments, resources from donor agencies to support country-level implementation and engagement from manufacturers to serialize their products in emerging markets and register their products in the global repository.

### **Link stock management and end-to-end supply chain management**

Agenda 2030 outlines a plan to reach all people in need of vaccines. Two strategic objectives emphasize the need for well-functioning public health systems with sufficient supplies and quality vaccine supply to ensure proper implementation. As part of UNICEF's mandate in health to ensure that each child survives and thrives, UNICEF's role within the Gavi Alliance is to support countries to improve immunization coverage and equity, and vaccine management in Gavi-supported countries.

The electronic joint immunization data reporting form and other UNICEF's analyses have shown that countries have experienced shortages and stock outs leading to disruptions to the supply chain and the delivery of health products and services.

<sup>106</sup> United Nations Children's Fund, 'Strengthening national data systems', UNICEF, <<https://www.unicef.org/supply/documents/strengthening-national-data-systems>>.

To reduce stock outs, it is necessary to strengthen countries' stock visibility to enable them to identify bottlenecks, red flags and the action needed to resolve such issues. However, visibility at a location at a given time does not facilitate supply chain management and ensure children will be vaccinated; stock management must be linked to forecasting, procurement, delivery and utilization. Collection of all these data is needed to ensure that available funding streams – for instance from Gavi's targeted country assistance or health system and immunization strengthening budget envelopes – are used effectively to support countries in managing their vaccine inventory.

## 2. Promote environmental, social and economic sustainability through supply chains

Disaster preparedness reduces time, money and complexity in humanitarian response and lessens the need for international mobilization. Recent studies from the [Logistics Cluster Preparedness](#) have shown that supply chain accounts for an average of 73 per cent of humanitarian response costs.

New ideas, innovative solutions and business models that promote environmental and social sustainability are needed to overcome supply chain challenges, and reduce costs and CO<sub>2</sub> emissions across programmes. New partnerships with the private sector, research institutes and academia should be sought to bridge the gap in access to essential products and services, meet the needs of underserved communities and make global public goods available to everyone, at the same time offering value-for-money. To address issues such as a lack of water supply, uneven soap availability, medical waste at primary health care centres, insufficient RUTF production, and high prices, innovative global, regional and local partnerships are needed.

### Invest in cold chain infrastructure to keep vaccines safe

Strong and efficient health supply chains – equipped with reliable cold chain equipment to ensure vaccine and other biological health product potency and safety – are vital to helping countries reach the last mile, increase equitable and sustainable health coverage, and saves lives. The COVID-19 pandemic and subsequent response have had a significant impact on cold chain systems, demanding flexibility and agility to deliver comprehensive health services and manage all cold chain commodities.

UNICEF and WHO have encouraged expanded use of immunization cold chain equipment with greater health commodity supply chain integration for temperature-sensitive pharmaceuticals.<sup>107</sup> These new developments highlight the critical need to shift towards a more holistic approach to cold chain management and invest in national health supply chain strengthening efforts at large.

Since 2017, UNICEF has procured and delivered more than 150,000 refrigerators to programme countries, securing vaccine cold chain equipment benefiting close to 1 billion people. The Cold Chain Equipment Optimization Platform has been an important funding and implementation platform supplementing existing funding and programme avenues.

The investments in recent years have been critical to ensure basic infrastructure to manage the initial wave of COVID-19 vaccine cold chain requirements. Still, systematic cold chain investments continue to be critical to cope with replenishment and (vaccine and health facility) expansion strategies.

In collaboration with WHO, UNICEF is currently working on a cold chain inventory data tracking system with a particular focus on the last mile status. This will further inform the gap requirement and supplement and qualify the yearly predicted demand uptake in the range of 15,000 to 20,000 refrigerators.

### Scale up solar-powered systems

UNICEF recognizes the integral connection between equitable access to energy and child rights. Where sustainable energy access is lacking or unreliable, children and young people pay the biggest price as one of the most affected groups. The impacts threaten to undermine decades of progress on every child's ability to survive, grow and thrive.<sup>108</sup> Health facility solar electrification is a growing priority for UNICEF and partners and a critical step to strengthen primary health care and achieve the SDGs. Specifically, it can help countries to achieve SDGs 3, 6, 7 and 13 on good health and well-being; water and sanitation; affordable and clean energy; and climate action.

Electricity is a crucial enabler for the provision of health care, education and other services, which in turn can aid communities in achieving socioeconomic growth. The provision of solar panels to health facilities that have poor, or no grid electricity will substantially improve the number of patients attending and provide the enabling

107 World Health Organization and United Nations Children's Fund, 'Temperature-sensitive health products in the expanded programme on immunization cold chain: Interim updates on COVID-19 response', 15 May 2020, <<https://technet-21.com/fr/chapter-4-antibody-detection-methods-for-laboratory-confirmation-of-measles-rubella-and-crs/itemlist/category/258-nlwg&format=feed&Itemid=3683&type=atom>>.

108 United Nations Children's Fund, 'A brighter life for every child with sustainable energy', UNICEF, New York, 2022, <<https://www.unicef.org/media/127626/file/A%20brighter%20life%20for%20every%20child%20with%20sustainable%20energy.pdf>>.







environment for life-saving interventions and quality, primary health care to be dispensed to children, their families and communities.<sup>109</sup>

Scaling up the use of solar power will increase vaccine storage capacity and expand the reach of immunization services, ensuring that services are delivered to under-served communities. More investments in solarization are needed to leave no one behind and meet the health SDGs. These investments must be economically, financially and socially sustainable and they require good inter-ministry collaboration between the health and energy sectors.

Under Immunization Agenda 2030 and the Astana Declaration to deliver primary health care, bringing electricity to health facilities with sustainable energy technologies is critical to the effective delivery of services. To achieve this goal, UNICEF is leveraging its competencies under the Cold Chain Equipment Optimization Platform to solarize health facilities. Solar-powered electrification of 10,000 health facilities would generate enough electricity to keep them running up to the year 2050, and trigger significant reductions in carbon emissions. There has been increasing demand for solar refrigerators in the last decade, with an estimated 60,000 health facilities needing new fridges by 2030.

#### **Develop evidence-driven waste management plans**

Countries are encouraged to run WHO health care waste management assessments. These are fundamental to devising comprehensive health care waste management plans that identify areas of improvement and investment, and are able to leverage climate resilient technologies. These plans should feed into national health strategies and programmes where domestic funds can be mobilized.

#### **Invest in sustainable WASH infrastructure and services in health care facilities**

Without investments in WASH infrastructure and services in health care facilities, schools and communities, populations are at increased risk of disease.

<sup>109</sup> United Nations Children's Fund and World Health Organization, 'Introducing solar-powered vaccine refrigerator and freezer systems', WHO, Geneva, 2015, <[https://apps.who.int/iris/bitstream/handle/10665/195778/9789241509862\\_eng.pdf](https://apps.who.int/iris/bitstream/handle/10665/195778/9789241509862_eng.pdf)>.



Different levels of health care facilities also have different WASH needs. A facility that provides acute care, such as performing surgery or treating highly infectious patients, requires more advanced infection prevention and control practices and may have special needs for treatment of contaminated faeces or may require a high level of water quality. Facilities that offer only primary care services still require good WASH systems but may not need to meet these stricter requirements.<sup>110</sup>

### 3. Strengthen service delivery systems and quality of care all the way to the last mile

#### Create agile, end-to-end supply distribution networks

People living in remote mountainous and rural areas experience inefficiencies in distribution, while poor or sometimes non-existent infrastructure is a perpetual barrier to accessibility of supplies. This is why optimizing supply chain networks is critical to build agile distribution networks that are adaptable to the changing needs of health programmes.

New vaccines, medicines and diagnostics have to be delivered to new populations of mothers, children and adolescents. New diseases emerge, populations move, and road, rail and airport infrastructure are sometimes susceptible to disruptions or fail to meet the standards required for the effective delivery of health products. All of these factors impact supply chain responsiveness and agility, ultimately impacting access to health products at community level.

As the pressure and demand to have well-performing health supply chains increases, it is imperative that the entities and organizations mandated to operate these supply chains undertake continuous reviews and analyses to uncover opportunities that bring about end-to-end optimization. End-to-end optimization allows governments and organizations to increase operational and cost efficiencies, formalize distribution networks and attract new investments. It also allows for new innovations to be identified and deployed at the last mile, which offers opportunities to generate cashflow, build in sustainability practices and provide a consistent and predictable delivery service to hard-to-reach populations in remote rural, urban poor and conflict settings, working with local communities and the private sector. Optimization initiatives help countries to develop risk profiles and implement road maps with the goal of transitioning countries out of donor support and creating self-sustaining operating models.

UNICEF has a wide network of global, regional and local warehouses, distribution centres, civil society organizations and third-party logistics providers. These assets have proven instrumental in supporting countries to plan and execute the efficient flow and storage of supplies from ports of entry to their final destinations, while supporting regular health and primary health care programmes. By applying innovative and tested approaches to reinforce national supply systems, UNICEF is supporting governments to be better prepared to withstand future pandemics and ensure commodity security and continuity of supply to beneficiaries.

110 Centers for Disease Control and Prevention, 'Water, Sanitation and Hygiene in Healthcare Facilities', CDC, <<https://www.cdc.gov/healthywater/global/healthcare-facilities/overview.html#>>>.





### **Scale up last-mile transport innovations**

UNICEF and partners support efforts to ensure that national supply chain systems led by governments are able to provide a predictable, sustainable and efficient logistics/delivery service to beneficiaries up to the last mile, while maintaining product safety and efficacy. In order to develop this capability, UNICEF leverages technologies and last-mile innovations, such as drones, to deliver life-saving commodities to hard-to-reach areas, the urban poor and in conflict settings (see page 90). UNICEF also leverages network optimization software to construct efficient logistics network structures, and renewable energy to power equipment and promote local manufacturing.

### **Train and equip human resources to improve quality of care**

Universal health coverage requires an efficient and well-performing health system that provides the entire population with access to good quality services, health workers, medicines and technologies. UNICEF works with governments to improve the quality of newborn, child, adolescent and maternal health care, especially at community level. This is done through the development of culturally- and age-appropriate health protocols and guidelines, and national quality improvement programmes. It also includes the provision of equipment, such as oxygen plants, at the last mile. By the end of 2021, 39 of 52 target high-burden countries had national quality improvement programmes in place with guidelines, standards and implementation plans.

Well-trained and motivated health workers and their leaders are required to provide the services patients need. UNICEF trains and equips health and allied personnel to better serve the needs of newborn babies, children, adolescents and their mothers. UNICEF improves access to WASH supplies and services in health care facilities in 70 countries. In 2021 alone, 4,390 facilities gained access to WASH services through UNICEF direct support.

### **Create a demand for health products and services**

To achieve universal coverage of public services across programmes, a fundamental shift in education, attitudes and behaviours is required so that vaccination and hand hygiene become a social norm accepted and adhered to by local communities. Similarly, educating communities about the prevention of malnutrition, RUTF treatment and bed nets, for example, is necessary to ensure treatment adherence.

UNICEF also helps health care and other community workers to develop essential soft skills, such as interpersonal communication skills, to strengthen the understanding and acceptability of the population for the supplies and services they receive. UNICEF recognizes the central role played by front-line health workers in addressing local drivers of inequity and promoting and sustaining community demand for immunization and health in general. UNICEF programme interventions seek to strengthen local accountability and encourage communities to advocate for immunization as a right.

### **Monitor patient acceptability of supplies and adherence to treatments**

It is essential to assess whether services and products are reaching the intended recipients and having the intended impact on their well-being. Beneficiary-centred surveys provide the means to collect patient feedback and shape targeted awareness-raising campaigns, drive behaviour change,



improve ownership and sustain adherence of recipient communities to the assistance and programmes delivered.

UNICEF's Child Service Outcome tool<sup>111</sup> is a reference assessment that identifies the nature and scope of children's barriers to accessing supplies at the community level. The evidence generated helps partners inform upstream supply chain (e.g., forecasting, planning, budgeting) and in-country logistics operations to increase product availability; strengthen community programme participation, ownership and sustainability; and identify changes in demand and product utilization patterns, including design-related flaws, with the objective of influencing markets, driving product innovation and boosting localization and local production.

In the Central African Republic, the findings of a Child Service Outcome tool assessment indicated that stock out management was one of the main challenges to ensuring continued availability of RUTF. It highlighted the need to increase investments in empowering the local health care workforce in prescribing the right dosage and following up on underserved children, as well as improving community awareness and sensitization around the benefits of RUTF to avoid misuse and reselling of commodities.

#### **4. Increase public financing for supplies and reform fiscal policies**

UNICEF works with partners to support governments as they transition towards sustainable self-financing. This includes helping them address the underlying causes of insufficient budget allocation and delayed execution, while also increasing fiscal space and mobilizing domestic resources to finance demand.

##### **Strengthen public finance management capacity in countries**

UNICEF supports national and local governments to mobilize, allocate and improve the use of public finances to deliver more equitable and sustainable primary health care services for greater, more equitable results for children.

To help countries tackle their public finance management, UNICEF has been scaling up efforts to engage with financial decision-makers to better reflect child-related policy commitments in budget processes. This also helps

111 United Nations Children's Fund, 'The UNICEF Child Service Outcome Evaluation Tool', UNICEF, New York, <[www.unicef.org/supply/media/10961/file/CoS-Concept-Note.pdf](http://www.unicef.org/supply/media/10961/file/CoS-Concept-Note.pdf)>.





identify cost-effective and equitable ways to deliver services and life-saving commodities, and to plan, cost and budget them. It also improves the flow and use of budgeted resources for service delivery, including at subnational level.

### **Support supply financing solutions to ensure availability of essential supplies**

UNICEF Supply Division provides technical assistance to governments in their transition towards sustainable self-financing of essential supplies. It offers a range of supply financing tools to improve and accelerate market access and affordability of essential supplies.

The Vaccine Independence Initiative has been a critical financing tool in support of countries' timely access to essential supplies by accelerating the delivery of more than \$957 million worth of supplies in 2020 and 2021 (see page 44). The VII is playing a critical role in supporting countries' procurement and procurement of both emergency (e.g. COVID-19) and routine antigens (and other non-immunization commodities), and ensuring that they avoid stock-outs at a time of surging needs. UNICEF is calling on donor partners to allocate additional resources to increase the size of the VII Revolving Fund and meet country needs for supply financing support.

Through UNICEF's work as part of 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; the initiative is solely focused on supplies. These activities consist of supporting capacity-strengthening to improve country-owned forecasting and budgeting, financial procedure development, and the mobilization of domestic funds through evidence-based advocacy and multi-year planning, as well as improving efficiency.

Additional support is needed to support governments in identifying development priorities that are based on strong evidence, estimating the cost of delivering essential health packages, improving the efficiency and equity of health spending, ensuring that primary health care and critical public goods are adequately funded, and bettering link health plans and budgets.

## **5. Support local production and manufacturing of supplies, including through market-shaping**

### **Prioritize RUTF and other nutrition commodities**

There is growing interest in incentivizing domestic funding for nutrition supplies and in recent years, the Nutrition Match Instrument (NMI) has enabled several countries to double their domestic funding towards RUTF (see page 70). In the coming years, NMI will expand to other commodities that address prevention of nutritional deficiencies and wasting.

Nutrition commodities must be considered essential and worthy of government finance allocation if they are to be accessible in the longer-term and if the programmes that rely on them are to be viable. Nutrition products are sourced from several local manufacturers in different countries. Developing a local supplier base requires additional resources from both UNICEF and from suppliers and takes several years of committed technical capacity-building to ensure appropriate quality standards.

### **Stimulate the production of vaccines**

In 2021, UNICEF procured 2.299 billion doses of vaccines to protect children against diarrhoea, measles, pneumonia, polio, tetanus, tuberculosis and other preventable diseases. Thanks to the procurement principle of having multiple vaccine suppliers in place and ensuring buffer capacity in each market, UNICEF could place orders with a range of suppliers even if one or more faced constraints during the COVID-19 pandemic. Expertise in forecasting and anticipating demand trends, and a strong knowledge of market dynamics and the vaccine industry enabled UNICEF to consider the challenges facing production and supply chains. Planning helped to minimize risks to countries and ensured timely access to vaccines.

Global efforts to boost and enable reliable vaccine production lines in Africa are needed to mitigate these challenges, lower costs and increase country capacity to prepare for and respond to future pandemics. In April 2021, UNICEF welcomed the African Union and Africa CDC commitment to increase the share of vaccines produced in Africa from 1 per cent to 60 per cent by 2040. In line with

its efforts to support a more diverse and resilient supplier base across the continent, UNICEF introduced an additional positive weighting in vaccine tender evaluations for prospective manufacturers who could contribute to strengthening public health systems in African countries.

### **Influence markets**

Access to affordable and fit-for-purpose products from sustainable markets is essential for the survival and development of children. UNICEF and its partners support both local and global actions to encourage markets to better serve children. This work includes: activating and stimulating demand for a diverse range of products and services that are appropriate for different contexts; engaging with new suppliers and encouraging them to enter the market and meet demand; procuring supplies at sustainable prices where they are needed most; and incentivizing or technically supporting suppliers to innovate and improve solutions.

## **6. Enhance governance, private sector involvement and multi-partner coordination**

### **Support national policy and strategy formulation**

Governments and health administrations are indispensable partners in improving the lives of children at scale and their actions should be supported by sound supply chain policies. As fundamental building blocks for efficient social welfare and safety net programmes, they help to create an enabling political and socioeconomic environment that governs the timely planning, provision and distribution of quality supplies across sectors. These policies are needed to support small- and medium-scale businesses and encourage the private sector to offer a wide range of affordable, durable and high-quality products, and invest in innovation.

UNICEF helps strengthen the capacities of governments for good health and nutrition governance by convening strategic partnerships, [generating data](#), sharing knowledge, advocating for children's right to supplies, and mobilizing the necessary resources to reach every child in need. Evidence is foundational to improving governance. It informs effective policies, strategies and programmes for maternal and child health and nutrition. It also guides advocacy and helps direct resources in ways that prioritize the right to essential supplies for every child.

Similarly, WASH services require strong national policies, financial systems and monitoring in order to be sustainable, resilient and accountable. Adequate human resources and clear roles for government institutions and regulators are also critical. Without strong governance, neither government stakeholders nor donors and development partners can be held accountable. Moreover, few WASH programmes are reviewed for their impact using high-quality evaluations. In light of these challenges, UNICEF remains focused on strengthening government capacities to manage the WASH sector, with programmes supporting government policies, strategies, public financing and coordination with other development partners.

### **Support local private sector involvement**

UNICEF supports national authorities to strengthen governance on private sector involvement in primary health care in several ways. To ensure greater understanding of the situation, we conduct mapping and assess the scope of private service delivery. We also ensure that the data from private health care are integrated into national health information systems. We support the development of policy to increase private sector engagement and support the integration of





legal and regulatory frameworks to achieve this, while also strengthening capacity to oversee and control private sector health care. In addition, we contract local third-party logistics companies to coordinate agile responses to emergencies and regular programmes globally.

UNICEF can play a leading role in identifying private sector solutions to address WASH access barriers and ensure there is a healthy, competitive market and a level-playing field. Read about [UNICEF's game plan to reach safely-managed sanitation](#).

### **Bolster in-country partner coordination**

In-country coordination is essential to the deployment of vaccine and other health products as it ensures that countries are ready to receive, store and distribute supplies to service delivery points, and administer treatment. This has been demonstrated during the COVID-19 pandemic, where in-country logistics coordination groups (NLWGs) have played a crucial role in ensuring the uninterrupted availability of routine immunization programmes, including preparations to receive and distribute COVID-19 vaccines, from the port of entry to distribution points and lower-level vaccine stores.

NLWGs provide guidance, expertise and technical assistance on all matters concerning supply chain operations and improvement initiatives. They engage with key stakeholders in the process to share information, evidence and lessons learned; to identify and overcome programme bottlenecks; to explore opportunities for innovation; and to make optimal use of resources.

Such coordination mechanisms aid in overseeing the upgrade of in-country cold chain capacity and receipt and distribution of all other supplementary supplies such as syringes and injection safety boxes. They play a critical role in ensuring that supply chain interventions are not duplicative and instead are coordinated with optimal visibility of the health products available at national and sub-national levels. NLWGs also identify resource needs to store and distribute, as well as define supply processes for COVID-19 vaccine introduction with partners. Under the stewardship of the immunization programmes, UNICEF and other partners are playing advisory roles as key members of the NLWG comprising local health and logistics professionals. Together with development partners, the role of UNICEF and other partners – including NGOs, development organizations and others – in these NLWGs and subnational working groups is key in providing governments with the necessary technical assistance. These kinds of multi-partner collaborations enhance visibility in all upstream and downstream operations for vaccines and ancillary supplies and help to identify and address supply chain and programmatic challenges that negatively impact their availability at the last mile.

The role and successes that NLWGs have achieved in countries – particularly in India, Indonesia, Kenya, Mozambique and Nigeria – suggest that the working group is a key element of the national Expanded Programme on Immunization strategy to ensure the availability of effective vaccines for children and adults at all levels of the health system. Among the greatest achievements of NLWGs is vaccine management training and demand forecasting, as well as Effective Vaccine Management assessment and preparing to introduce new vaccines.<sup>112</sup>

112 United Nations Children's Fund, 'Supply Annual Report 2021', UNICEF, Copenhagen, 2021, <[www.unicef.org/supply/media/12776/file/Supply\\_Annual\\_Report\\_2021.pdf](http://www.unicef.org/supply/media/12776/file/Supply_Annual_Report_2021.pdf)>.



To further boost coordination and enhance technical assistance, as part of the COVID-19 response UNICEF deployed 80 vaccine management specialists in 40 high-risk countries to support the NLWGs to roll out the COVID-19 vaccine.

Read the case study on UNICEF's work with in-country logistics coordination groups on page 98.

## 7. Invest in supply chain workforce development

For any supply chain, capable and dedicated people are required to achieve the intended results. UNICEF advocates for greater staffing and supports interventions to build the capacity of supply chain professionals and their leaders, and to enhance both their technical and managerial knowledge. UNICEF also advocates the development of the skills and attitudes needed for effective and efficient supply chains, especially at primary health care level. In doing so, UNICEF works with WHO and other partners to facilitate the development of a workforce that is fit-for-purpose in key areas such as procurement and supply chain management, with skills to forecast needs, develop procurement processes, manage warehousing and distribution, stock management, maintenance and more.

### Form broad collaborations to boost the health supply chain workforce

Much of UNICEF's work to support the supply chain workforce is done through its workforce arm: People that Deliver, a global coalition hosted by UNICEF Supply Division. PtD oversees and coordinates the Strategic Training Executive Programme (STEP 2.0), a professional development tool specifically tailored to the needs of health supply chain leaders and managers. Crucially, STEP blends elements of self-paced learning, facilitator-led training, on-the-job application of leadership skills and coaching support. Uniquely, it pairs public sector supply chain managers with private sector supply experts.

Through collaborations with various actors including academic institutions, professional associations and the private sector, UNICEF is well positioned to influence the introduction of tools and resources that support the health supply chain workforce. This means establishing motivation mechanisms for staff and improving working conditions, on top of ensuring personnel have the right skills and are employed in the right number. This holistic approach will nudge supply chains towards their potential and allow children access to the care they require.

Read more about what UNICEF is doing to support the supply chain workforce on page 73.



## 8. Foster and strengthen global partnerships in a post-pandemic future

**Scale up to have an impact:** Partnerships are instrumental in strengthening countries' supply chain management capacity, bringing supply costs down, and developing and scaling up innovations that save lives and having a greater collective impact. To reach every child with timely and quality supplies and services, UNICEF collaborates with a wide range of partners at all stages of the supply chain and across key commodity and service groups with the objective of improving efficiency, achieving fit-for-purpose solutions, offering value for money and providing long-term sustainability. Crucially, partnerships are fundamental to scaling up the interventions that make a lasting change in children's lives.

One of UNICEF's most-striking examples of scaling up is reaching the world's children with the range of vaccines to protect against preventable diseases. Each individual vaccine requires a tailored strategy to align supply and demand, developed in close collaboration with manufacturers and partners. Upgrading the cold chain infrastructure across tens of thousands of health care centres to safeguard these vaccines also demonstrates how collaborations are working at scale.

As the largest United Nations procurement agency in 2021,<sup>113</sup> UNICEF is leveraging its reach, supply expertise and purchasing power to support governments in 150 countries to deliver results for children. Through its strategic procurement and influencing market approach, UNICEF achieves substantial savings across a range of products. In 2020, the organization saved governments and donors \$117.9 million<sup>114</sup>. Within these figures is a wide array of fit-for-purpose supplies and innovative approaches to deliver those supplies, at scale, to children. From education materials to therapeutic food, vaccines to medicines, soap to insecticide-treated mosquito nets – the supplies that support the health and well-being of children have unique stories of scaling up.

Find out how and why UNICEF prioritizes partnerships on page 76.

**A call to action:** Strong national supply chains are critical cornerstones of well-functioning public welfare systems and a driving force in achieving the SDGs and in advancing the 2030 Global Health Security agenda. The COVID-19 pandemic has shone a light on the value

of building resilient health and public welfare systems and ensuring they are supported by strong supply chains. After all, it is these supply chains that provide frontline health workers with access to the medicines, health care commodities and equipment they need to care for populations.

UNICEF has made systems-strengthening a priority. This is critical to build well-functioning, responsive, accountable and resilient systems that better support communities, caregivers and children by ensuring access to timely, quality essential services and supplies, without discrimination. Strengthening systems means enhancing their components, functioning, responsiveness and accountability. Prioritizing strengthening primary health care systems is important, especially in fragile settings, as is strengthening education systems to address the global learning crisis. Likewise, building the capacity of the supply chain workforce will help the health, education, WASH, child protection, social protection systems – and others – work in alignment. Strengthening national statistical and data systems will offer reliable data with which to make decisions.

Considering the impact of the COVID-19 pandemic UNICEF recognizes the need for more coordinated and cross-programme supply chain management investments to build the foundations of efficient welfare systems and support the preparedness and response capacity of governments to meet surging needs triggered by emergencies and provide higher levels of access to essential supplies and services. Strengthening global planning and coordination mechanisms will be key to meeting global targets. These mechanisms will help us all better target priority investments, mobilize resources and deploy technical assistance in a complementary fashion based on our competitive advantages.

As part of these efforts, UNICEF will continue to lend its technical expertise in forecasting, market-influencing, data analytics, resource mobilization, institutional and human resource capacity-development, and more. This is essential to support governments on their strengthening journey as they seek long-lasting solutions to bridge the gaps in access to quality child health, nutrition, education, WASH and other public services.<sup>115</sup>

113 United Nations Office for Project Services, '2021 annual Statistical Report' UNOPS, Copenhagen, 2021, <[https://www.unops.org/Shared/KnowledgeCenter/Pages/asr\\_report](https://www.unops.org/Shared/KnowledgeCenter/Pages/asr_report)>.

114 United Nations Children's Fund, 'Supply Annual Report 2021', UNICEF, Copenhagen, 2021, <[www.unicef.org/supply/media/12776/file/Supply\\_Annual\\_Report\\_2021.pdf](http://www.unicef.org/supply/media/12776/file/Supply_Annual_Report_2021.pdf)>.

115 United Nations Children's Fund, 'Leveraging the power of public supply chains to drive change for children everyday', UNICEF, New York, June 2021, <<https://www.unicef.org/supply/reports/leveraging-power-public-supply-chains-drive-change-children-everyday>>..











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