

STRENGTHENING WATER AND SANITATION SYSTEMS TO IMPROVE CHILD NUTRITION AND DEVELOPMENT OUTCOMES

Brief Technical Guidance

Acknowledgements

This guidance was prepared jointly by the Child Nutrition and Development section and the Water, Sanitation and Hygiene section at UNICEF Programme Group, New York.

Authors: Leah Richardson, Harmonie Bucher, Michael Emerson Gnilo, and Linda Shaker Berbari. Timely contributions and reviews by Julie Aubriot, Marije Broekhuijsen, Dorothy Foote, Aidan Cronin, Mathieu Joyeux, Arnaud Laillou and Joachim Peeters. Overall guidance from Grainne Moloney, Ann Thomas, Cecilia Scharp and Victor Aguayo

Editor: Julia D'Aloisio

Design: Nona Reuter

Citation: United Nations Children's Fund (UNICEF). *Strengthening water and sanitation systems to improve child nutrition and development outcomes: Brief technical guidance*. New York: UNICEF 2024

© United Nations Children's Fund (UNICEF)

March 2024

Permission is required to reproduce any part of this publication.
Permissions will be freely granted to educational or non-profit organizations.

Published by:
UNICEF
Three United Nations Plaza
New York, NY 10017, USA

Photography credits: Cover: © UNICEF/UN0259568/Ndinda; page 12: © UNICEF/UNI419390/Prinsloo; page 14: © UNICEF/UN0849755/Mussapp; page 15: © UNICEF/UN0685354/Sells

STRENGTHENING WATER AND SANITATION SYSTEMS TO IMPROVE CHILD NUTRITION AND DEVELOPMENT OUTCOMES

Brief technical guidance

A glance at the past

In 2018, the water sanitation and hygiene (WASH) sector was presented with new evidence showing little or no impact of selected WASH interventions on reducing childhood diarrhoea and stunting. Some practitioners and funders initially reacted to this new evidence by questioning the value of investing in WASH compared with other interventions for improving child health, nutrition and development. Yet, as described in a 2019 position paper by UNICEF and WHO,¹ these findings are not a reason to do less on WASH: rather, a strong rationale remains for integrating child nutrition and development and WASH programming. This rationale includes: 1) the ample field observations and correlative evidence showing positive WASH to nutrition and child development impacts; 2) the clear evidence and historical significance of WASH in disease prevention and control; 3) the strong conceptual basis for WASH; and 4) the importance of WASH in reducing disease outbreaks and endemic transmission.

The new findings, together with this wider body of evidence, reinforce that the WASH sector needs to do better at ensuring higher service levels of safely managed water and sanitation services for all to reach the ambitious targets of the Sustainable Development Goals (SDGs). This includes investing in transformative WASH, meaning interventions that lead to a comprehensively clean environment, contributing to improved health, nutrition and development outcomes for all.²

About this brief

This brief guidance describes the concept of 'transformative' WASH, which was adopted and further defined by UNICEF and WHO³ and explains how it can be used to strengthen efforts to improve survival, nutrition and development in early childhood. It brings together the latest developments and good practices in applying transformative WASH through joint programming to contribute to improved child nutrition and development outcomes, including improved diets for infants and young children and the prevention of undernutrition. The brief offers a practical approach to applying a systems lens to all phases of joint programming.

Audience

This brief guidance is intended for UNICEF Child Nutrition and Development (CND) and WASH programme staff at country and regional levels. It aims to support the design of evidence-based and effective programmes to improve outcomes for infants and young children aged 6–23 months. This document can also be used as an advocacy tool and resource for CND and WASH sector partners at country or regional level, including government counterparts.

Purpose

This brief guidance will support programme staff to:

1. Act on the latest evidence on transformative WASH programming to improve children's diets and nutrition and development outcomes
2. Operationalize water and sanitation system-related actions that address core drivers of improved nutrition and development in early childhood
3. Improve joint CND and WASH programming for improved nutrition and development in early childhood
4. Share learning about transformative WASH programming for improved nutrition and development outcomes from contexts in which UNICEF is operational.

Detailed toolkits and guidebooks for integrating CND and WASH programming exist and can be found in the annotated bibliography (*Annex 1*).

Why optimal nutrition and WASH matter for young children

Over the last three decades (1990–2020) the prevalence of child stunting has declined by 40 per cent, and the number of children with stunted growth and development due to malnutrition has been reduced by 90 million, despite population growth. Such progress has contributed to a 60 per cent decline in under-five mortality, proving that positive change for child nutrition is happening at scale, across countries and regions. However, the rate of progress is not fast enough to meet the SDG 2.2 target. Urgent and multiple actions are needed to prevent undernutrition and end all forms of malnutrition by 2030,⁴ with infant and young child feeding and joint CNL and WASH programming playing a significant role.⁵ This is even more important in the context of the planetary crisis of climate change, environmental pollution and biodiversity loss, which has put virtually every child in the world at risk.⁶

The complementary feeding period (6–23 months) is a critical opportunity for the prevention of undernutrition

The consequences of poor diets during the complementary feeding period (between the ages of 6 and 23 months) are visible in the rapid increase in the prevalence of undernutrition (stunting and wasting)

during this time. Globally, about 70 per cent of the shortfall in height accumulated by the age of 5 years is due to growth faltering that occurs before the age of 2 years.⁷

In addition, about half of all children under 5 with wasting are younger than 2 years of age.⁸ Stunting and child growth deficits are difficult to reverse and cognitive deficits may be permanent after the age of 2 years.⁹ To prevent undernutrition, it is crucial to prioritize actions that contribute to nutritious and safe diets for infants and young children.⁹

Young children are at greatest risk of being exposed to pathogens in their environment

The youngest children have contact with the environment in ways that adults and older children do not (*Figure 1*). Because they crawl on the ground and put objects in their mouths, young children are more likely to consume soil or dirt and become exposed to pathogens on common objects or surfaces such as toys, clothing, or furniture. Young children are also more exposed to pathogens than adults because they are more likely to defecate openly and to have their faeces disposed of improperly (e.g., in places where other children play). Young children's frequent mouthing of fingers and objects also puts them at greater risk of ingesting faeces, including in settings where animals are present.¹⁰

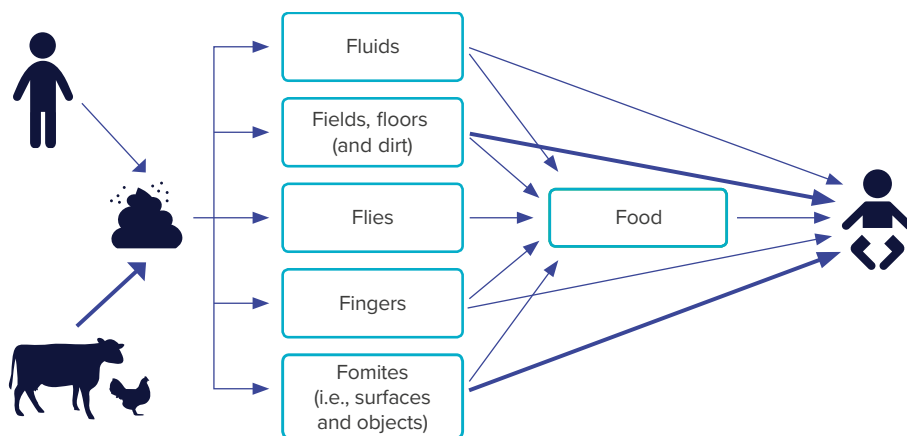


Figure 1: Faecal-oral transmission routes for infants and young children²

SIDEBAR 1

Complementary feeding

Beginning at 6 months of age, a child's energy and nutrient needs start to exceed what is provided by breastmilk alone; at this time, adequate, and safe complementary foods are necessary to meet these needs, along with continued breastfeeding to age 2 years or beyond. Responsive feeding practices, with the timely introduction of solid and semi-solid foods that are safely prepared, stored and consumed, are also key components of optimal complementary feeding practices.

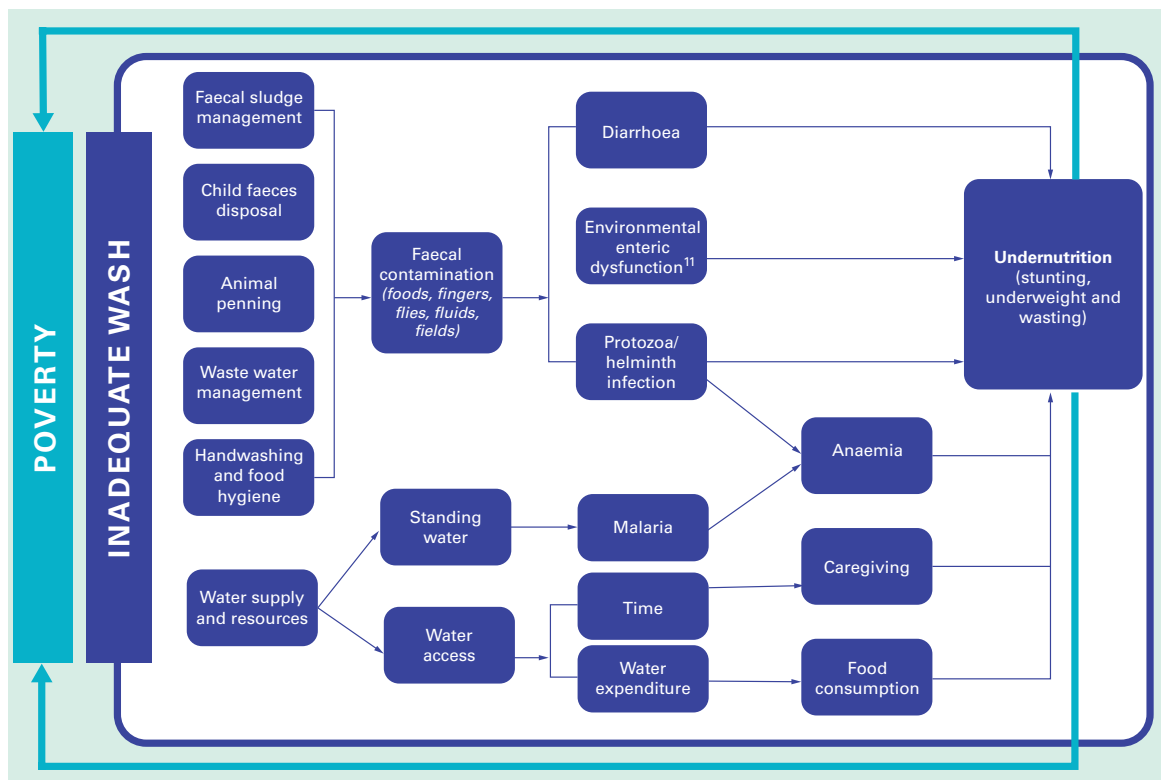


Figure 2: Critical pathways through which WASH influences child nutrition and development

Adapted from Chase, C. and F. Ngunjiri, *Multisectoral approaches to improving nutrition: Water, sanitation and hygiene*, Washington, World Bank, 2016.

Poor food hygiene and contaminated complementary food and water can also spread pathogens to young children. Unsafe water and unsafely managed sanitation services can increase the transmission routes through which young children are exposed to pathogens (*Figure 2*).

There is a direct link between poor water and sanitation and child undernutrition

Availability, quality, access and use of water and sanitation systems, combined with adequate hygiene practices, play a critical role in young children’s nutrition and affect their ability to grow and develop.

Access to safe water and clean household environments for young children are critical to significantly reduce environmental contamination and improve children’s nutrition. In contrast, persistent exposure to pathogens from ingestion of faecal bacteria, as well as repeated bouts of diarrhoea and intestinal worm infections from living in environments with poor WASH conditions, can compromise nutrient absorption and utilization, even when adequate nutrients are available.¹² Further, the time and resources needed for water collection can constrain food consumption, thereby contributing to undernutrition. The absence of clean and palatable drinking water can lead to poor diets as water may be replaced with sugar-sweetened beverages therefore contributing to malnutrition.

Despite these linkages, 43 per cent of the global population lacks safely managed sanitation, while 419 million people still practice open defecation. At the same time, 2.2 billion people (27 per cent) lack safely managed drinking water, while 25 per cent lack basic hand hygiene services.¹³ WASH inequalities between and within countries are also significant.

It is therefore critical that WASH interventions be integrated within CND programmes to avoid derailing efforts to prevent all forms of malnutrition.¹⁴ The age-specific risks identified above are important to capture in sanitation and hygiene programming to protect young children from disease transmission and improve their access to nutritious diets, essential nutrition services and positive practices (*Figure 3*).

In the context of climate change, environmental degradation and disasters, an inter-sectoral approach has never been more important. Extreme weather events can impact child health by disrupting access to safe water, sanitation and healthcare services. They can also affect child nutrition and development by negatively affecting food security and agricultural productivity. Therefore, isolated responses within individual sectors will not yield lasting solutions.¹⁵

Transformative WASH programming to improve nutrition and development outcomes for young children

In view of the limited impact of traditional low-tech WASH interventions on nutrition and development outcomes, a growing body of evidence is converging towards the application of 'transformative' WASH interventions that would more completely block disease transmission and that require more than basic household level improvements to water and sanitation.¹⁶

What is transformative WASH?

Transformative WASH programming is an approach to achieving comprehensive and safe WASH services and behaviours that adequately reduce exposure to harmful pathogens and provide safe environments that support good health, nutrition and well-being.^{17,18}

Transformative WASH is **informed by context**, respects the principles of **safely managed WASH services**, and entails a **comprehensive package of WASH interventions** tailored to **address the local exposure landscape and disease burden**, as well as social and environmental conditions, to contribute to preventing childhood malnutrition (*Box 1*).¹⁹ It focuses on **ambitious service delivery with universal geographic coverage, interrupting local disease transmission pathways** and considering the unique risks faced by young children.

Transformative WASH programming represents a set of interventions capable of interrupting all routes of environmental contamination, thereby systematically preventing exposure to faecal pathogens and other WASH-related diseases.

There is strong consensus that transformative WASH includes actions that are:

- **Context-specific:** Interventions are designed with context-specific risks in mind (i.e., in response to local sociocultural, economic and environmental factors) instead of predefined (e.g., toilets, chlorination and generic behaviour change approaches).
- **Risk-based:** Interventions comprehensively block multiple routes of disease transmission. This includes risk-based interventions that respond to local and age-specific disease burden and transmission patterns, and which can be tailored to focus on the pathways most relevant to interrupting the transmission of specific pathogens.
- **Implemented at scale:** This includes addressing ALL transmission pathways at household, community and administrative level for area-wide results. Area-wide coverage is important because it assumes the programme 'leaves no one behind', which is important for equity and the fulfilment of human rights.
- **High-coverage (Box 1):** At a minimum, interventions should reach everyone in a community with at least basic WASH services and incorporate future upgrades to safely managed services in the programme design. The quality and sustainability of lower service levels are key to avoid backsliding and loss of the initial investment before upgrades can happen.
- **High-level in terms of service delivery (Box 1):** Water and sanitation services should aim to go beyond basic service delivery towards an ambitious higher-level delivery. These safely managed service delivery levels are now well established within monitoring ladders for SDGs 6.1 and 6.2 and are also reflected in the WHO Guidelines on Sanitation and Health.²⁰

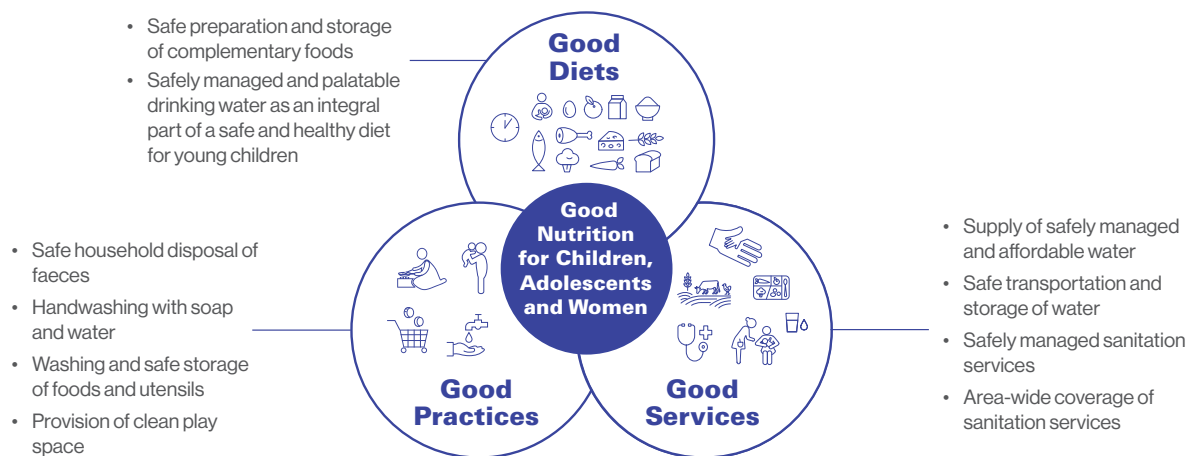


Figure 3: WASH interventions contributing to improved diets, practices, and services

Source: United Nations Children's Fund (UNICEF). *Improving Young Children's Diets During the Complementary Feeding Period. UNICEF Programming Guidance*. New York: UNICEF, 2020.

To meet the needs of young children, the portfolio of WASH services and practices need to be broadened to include specific interventions (*Figure 3*) that address the unique ways in which young children interact with their environment (often referred to as Baby-WASH interventions).²¹ These must be implemented to achieve transformative WASH aspirations.

Implementing transformative WASH for child nutrition and development

Adopting a transformative WASH approach to improve the nutrition and development of infants and young children requires collaboration between CND and WASH staff to design and deliver multisectoral programming through a systems approach. Systems-strengthening is a guiding principle of UNICEF programming in all contexts. Through various strategic commitments – such as the UNICEF Strategic Plan 2022–2025, the UNICEF Nutrition Strategy 2020–2030, the WASH Strategy 2016–2030, the UNICEF Game Plan

to Reach Safely Managed Sanitation 2022–2030,¹⁵ the UNICEF Water Game Plan: Universal safe and sustainable water services for all by 2030, the Strategic Framework for WASH Climate Resilient Development 2022, and the UNICEF Programming Guidance on Improving Young Children’s Diets During the Complementary Feeding Period – UNICEF makes clear its commitment to fostering multisectoral programming to maximize results for children.

As per UNICEF’s programming guidance on complementary feeding, a systems approach aims to leverage the potential of multiple systems and make them more accountable for delivering nutrition and development results for young children. Rather than simple coordination among sectors, a systems approach requires a shared vision, joint planning and monitoring (see case studies 1, 2 and 3). Leveraging the power of systems, such as the water and sanitation system, expands the number of opportunities to reach children in a more comprehensive and systematic way.^{22,23}

BOX 1

What do ‘higher service levels’ and ‘safely managed’ mean?

The WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (<https://washdata.org/monitoring>) has defined a scale or “ladder” of water and sanitation services to help support standardized monitoring of service provision. “Safely managed” water and sanitation services are a newer, more ambitious level of service delivery that exceeds “basic” services. Moving beyond “basic” to “safely managed” services is critical for young child nutrition.

Sanitation ladder

SAFELY MANAGED	Use of improved facilities that are not shared with other households and where excreta are safely disposed of <i>in situ</i> or removed and treated offsite
BASIC	Use of improved facilities that are not shared with other households
LIMITED	Use of improved facilities shared between two or more households
UNIMPROVED	Use of pit latrines without a slab or platform, hanging latrines or bucket latrines
OPEN DEFECACTION	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches and other open spaces or with solid waste

For sanitation: The main difference for safely managed sanitation services is that waste matter (excreta) is now safely disposed of and treated, either on or off site. This capture and treatment of faeces is an important improvement for removing human faeces from a child’s environment.

For water: The main difference for safely managed water supply is that water should now be accessible on premises when needed and free from faecal and priority chemical contamination. This is an important component for hygienic food preparation, hand hygiene, and a clean environment.

Drinking water ladder

SAFELY MANAGED	Drinking water from an improved water source that is accessible on premises, available when needed and free from faecal and priority chemical contamination
BASIC	Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing
LIMITED	Drinking water from an improved source for which collection time exceeds 30 minutes for a roundtrip including queuing
UNIMPROVED	Drinking water from an unprotected dug well or unprotected spring
SURFACE WATER	Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal

UNICEF and its partners have made large strides in ending open defecation. The UNICEF Game Plan¹⁵ to Reach Safely Managed Sanitation 2022–2030 will keep pushing the SDG 6.2 ambition to ensure progressive attainment of universal, safely managed sanitation using the SDG 6 acceleration framework.²³ It focuses on household sanitation in both urban and rural contexts and covers the entire sanitation service chain. The Game Plan also prioritizes strategies that are transformational and can lead to systems change.

CASE STUDY 1

Using a systems approach to deliver nutrition results for young children in northeast Nigeria

In Nigeria, UNICEF and partners are leveraging the water and sanitation system to improve nutrition and development outcomes for young children using elements of transformative WASH. These elements include area-wide coverage of the targeted zones with safely managed water systems, moving progressively towards higher-level sanitation systems, and behaviour change communication with a focus on food and environmental hygiene.

The complex emergency in northeast Nigeria has devastated lives and livelihoods and forced millions to flee their homes. Food and nutrition insecurity is a pervasive feature in this crisis, and internally displaced people are most affected. The high prevalence of child stunting (between 40 and 65 per cent in the northeast states) reflects Nigeria's critical undernutrition situation. While the causal factors are multiple and poorly understood, assessments conducted to-date have identified factors such as severe food insecurity, early marriage, poor maternal nutrition, poverty, poor sanitation and hygiene practices, low exclusive breastfeeding rates and inadequate complementary feeding.

The opportunity to reinforce and enhance positive nutrition and development outcomes through WASH and the available funding from the United Kingdom Foreign, Commonwealth and Development Office to develop a convergent programme were key to designing a joint programme. Building on this experience, a subsequent project co-led by UNICEF and WFP and supported by BMZ started in early 2022. Centred on the 1,000-day window of opportunity from pregnancy to age 2 years, this resilience project is designed to improve nutrition and development outcomes for young children via a

package of interventions delivered through the health, education, WASH and social protection systems.

The Nigeria programme is a good example of how a systems approach – including shared vision, planning and action – expands the opportunities for improving the nutrition and development of young children. Naturally aligning with the Action Framework to Improve the Diets of Young Children During the Complementary Feeding Period, the project applies a combination of improving access to supplies and services, encouraging behaviour change and incentivizing the use of services. Optimal complementary diets and feeding practices are secured and the principles of transformative WASH are applied through a range of platforms that were identified as stable and adapted to implement CND and WASH interventions. These convergent interventions aim to block multiple disease pathways, achieve high coverage in targeted areas and take stepwise actions towards safely managed water and sanitation service delivery.

Some or all of the following nutrition interventions are provided to pregnant and breastfeeding women and children aged 6–23 months at the household level:

- Promotion and increasing access to nutrient-rich complementary foods to improve dietary diversity during the 1,000-day window of opportunity
- Cash-based transfers to promote the consumption of locally available nutritious foods
- Community-based social and behavioural change communication and nutrition education.

WASH is enhanced at the community level by:

- Focusing on food hygiene through safe meal preparation
- Promoting community-led total sanitation (CLTS)
- Establishing community water systems management plans for operations and maintenance. Plans will ensure water quality from source to point-of-use by generating local tariffs as well as developing water safety plans
- Completing water scheme¹ implementation with provision of a safe water source, storage, treatment, and reticulation for safe collection at household levels
- Introducing community-friendly faecal sludge management through engagement with the government to ensure environmental hygiene
- Setting up community-based structures that ensure decision-making and enable local technical capacity for maintenance of water and sanitation systems
- Optimizing existing water systems and conversion to use clean energy sources, such as solar or wind energy.

1 A water scheme is also referred to as water project or programme that is specific to a community or an area

The water and sanitation system is comprised of the policies, programmes, services and actions that ensure a population's access to and use of safe drinking water, hygiene and sanitation services. Leveraging the potential of this system expands the opportunities for achieving and sustaining nutrition and development outcomes for infants and young children.^{21,22}

Anchoring 'transformative' WASH interventions in CND programming and ensuring both systems have a shared vision, joint planning and monitoring is a necessary step leading to improved nutritional status for young children. This exercise can be facilitated through the use of an Action Framework, as described below.

Using the Action Framework to facilitate the design and implementation of transformative WASH for child nutrition and development

The Action Framework to Improve the Diets of Young Children During the Complementary Feeding Period (hereafter referred to as the Action Framework) is a tool for facilitating programming to improve the diets of children aged 6–23 months. Applying the Action Framework facilitates a systematic analysis of the context-specific drivers of poor diets during the complementary feeding period and prioritizes strategic actions for addressing them through relevant systems. Following the systems approach, an Action Framework has been developed for the food, health, water and sanitation, and social protection systems.

The Action Framework for Water and Sanitation (*Figure 4*) can be used to identify a range of context-specific strategic actions at policy, institutional, community/household level to address the critical pathways through which WASH affects young child nutrition and development.

Applying the steps of the Action Framework can contribute to positive nutrition and development outcomes through both WASH supply and services, as well as through the behaviours of caregivers. The steps are outlined in-depth in the UNICEF Programming Guidance on Improving Young Children's Diets During the Complementary Feeding Period (2020); *Figure 4* shows an actively populated framework to illustrate its potential use.

The main steps can be described as:

1. Conducting a situation analysis of the policy environment, institutional capacities and social behaviours

The situation analysis requires an examination of components of young children's diets and helps in identifying WASH related factors.²⁴ It may not always be feasible to include all recommended components; as such, country teams should determine the most comprehensive situation analysis methodology possible in their given context and include all or a combination of the suggested components. The situation analysis allows country teams to identify key determinants and drivers of children's diets that must be tackled to improve the nutrition and development of young children, including those related to water and sanitation.

2. Developing strategic actions delivered via policies, institutions and communities to support the government, bring together actors, and invest in the water and sanitation system

Once the situation analysis is complete and the determinants and drivers have been identified, strategic actions can be prioritized at different levels and within different systems, including the water and sanitation system. These actions must address the context-specific gaps, bottlenecks, and barriers to good nutrition for young children related to diets, services and practices. In the context of determinants and drivers related to water, sanitation and hygiene, this is the opportunity to ensure the inclusion of a transformative WASH approach.

The following steps are recommended to identify strategic actions:

- Bring together all stakeholders in a coordination platform or working group to address barriers identified in the situation analysis, in particular age-specific risks.
- Support the government in its efforts to combat malnutrition and provide WASH and CND technical expertise and experience, including in transformative WASH.
- Use a joint targeting system and logistics channel to identify beneficiaries and deliver supplies.
- Work together for joint strengthening of institutional capacity that delivers community-based services.
- Consider contextual factors that influence the spread of pathogens (e.g., population density, climate, local epidemiological profile, age-specific risks).

Delivering through the water and sanitation system

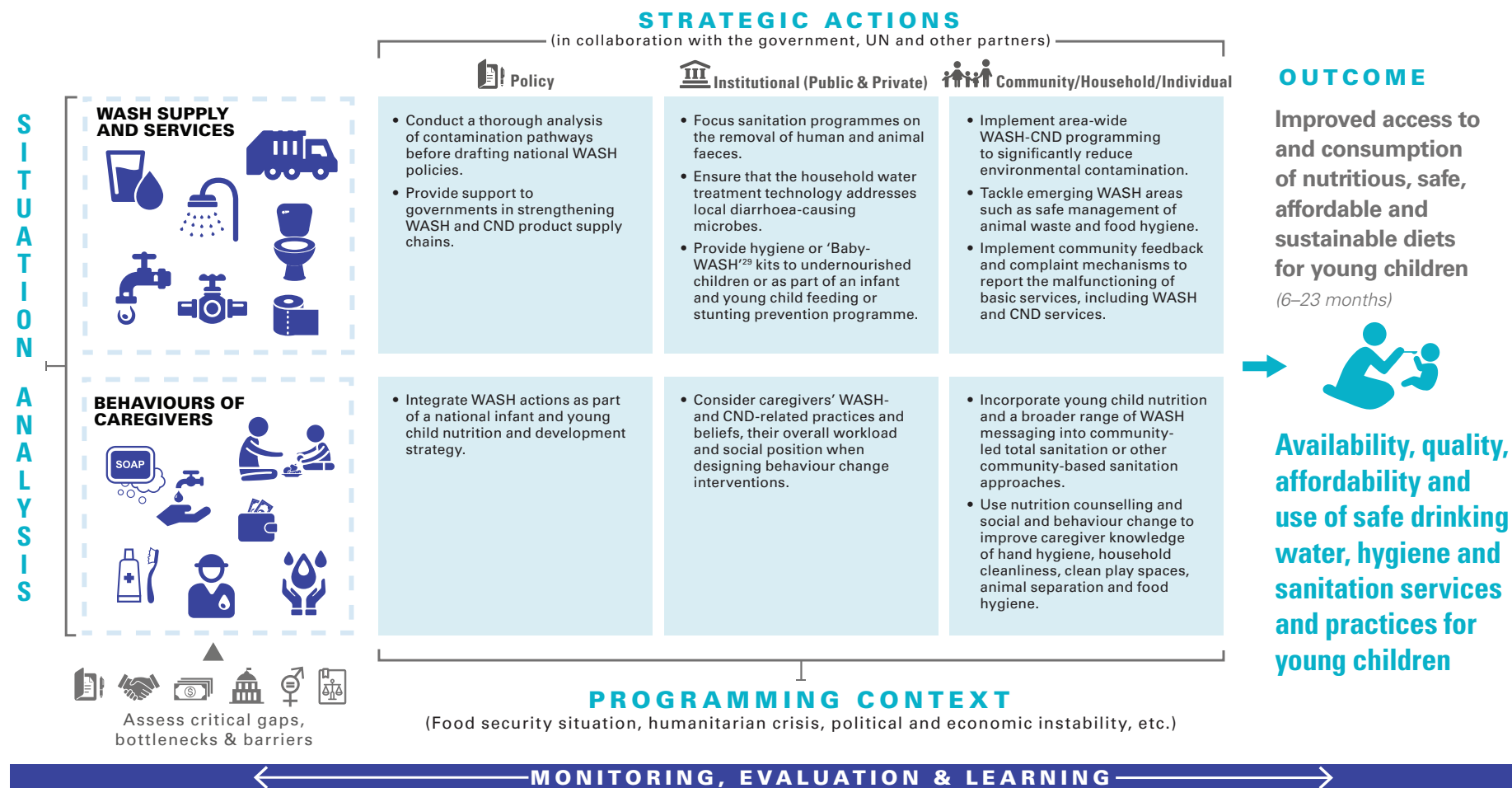


Figure 4: Utilizing the Action Framework for Improving the Nutrition of Young Children through the Water and Sanitation System – Examples of Actions

Source: United Nations Children's Fund (UNICEF). *Improving Young Children's Diets During the Complementary Feeding Period*. UNICEF Programming Guidance. New York: UNICEF, 2020.

Figure 4 provides examples of actions within the water and sanitation system that can be taken at the policy, institutional and community levels.

3. Carrying out monitoring, evaluation and learning activities to measure context specific short-term and long terms changes. Consider the following as part of this monitoring, evaluation and learning process:

- Monitor WASH and nutrition and child development indicators recorded by major national surveys (e.g., Multiple Indicator Cluster Surveys (MICS), Standardized Monitoring and Assessment of Relief and Transition (SMART) Surveys, etc.).
- Monitor WASH interventions for young children in a given context, using process indicators and considering how to track long-term changes.
- Measure behavioural outcomes related to the use of water and sanitation services and hygiene practices and link them with nutrition and development outcomes.
- Measure the impact of WASH interventions for young children in a given context, such as the pathogen load from animal faeces, food hygiene practices, feeding practices, including water consumption, and the cleanliness of flooring and play spaces.
- Complement process indicators with outcome/ impact indicators.

The Action Framework guides programmers in designing and implementing transformative WASH approaches to improve nutrition and development outcomes for infants and young children. This guidance brief has described the concept of transformative WASH, outlined its importance in early childhood and provided a framework for implementing transformative WASH interventions using a systems approach. The following section will provide recommendations for taking action and advocating for the importance of this approach among governments and partners.

Moving from evidence to advocacy and action

Despite their best intentions, many programmers face barriers to operationalizing integrated CND and WASH policies and programmes. Below are four suggestions to inspire cross-sectoral collaboration and commitment to act on the latest evidence on transformative WASH programming to improve young children's diets, nutrition and development.

- 1. Generate context-specific evidence using existing data to make a case for investment.** Analyse existing country level secondary data on WASH and child nutrition and development to advocate for greater focus on and investment in WASH as a component of malnutrition prevention and reduction efforts. Conducting advanced statistical analysis on the correlation between WASH and nutrition factors (based, for example, on recent MICS data) can help to identify which activities to prioritize and also develop a stronger advocacy case using country-specific data. Data should be disaggregated so that barriers to accessing WASH services can be identified and addressed in WASH programming and policies.
- 2. Establish a working group to lead advocacy on CND and WASH.** Under the leadership of the government, convene relevant partners via an advocacy working group (e.g., within a broader working group on WASH and CND) to lead the development of an advocacy plan and common advocacy messages that are specifically targeted to the changes required in the country context.
- 3. Break silos between sectors by leveraging existing policies and strategies.** When advocating for action within UNICEF, draw on the approaches outlined in the WASH and CND strategies and frameworks that guide UNICEF's efforts. The UNICEF Nutrition Strategy 2020–2030²⁵ places WASH as a cornerstone of preventing malnutrition in young children using a systems approach, with the intended result that *“water and sanitation systems protect, promote and support diets, services and practices that prevent child malnutrition in all its forms”*. Similarly, the UNICEF Strategy for Water, Sanitation and Hygiene, 2016–2030²⁶ prioritizes cross-sectoral interventions, including *“targeted sanitation and hygiene interventions in support of programmes to reduce malnutrition”* across the child's life course.
- 4. Implement transformative WASH programmes and capture nationally generated evidence.** Seize opportunities to integrate transformative WASH and CND programming and use evidence from these experiences to tailor programmes to local contexts. Nationally generated evidence is often a successful component for scaling up. Capture implementation costs and include economic arguments to illustrate the return on investment where possible.

CASE STUDY 2

Integrated social behaviour change to improve the nutrition status of young children in northern Mozambique

To strengthen and influence the water and sanitation system for nutrition results in Mozambique, UNICEF collaborated with the Government to implement a national multisectoral plan to improve child nutrition and development. A dual focus on improving WASH and nutrition services, as well as caregiver behaviours, resulted in a unique project where WASH and nutrition programmes were fully integrated and largely co-located in the same communities.

In Mozambique, more than one in every three children (38 per cent) under the age of 5 has stunted growth. Stunting is more common among children living in the heavily populated northern provinces of Nampula and Zambézia, where the prevalence is more than four times that of the southern areas.³⁰ Furthermore, the risk of stunting in children from poor families is double that of children from the wealthiest families. At the same time, access to sanitation is very poor, with one of the highest open defecation rates in sub-Saharan Africa (36 per cent) and more than 88 per cent of the rural population do not have or do not use improved sanitation facilities.

To help address these stark inequities, UNICEF, in collaboration with the Government of Mozambique, implemented the 'Improving Nutritional Status of Children'

programme in seven districts of Nampula and Zambézia provinces over the period 2017–2022, with financial support from the European Union. The overall aim was to reach 100,000 young children and their families annually with direct interventions in targeted districts to improve the nutritional status of children under 5 years as well as pregnant and lactating women. The desired outcomes were: 1) strengthening provincial and district capacity for advocacy, coordination, management and progressive implementation of the Multisector Action Plan for Stunting Reduction; 2) increasing the use and quality of nutrition and WASH services; and 3) increasing the adoption of key behaviours by caregivers, including pregnant and lactating women.

WASH and nutrition programmes were fully integrated and largely co-located in the same communities. A strong social and behaviour change component was also included through engagement with various community platforms and actors to reinforce consistent messaging for improved nutrition and WASH behaviours. The implementation of CLTS was modified to include nutrition messages and interventions, while nutrition activities included messaging on sanitation and hygiene. Sanitation and nutrition groups were formed and equipped with knowledge to monitor sanitation

and hygiene indicators. Certification of open defecation-free communities was combined with certification of 'model families' who demonstrated key behaviours, combining area-wide and household level interventions to maximize impact.

Key learnings from the programme were as follows:

1. High-level commitment of the government to developing multisectoral nutrition plans, guided by evidence, attracts and enables funding for joint programmes for stunting reduction.
2. Investing in multisectoral governance structures from national to community level ensures ownership of the interventions and results, increases sustainability, and ensures coordination of multiple investments/partnerships.
3. With small investments, other sectoral platforms and interventions can be leveraged to foster consistent messaging (e.g., child cash grant agents, agricultural extensionists, social workers, etc.), with the aim of 'full saturation' of key messages for social and behaviour change at the community level.



Figure 5: Interventions included within the Mozambique nutrition and WASH programme

CASE STUDY 3

Evaluating the potential of a child-focused sanitation and nutrition programme in Kitui County, Kenya

In Kenya, the Kitui County Government implemented a CLTS programme across 2,100 villages from June 2016 to January 2017. From October 2016 to January 2017, with support from UNICEF, a combined sanitation and nutrition (SanNut) intervention was designed and delivered alongside the CLTS programme, engaging caregivers of children under 5 years of age through two community meetings and additional messaging during routine household visits about the

importance of a sanitary household environment, proper hygiene practices and various nutritional practices (see Table 1). This approach was important given the high prevalence of stunting in Kitui County (46 per cent) and the opportunity to leverage the existing CLTS programme to deliver child-centred messaging on nutrition and sanitation.

To evaluate the effectiveness of the SanNut intervention, UNICEF and the Government of Kitui County

conducted a cluster-randomized controlled trial to assess the impact of the SanNut intervention on caregiver knowledge, sanitary and hygiene practices, sanitation outcomes and nutrition outcomes. The evaluation included caregivers of children under 5 years of age across 604 villages in Kitui County: 309 villages were randomly assigned to receive both the SanNut intervention and the standard CLTS programme, while 295 control villages only received the CLTS interventions (see Table 1).

Table 1: CLTS interventions compared with SanNut interventions²⁷

CLTS topics	Additional SanNut topics
Highlight all points of open defecation and other sources of faeces within the community that can lead to contamination, for everyone in the community	Highlight all sources of faecal matter within the homestead that can lead to faecal contamination of children as they interact with their environment
Link diarrhoeal diseases and the associated health costs with poor sanitation	Link stunting and impaired cognitive development in children to poor sanitary and nutritional practices
Emphasize the use of latrines and handwashing with water and soap/ash among adults to prevent faecal contamination	Emphasize proper disposal of child faeces and handwashing with water and soap/ash among both children and adults
	Promote recommended infant feeding practices, especially exclusive and complementary breastfeeding at appropriate ages, and encourage the use of nutrient-rich foods
	Encourage caregivers to bring children to regular health facility visits to receive routine health services, such as vitamin A supplementation and deworming

The study results showed that the SanNut intervention led to modest improvements in sanitation knowledge and practices among caregivers who received both the SanNut and CLTS interventions. Further, households that received both interventions were more likely to have a handwashing station that was stocked with soap and water, more likely to dispose of child faeces correctly and more likely to report washing hands after handling child faeces or feeding

children. SanNut did not have an impact on nutritional practices, such as breastfeeding, vitamin A supplementation or deworming; however, process indicators on the practices and uptake of services described earlier were positive. Non-child-specific outcomes, including latrine use and homestead sanitary conditions, were similar in both intervention groups.

Overall, the study showed that the integration of child-focused messaging was most effective for

topics that were closer to CLTS objectives, such as sanitation practices and handwashing. These results suggest that the SanNut programme presents a potentially low-cost opportunity for integrating child-focused sanitation messages into CLTS, with some success.



SPOTLIGHT 1

How can transformative WASH be integrated into the response to child nutrition and development during emergencies?

During an emergency, access to adequate sanitation and water services and availability of hygiene products can be severely compromised. The disruption of basic WASH services and supplies can increase the risk of disease, including diarrhoea and cholera. The risk of malnutrition depends on factors such as the underlying levels of wasting, infant feeding practices, access to safe water and health services. The risks to feeding and caring practices for infants, young children and their mothers and caregivers are high. Humanitarian response occurs in a charged operational environment where there is a disturbance or destruction of existing services, often coupled with the need to increase services or offer new services entirely. Each of these presents a specific option for ensuring that WASH components are integrated into programming for young children, or at least that WASH services converge in the same geographic location.

Consider the following when implementing synergized WASH and CND actions during emergencies.

1. For endemic or cyclical emergencies, consider how preparatory work for some of the actions can be accomplished before crises hit.
2. Implement or scale up simplified approaches for the early detection

and treatment of child wasting. Consider including a stronger focus on targeting children with severe wasting with WASH interventions, including higher intensity activity at the household level (such as more regular visits by community health workers). Already malnourished children are at heightened risk of disease or becoming further malnourished.

3. Select WASH actions that can be quickly and easily implemented, as the staff involved in emergency response may already be overwhelmed. Incorporate those into existing plans and standard operating procedures for emergency response.
4. Identify the actions needed to strengthen systems or enhance preparedness to ensure that integrated or synergized WASH and CND programmes can scale up or down in response.
5. Ensure adequate food hygiene with reference to young children's diets. Hygiene practices and access to services and supplies are easily disturbed during emergencies.
6. Set realistic reporting requirements during emergencies. Complicated indicators will only produce frustration and may result in poor quality reporting.

International standards for programmatic response exist, such as the Sphere Minimum Standards in Humanitarian Response. Likewise, there may be national policies and standards for emergency response within the WASH and nutrition sectors. The UNICEF Core Commitments for Children in Humanitarian Action form the core UNICEF policy framework for humanitarian action, setting commitments and benchmarks, including sectoral commitments and systems-strengthening for child nutrition and development.

The Operational Guidance on Infant Feeding in Emergencies³¹ is particularly relevant, as it aims to support governments and humanitarian actors in safeguarding infant and young child survival, growth and development in humanitarian settings by highlighting relevant opportunities for different sectors, including WASH.

UNICEF is the global lead for both the WASH and the Nutrition Cluster, which provides an opportunity to integrate transformative WASH into the entire WASH and nutrition sector emergency response.



SPOTLIGHT 2

How can we optimize reaching all young children with WASH services and messages?

Young children need to receive ‘nurturing care’ – which is composed of adequate health, nutrition, early stimulation, learning opportunities, care and protection – for optimal cognitive and psychosocial outcomes. Early childhood development (ECD) refers to a range of processes that sustain, support and aid in the holistic development of children from birth up to school entry around 5 or 6 years of age. It is an opportunity to optimize children’s development through the combined impact of services for health, nutrition, WASH, child protection and early learning.

Parenting support programmes through one-on-one or group counselling sessions are a vital component to achieving holistic ECD objectives, providing behaviour change communication to parents on health, nutrition and WASH. Ultimately, parenting support is intended to promote a healthy environment for children while at home and to encourage parents to follow healthy practices within their household.

Young children may not always be cared for in the home; therefore, it is critical to also address other settings where

children gather. Increasingly, daycare and nursery services provide care for the youngest children (less than 3 years of age) during the day while parents work. In countries where attendance in daycare or nursery is high, the use of daycare platforms to provide key holistic ECD services and activities is an important link to ensure equity in service delivery.

Preschool platforms, either in the community or through centres, provide an opportunity to target children aged 3 to 6 years through the provision of healthy, safe foods and appropriate hygiene and sanitation facilities. This has the direct effect of promoting a healthy environment for children, while encouraging them to apply the messages they have learned. Key practices such as hand washing, food hygiene, drinking clean water and eating a nutritious diet can be reinforced in this slightly older age group with age-appropriate interventions. Numerous materials and methods from school-based WASH can be used or adapted for preschool. WASH curricula can also be incorporated within pre-service and in-service teacher education.³²

A UNICEF technical officer explains how WASH behaviours are reinforced among young children in preschool classrooms in Cambodia:

“Acknowledging the younger children’s different learning styles and inability to understand complex concepts has been crucial for successful WASH education in this school. Interactive learning and playful engagement have encouraged the children to put their new habits into practice. Children have two songs, one for handwashing and one for using the toilet, which they proudly sing. Songs are an excellent way to teach young children good behaviour and skills, and an important part of any preschool classroom.” – UNICEF Cambodia³³

ANNEX 1: HOW CAN YOU LEARN MORE?

This annotated bibliography provides key guidance and literature relevant to delving deeper into integrating WASH and nutrition for improved health, nutrition and child development outcomes.

Integrating nutrition and WASH

Action Against Hunger, WASH'Nutrition: A practical guidebook on increasing nutritional impact through integration of WASH and Nutrition programmes, Action Against Hunger, 2017. <https://www.actionagainsthunger.org/publications/increasing-nutritional-impact-through-integration-wash-and-nutrition-programmes/>

This operational guidebook primarily addresses field practitioners and WASH and nutrition programme managers working in humanitarian and development contexts. It provides practitioners with practical information and tools for designing and implementing effective WASH and nutrition programmes.

UNICEF, Nutrition-WASH Toolkits: Guide for practical joint actions, UNICEF East Asia and the Pacific Regional Office, Bangkok, 2016. <https://unicefapronutritionwashtoolkit.com>

This toolkit presents practical guidance for progressing towards more systematically integrating WASH and nutrition programming from a holistic point of view. Programming is much more than project implementation, and as such, the guidance focuses both on upstream and downstream actions for improved systems.

UNICEF, Synergized WASH and Nutrition Toolkit, UNICEF Eastern and Southern Africa Regional Office, UNICEF, 2016. <https://www.unicef.org/esa/reports/synergized-wash-and-nutrition-programming>

This is a modular toolkit and is intended to be used to help the user progress from implementing sector-specific programmes to influencing synergized WASH and nutrition programmes. This toolkit has been designed for use in a variety of contexts, from fragile contexts to more stable contexts, where UNICEF programmes are more focused on systems-strengthening and child development.

WHO, USAID and UNICEF, Improving Nutrition Outcomes with Better Water, Sanitation and Hygiene: Practical solutions for policies and programmes, Geneva, WHO, 2015. <https://www.who.int/publications/i/item/9789241565103>

This document provides an overview of the evidence of nutrition gains that can be achieved with improved WASH, a description of key WASH practices, and practical knowledge and guidance on how to integrate WASH into nutrition programmes, including important monitoring and evaluation aspects.

WHO Guidelines on sanitation and health. Geneva: World Health Organization; 2018. <https://who.int/publications/i/item/9789241514705>

These guidelines provide comprehensive advice on maximizing the health impact of sanitation interventions. The guidelines summarize the evidence on the links between sanitation and health, provide evidence-informed recommendations, and offer guidance for international, national and local sanitation policies and programme actions.

Baby-WASH

Action Against Hunger, Baby WASH and the 1,000 days: A Practical Package for Stunting Reduction, Action Against Hunger, 2017. <https://www.actionagainsthunger.org/publication/2017/10/babywash-and-1000-days>

This document proposes a package of activities at the household level to integrate WASH, nutrition and health sectors around the 1,000 days for stunting prevention.

UNICEF Eastern and Southern Africa Learning Note 2020. Baby WASH Programming Integrating water, sanitation and hygiene interventions across sectors to impact child health outcomes. <https://www.unicef.org/esa/reports/baby-wash-programming>

This Learning Note aims to highlight the potential impact of Baby-WASH, which sits at the intersection of critical interventions for childhood health, and to illustrate simple entry points and possible approaches to programming in Eastern and Southern Africa.

Discussions around evidence

Cumming, O., Arnold, B.F., Ban, R. et al. The implications of three major new trials for the effect of water, sanitation and hygiene on childhood diarrhoea and stunting: a consensus statement. *BMC Med* 17, 173 (2019). <https://doi.org/10.1186/s12916-019-1410-x>
This paper reports the conclusions of an expert meeting convened by the World Health Organization and the Bill & Melinda Gates Foundation to discuss the findings of three large randomized controlled trials of WASH (WASH-benefits and SHINE). It presents five key consensus messages as a basis for wider discussion and debate in the WASH and nutrition sectors.

Macintyre, A and Strachan, C. (2021) 'Sanitation, Hygiene and Environmental Cleanliness for Child Development' *Frontiers of Sanitation: Innovations and Insights* 19, Brighton IDS, DOI: 10.19088/SLH.2021.022 <https://doi.org/10.19088/SLH.2021.022> <https://opendocs.ids.ac.uk/opendocs/handle/20.500.12413/16954>
This resource document draws on the transformative WASH concept to explore and outline what may be required of WASH implementation stakeholders in efforts to support child development outcomes.

UNICEF, *WASH and Nutrition: Internal Discussion Paper*, March 2020, UNICEF, New York, 2020.
This paper focuses on the evidence around how WASH interventions impact the prevention of growth faltering in key population groups. It reviews the evidence and provides recommendations for UNICEF's WASH-nutrition programming.

World Health Organization and United Nations Children's Fund (2019). *Position paper: Implications of recent WASH and nutrition studies for WASH policy and practice*. UNICEF, New York. <https://www.who.int/publications/m/item/implications-of-recent-wash-and-nutrition-studies-for-wash-policy-and-practice>
In 2018, the WASH sector was surprised by three new high-quality studies (WASH Benefits, Kenya and Bangladesh and SHINE, Zimbabwe) that showed little or no impact of selected WASH interventions on reducing childhood diarrhoea and stunting. The purpose of this paper is two-fold: to summarize the studies and the responses, contextualizing their findings within the wider body of evidence; and to distil the implications for future WASH investments, including WASH and nutrition co-programming, to guide practice, policy and research.

Additional relevant resources

UNICEF, *The UNICEF Game Plan to Reach Safely Managed Sanitation 2022-2030*. 2022. <https://www.unicef.org/documents/sanitation-game-plan>
This strategy document emphasizes the importance of transformative WASH, including higher levels of sanitation service, area-wide sanitation coverage and systems-strengthening to achieve health and nutrition benefits for children.

UNICEF, *Disability Inclusive WASH Practices Guidance Note*, UNICEF, 2017. <https://washenablingenvironment.files.wordpress.com/2017/05/wash-and-disability-guidance-note-final.pdf>
The purpose of the guidance note is to provide a practical tool for strengthening the inclusion and access of children and adults with disabilities in UNICEF WASH interventions. The guidance note starts with an outline of why disability inclusion is important in WASH, followed by key strategies for including people with disabilities in WASH programming, and entry points for inclusive and accessible WASH programming. It includes suggested tools and additional resources.

UNICEF *Programming Guidance on Improving Young children's Diets during the Complementary Feeding Period*, 2020. <https://www.unicef.org/documents/improving-young-childrens-diets-during-complementary-feeding-period-unicef-programming>
This Programming Guidance goes beyond feeding practices to articulate interventions and approaches for improving the availability, accessibility, affordability and consumption of nutritious and safe complementary foods. In addition, this Programming Guidance describes the most recent evidence on improving complementary feeding, explores the determinants and drivers of young children's diets, and presents action frameworks for delivering nutrition results for children through the food, health, water and sanitation, and social protection systems.

ENDNOTES

- 1 United Nations Children's Fund and World Health Organisation (2019). *Position paper: Implications of recent WASH and nutrition studies for WASH policy and practice*. UNICEF, New York.
- 2 Macintyre, A and Strachan, C. (2021) 'Sanitation, Hygiene and Environmental Cleanliness for Child Development' *Frontiers of Sanitation: Innovations and Insights 19*, Brighton IDS, DOI: 10.19088/SLH.2021.022.
- 3 This was defined in a joint position paper in 2019: United Nations Children's Fund and World Health Organisation (2019). *Position paper: Implications of recent WASH and nutrition studies for WASH policy and practice*. UNICEF, New York. <https://www.who.int/publications/m/item/implications-of-recent-wash-and-nutrition-studies-for-wash-policy-and-practice>, and how it can be used to strengthen efforts to improve survival, nutrition and development in early childhood. It brings together the latest developments and good practices in applying transformative WASH through joint programming to contribute to improved child nutrition and development outcomes, including improved diets for infants and young children and the prevention of undernutrition. The brief offers a practical approach to applying a systems lens to all phases of joint programming.
- 4 United Nations Children's Fund (UNICEF), World Health Organization (WHO), International Bank for Reconstruction and Development/ The World Bank. *Levels and trends in child malnutrition: UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates: Key findings of the 2023 edition*. New York: UNICEF and WHO; 2023. CC BY-NC-SA 3.0 IGO. <https://www.childwasting.org/>
- 5 UNICEF Sustainability and Climate Change Action Plan (2023-2030)
- 6 Leroy, J. L., Ruel, M., Habicht, J. P., & Frongillo, E. A. (2014). Linear growth deficit continues to accumulate beyond the first 1000 days in low- and middle-income countries: global evidence from 51 national surveys. *Journal of Nutrition*, 144(9), 1460-1466. doi: 10.3945/jn.114.191981.
- 7 United Nations Children's Fund (UNICEF). *Fed to Fail? The Crisis of Children's Diets in Early Life*. 2021 *Child Nutrition Report*. UNICEF, New York, 2021.
- 8 Pan American Health Organization. (2003). *Guiding principles for complementary feeding of the breastfed child*. PAHO, Washington D.C.
- 9 Macintyre, A and Strachan, C. (2021) 'Sanitation, Hygiene and Environmental Cleanliness for Child Development' *Frontiers of Sanitation: Innovations and Insights 19*, Brighton IDS, DOI: 10.19088/SLH.2021.022
- 10 Environmental enteric dysfunction (EED): A sub-clinical condition, characterized by a flattening in the lining of the intestines, that results in a reduced ability to absorb nutrients properly from food as well as increased permeability to bacteria and parasites. EED is assumed to be caused by unhygienic environments where there is constant exposure to human or animal faecal microbes. EED is sometimes referred to as tropical enteropathy or environmental enteropathy.
- 11 UNICEF, *Nutrition-WASH Toolkits: Guide for practical joint actions*, UNICEF East Asia and Pacific Regional Office, Bangkok, 2016
- 12 WHO/UNICEF JMP (2023), *Progress on household drinking water, sanitation and hygiene 2000-2022: Special focus on gender*
- 13 Zavala E, King SE, Sawadogo-Lewis T, Robertson T. Leveraging water, sanitation and hygiene for nutrition in low- and middle-income countries: A conceptual framework. *Matern Child Nutr*. 2021 Jul;17(3):e13202. doi: 10.1111/mcn.13202. Epub 2021 May 14. PMID: 33988303; PMCID: PMC8189228.
- 14 UNICEF Sustainability and Climate Change Action Plan (2023-2030)
- 15 Fischer Walker CL, Walker N, Black RE. Updating the assumptions on the impact of household water, sanitation and hygiene interventions on diarrhea morbidity in young children. *J Glob Health* 2022;12:08003.
- 16 Husseini, M., Darboe, M.K., Moore, S.E. et al. Thresholds of socio-economic and environmental conditions necessary to escape from childhood malnutrition: a natural experiment in rural Gambia. *BMC Med* 16, 199 (2018). <https://doi.org/10.1186/s12916-018-1179-3>.
- 17 Cumming, O., Arnold, B.F., Ban, R. et al. The implications of three major new trials for the effect of water, sanitation and hygiene on childhood diarrhea and stunting: a consensus statement. *BMC Med* 17, 173 (2019). <https://doi.org/10.1186/s12916-019-1410-x>.
- 18 United Nations Children's Fund and World Health Organisation. *Position paper: Implications of recent WASH and nutrition studies for WASH policy and practice*. UNICEF, New York
- 19 *Guidelines on sanitation and health*. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.. <https://who.int/publications/item/9789241514705>
- 20 UNICEF Eastern and Southern Africa Learning Note 2020. *Baby WASH Programming: Integrating water, sanitation and hygiene interventions across sectors to impact child health outcomes*.
- 21 United Nations Children's Fund (UNICEF). *Improving Young Children's Diets During the Complementary Feeding Period. UNICEF Programming Guidance*. New York: UNICEF, 2020. United Nations Children's Fund. (UNICEF).
- 22 United Nations Children's Fund. (UNICEF). *Nutrition, for Every Child: UNICEF Nutrition Strategy 2020–2030*. UNICEF, 2020, New York
- 23 The components include: complementary feeding status, trends and predictors; policy landscape of relevant sectors; programme service delivery; knowledge, attitudes and practices; stakeholder mapping; food consumption patterns; nutrient gaps and cost of diet; barriers to accessing adequate complementary foods; and composition and marketing of locally and commercially prepared complementary foods. Financing can also be considered as an additional component.

- 25 UNICEF, *Nutrition for every child: UNICEF Nutrition Strategy 2020 - 2030*, UNICEF, New York, 2020
- 26 UNICEF, *Strategy for Water, Sanitation and Hygiene 2016-2030*, UNICEF, New York, 2016
- 27 Table adapted from Gimaiyo G, McManus J, Yarri M, *et al.* Can child-focused sanitation and nutrition programming improve health practices and outcomes? Evidence from a randomized controlled trial in Kitui County, Kenya. *BMJ Glob Health* 2019; 4:e000973. doi:10.1136/bmjgh-2018-000973
- 28 <https://www.unwater.org/our-work/sdg-6-global-acceleration-framework>
- 29 See Annex 1
- 30 Inquérito ao Orçamento Familiar (Household Budget Survey) 2019/2020)
- 31 Available at: <https://www.enonline.net/operationalguidance-v3-2017>
- 32 Wagner, Judith & Samuelsson, Ingrid. (2019). WASH from the START: Water, Sanitation and Hygiene Education in Preschool. *International Journal of Early Childhood*. 51. 10.1007/s13158-019-00236-5.
- 33 <https://www.unicef.org/cambodia/stories/age-appropriate-wash-early-childhood>

© United Nations Children's Fund (UNICEF)

March 2024

Permission is required to reproduce any part of this publication. Permissions will be freely granted to educational or non-profit organizations.

Published by:

UNICEF Nutrition and Child Development Section and
Water, Sanitation and Hygiene Section, Programme Group
3 United Nations Plaza
New York, NY 10017
USA

unicef  | for every child