

REPUBLIC OF KENYA



MINISTRY OF HEALTH

IMPLEMENTATION GUIDELINES FOR RURAL SANITATION & HYGIENE



IMPLEMENTATION GUIDELINES FOR RURAL SANITATION & HYGIENE

2022

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Acronyms

ASAL	Arid and Semi-Arid Lands
CBO	Community-Based Organisation
CHA	Community Health Assistant
CHEW	Community Health Extension Worker
CHV	Community Health Volunteer
CLTS	Community-Led Total Sanitation
DHIS	District Health Information System
G1	Grade 1 Open Defecation Free environment
G2	Grade 2 Safe & Sustainable environment
G3	Grade 3 Clean & Healthy environment
G1-ASAL	Grade 1-ASAL Excreta Free environment in ASAL communities
G2-ASAL	Grade 2-ASAL Safe & Resilient environment in ASAL communities
HH	Household
JMP	Joint Monitoring Programme for Water Supply, Sanitation and Hygiene
KESHP	Kenya Environmental Sanitation and Hygiene Policy
MALF	Ministry of Agriculture, Livestock, Fisheries and Cooperatives
MoH	Ministry of Health
MoWSI	Ministry of Water, Sanitation and Irrigation
NGO	Non-Governmental Organisation
ODF	Open Defecation Free
PHO	Public Health Officer
RTMIS	Real-Time Monitoring Information System
RuSH	Rural Sanitation and Hygiene
SDG	Sustainable Development Goal
UNICEF	United Nations Children’s Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Definitions

Animal management

Safe household management of animals includes: safe disposal of animal excreta, penning and isolation of animals, and safe handling and management of animal products.

Certification (outcomes)

An official process to confirm and certify the rural sanitation and hygiene outcomes previously verified for a particular grade of the Rural Sanitation and Hygiene Protocol.

Child excreta (safe disposal)

The urine and faeces of infants and young children, which should be safely disposed of into improved toilets or covered disposal pits.

Clean homes

Houses that have clean and swept floors, clothes and other items are well stored, with beds or mattresses.

Clean & Healthy environment

All households in the community (or administrative unit) meet the criteria for a G3 Clean & Healthy environment.

Communal areas

Areas within the settlement that are not part of household compounds, and which are accessible to all.

Community

A group of households in a single settlement, or a single neighbourhood. Usually either a village, a sub-village or a neighbourhood in a larger urban or peri-urban settlement.

Critical times (handwashing)

The times for handwashing with soap that are considered most critical to preventing faecal-oral contamination.

Diapers (safe disposal)

The washable cloths or disposable material worn by infants to absorb and retain urine and faeces.

Durable toilets

Toilets with durable slabs and pits that allow sustained use without the need for frequent repair and replacement.

Faecal sludge

Solid and liquid contents of pit latrines or septic tanks (or other excreta containment systems).

Flyproof and clean toilets

Toilets with slabs and superstructures that are free of visible excreta, and prevent flies from entering the excreta containment system.

Fomite

An object or material which is likely to carry infection (such as clothes, utensils or furniture)

Food hygiene (safe)

Food, utensils, storage areas, and food preparation and eating areas are kept clean and safe before, during and after eating.

Good nutrition

People receive the macronutrients (carbohydrates, proteins and fats) and micronutrients (minerals and vitamins) required for good health.

Household

Single or polygamous household structure, in which there is a joint provision of food or other essentials. More complex household structures should be recognised in polygamous families.

Household compound

The area around the household residence that is used and managed by the household (either fenced or unfenced)

Handwashing with soap

Act of cleaning one's hands with soap and water to remove any harmful or unwanted substances.

Liquid waste management (safe)

Safe management of the spent or used water from homes and other sources.

Hygiene

Set of practices associated with the preservation of good health and healthy living, including handwashing with soap, safe disposal of children's faeces, and keeping oneself and one's home and surroundings clean.

Malaria-safe

Prevention of malaria through vector control and protection from mosquito bites, including the use of insecticide-treated nets and screens.

Menstrual health

State of complete physical, mental and social well-being in all matters relating to the menstrual process.

Menstrual materials

Menstrual products including disposable and reusable sanitary pads, tampons and menstrual cups, and clean pieces of cotton cloth or cotton wool, that are safe and hygienic for collection and absorption of blood during menstrual periods.

Open Defecation Free (ODF)

Free from indiscriminate defecation or discharge of excreta into open spaces, water bodies or other places.

Open Defecation Free environment

All households in the community (or administrative unit) meet the criteria for a G1 ODF environment.

Personal hygiene

Act of keeping the body clean to remove any harmful or unwanted substances and prevent disease.

Resilient toilets

Sanitation facilities (and related sanitation services) designed using local materials to resist the main local sustainability challenges.

Safe & Sustainable environment

All households in the community (or administrative unit) meet the criteria for a G2 Safe & Sustainable environment.

Safely managed sanitation services

Use of improved sanitation services, with excreta either safely disposed of on-site, or transported and treated off-site.

Sanitation

Maintenance of hygienic conditions and healthy environments through safe management of human excreta, and safe management of solid and liquid wastes.

Solid waste management (safe)

Management of household and other solid wastes, including their safe collection, transfer, treatment, recycling, resource recovery and disposal.

Vector control

Control of insects or other organisms (e.g. mosquitoes, flies or bilharzia-infected snails) that carry disease from animals to humans or other insects or organisms.

Verification (outcomes)

A local administration process to inspect, assess and verify the rural sanitation and hygiene outcomes agreed for each grade of the Rural Sanitation and Hygiene Protocol.

Water management (safe)

Management of domestic water to prevent contamination through all of the stages from the water source to consumption in the home, including protection, collection, handling, transport, storage, treatment and use.

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1 Introduction

All rural communities in Kenya have to eliminate open defecation, achieve universal access to improved sanitation, and work towards clean and healthy environments by 2030¹.

Over the next eight years, county governments and sub-county administrations will have to plan and implement rural sanitation and hygiene interventions, monitor progress, and certify sanitation and hygiene outcomes in every rural community in every area of the country. The size of this challenge, and the short timeframe involved, require strengthened policy and monitoring instruments, including new guidelines for area-wide implementation of rural sanitation and hygiene interventions.

These implementation guidelines form part of a three-document guidance package developed by the Ministry of Health, with support from UNICEF, to accelerate and improve rural sanitation and hygiene services in Kenya, including:

1. **Rural Sanitation and Hygiene Protocol** (RuSH Protocol)
2. **Implementation Guidelines for Rural Sanitation and Hygiene** (Implementation Guidelines)
3. **Monitoring Framework for Rural Sanitation and Hygiene** (Monitoring Framework).

The **Rural Sanitation and Hygiene Protocol** (RuSH Protocol) sets out the sanitation and hygiene outcomes that the Government of Kenya would like rural communities, local administrations and county governments to achieve by 2030, based on national policies, strategies and plans, and on international commitments like the 2030 sanitation and hygiene target (6.2) included in the Sustainable Development Goals.

The **Monitoring Framework** details how the sanitation and hygiene outcomes required by the RuSH Protocol should be monitored over time, and how county governments should verify and certify the overall outcome grades defined by the RuSH Protocol (G1 Open Defecation Free; G2 Safe and Sustainable; and G3 Clean and Healthy).

The **Implementation Guidelines** inform county governments and local administrations how to achieve the rural sanitation and hygiene outcomes required by the RuSH Protocol, given local contexts and constraints.

The goal of the Implementation Guidelines is to scale up and improve the effectiveness of rural sanitation and hygiene interventions, and increase the equity and sustainability of services and outcomes, so that the 2030 goal of all Kenyans living in clean and healthy environments becomes a reality.

1 MoH (2016) Kenya Environmental Sanitation and Hygiene Policy 2016-2030 Nairobi: Republic of Kenya, Ministry of Health.

The huge variety of rural communities, contexts, sanitation and hygiene practices, and local administration capacity and resources across Kenya mean that a range of different sanitation and hygiene approaches and solutions are required, with different guidance being relevant, in each of these different situations.

The implementation guidelines are designed to encourage communities, county governments and local administrations, and their development partners to work towards the phased outcomes set out in the RuSH Protocol using the capacity and resources available, and adapting approaches to the local context. Therefore, the implementation guidelines suggest the main principles that should be followed in each situation, with examples of good practice and lessons learned, and encourage the creation of local innovations, adaptations and new learning from the drive to achieve these outcomes in all rural areas across all populations by 2030.

Different components of the implementation guidelines will be aimed at:

- County officials and development partners designing implementation strategies
- PHOs and partners responsible for implementation and monitoring
- CHAs and CHVs working in communities.

Training packages will be developed for the implementation guidelines (and for the rural sanitation and hygiene protocol and monitoring framework). The training will help to explain how the guidelines should be used, and which elements and components are relevant for different people working at different levels (in different contexts).

Other ongoing sanitation and hygiene initiatives

The Rural Sanitation and Hygiene Protocol has been developed in parallel with the National Sanitation Management Policy (NSMP). Both documents were developed during the same period, with close collaboration between the Ministry of Health (MoH), Ministry of Water, Sanitation and Irrigation (MoWSI) and other key sanitation stakeholders.

The national monitoring information system (MIS) for rural sanitation and hygiene will be updated to reflect the new outcomes and monitoring indicators required by the RuSH Protocol. The MoH, supported by UNICEF, is leading the MIS development process.

The RuSH Protocol will also inform the development of a new roadmap for rural sanitation and hygiene. The previous ODF roadmap expired in 2020, with a new roadmap now under development to reflect the wider environmental sanitation and hygiene objectives in the 2016 Kenya Environmental Sanitation and Hygiene Policy, and the outcomes required by the Rural Sanitation and Hygiene Protocol.

2 Rural Sanitation and Hygiene in Kenya

Sanitation and hygiene are significant challenges in Kenya. The WHO-UNICEF MDG Assessment² concluded that while “good progress” was made in Kenya towards the MDG target for drinking water, “limited or no progress” was made with respect to sanitation. Around 70% of Kenya’s population, almost 33 million people, lack access to basic sanitation services and 10% practice open defecation (OD).

Since 2011, the Government of Kenya has put in place a comprehensive set of sanitation policies and strategies to guide progress towards the universal access target stated in Kenya’s VISION 2030³. This national sanitation target is in line with the Sustainable Development Goal (SDG) Target 6.2 which aims to achieve “*access to adequate and equitable sanitation and hygiene for all and the elimination of open defecation*” by 2030.

While open defecation is largely a rural problem, the rural sanitation challenge in Kenya varies significantly by context: 83% of open defecation takes place in 15 large counties that are mostly in the Arid and Semi-Arid Lands (ASAL)⁴. At least 10 of these 15 counties have a high proportion of nomadic pastoralists, who have proved difficult to reach through conventional sanitation interventions. Furthermore, sanitation access in the ASAL counties with high open defecation rates is generally below 60%, and the proportion of unimproved toilets is generally higher than in other counties.

The main source of recent sanitation data is the 2019 Kenya Population and Housing Census. Using the census data, the Ministry of Health worked with UNICEF to class the counties into three sanitation categories:

- **Category 1 - High Open Defecation Burden:** 15 counties with large OD populations, and more than 10% OD.
- **Category 2 - Moderate Open Defecation Burden:** 11 counties with 20,000-120,000 people practicing OD, and below 11% OD.
- **Category 3 - Low Open Defecation Burden:** 21 counties with less than 20,000 people practicing OD, and less than 2.5% OD.

2 JMP (2017) Progress on Sanitation and Drinking Water WHO-UNICEF Joint Monitoring Programme on Water Supply, Sanitation and Hygiene, Progress update.

3 <http://vision2030.go.ke/inc/uploads/2018/05/Vision-2030-Popular-Version.pdf>

4 2019 Kenya Population and Housing Census.

Table 1: Category 1 - High Open Defecation Burden counties (15)

County	Total population	OD population	OD %
Lamu	143,920	25,257	17.9%
Isiolo	121,066	85,205	30.6%
Tana River	315,943	154,628	48.6%
Kajiado	1,117,840	182,097	13.6%
Samburu	310,327	203,336	65.6%
Marsabit	459,785	222,424	47.4%
Baringo	666,763	229,357	30.8%
West Pokot	621,241	262,145	42.7%
Kilifi	1,453,787	270,717	17.0%
Kwale	866,820	291,387	31.7%
Garissa	841,353	323,252	36.2%
Narok	1,157,873	332,383	28.2%
Mandera	867,457	342,312	39.4%
Wajir	781,263	347,256	43.6%
Turkana	926,976	642,666	68.1%
Total	10,652,414 (24.3%)	3,914,424 (83%)	36.7%

Table 2: Category 2 - Moderate Open Defecation Burden counties (11)

County	Total population	OD population	OD %
Kakamega	1,867,579	20,299	1.1%
Busia	893,681	22,309	2.5%
Bungoma	1,670,570	22,732	1.4%
Meru	1,545,570	24,661	1.4%
Elgeyo-Marakwet	454,480	30,920	6.8%
Kisumu	1,155,574	44,456	3.6%
Laikipia	518,560	56,779	9.4%
Siaya	993,183	59,464	6.0%
Migori	1,116,436	102,931	9.4%
Kitui	1,136,187	111,536	9.2%
Homa Bay	117,439	116,464	10.2%
Total	11,469,403 (26.2%)	612,550 (13%)	5.3%

Table 3: Category 3 - Low Open Defecation Burden counties (21)

County	Total population	OD population	OD %
Nyeri	759,164	663	0.1%
Nyandarua	638,289	917	0.2%
Kirinyaga	610,411	1,248	0.2%
Kiambu	2,417,735	2,342	0.1%
Murang'a	1,056,640	2,666	0.2%
Vihaga	95,292	3,258	0.6%
Embu	608,599	4,221	0.7%
Nairobi City	4,397,073	4,692	0.1%
Tharaka-Nithi	393,177	4,815	1.1%
Uasin Gishu	1,163,186	5,564	0.5%
Nyamira	605,576	5,823	1.0%
Taita-Taveta	340,671	8,226	2.4%
Bomet	875,689	8,940	1.0%
Mombasa	1,208,333	11,204	0.9%
Makueni	130,375	11,663	1.2%
Kisii	1,266,860	12,226	0.9%
Machakos	170,606	13,671	0.9%
Nandi	885,711	13,977	1.5%
Trans Nzoia	990,341	14,091	1.4%
Kericho	901,777	14,333	1.5%
Nakuru	2,162,202	17,170	0.8%
Total	21,677,707 (49.5%)	161,711 (3%)	0.7%

Overall, around 25% of the 78,000 rural communities in Kenya now have certified ODF status, with several completely ODF certified counties (Busia, Siaya and Kitui). Unsurprisingly, progress in the achievement of Open Defecation Free (ODF) communities has been slower in the ASAL counties that started with high open defecation rates.

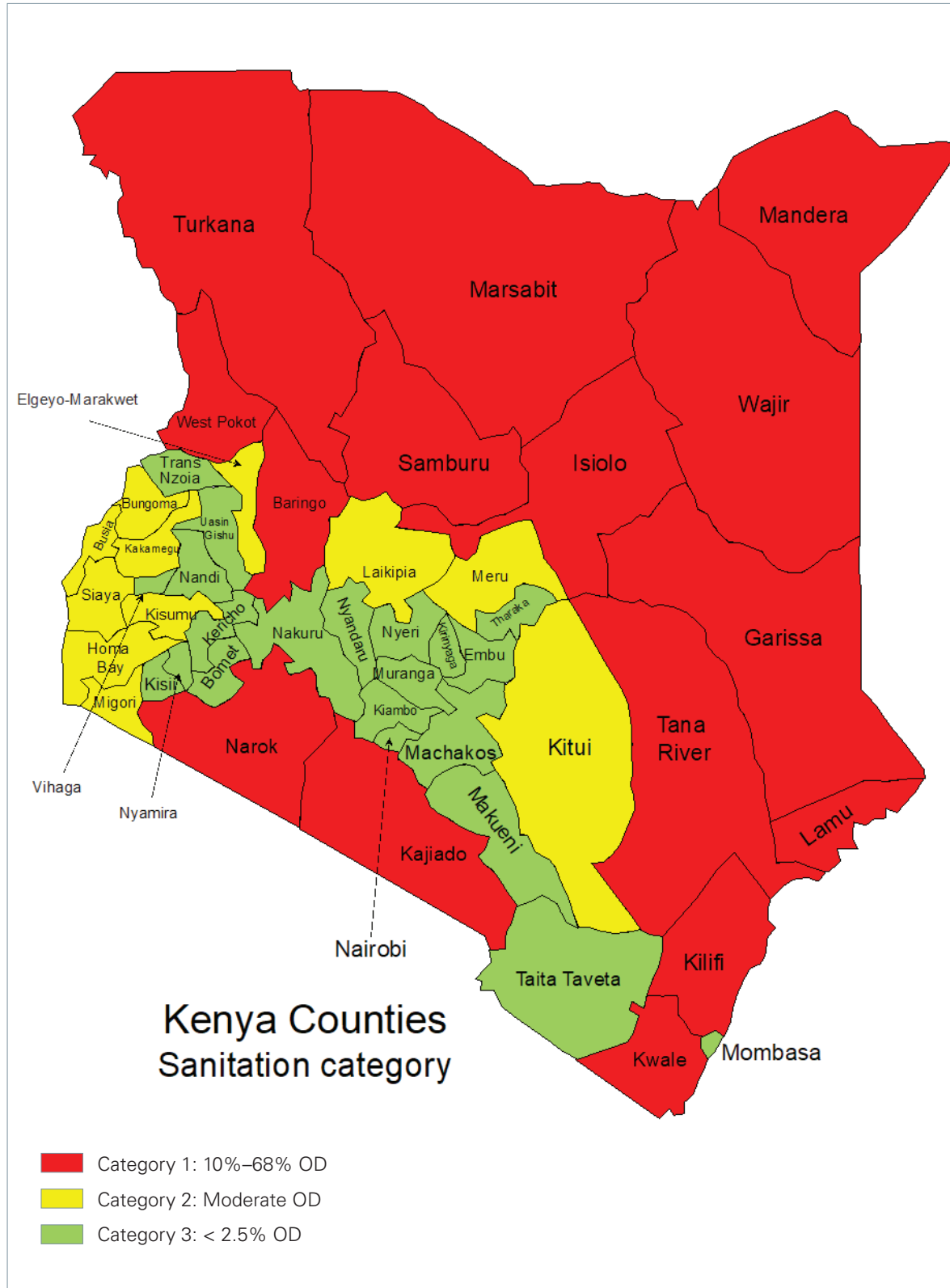
While a few high burden ASAL counties have made good progress (Garissa 47% ODF, Turkana 23% ODF, and West Pokot 16% ODF), most ASAL counties report less than 12% of rural communities with ODF certified status, with nine ASAL counties⁵ reporting less than 5% ODF communities⁶ in mid-2021. Significant efforts will be required in these high burden counties to eliminate open defecation and achieve the SDG sanitation target by 2030, with

5 June 2021 data: Mandera, Laikipia and Lamu 0% ODF, Tana River 1% ODF, Samburu and Meru 2% ODF, Marsabit 4% ODF; Baringo and Kajiado 5% ODF.

6 Ministry of Health Real Time Monitoring Information System: <http://wash.health.go.ke/clts/index.jsp> Accessed on 01 June 2021.

existing approaches and tools in need of comprehensive revision to better address the needs of pastoralists, nomadic groups and other ASAL populations.

Figure 1: Sanitation categories of Kenyan counties (by open defecation burden)



In contrast to the ASAL challenges, there are 21 “Low Open Defecation” Counties where less than 2.5% of the population practices open defecation (see Table 3), in which more than 21 million people have access to toilets⁷. These low-burden counties have generally better economic conditions, which suggests that much of the population should be able to afford market-supplied sanitation products and services, and that implementation approaches other than Community-Led Total Sanitation (CLTS), which focuses largely on the elimination of open defecation, are likely to be required to achieve ODF status, and progress towards higher levels of sanitation service.

These implementation guidelines aim to provide guidance on the variations in implementation approaches required across the wide variety of contexts and populations found in rural Kenya, including high burden ASAL areas, other challenging contexts (flooded, drought or conflict affected areas), as well as the ODF and low OD counties where most people are already using some form of toilet.

3 Rural Sanitation and Hygiene Protocol

The Rural Sanitation and Hygiene Protocol provides a phased approach for the achievement of the rural sanitation and hygiene objectives of the Government of Kenya. The RuSH Protocol is designed to operationalise and strengthen the phased approach promoted by the CLTS Protocol, through the inclusion of additional indicators and sustainability criteria.

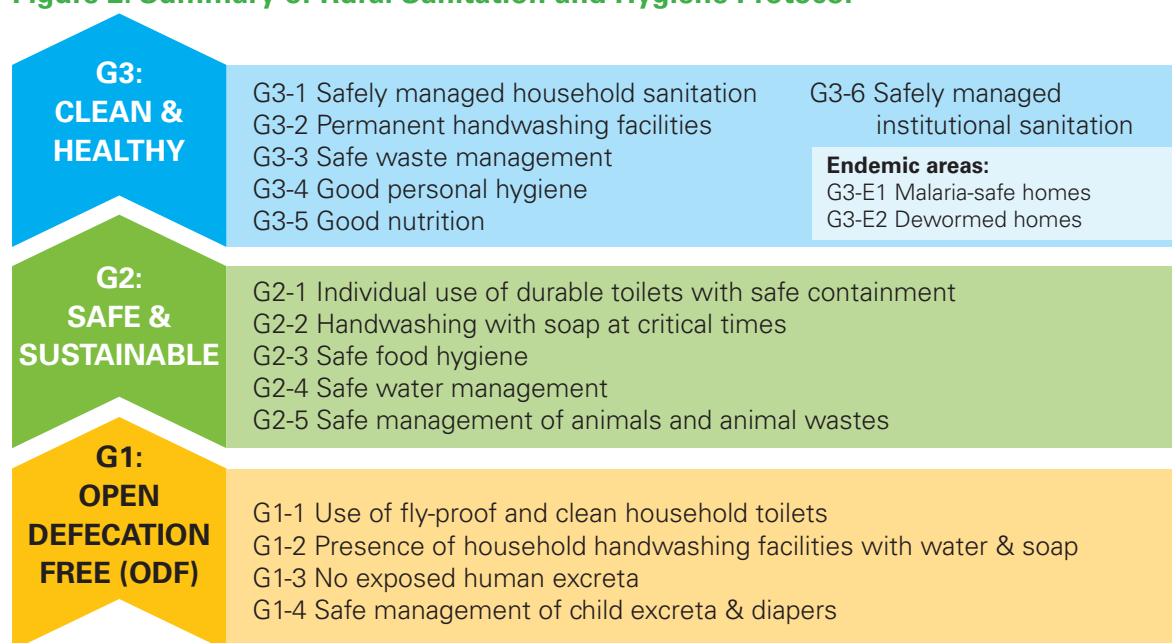
The RuSH Protocol breaks down rural sanitation and hygiene development into three grades. The first two grades (G1 and G2) include the main toilet and handwashing outcomes, with only a few other critical outcomes required in order to keep the implementation and monitoring processes simple. **The main aim of the Rural Sanitation and Hygiene Protocol is that all rural communities achieve G2 status**, which should mean that they have eliminated open defecation, are using durable toilets, washing their hands with soap at critical times, and safely managing their food, water and animal wastes.

The final G3 grade includes a number of broader hygiene and environmental health outcomes, as these outcomes become more critical to public health in rural communities once the main sanitation and hygiene outcomes are achieved (in the G1 and G2 phases).

The three grades included in the RuSH Protocol are:

- **G1 ODF:** 4 outcome indicators + 3 sustainability indicators
- **G2 Safe & Sustainable:** 5 outcome indicators + 3 sustainability indicators
- **G3 Clean & Healthy:** 6 outcome indicators + 3 sustainability indicators

Figure 2: Summary of Rural Sanitation and Hygiene Protocol



County governments and local administrations are responsible for the verification of community claims of achievement of the three grades of the protocol, and for official certification of achievement of the three grades. Further detail on the grade certification process is available in the **Monitoring Framework**.

3.1 What is the aim of the Rural Sanitation and Hygiene Protocol?

The Rural Sanitation and Hygiene Protocol aims to:

1. Operationalise the policy and strategic objectives set out in the Ministry of Health's Kenya Environmental Sanitation and Hygiene Policy 2016-2030 (and in other related health policies) by defining clear outcome targets for all rural communities.
2. Ensure that the main faecal-oral transmission routes are blocked through improved sanitation and hygiene practices by households and communities.
3. Combine conventional sanitation and hygiene outcome targets with broader environmental health and nutrition outcomes, to enhance the public health impact of the higher-level outcomes.

G1 Open Defecation Free: focused on behaviour change and the elimination of the unsafe return of excreta (through open defecation, unsafe toilets, child excreta or diaper disposal).

G2 Safe & Sustainable: focused on the safe management of toilets, hands, food, water and animal wastes to block the primary routes of faecal exposure, and encourage the development of sustainable services.

G3 Clean & Healthy: focused on secondary barriers to disease transmission and other important aspects of environmental sanitation and health, to create a clean and healthy environment through more comprehensive interventions for greater impacts on public health.

Figure 3 below summarises the relevant national policy objectives, and the main faecal-oral transmission routes (as well as the primary and secondary barriers to transmission); and illustrates how these factors determine the outcome targets set by the RuSH Protocol.

Figure 4 below documents the evolution of the Rural Sanitation and Hygiene Protocol, from the 2014 CLTS Protocol and the 2016 Kenya Environmental Sanitation and Hygiene Policy to the current set of outcomes. Only two of the outcomes are completely new: G1-4 and G2-5.

Figure 3: Health policy objectives, barriers to disease transmission, and the Rural Sanitation and Hygiene Protocol

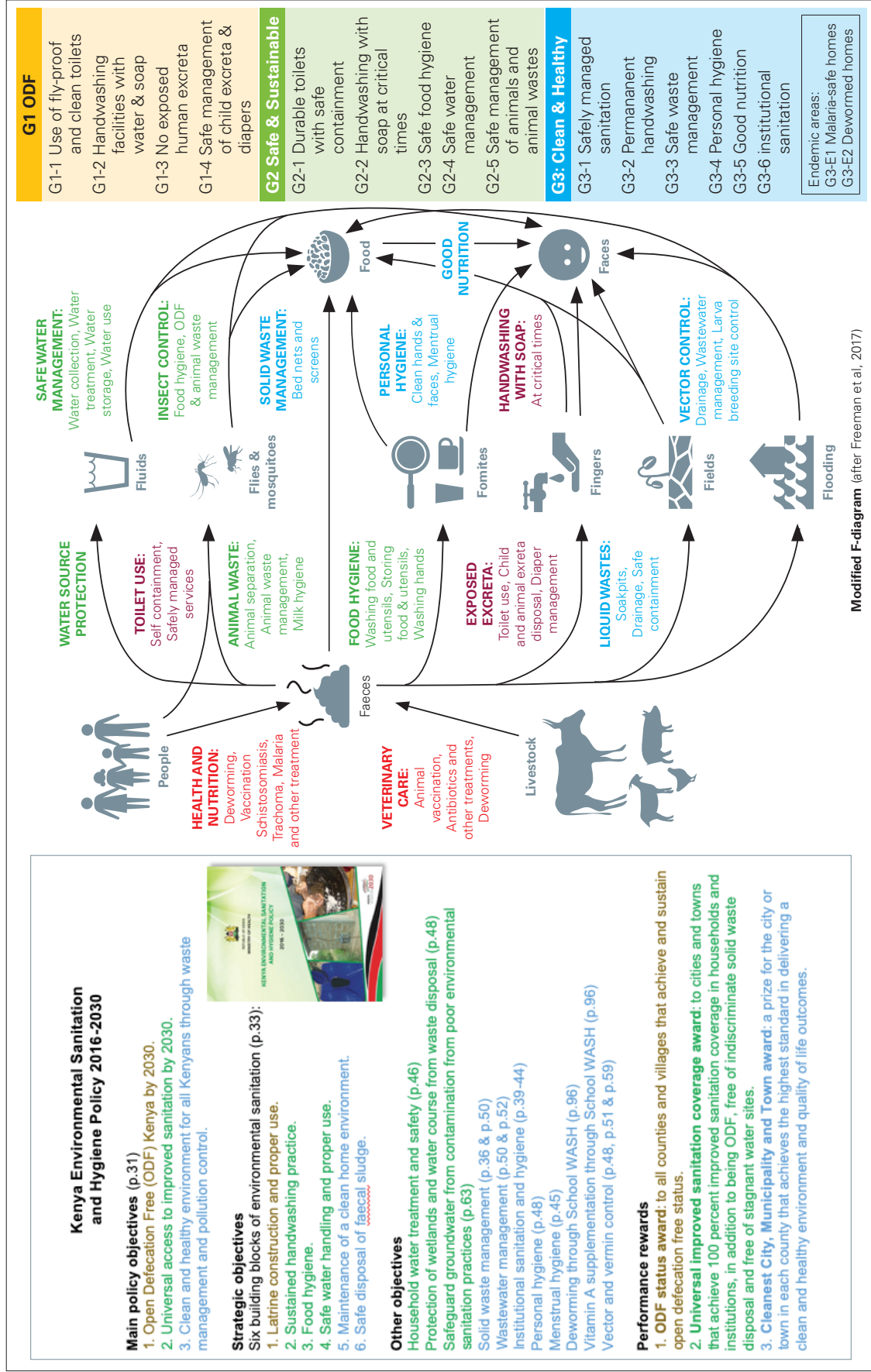


Figure 4: Rural Sanitation and Hygiene Protocol: Outcomes derive from earlier Protocol and Policy

2014 CLTS Protocol	2016 KESHP	2021 Rural Sanitation & Hygiene Protocol
Stage 1: ODF	ODF by 2030	Grade 1: ODF environment
1.1a All households have access to a toilet	Latrine construction and proper use	1-1 Use of flyproof & clean toilets
1.1b Continued use of toilet by household	Sustained handwashing practice	1-2 Handwashing facility with water and soap
1.2 Handwashing facility with soap & water	Universal use of improved sanitation	1-3 No exposed human excreta
1.3 No exposed human excreta	Protect groundwater from contamination	1-4 Safe child excreta & diaper disposal*
Stage 2: Post ODF	Institutional sanitation & hygiene	Grade 2: Safe & Sustainable environment
3.6a Functional institutional WASH facilities	Vitamin A supplements (School WASH)	2-1 Use of durable toilet with safe containment
3.6b Maintenance system for school WASH	Deworming through School WASH	2-2 Handwashing with soap at critical times
2.4 Safe water management	Safe water management & protection	2-4 Safe water management
Stage 3: Total Sanitation environment	Clean & healthy environment	2-3 Safe food hygiene
2.3 Safe food hygiene (storage & handling)	Food hygiene	2-5 Safe management of animals & animal wastes*
3.3 Visibly clean village (no wastes)	Solid & liquid waste management	Grade 3: Clean & Healthy environment
3.4 Personal hygiene	Safe disposal of faecal sludge	3-1 Safely managed household sanitation services
S1 Community system to stop OD	Personal & <u>menstrual</u> hygiene	3-2 Permanent handwashing stations
	Vector control	3-3 Safe waste management
	Clean home environment	3-4 Personal hygiene (includes menstrual health)
		3-5 Good nutrition (vaccination, Vit A, breastfeeding)
		3-6C Safely managed institutional sanitation
		3-E1 Malaria-safe homes (vector control, protection)
		3-E2 Dewormed homes

* New outcomes: not previously in 2014 CLTS Protocol or 2016 Kenya Environmental Sanitation and Hygiene Policy (KESHP)

The 2019 WHO Consensus statement on the effect of WASH on childhood diarrhoea and stunting⁸ noted the effect of context on outcomes: basic sanitation and hygiene interventions may yield benefits in settings where most people practice open defecation or rely on untreated surface water, but **other exposure sources and routes, such as animal waste or foodborne transmissions**, may be effective in reducing diarrhoeal disease in settings with better sanitation and water supply status. The guiding principle in any context is that a comprehensive package of interventions is required, *“tailored to address the local exposure landscape and enteric disease burden”*⁹.

The key message is that access to basic toilets and use of simple handwashing facilities are required everywhere, but that these outcomes alone may not be sufficient to improve public health where other faecal exposure routes are significant, or where the use of toilets and handwashing practices do not block the main faecal-oral transmission routes. For example, public health benefits may be limited if:

- Some members of the household do not use the toilet (and practice open defecation)
- Toilets are not clean and hygienic
- Excreta are not safely contained by toilets
- Infant and child excreta are disposed unsafely (to the open, drains or water bodies)
- Infant excreta are washed from diapers close to unprotected water sources, or in areas where people live and children play
- Used disposable diapers are unsafely disposed (to the open, drains or water bodies)
- Household members do not wash their hands with soap at critical times (e.g. after contact with adult or child faeces; before preparing food, cooking or feeding infants; after cleaning faeces from infants or handling diapers; or after contact with animals, animal products or animal wastes).

Recent research confirms that there is a high potential for zoonotic disease transmission (from animals to people, and from people to animals) in populations that keep animals close to the home. A systematic review of the human health impacts of exposure to poorly managed animal faeces through WASH-related pathways in low- and middle-income countries¹⁰ found that **one-third of deaths among children under five years can be attributed to pathogens that can be found in animal faeces**. The review also identified a number of other transmission routes:

- Fluids: Compromised water sources (animal faeces runoff into drinking water sources; animals sharing same sources)
- Fields: application of manure and animal faeces to fields, animals defecating in fields and public spaces
- Food: slaughtering practices, management of animal products (e.g. eggs, milk, meat)

8 Cumming et al (2019) The implications of three major new trials for the effect of water, sanitation and hygiene on childhood diarrhea and stunting: a consensus statement BMC Medicine (2019) 17:173.

9 Ibid.

10 Penakalapati G, Swarthout J, Delahoy M, McAliley L, Wodnik B, Levy K and Freeman M (2017) *Exposure to animal feces and human health: a systematic review and proposed research priorities* Environmental Science & Technology 2017, 51, 11537-11552.

- Flies: uncontained disposal of animal faeces
- Fingers: direct contact with animal excreta (handling manure for fuel, cohabitation with animals, children ingesting uncontained faeces)
- Fomites¹¹: contaminated domestic objects (toys, cooking utensils) and household surfaces (tables, food preparation and storage areas)

Given the high frequency and extensive contact with animals found in many rural communities in Kenya, **safe management of animals and animal wastes** has been introduced to the G2 phase of the RuSH Protocol, including safe management of animal wastes, handwashing with soap at critical times related to animals (e.g. after contact with animal excreta, contact with animals or contact with animal products), and safe separation of animals from under-5 children.

Three other health and nutrition related outcomes have also been added to the RuSH Protocol: G3-5 **Good nutrition**, G3-E1 **Malaria-safe homes** and G3-E2 **Dewormed homes** (the last two, G3-E1 * G3-E2, should only be used in Malaria-endemic or Soil-transmitted Helminth-endemic counties).

These health and nutrition outcomes are not usually targeted in conventional rural sanitation and hygiene interventions, as the related interventions are generally managed by other nutrition and health staff. However, the RuSH Protocol offers the possibility to utilise and combine messages, interventions and monitoring from these other health subsectors to increase the public health impact of the protocol (including improved nutrition and reduced infections from malaria, trachoma, schistosomiasis and soil-transmitted helminths), and encourage universal achievement of the selected health and nutrition outcomes.

There is increasing recognition of the linkages between BabyWASH (interventions designed to target WASH practices and behaviours that affect the health of babies) and nutrition. The RuSH Protocol already includes outcomes for safe child excreta disposal and diaper management; handwashing with soap at critical “food times” and “infant times” (related to preparing food for and feeding of infants and children, and cleaning or handling infant faeces or diapers); and safe food hygiene. But these outcomes do not address other aspects of preventive health (e.g. vaccination, deworming) or the supply of micro- and macro-nutrients (e.g. Vitamin A supplements, exclusive breastfeeding, and adequate feeding of young children from the 5 main food groups) without which the other nutrition-sensitive outcomes may have little impact.

The UNICEF Sanitation and Nutrition (SanNut) pilot project in Kitui county¹², and recent nutrition research in Zambia¹³ confirmed that the addition of a few simple nutrition-sensitive outcome targets has benefits, without detracting from the effectiveness of the other sanitation and hygiene interventions. The inclusion of a Good Nutrition outcome in the

11 Fomite = an object or material which is likely to carry infection (such as clothes, utensils or furniture)

12 Gimaiyo et al (2018) *SanNut: Integrating sanitation programs & nutrition messaging* Nairobi: UNICEF and ID Insight Policy Brief.

13 IPA (2018) *Poster child for healthy growth: rural Zambia* Innovations for Poverty Action (IPA), Health Policy Brief.

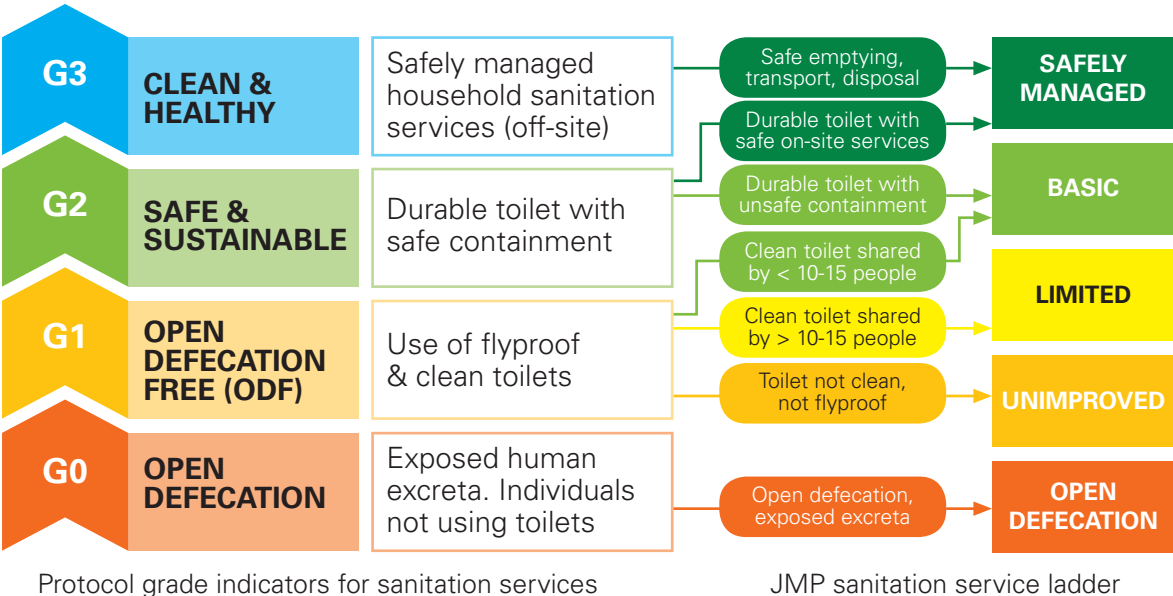
RuSH Protocol provides the opportunity to encourage community-wide improvements in nutrition (in areas where nutrition services are available), and build on the health gains from the other collective improvements in sanitation and hygiene outcomes.

Similarly, malaria prevention is rarely addressed in sanitation and hygiene programmes, despite the significant health impact of malaria in rural Kenya, and the strong associations between liquid waste management, drainage and vector control. While solid and liquid waste management are often included in sanitation programmes, the relevance of these outcomes to fly and mosquito control is seldom emphasized, and these activities are not well linked with the personal protection interventions in malaria programmes that support the use of insecticide-treated bednets and the provision of insect screens on openings in the home. The inclusion of a Malaria-safe Home outcome in the RuSH Protocol (in malaria-endemic counties) will encourage community-wide improvements in personal protection and vector control, and combine with the Good Nutrition outcome to build on the health gains from other collective improvements.

These additions to the protocol are also aligned with the Government of Kenya’s Big 4 agenda¹⁴ 2017-2022 (which includes affordable healthcare); and the related goal of Universal Health Coverage (UHC), which is driving greater support for the prevention of disease and primary healthcare in all areas of Kenya.

See **Section 7 Outcomes** for further details of the relevance of the other outcomes, including the outcome indicators and monitoring criteria included in the RuSH Protocol, and the guidelines on key principles and good practices for the achievement of each rural sanitation and hygiene outcome.

Figure 5: Alignment of RuSH Protocol with JMP sanitation service ladder



14 Big four agenda: focuses on i) food security; ii) affordable housing; iii) manufacturing; and iv) affordable healthcare.

JMP safely managed sanitation services require:

- a) **G2 Durable toilet with safe on-site containment** (toilet pits are covered and replaced when full; with no use of off-site services (e.g. no emptying, transport, treatment or disposal of faecal sludge); no surface outflows; and low risk of groundwater contamination¹⁵)
- b) **G3 Safely managed off-site sanitation services** (all off-site services, including emptying, transport, treatment and disposal, are safely managed) and G2 criteria for safe on-site excreta containment (in pit or tank) are also met (no surface outflows; low risk of groundwater contamination).

JMP basic sanitation services require:

G1 or G2 Durable or non-durable toilet that is flyproof and clean, not shared (used by less than 15-20 people). The toilet should contain excreta in a pit or tank, but does not need to meet all of the G2 criteria for safe containment (i.e. no surface outflows, or a low risk of groundwater contamination) to be classified as use of a basic sanitation service.

¹⁵ The current JMP monitoring definitions for the use of safely managed sanitation services do not require “low risk of groundwater contamination”, because it is difficult to monitor through the nationally representative sample surveys used to construct JMP service level estimates. However, safe management of sanitation services requires that pathogens do not enter groundwater used for drinking, hence this requirement has been added to these national criteria.

4 Implementation strategy

The diversity of people, communities, livelihoods, contexts and sanitation and hygiene practices found in rural Kenya means that a single national implementation strategy for rural sanitation and hygiene is unlikely to be effective. Each county and administration (sub-county or ward) contains a variety of contexts, conditions and population groups, with a range of sanitation and hygiene solutions and services required even at subnational levels.

For instance: around 25% of rural communities in Kenya are already certified as ODF, which means that everyone in these communities is using a toilet and that they should now be working on post ODF (G2) outcomes. Meanwhile, other on-road rural communities are well connected to local markets, but many households have intermittent incomes that make it difficult for them to purchase the sanitation products or services that they desire, which slows sanitation progress. Other communities are in remote locations, far from good roads and markets, with low sanitation coverage and a reliance on local materials to build facilities. And then there are nomadic pastoralists and seasonal workers who often spend long periods away from settlements, and whose households may be split into several units for periods of weeks or months, all of which makes participatory development challenging, and alters both demand for sanitation and hygiene services, as well as the type of services demanded. Finally, some communities (particularly in ASAL areas) live in water scarce areas, with little water to spare for sanitation or hygiene practices; while others live in areas with soils that are difficult to dig or build in, or face the challenges of high groundwater tables, regular flooding or a scarcity of building materials and tools.

Each of these different community types and contexts will require different sanitation and hygiene solutions. Therefore, most counties and subcounties in Kenya are likely to need to develop tailored implementation strategies that include appropriate approaches and support to reach all of the different types of community, and the different contexts, contained within each administrative unit.

The other difference in the RuSH Protocol is that it is linked to time-bound targets – the Government of Kenya wants to achieve its main sanitation and hygiene targets by 2030. These targets include the elimination of open defecation, and universal access to improved sanitation. The achievement of these targets will require sanitation and hygiene interventions in every rural community in the country over the next nine years (2022-2030).

The 2030 Vision requires that county governments formulate appropriate implementation strategies, and plan and develop large-scale, area-wide rural sanitation and hygiene programmes. These programmes should be designed to reach everyone in all communities, including people from marginalised groups, those facing contextual challenges, and women and girls with high sanitation and hygiene burdens. The aim should be to improve the

sanitation and hygiene outcomes in all of these groups, and work towards the sustained use of basic sanitation and hygiene services. Where conditions allow, the programmes should also support progressive communities and local administrations to develop safely managed sanitation and hygiene services, and address wider environmental health and nutrition outcomes (G3 outcomes).

4.1 Joint UNICEF-WaterAid-Plan International Programming Guidance

In 2019, a joint initiative by WaterAid, UNICEF and Plan International produced global programming guidance for rural sanitation¹⁶. The programming guidance recognised that, given the higher requirements of the 2030 Sustainable Development Goal (SDG) sanitation target, CLTS was not enough. Other implementation approaches would be required, alongside strengthening of government systems, and more comprehensive and area-wide implementation strategies.

The programming guidance suggested that area-wide implementation (to reach everyone everywhere, within a defined area such as a county) requires a range of approaches and programme components, including:

1. Governance (system strengthening or enabling environment strengthening)
2. Monitoring, evaluation & learning systems
3. Equity, gender and non-discrimination focus
4. Cost tracking & assessment
5. Programme management & capacity development
6. Sustainability support systems

The programming guidance also identified **four main categories of rural context**, and suggested generic implementation strategies for each of these context categories (see **Figure 5** below):

- **Rural remote communities** (hard to reach, low population density)
- **Rural on-road communities** (accessible, rural livelihoods)
- **Rural mixed communities** (rural centres with urban characteristics)
- **Communities in difficult contexts** (insecure, fragile, disaster-affected, socio-cultural barriers, geophysical constraints etc)

16 WaterAid (2019) *Guidance on programming for rural sanitation* London: WaterAid, Plan International and UNICEF joint initiative.

Figure 6: Programming guidance: components and implementation strategies

CORE COMPONENTS: to be included in all programmes.

- A. Monitoring, evaluation & learning
- B. Enabling environment strengthening
- C. Cost assessment
- D. Programme management & capacity development

IMPLEMENTATION STRATEGIES

Sets of implementation approaches adapted and combined for specific contexts. Choose one (or several) implementation strategies as a starting point for the selection and refinement of area implementation approaches.

<p>1 RURAL REMOTE</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> CLTS <input checked="" type="checkbox"/> Community-based <input type="checkbox"/> Peri-urban <input checked="" type="checkbox"/> Non-market technical <input type="checkbox"/> Market-based sanitation <input checked="" type="checkbox"/> Low-cost marketing <input type="checkbox"/> Sanitation finance <input checked="" type="checkbox"/> Support disadvantaged <input type="checkbox"/> Support shared sanitation 	<p>2 RURAL ON-ROAD</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> CLTS <input checked="" type="checkbox"/> Community-based <input type="checkbox"/> Peri-urban <input checked="" type="checkbox"/> Non-market technical <input checked="" type="checkbox"/> Market-based sanitation <input type="checkbox"/> Low-cost marketing <input checked="" type="checkbox"/> Sanitation finance <input checked="" type="checkbox"/> Support disadvantaged <input type="checkbox"/> Support shared sanitation 	<p>3 RURAL MIXED</p> <ul style="list-style-type: none"> <input type="checkbox"/> CLTS <input checked="" type="checkbox"/> Community-based <input checked="" type="checkbox"/> Peri-urban <input type="checkbox"/> Non-market technical <input checked="" type="checkbox"/> Market-based sanitation <input type="checkbox"/> Low-cost marketing <input checked="" type="checkbox"/> Sanitation finance <input checked="" type="checkbox"/> Support disadvantaged <input checked="" type="checkbox"/> Support shared sanitation 	<p>4 DIFFICULT CONTEXTS</p> <p>Groups to reach:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Conflict-affected or insecure areas <input checked="" type="checkbox"/> Physically challenging areas <input checked="" type="checkbox"/> Non-responsive or hard-to-reach communities <input checked="" type="checkbox"/> Non-responsive or hard-to-reach groups within communities
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CORE THEMES: programme components, strategies and approaches should be designed to address the core themes.

- H. Equity and non-discrimination
- I. Gender equality
- J. Sustainability support

CORE APPROACHES: included to address other important faecal exposure pathways.

- K. Hygiene behaviour change communication (handwashing; hygiene; personal, food, menstrual; safe water management)
- L. Environmental sanitation (animal excreta, solid & liquid wastes, water safety, faecal sludge, vector control)
- M. Nutrition sensitive WASH (Baby WASH: safe births, child faeces, child hygiene, clean play spaces)

ANNEXES: provide more detailed guidance for all of the components, strategies, themes and approaches.

This Implementation Guidelines document adapts and refines the global guidance on programming for rural sanitation and hygiene to the specific and varied contexts and challenges found in rural Kenya.

4.2 County Implementation Strategy

Each county should develop an overall implementation plan for achievement of its 2030 rural sanitation and hygiene targets (i.e. to achieve the outcomes set out in the RuSH Protocol). The county implementation plan should specify the order in which rural communities are expected to achieve G1 and G2 status (e.g. how many communities per year to achieve each grade; and start to name and prioritise the communities), and suggest the number of more progressive communities that might achieve G3 status.

Different implementation strategies (or components of the strategy) will be required for different types of community and context, and these strategies will vary depending on the strength of existing government systems, and the capacity, resources and experience available to achieve the required rural sanitation and hygiene outcomes.

Five main context types have been identified for the rural areas in Kenya:

- **Rural growth centres** and low open defecation or **ODF communities**
- **On-road rural communities:** accessible by a good road; not too far from markets
- **Remote rural communities:** not easily accessible, bad roads, far from markets
- **Nomadic pastoralist communities:** fully or partially nomadic community, with arid or semi-arid conditions
- **Communities in challenging contexts:** conflict-affected, insecure/fragile, disaster-prone, physical challenges (e.g. rocky or sandy soils, high groundwater), resistant to interventions, severe cultural challenges.

An initial mapping is required to assess how many rural communities from each context type are found in the county, and confirm the sanitation and hygiene status of these communities (see **Table 4 in Section 5.2 Area-wide planning** for guidelines on strategic planning). Additional baseline information may be required to assess the sanitation situation in communities for which data are not currently available (e.g. data on the current status of the four G1 outcome indicators).

The development of an implementation strategy should start with an assessment of the county priorities and challenges, and an analysis of what is possible (in the short, medium and long-term) given existing and planned capacity and resources (see below). This analysis should also recognize that area-wide sanitation outcomes are required by 2030, thus the county needs to develop systems and work towards more comprehensive implementation programmes in a maximum of 3-4 phases (each of 2-3 years) over the next 9 years.

Systems strengthening at County level

Most county governments lack the capacity and experience to plan and undertake comprehensive systems strengthening on their own. In the absence of external support for systems strengthening, county governments should undertake a simpler process based on these four steps¹⁷:

17 UNICEF (2016) Strengthening the enabling environment for water, sanitation and hygiene New York: UNICEF Guidance Note.

Step 1: Agree on the rural sanitation and hygiene challenges

Identify the main bottlenecks and constraints to large-scale progress in rural sanitation and hygiene – what is preventing the county from achieving the desired sanitation and hygiene outcomes, and what is limiting the scale up of activities and acceleration of progress?

Build consensus and leadership to address the challenges and strengthen the subsector, through evidence-based advocacy and alliances with key stakeholders and development partners.

Step 2: Identify the main programme components needed

Use a government-led process to identify the key programme components and implementation approaches that can be implemented using current capacity, experience and resources, and which will be most effective in achieving the short-term county objectives.

Step 3: Design and implement a context-specific programme

Design and implement a programme that:

- targets critical sanitation and hygiene behaviours and outcomes (e.g. G1 outcomes).
- addresses the main challenges to progress (e.g. identify two or three critical “building blocks” that it will be realistic to strengthen over a 1-2 year period);
- builds on existing strengths to develop rural sanitation and hygiene services (e.g. CLTS expertise) and can be implemented at scale (e.g. across an entire sub-county);
- defines appropriate roles for government, development partners and other actors;
- supports government efforts to monitor and evaluate progress and performance; and
- includes a realistic investment plan.

It is recommended that counties should minimise the introduction of new approaches and interventions (or confine their use to specific pilot projects that are carefully monitored) until:

- a) some scale has been achieved in the implementation of the critical approaches,
- b) there is some evidence that key outcomes are being achieved, and
- c) there has been some progress in addressing the main challenges to progress.

Step 4: Plan for a more progressive second phase

Plan for implementation of a second phase once the first phase programme is working well and achieving some scale. Ideally the first phase programme would take around two years to refine approaches, scale up implementation, and strengthen critical systems. Where it takes longer, it is likely that more intensive monitoring and support are required (to figure out why implementation is not working, improve performance, and drive faster progress).

The second phase programme should:

- include more inclusive planning (e.g. for hard-to-reach communities and groups)
- develop implementation strategies for new outcomes (e.g. G2 or G3 outcomes)
- increase capacity development (e.g. for new implementation approaches, and in areas that are under-strength), and
- expand and improve the activities that worked well in the first phase (including rewarding the most successful individuals and organisations with more responsibility, more budget and more freedom to innovate and accelerate progress).

The ward-level analysis should consider the context type, sanitation status, and health status to determine the outcomes to be aimed for (at each grade), and the likely implementation strategy required. Finally, the systems strengthening assessment should be overlain on this information to confirm whether the initial phase will aim to cover all contexts and all implementation strategies (only in progressive and high-capacity counties), or whether the initial phase will be restricted to CLTS and adapted CLTS in the high priority wards.

Table 4 below (Implementation strategies by context) provides an outline of potential implementation strategies in the five main context types. The table aims to illustrate that minor variations will be required, depending on the context, but that some components will remain similar across all of the different contexts.

Table 4: Implementation strategies by context

G1 ODF implementation strategies				
Low OD/centre	On-road rural	Remote rural	Nomadic	Challenging
←	1. Governance	→	1. Mobile services	1. Governance
2. Follow-up Mandona	2. CLTS	→	2. Adapted CLTS	2. Adapted CLTS
3. Market-based sanitation	3. Low-cost marketing	3. Non-market tech.	3. Portable san.	3. Resilient san.
←	4. Local govt & community support	→	4. Targeted support	4. Targeted support
←	5. Monitoring & learning	→		
←	6. Equity & inclusion	→		
←	7. Sustainability	7. Resilience	7. Resilience	7. Sustainability
←	8. Cost tracking	→		
←	9. Management & capacity	→	9. Special capacity	9. Special capacity

Main implementation strategies:

- Low OD/rural centres:** CLTS no longer appropriate, but Follow Up Mandona (or other systematic follow up) may be effective to complete or accelerate G1 ODF achievement; market-based sanitation should be introduced early.
- On-road rural communities:** all implementation components required, with CLTS supplemented by low-cost marketing activities (during the G1 ODF phase).
- Remote rural/ASAL communities:** non-market technical support preferred to low-cost marketing; and climate resilience preferred to sustainability (e.g. encourage climate resilient facilities built from local materials rather than durable market-bought materials)
- Nomadic communities:** most implementation components are revised in nomadic communities (mobile services, adapted CLTS, portable products, targeted support, and special capacity for implementation)
- Communities in challenging contexts:** half the implementation components are revised (adapted CLTS, resilient sanitation, targeted support, and special capacity for implementation). *NB communities in challenging contexts may also be in remote areas, or comprise nomadic pastoralists, in which case the other adaptations will also be required.*

5 WASH Governance

Good governance of WASH services, including sanitation and hygiene services, will be critical to successful achievement of the ambitious goals and objectives set by the 2030 Vision, Kenya Environmental Sanitation and Hygiene Policy 2016-2030, and the Rural Sanitation and Hygiene Protocol.

Responsibility for sanitation and hygiene services has been devolved to county governments. However, at present, most counties offer limited political support to the development of rural sanitation and hygiene services. Rural water supply is often a higher priority, particularly in ASAL counties, which results in little budget, capacity or other resources allocated to rural sanitation and hygiene by county governments and local administrations. As a result, progress in rural sanitation and hygiene has been slow in many counties.

There are a few exceptions, with several counties (notably Kisumu, Kitui, Siaya and West Pokot) allocating significant rural sanitation and hygiene budgets from county funds, and reporting good progress as a result of these increased allocations. Nonetheless, most counties rely on development partners to implement rural sanitation and hygiene programmes, support monitoring, and finance ODF certification activities.

Unfortunately, international development partners have been heavily affected by the COVID-19 pandemic, and by global reductions in development aid allocations. Several large rural sanitation and hygiene programmes came to an end in 2020-21 (e.g. the Global Sanitation Fund-supported Kenya Sanitation and Hygiene Improvement Programme K-SHIP; and the USAID-supported Kenya Integrated Water, Sanitation and Hygiene Project KIWASH), with little evidence that external development partners will continue to finance new rural WASH projects or programmes at the same level.

Development partner support usually assists the rate of development of sanitation and hygiene services, but rarely addresses the challenges of sustainability, or of development beyond the outcomes and services targeted by specific projects. Furthermore, large-scale and sustainable progress, such as that called for in the government targets, is only possible when a more comprehensive systems strengthening approach leads to improvements in governance.

For long-term sustainability, with continuous planning, development and support of new services, county governments need to strengthen their systems in a number of “building block” areas¹⁸:

18 Adapted from: Tillett W and Gensch R (2019) *Strengthening sanitation and hygiene in the WASH systems conceptual framework: Discussion paper* Welt Hunger Hilfe, German Toilet Organisation and Aguaconsult, Sustainable Services Initiative; and, Sanitation and Water for All (SWA) Building Blocks for a well-functioning WASH sector <https://www.sanitationandwaterforall.org/about/our-work/priority-areas/building-blocks>.

- 1. Political will, policy and strategy:** rural sanitation and hygiene goals, policies, and implementation strategies
- 2. Institutional arrangements and coordination:** roles and responsibilities, coordination mechanisms, legal and regulatory frameworks, service delivery models
- 3. Finance:** costed plans, budget for rural sanitation and hygiene (for service development, sustainability support, monitoring), support for equity and inclusion
- 4. Inclusive planning and monitoring:** use of data and lessons learned to inform planning, area-wide planning, systematic monitoring of progress and performance
- 5. Capacity development:** identification of current and future capacity gaps, recruitment and training, refresher training for existing staff
- 6. Learning and adaptation:** evaluation of what works (and what does not), dissemination of lessons learned and good practice, learning from other peers and stakeholders, adaptive management of programmes (revisions based on learning)

The following sub-sections provide guidelines based on evidence of what has worked, and what has not, in Kenya (and in other countries with similar issues or contexts); including examples of good practice where available and relevant.

5.1 Strengthening political support

Political and institutional awareness of the importance and benefits of safely managed sanitation and hygiene services, for example through reduced county health costs, are critical to the development of services and the achievement of sustained outcomes. There are a number of different approaches that can be used to raise awareness, increase support for improved sanitation and hygiene services, and encourage system strengthening.

Institutional triggering

Institutional triggering involves specific activities designed to trigger leaders, decision makers and key stakeholders (from different institutions) to support, engage with, and participate in sanitation and hygiene improvement. Institutional triggering usually happens at several levels, with different purposes:

1. Institutional triggering at county level

a. Who:

- i. County leadership and officials (administrators, CEC, elected officials)
- ii. Health, water, nutrition, livestock, education and other relevant staff.
- iii. Key sanitation and hygiene stakeholders (implementing agencies, NGOs, CBOs, associations, academics, consultants)
- iv. Private sector (suppliers of sanitation products and service providers – where appropriate)

b. What: presentation and discussion of key information on sanitation and hygiene in rural communities.

- i. local statistics on public health
- ii. F-diagram (to show transmissions routes and potential barriers)

- iii. rates of open defecation, sanitation and hygiene practice
- iv. costs of inadequate sanitation and hygiene (health and other costs)
- v. sanitation and hygiene success stories from other counties.
- vi. Where appropriate: potential market for improved sanitation and hygiene products and services

c. Why:

- i. raise awareness of the importance of sanitation and hygiene.
- ii. develop buy-in for increased support to sanitation and hygiene (budget, capacity, resources)
- iii. formulate supportive bills, policies, plans and implementation strategies.

d. What next:

- i. involvement of all sector partners in further discussions
- ii. incorporate activities into county and sub-county development plans
- iii. appropriate allocation of budget and capacity
- iv. develop training for nominated staff
- v. manage programmes and drive progress towards goals.

2. Institutional triggering at sub-county level

a. Who: key sub-county stakeholders.

- i. sub-county leadership (administrators, elected officials)
- ii. departmental officials (health, water, nutrition, community development, livestock, education etc)
- iii. traditional, religious and other local leaders
- iv. Key sanitation and hygiene stakeholders (implementing agencies, NGOs, CBOs, associations)

b. What: presentation and discussion of:

- i. sub-county data on public health, rural sanitation and hygiene
- ii. national and county targets for sanitation and hygiene.
- iii. Sanitation and hygiene success stories from other areas

c. Why:

- i. raise awareness of the importance of sanitation and hygiene.
- ii. encourage coordinated messaging and support of interventions.

d. What next: development of sub-county implementation strategy and monitoring plan (with specific and timebound targets).

3. Institutional triggering at ward level

a. Who: key ward stakeholders.

- i. Ward and village leadership (officials, MCA, chiefs)
- ii. Health post staff, teachers and other community workers

iii. Traditional, religious and other local leaders

b. What: presentation and discussion of:

- i. Ward data on public health, rural sanitation and hygiene
- ii. Sub-county targets for sanitation and hygiene.
- iii. Sanitation and hygiene success stories from other areas
- iv. Approaches and processes to be used

c. Why: raise awareness of the importance of sanitation and hygiene; encourage coordinated messaging; identify and address bottlenecks; and ensure ownership and support by local leaders.

d. What next: development of ward implementation and monitoring plan (with specific and timebound targets).

4. Institutional triggering at community level: pre-triggering

a. Who: key community stakeholders.

- i. Community leadership
- ii. Community health workers and volunteers, natural leaders, committee members
- iii. Traditional, religious and other local leaders

b. What: discussion of:

- i. Baseline data on sanitation and hygiene
- ii. Action plan
- iii. Approaches and processes to be used
- iv. Monitoring mechanisms.

c. Why: plan activities (agree dates); ensure ownership and support by local leaders; identify and address bottlenecks.

d. What next: collect any missing baseline data; begin main implementation activities.

Institutional triggering in ASAL areas

Institutional triggering in ASAL areas should follow the same model, except that the stakeholders involved may be slightly different, to reflect the key influencers and stakeholders found in pastoralist, nomadic and other ASAL communities.

Institutional triggering: Example 1. K-SHIP implementation in Wajir

The K-SHIP project in Wajir used Islamic teaching around hygiene and cleanliness to trigger local Imans (Muslim religious leaders) to support sanitation and hygiene improvement. Triggering CLTS tools and activities were also adapted to fit better with the pastoralist way of life (see Section 7.1 below on achievement of G1 ODF status).

Source: Interview with Shukri Isaack, Wajir WASH coordinator.

Institutional triggering: Example 2. UNICEF in Somalia

Institutional triggering was critical in overcoming resistance to CLTS among key stakeholders in Somalia, and bringing local (traditional and religious) leaders on board as agents of change. Efforts were also made to involve long-term NGO partners working on health and nutrition programmes in facilitation and support activities, as these organisations typically stay with communities for years, and appreciate the health and nutrition benefits of ODF achievement. In contrast, WASH NGOs tended to have a shorter-term engagement, working to facilitate the building of latrines and then leaving the community. Implementation was also more multi-sectoral – sanitation and hygiene interventions were often implemented alongside other community-level activities in health and nutrition, which increased the levels of awareness, engagement and collaboration by all stakeholders.

Source: Balfour N, Mutai C, Otieno P and Johnston D (2015) *CLTS in fragile and insecure contexts* Waterlines Vol. 34, No. 3.

National Advocacy and Action: Kenya Sanitation Alliance

The Kenya Sanitation Alliance, launched in November 2021, is a high-level alliance convened under Government of Kenya and UNICEF leadership to accelerate and achieve ODF status in the counties with high open defecation burdens. The aim is to highlight the relatively low cost of transformational sanitation and hygiene improvement in these counties, versus the very high cost of inaction, and advocate for firm commitments to finance and support efforts to end open defecation.

The alliance will bring together important national and county leaders and key sector stakeholders, including Governors, CEC members, Chief Officers, Council of Governors, senior leadership from the Ministry of Health and the Ministry of Water and Irrigation, and key development partners. The main objectives of the alliance will be to:

- Mobilise domestic resources from the target counties and donors
- Strengthen the leadership of MoH and MoWI to lead transformational change
- Monitor progress through a national, high-level mechanism (with reporting to governors and senior decision-makers).

National Advocacy and Action: Example 3. Ghana Sanitation League Tables

Ghana used Sanitation League Tables, which ranked districts based on their sanitation achievements and performance, as a powerful political tool to drive improvements. District League Tables were introduced in Ghana in 2014 to highlight district progress and disparities in social development, and provide some accountability to district citizens.

Progress and performance are ranked in 5 different sectors: education, health, water, sanitation and child protection. The league tables provide a more precise picture of development issues, helping to inform policies, programmes and advocate for more equitable investment in districts where progress has been constrained; and pointing towards the good practices and lessons learned in the most successful districts.

Ghana also introduced District Sanitation Ambassadors, who were usually selected from traditional chiefs, elected officials and religious leaders, as part of the National Sanitation Campaign launched by the President in 2017. Sanitation ambassadors are popular and influential individuals who are asked to raise awareness on the need for a clean and healthy environment, and facilitate support for district sanitation and hygiene initiatives.

Area-wide Assessments: Shit Flow Diagrams

An excreta flow diagram (or Shit Flow Diagram, SFD) is a tool to help understand and communicate how excreta flow through a city or any other area. The diagram shows how the excreta generated is, or is not, contained as it flows from defecation to disposal or end use.

The SFD is a powerful tool to inform sanitation programming, presenting a visual summary of the status of sanitation services that clearly shows the proportion of excreta that are safely managed, or unsafely managed. SFDs also offer an innovative way to engage with sanitation stakeholders, from political leaders to sanitation experts and civil society organisations, to have a coordinated dialogue about safe excreta management.

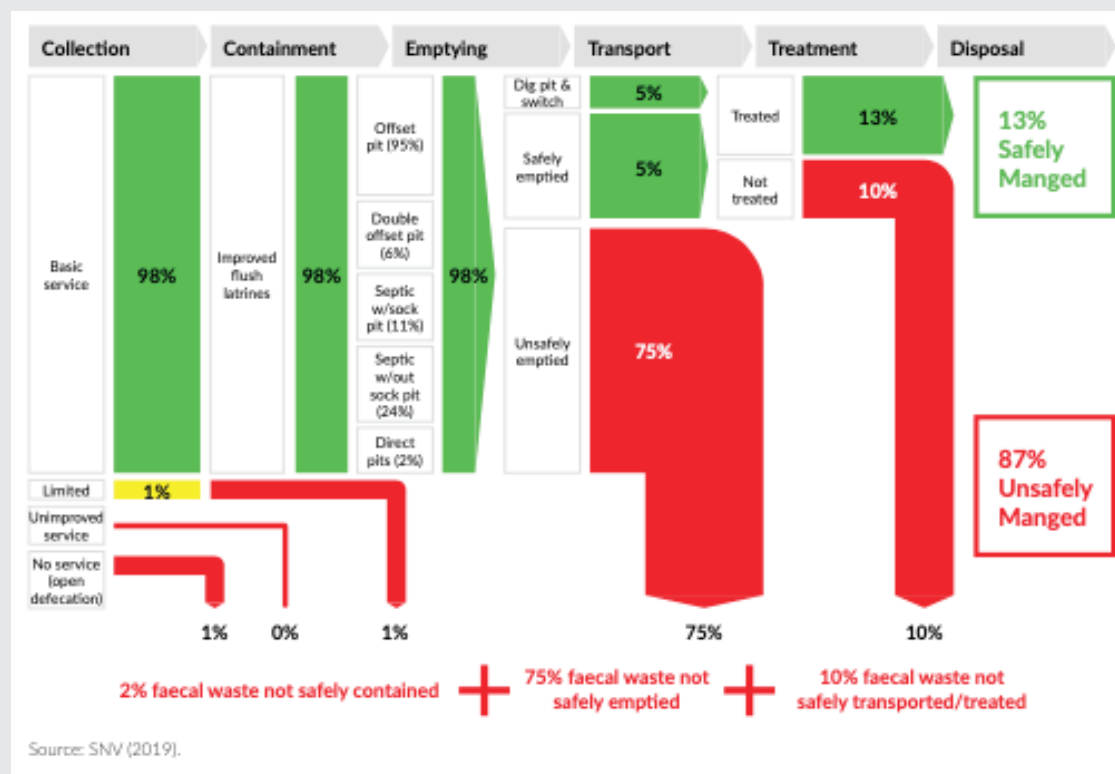
SFDs have largely been used in urban settings, but are also starting to be used in rural settings. SNV Nepal used rural shit flow diagrams to highlight differences in the safe management of sanitation services in different rural contexts in Nepal. Similarly, in 2020, the Water Supply and Sanitation Collaborative Council (WSSCC) used SFDs to assess safe excreta management in the Global Sanitation Fund programmes in Cambodia and Tanzania, and recommended that similar SFDs (which included separate assessment of child excreta flows – which is not usually included in urban SFDs) should be used to inform both national and subnational policy, programming and practice.

One of the key requirements for production of a useful SFD is reliable and recent data on excreta flows in the target area. This means that reliable data on open defecation, safe containment in household toilets, and safe management of any faecal sludge emptied from toilet containment systems, need to be collected through surveys or improved routine monitoring. One of the benefits of undertaking a shit flow diagram is that the process helps to identify data gaps and encourage strengthened monitoring systems.

Shit Flow Diagrams for rural areas: Example 4. SNV Nepal SFDs in rural terai districts

SNV Nepal produced and compared Shit Flow Diagrams (SFDs) for three different rural settings: rural hill districts, rural mountain districts and rural *terai*¹⁹ districts. The SFD from the rural *terai* districts is displayed below.

Figure 7: SNV Nepal Shit Flow Diagram for rural terai districts



The rural SFDs produced by SNV Nepal involved significant assumptions, but still provided a useful overview of excreta flows and safely managed sanitation services in the three settings. The Nepal rural SFDs were particularly good at highlighting the difference in emptying practices, with **Figure 6** showing that 75% of improved pour-flush latrines are unsafely emptied in the terai districts, and a further 10% are safely emptied, but unsafely disposed (not treated). As a result, 87% of excreta flows in rural areas were estimated to be unsafely managed.

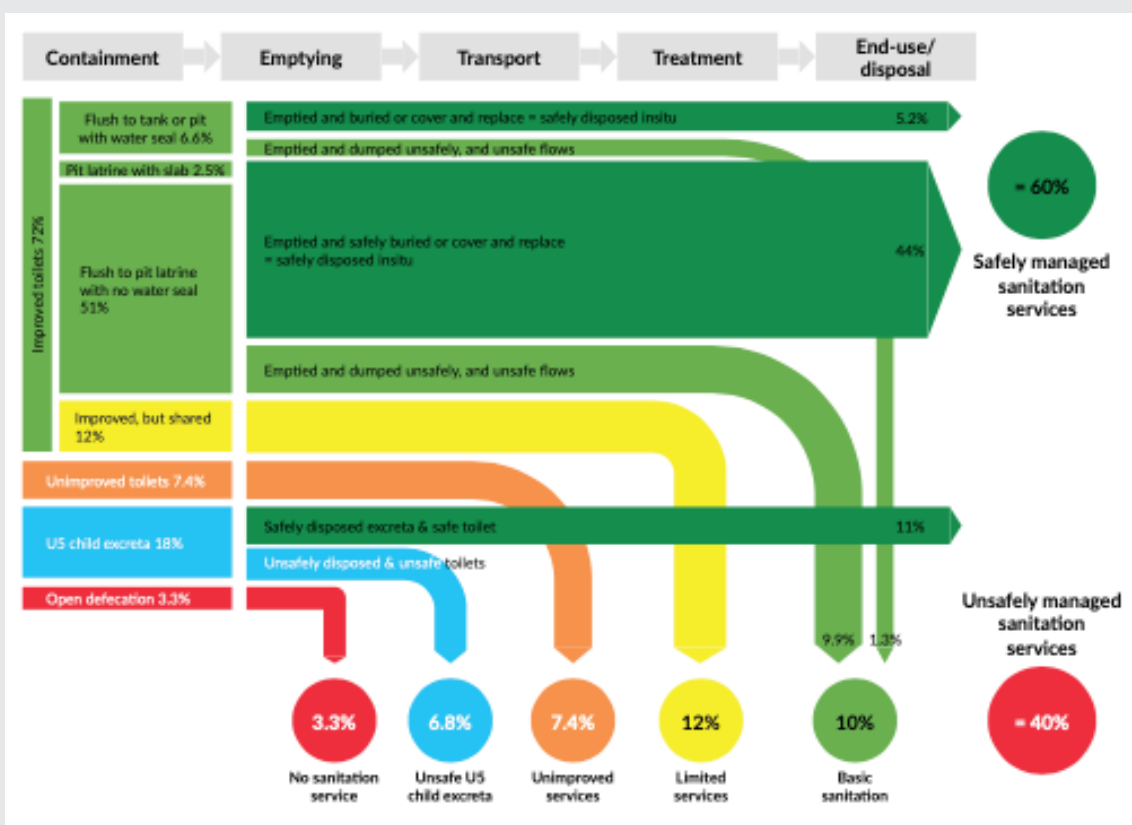
Source: SNV (2019) *Estimating safely managed sanitation in Nepal: SNV Sustainable Sanitation and Hygiene for All (SSH4A)* The Hague: SNV Programme Learning Brief.

19 Lowland.

Shit Flow Diagrams in rural areas: Example 5. Rural SFD for GSF Tanzania

Outcome survey data from Global Sanitation Fund (GSF) supported country programmes were used to produce rural Shit Flow Diagrams (SFDs) for the Cambodia and Tanzania programmes. Unsafe excreta flows were classed according to the JMP sanitation service levels, with child excreta flows separated from other excreta flows (based on detailed outcome survey data) to highlight the different practices that influence these flows, and the different outcomes for safe management of child excreta.

Figure 8: Rural shit flow diagram for GSF Tanzania programme



The GSF Tanzania SFD (shown in **Figure 7**) estimates that 60% of sanitation services are safely managed, due to the large proportion of latrine pits that are assumed to be covered and replaced when full, as well as the generally low open defecation rates reported by adults and children. The intention of these rural SFDs was to highlight areas of unsafely managed sanitation services and draw attention to excreta and pathogen flows, such as those from unsafe disposal of child excreta, that have not previously been well addressed.

Source: Robinson A and Peal A (2020) *Safely managed sanitation services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council, Legacy Publication.

County bills, policies and guidelines

County legislation, policies and guidelines can be important to sanitation and hygiene progress. Community Health Volunteers (CHVs) are critical to the promotion, monitoring and support of rural sanitation and hygiene services. Several counties have passed bills to formalise the payment of monthly stipends to CHVs, which greatly assists community health services and encourages more effective promotion and more regular monitoring.

Local byelaws, sanctions and enforcement

Another important governance component is the formulation and enforcement of local byelaws and sanctions. Where local administrations, key stakeholders and community representatives commit to sanitation and hygiene improvements, and agree that formal sanitation and hygiene rules are required, for example to confirm that open defecation is no longer tolerated in a certified ODF community, appropriate byelaws (or other local regulations) should be constituted and approved.

The aim should be to codify collective behaviours and outcomes that have been agreed on through participatory processes, rather than to stigmatise or sanction people who have been unable to change their behaviour or achieve these outcomes. Where people from marginalised groups are unable, or reluctant, to change their behaviour or develop the required facilities and services, the community or local administration should support these people to change their behaviour or achieve the agreed outcomes.

Any sanctions should be proportionate to the effects of the sanctioned behaviour or action, e.g. minor infringements should incur only minor sanctions; and sanctions should only be applied where everyone agrees that a particular sanitation or hygiene behaviour is no longer excusable or acceptable, and where the person or household has exercised a choice in not adopting the agreed behaviour, i.e. sanctions should not be applied where the person or household is unable to exercise the agreed behaviour for any good reason.

5.2 Area-wide planning

Area-wide planning requires that strategies and plans (for investment, implementation, monitoring, and long-term support of services) aim to reach the entire population within the target area, rather than only implementing in communities that meet specific implementation criteria. Any implementation strategy developed by the county or subcounties should use an area-wide planning approach, and set out how universal use of sanitation and hygiene services will be achieved by 2030.

Area-wide planning is essential to work towards the universal outcome targets required by the 2030 Vision and SDG sanitation target. In most cases, area-wide planning is recommended at the sub-county level, using the ward as the planning unit, with the aim of working ward by ward to achieve the required sanitation and hygiene outcomes (G1, G2 and G3 status) in the entire sub-county by 2030.

The key aspect of area-wide planning is that every community, and every group within every community has to be reached – the main question is then the order in which communities will be targeted. Given the wide range of types of community, and of groups within communities, area-wide planning requires that some key planning factors are identified:

- **Context:** how many different types of context are found in the sub-county
- **Sanitation and hygiene status:** what is the existing sanitation status (number of toilets, types of toilets, shared use of toilets) and hygiene status
- **Health status:** identify disease hotspots, and areas of chronic disease (e.g. under-nutrition), that should be prioritised for intervention
- **Challenges:** what are the main implementation constraints in the sub-county
- **Approaches:** what different implementation approaches will be required (in these contexts, given these challenges)
- **Costs:** how will implementation, monitoring and support costs vary across the different contexts (based on the implementation approaches to be used, and the access and contextual challenges involved. NB cost per household, and cost per community will generally be higher in remote communities where special interventions are required to address challenges)
- **Capacity:** what capacity is required to conduct implementation, monitoring and long-term support of services (including specialist capacity for new and inclusive approaches)

All plans or strategies to achieve sanitation and hygiene outcomes at sub-county level should consider the factors listed above, and ensure that an area-wide planning approach has been taken so that all rural communities can be targeted for interventions before 2030. The plan should also consider the relative priority of sanitation and hygiene improvement in the different communities.

Strategic planning

Strategic planning is recommended²⁰ to identify communities in which similar combinations of implementation approaches can be used, and to prioritise and schedule implementation in these communities based on implementation capacity and agreed targets. A simple approach is recommended initially, which can be refined as the key factors that influence the effectiveness and sustainability of the implementation approaches are better understood.

This strategic planning requires that community-level sanitation data are available, which may necessitate waiting until baseline surveys have been conducted, or can be undertaken as part of the planning or pre-triggering process before community implementation.

Once community-level sanitation data are available, it is recommended that communities are mapped in different categories (e.g. using a matrix, as below) to facilitate strategic planning of interventions in the programme area.

20 WaterAid (2019) *Guidance on programming for rural sanitation* London: WaterAid, Plan International and UNICEF joint initiative.

Table 5: Strategic planning: types and numbers of community in target sub-county

Community context	Rural centre/ progressive	Rural on-road	Rural remote	Nomadic pastoralist	Challenging context
Low OD (almost ODF)	3	5	1	-	-
High unimproved sanitation	2	10	2	-	-
Low sanitation access	-	5	23	8	4
Sanitation challenges	1	3	5	9	5

Note: The figures included above are included to illustrate the concept (not a real sub-county).

The matrix assessment should help to identify the balance of implementation strategies and approaches required, and the amount of capacity and support that will be required in different areas and in the implementation of these different approaches. The broad guidance below suggests typical approaches in some common categories:

1. Certified G1 ODF communities

Where higher sanitation targets (e.g. G2 or G3, including safely managed sanitation services) are required, certified G1 ODF communities should be targeted for G2 outcomes, including toilet upgrading, sustainability support and monitoring of safe containment and safe management.

2. Almost G1 ODF communities (low OD)

Communities that are close to G1 ODF status, or close to 100% access to basic sanitation, should be targeted with community-based behaviour change approaches for rapid ODF progress. These communities can then join the certified G1 ODF communities for progress towards higher levels of service.

3. Upgrading communities (high rates of unimproved sanitation)

Communities in which a significant proportion of households are already using toilets and there is little open defecation, but where these toilets are not functional, flyproof or clean, should be targeted with:

- technical support
- market-based sanitation (where sanitation markets function and reach communities)
- sanitation finance (where affordability is a barrier).

4. Low sanitation communities (high rates of OD or unimproved sanitation)

In communities where few households are using toilets, a longer process will be required, involving all of the main implementation approaches:

- community-based behaviour change (including CLTS)
- non-market technical support or market-based sanitation
- sanitation finance, and
- support for marginalized groups.

Adapted CLTS with a strengthened social norms approach may also be required to encourage the major change in social norms required for the elimination of open defecation.

5. Shared sanitation communities (high rates of limited sanitation)

Shared use of improved sanitation facilities is common in some contexts, particularly where extended families live in small compounds and also share other facilities.

G1 ODF verification criteria allow some households to continue to practice sharing (providing no more than 10-15 people use each toilet – with the exact threshold to be determined by each county government, based on local context). Where more than 10-15 people currently share a toilet, or where sharing is judged to be partial (i.e. only some people in each household use the toilet, or some people only use the toilet some of the time), community-based behaviour change approaches will be required to convince households of the benefits of private toilets for each household.

In some cases (for example tenants living in congested areas) there may be few alternatives to shared use of sanitation, hence support will be required to work with local authorities to agree on the requirements for adequate, equitable and safely managed shared facilities.

6. Communities in challenging contexts

Some communities and populations live in challenging contexts that limit the effectiveness of the main implementation approaches. These communities should be identified during a strategic planning process, and prioritised for specific or adapted implementation approaches. The achievement of G1 and G2 outcomes in these communities is likely to take longer than in other communities, thus it is recommended that interventions to target improvements in these communities are started early, and allow sufficient time and resources for the achievement of behaviour change and sustained use of improved services.

7. Phasing of implementation approaches within communities

The phasing of approaches should be based on sanitation status and context, health status, and political priority (to maintain political support for sanitation and hygiene improvement).

For public health, interventions to tackle the highest priority behaviours, sanitation challenges or disease hotspots should be implemented first (e.g. firstly, to target communities with the worst health and nutrition situations), followed by interventions in communities where existing capacity and resources can be used (e.g. to achieve rapid progress by using existing structures). More complex interventions should be introduced only as experience, capacity and support develop, when it is more likely that the community and its service providers are ready to adopt higher levels of service, and more likely that local administrations and implementers are able to target new outcomes.

Population segments in rural communities

Different approaches will also be more (or less) relevant for different population segments within communities. Implementation teams should identify the priority segments and groups for each implementation approach, to ensure that 'no one is left behind'.

For instance:

- community-based approaches and technical guidance may be required for low income groups within a community
- sanitation finance and external support for disadvantaged and vulnerable groups
- community-based approaches, toilet loans and market-based sanitation for middle income groups
- targeted solutions and support may be provided to through working with representative groups such as disabled peoples organisations; and
- toilet upgrading and safe management interventions targeted at higher income groups.

Benefits of area-wide planning

An area-wide planning approach can have significant public health benefits, as this approach addresses externalities – the effects of other people, and other communities, on households and communities who share resources. An area-wide approach should mean that every community in a ward is targeted to achieve G1, G2 and then G3 outcomes. The removal of open defecation, animal wastes, and solid and liquid wastes from the local environment can have significant benefits for water supply and environmental outcomes, and public health, in a larger area.

Area-wide approaches also create larger sanitation markets, and facilitate partnerships with private enterprises. Where every community, and every household, has to build and improve toilets, and develop permanent handwashing and other facilities, a large and attractive market develops for private suppliers and service providers. Activities to raise awareness of this potential market, and encourage collaboration with the private sector, should be included in the planned interventions.

Area-wide approaches also help to create new social norms and expectations. As communities in a ward or sub-county start to achieve G1 ODF status or G2 Safe & Sustainable status, and these achievements are celebrated and promoted, it starts to become the norm that everyone uses a toilet, washes their hands with soap, and manages their food, water and animal wastes safely. These changes put pressure on households that are resistant or reluctant to change their behaviour, and on communities that are slow to achieve results, as local leaders and key influencers recognise that it is possible to achieve these outcomes using local capacity and resources, and gain the benefits of these changes.

Area-wide planning should also recognise the rapid population growth in Kenya. Migration and the emergence of new adult households is common in rural communities, and needs to be factored into any planning. The following factors (that affect population movement and variations) should be considered:

- demographic change
- climate change
- increasing water pollution
- economic volatility (shocks)
- armed conflict

Finally, area-wide approaches encourage the expansion of good governance. Where a few communities achieve G1, G2 or G3 outcomes, local leadership is encouraged to transfer the lessons learned to other communities, and expand the progress into new areas. Exchange visits to successful communities and local administrations help to transfer innovations and lessons learned to new areas; as does the transfer of successful leaders and facilitators, who can be rewarded by transfers to higher positions in areas that need stronger and more experienced leadership to achieve sanitation and hygiene outcomes.

5.3 Capacity development planning

County governments need to plan for capacity development consistent with the rural sanitation and hygiene targets set by the national government, and with the specific requirements of the implementation strategies adopted by the county government.

System strengthening efforts should consider how capacity affects the scale and effectiveness of current services for rural sanitation and hygiene. Where critical positions with the community health services are empty or understaffed; or where capacity is weak to undertake and support new approaches and new monitoring; county governments and sub-county administrations need to examine how they can strengthen existing systems for capacity development.

5.4 Coordination

The rural sanitation and hygiene subsector is fragmented, with several different ministries, departments and stakeholders involved in the provision and support of services. While coordination mechanisms exist in most county governments and administrative units, the focus tends to be on water supply development, thus it is rare to find active and effective coordination for rural sanitation and hygiene.

The Ministry of Health encourages the **establishment of County Stakeholder Forums** (for rural sanitation and hygiene) that bring together the key stakeholders in each county, including county and local administration officials, development partners and private sector actors, to encourage joint planning, alignment of policy and practice, sharing of monitoring data, evidence and lessons learned, and coordinated contributions towards the county sanitation and hygiene goals.

Key principles:

- a. The RuSH Protocol requires achievement of multiple outcomes with strong coordination between health, nutrition, education, water supply, environmental, animal health, livestock, agriculture and community development actors.
- b. Wherever market-based sanitation services are planned and developed, the key private sector actors should be involved in all planning, monitoring, evaluation and learning activities.
- c. All stakeholders working within an administrative unit should agree to follow the same policies and practice; report progress through the same monitoring system; share evidence and lessons learned with all other stakeholders (through regular learning

events and annual reviews); and update policies and practice as appropriate (based on the evidence and learning).

Coordination: Example 6. UNICEF Ethiopia guidelines in pastoralist areas

UNICEF Ethiopia recently developed specific guidance²¹ for implementation of the national Community Led Total Sanitation and Hygiene (CLTS-H) approach in lowland pastoralist contexts. The UNICEF Ethiopia guide (for use by the Somali Regional Health Bureau) identified a set of **contextual constraints in pastoralist areas**:

- fixed place defecation is a new concept
- arid climate and acute constraints for access to water
- continual displacement of communities due to drought and conflict
- hot weather: no fieldwork is possible during the hottest midday period

The UNICEF Ethiopia guide also highlighted capacity issues for service delivery in pastoralist areas:

- inadequate number of health extension workers (72% unfilled positions in the region)
- only 11% of the potential health extension workers have received CLTSH training
- frequent transfers of trained health staff
- bad road conditions and long distances to communities make travel difficult, and increase the costs of service delivery (above national unit cost)
- limited capacity to provide training, coordinate, plan, monitor and manage CLTSH.

The UNICEF Ethiopia guide proposed 6 important actions to address these constraints:

1. **Form multi-sector CLTS-H teams:** as MoH cannot deliver services on its own, and institutional sanitation requires involvement of other sectors = involve agriculture, education and water departments, who already have regular work in the community.
2. **Sector wide woreda coordination policy:** joint selection of communities and coordination of policies and interventions to work towards ODF and other goals.
3. **CLTS-H orientation to Woreda WASH committee and multi-sector facilitation team.**
4. **Woreda ODF roadmap development:** context-specific, recognising strengths and weaknesses, opportunities and constraints.
5. **Annual Woreda review and action planning:** coordinate to avoid stakeholders working in isolation, and implementing different policies and practices; efficient use of resources; joint learning.
6. **Regular CLTS-H planning meeting:** monthly or bi-monthly meetings to plan and coordinate activities.

21 Saha S (2018) CLTS and Hygiene in the lowland rural pastoralist community context of Ethiopia: Facilitating multi-sector departments and actors in a coordinated CLTSH programme in a woreda – a guide for the Regional Health Bureau UNICEF Ethiopia.

5.5 Equity and inclusion in governance

County governments and sub-county administrations should ensure that all policies, guidelines and standards on rural sanitation and hygiene are inclusive. Without equitable and inclusive policies and approaches, it will be extremely difficult to achieve the goal of G1 and G2 outcomes in all rural communities (see **Section 9 Equity and Inclusion**).

County governments and sub-county administrations should ensure that the following five governance mechanisms are equitable and inclusive, particularly for the main marginalised groups in the target area:

1. Policy and guidelines on rural sanitation and hygiene
2. Budget allocations
3. Implementation activities
4. Monitoring processes
5. Support mechanisms

The use of more equitable and inclusive policies and approaches to reach universal service goals may incur higher costs. While the majority of the rural population are likely to be reached through large-scale interventions like CLTS, behaviour change communications, and market-based sanitation, more specialised interventions may be required to reach some marginalised groups, particularly those who live in remote communities or in challenging contexts (e.g. affected by conflict, insecurity or disasters). These more specialist interventions often require dedicated capacity and budget, with higher unit costs than in more conventional implementation approaches.

Target setting for equity and inclusion

Separate targets should not be set for results in pre-identified marginalised groups, unless these groups are distinct from other groups, and are clearly recognised as among the groups with the lowest and most inequitable sanitation outcomes, and the lowest use of sanitation services.

Setting targets for specific pre-selected groups fails to recognise the diversity and changing nature of contexts and geography, and the associated variations over time in the people who are most marginalised in any area. In addition, any pre-selection or universal priority to a particular group risks stigmatising those identified as the most vulnerable and disadvantaged (particularly if different outcomes are set for these groups, or if other marginalised groups are neglected as a result of this pre-selection).

Instead, **the aim should be that everyone achieves the same outcomes and levels of service**, including universal use of basic and safely managed sanitation and hygiene services. Inclusive processes should include specific checks that marginalised and “at-risk” groups²² (as identified in each area) achieve the required outcomes and levels of service, and that there are no significant differences in the outcomes and services among people from marginalised groups.

²² At-risk group: any person, household or group of people who are considered at higher risk of faecal exposure, or higher risk of having sustainability challenges related to the use of rural sanitation and hygiene services.

Monitoring and evaluation systems will need to be designed so that “at-risk” households are identified at the start of any process, with disaggregated monitoring and reporting of progress and performance data for these households, and that these data are used to inform interventions that work towards equitable, inclusive and sustained outcomes and services.

5.6 Finance and support

Finance for rural sanitation and hygiene remains a major constraint. Budget allocations are required by county governments to accelerate implementation, strengthen monitoring, and increase long-term support for services. At the moment, many counties rely on development partners to finance rural sanitation and hygiene interventions, despite awareness that the county faces significant costs from inadequate sanitation and hygiene (through increased health costs, reduced education effectiveness, reduced productivity etc) and that these costs affect the long-term development prospects of the county and its population.

Most rural sanitation and hygiene activities are undertaken through community health services. Outreach to, and monitoring of, rural communities incurs regular costs, including:

- Staff salaries
- Stipends to community health workers
- Transport (vehicle and fuel costs, maintenance)
- Activity and monitoring costs (printed and other materials, expenses)
- Mobile telephone costs (where mobile monitoring is used)
- Computer costs (maintenance of computer systems for data entry and upload)

While rural sanitation and hygiene services require long-term support, the main challenge lies in triggering behaviour change, construction of new facilities, and encouraging sustained use of these facilities. Once behaviour change has started, and people become familiar with new sanitation and hygiene practices and start to see the benefits, the cost of supporting rural sanitation and hygiene services diminishes greatly.

For these reasons, **a campaign approach is required for rural sanitation and hygiene while services are developed** – in the short term, intensive promotion, monitoring and support are required to achieve the G1, G2 and G3 outcomes, and these intensive activities have associated costs. But these costs will diminish over time, as services are established and strengthened, with a larger investment in more effective promotion and support at the outset likely to greatly reduce the overall cost of the rural sanitation and hygiene improvement process.

Support may also be required to assist the development of G2 and G3 services, including the provision of financial and other support for the development of the following:

- market-based sanitation services (e.g. to develop services and encourage the construction of durable toilets and installation of permanent handwashing stations);

- development of communal services (e.g. solid waste collection and disposal services; faecal sludge management and disposal services); and
- targeted support to people from marginalised groups who struggle to achieve and sustain higher levels of service.

Costs can also be reduced by:

- involving other sectors in rural sanitation and hygiene activities
- coordinating activities between sectors, and
- ensuring that rural sanitation and hygiene messages are incorporated in related activities (e.g. by staff from the water and irrigation, education, livestock, community development and other related sectors).

As noted earlier, the unit cost of processes and activities (e.g. cost per ODF household, or cost per ODF community) will vary considerably depending on the context and community type. Remote rural communities take more time to reach, and this travel time reduces the number of communities that can be visited per day or per week. Transport costs are also higher to reach remote communities, as the distances are greater and the road quality is usually lower. Additional costs are often associated with working with nomadic pastoralists (and other groups with unusual livelihoods and practices, such as fishing communities), both because they move around, and because households are sometimes split between settled groups and herding (or other mobile) groups. In some cases, completely different approaches will have to be taken, such as the use of mobile services (e.g. local people who undertake activities, CHVs who travel with the community and communicate by mobile phone), with different costs and resource requirements.

An area-wide approach requires more careful analysis of the costs of reaching different types of community, and the timeline associated with these activities. Cost tracking can be used to identify the most cost-effective approaches (see **Section 12** below).

6 Monitoring and learning

Monitoring and learning systems are critical to large-scale development and improvement of sanitation and hygiene services. Without data on progress and performance, it is difficult to plan ahead, or to know what is working, and what is not working.

Monitoring systems should collect and report data on both household and community level processes and outcomes. Household level data show progress within communities, towards the G1, G2 and G3 outcomes; while community level data confirm collective outcomes (i.e. whether the entire community has achieved the required outcomes for G1, G2 or G3 status).

6.1 Monitoring and evaluation of progress and performance

At present, only community data on ODF outcomes are available from the Real Time Monitoring Information System (RTMIS). While some household data are collected, and used by community health services, in most cases these data have not been entered into the RTMIS, and are not available for planning or programme management.

Increased and more systematic monitoring and reporting of household data will be important to inform and accelerate progress towards the RuSH Protocol targets: G1, G2 and G3 status. While annual updates of monitoring data are useful to track long-term use of services, more regular updates are required during implementation periods.

Implementers and programme managers need to know where interventions are working well, and identify areas where interventions are not working, during the life of the programme. This information is required regularly during implementation, so that policies and practices can be revised, approaches and processes can be strengthened, and more effective interventions undertaken, before programme finance is finished.

Further evaluation is usually required in areas where interventions are not working, to understand why progress is slow, and identify constraints and barriers to progress. Where lessons are learned, issues identified, and good practices demonstrated, learning systems are required to share these lessons with peers in other administrative units, and with other sanitation and hygiene stakeholders working in the same county or context.

Monitoring and learning systems require:

1. **Dedicated capacity:** time and resources allocated to regular implementation monitoring, and periodic monitoring of other communities.
2. **Budget line:** monitoring and learning are activities that should be undertaken every year, whether or not projects are being implemented, thus require annual budget allocations that recognize the costs of reliable and timely monitoring.
3. **Reporting systems:** monitoring is of little use if the data are not used. Some of the capacity and budget has to be allocated to the analysis and reporting of the data, with the aim that decision makers are aware of progress and performance, and can adjust policy, investment and other support accordingly.
4. **Learning events:** specific activities are required to capture, share and disseminate lessons learned. Quarterly review meetings are required a local level, to coordinate activities and address issues; annual reviews are required at higher levels, to share lessons learned, innovations and good practices, and encourage horizontal learning between stakeholders working in similar contexts and areas.

Monitoring of rural sanitation and hygiene is a function of county governments and local administrations, thus should have budget and capacity allocated as part of the annual planning and investment process. Learning systems should also be institutionalised, but are an area in which development partners can provide useful assistance – to facilitate learning processes, and encourage sharing and learning exchanges between administrative units and stakeholders at different levels (e.g. regional learning events at which counties share experiences and lessons learned; county learning events for subcounties; and sub-county events for wards).

During progress towards G1, G2 and G3 the following monitoring and evaluation activities should be considered:

- **Baseline data:** context analysis and outcome assessment (to inform strategy)
- **Progress data:** real-time tracking of progress & performance
- **Evaluation:** assessment of the effectiveness of approaches (particularly those in new & challenging contexts, or those to achieve new outcomes)
- **Rapid assessments:** in areas where implementation is not working well, conduct rapid assessments to determine whether activities are not being properly implemented, or whether slow progress is due to contextual constraints and barriers
- **Inclusive monitoring:** identification of at-risk households and groups (in different contexts and areas)
- **Disaggregation of monitoring data:** for different contexts and marginalized groups
- **Separate sampling:** of at-risk groups in grade certification processes (as sustained outcomes in these household are markers of success).

The following learning activities should also be considered:

- **Document & share:** lessons learned & good practices (across units and actors)
- **Real time information:** use WhatsApp and other platforms to share news of activities, results and problems, to encourage an engaged community of practice
- **Annual learning reviews:** highlight challenges faced, lessons learned and good practices identified (peer review by local administrations to provide practical knowledge on local solutions achieved using local resources)
- **Exchange visits (county funded):** to learn about approaches used in other areas
- **Specialist learning:** invest in specific action research (learning by doing) to learn what works in challenging contexts (as little knowledge is currently available).

Monitoring and learning: Example 1. Horizontal Learning Programme, Bangladesh

A village solves a local problem faced by another nearby community. One approach is to go to the second village, tell them what is wrong, and teach them how to solve the problem; a different approach is to invite representatives from the second village to visit the first village and encourage them to learn directly from the villagers own experiences of solving the problem. Which approach do you think will work better?

The horizontal learning approach²³ is based on similar thinking. It supports peer-to-peer learning through the formation of groups of local governments who form “communities of practice”. These groups are then facilitated to exchange ideas and lessons learned in a systematic and regular way. Local governments experience and discuss good practices with their peers, and then each local government decides to adopt or adapt these practices according to their own needs.

Basics of horizontal learning:

1. Identify good practices
2. Validate good practices
3. Learn via appreciative enquiry (focus on positive things = look for solutions rather than pointing out all that is wrong)
4. Prioritise practices to replicate and adapt the practice
5. Discuss with citizens and integrate into plans and systems.

Sources: <https://www.slideshare.net/world-bank-horizontal-learning-program-bangladesh>
[https://slideplayer.com/slide/horizontal learning program summary presentation/](https://slideplayer.com/slide/horizontal-learning-program-summary-presentation/)

23 WaterAid (2019) *Guidance on programming for rural sanitation* London: WaterAid, Plan International and UNICEF joint initiative.

Remote monitoring

Regular direct monitoring can be difficult and expensive in some contexts and conditions, notably when monitoring in remote communities, insecure areas and among nomadic groups. In these cases, remote monitoring should be considered – that is, monitoring by local stakeholders, including community health volunteers, who are embedded in or live nearby these communities, with the monitoring data then shared by mobile phone or other remote means (e.g. passing monitoring forms to other extension workers or stakeholders who pass through the area).

Mobile monitoring is increasingly used by other sectors in remote, insecure and nomadic communities, which should encourage county governments to support the monitoring of sanitation and hygiene outcomes through similar systems.

6.2 Grade Certification

Monitoring systems also need to be designed to assess claims of grade achievement by communities (or local administrations), and undertake grade claim, certification and declaration processes.

Details of the grade certification processes for G1, G2 and G3 status are provided in the **Monitoring Framework for Rural Sanitation and Hygiene**.

7 Outcomes: Rural Sanitation and Hygiene Protocol

The RuSH Protocol sets out the sanitation and hygiene outcomes that the Government of Kenya would like rural communities, and local administrations, to achieve by 2030. The outcomes have been selected to block disease transmission routes, and improve the well-being of rural communities, with a phased approach used to introduce a small number of new outcomes at each grade, to limit the complexity and challenge of grade achievement.

The following section provides guidelines for the achievement of each of the outcomes required by the G1, G2 and G3 grades. However, the main principle in an outcome-based framework is that there are many different ways to achieve each outcome, depending on the context, the capacity and resources available, and other local factors. The outcome criteria are well defined (in the Monitoring Framework), with these implementation guidelines intended to provide some key principles to follow and some appropriate options and approaches for the contexts typically found in rural Kenya.

It is important to recognise that the route (to achieve G1, G2 or G3 outcomes) that is appropriate and effective in one context is unlikely to be the same as the route that is appropriate and effective in another context. Different local administrations and implementers will face different challenges and arrive at different solutions, with monitoring and learning systems required to establish (and share knowledge about) the solutions that are most cost-effective and sustainable in each context.

7.1 Guidelines for achievement of G1 ODF outcomes

The Rural Sanitation and Hygiene Protocol expands the previous ODF criteria to include safe management of child excreta, and safe management of diapers in the G1 ODF outcome indicators. Infant and child excreta are highly pathogenic, thus these outcomes are critical to public health and need to be targeted by interventions and more closely monitored.

Figure 9: Outcome indicators for G1 ODF environment

G1: OPEN DEFECCATION FREE (ODF)	G1-1 Use of flyproof and clean toilets
	G1-2 Presence of handwashing facility with water & soap
	G1-3 No exposed human excreta
	G1-4 Safe management of child excreta and diapers
G1: Sustainability indicators	G1-S1 Monitoring system for OD and toilet use
	G1-S2 Disaggregated monitoring of at-risk households
	G1-S3 Action plan for G2 achievement

Community Led Total Sanitation to achieve G1 ODF status

Community Led Total Sanitation (CLTS) has been the main implementation approach adopted by the Ministry of Health to achieve ODF results in rural areas of Kenya. Its strengths lie in the:

- focus on behaviour change to eliminate open defecation;
- use of participatory tools to trigger rural communities to find collective and individual solutions to household sanitation problems (that are appropriate to local needs and conditions); and the
- inclusive nature of the ODF outcome (all households have to stop the practice of open defecation, and start using a toilet).

The CLTS approach has proved effective in Kenya, with around 25% of rural communities certified as ODF by mid-2021. However, while CLTS generally works well in small communities with good social cohesion and visible open defecation, it works less well in large communities with more mixed populations, and in communities where open defecation is less evident or where most people already use some form of toilet.

Equity and sustainability remain key challenges in CLTS interventions – in some contexts, people from marginalised groups build less durable toilets than others, or are reliant on others for repair and replacement, which increases sustainability problems; and people from marginalised groups are also more likely to be pressured into collective outcomes, which can reduce the likelihood of sustained long-term outcomes.

Gender is also an important issue, with women and girls often facing higher burdens related to sanitation and hygiene practices (e.g. related to collection of water for flushing and washing), but having less decision-making power within many rural households (e.g. to encourage construction of facilities that are appropriate, inclusive and easy to maintain).

WaterAid Practical Guidance to address gender equality while strengthening water, sanitation and hygiene systems:

<https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/practical-guidance-to-address-gender-equality-while-strengthening-water-sanitation-and-hygiene-systems.pdf>

Gender and Development – WASH resources:

<https://www.genderanddevelopment.org/issues/25-2-water-sanitation-and-hygiene/25-2-wash-resources/>

The need to achieve sanitation improvements in all rural communities by 2030 means that:

- efforts should be made to strengthen CLTS approaches to improve equity and sustainability;
- adapted CLTS approaches should be developed (for use in communities where open defecation is still a challenge, but where different triggering tools are required); and
- other approaches should be considered when CLTS does not seem appropriate (e.g. in communities with little or no open defecation, or where communities desire a higher level of sanitation service).

Key principles to strengthen the CLTS approach

1. **Good preparation:** reliable sanitation and hygiene data should be collected and analysed; community facilitators identified; and triggering dates agreed.
2. **Triggering depth:** attendance should include at least 50% of the households in the community, including people from all sub-villages and all of the main community groups (ethnic, religious, political and any other) – the triggering event should be delayed if participation is likely to be lower than 50%.
3. **Process to reach those not present at triggering:** some people will not be able to attend the main triggering event. A specific process is required to reach households who were not present at the triggering, for example through community exchanges to pass on the key messages.
4. **Number of natural leaders:** the number of natural leaders should be sufficient to cover the community (with less than 30 households covered by each natural leader); wherever possible, natural leaders should receive some training.
5. **Develop a community action plan:** with clear steps towards ODF status
6. **Systematic follow-up:** a systematic process of follow-up should be used, starting as soon after the triggering event as possible e.g. Follow Up Mandona process.
7. **Completion of all steps:** programme managers should monitor the completion of all of the main steps of the CLTS process.
8. **Provide ODF incentives:** wherever possible, some incentive should be provided for achievement of the G1 ODF outcome, such as: an ODF celebration; recognition of the key actors in ODF achievement; higher priority for other development interventions; or further support to achieve the G2 outcomes.

G1 outcomes: Example 1. Follow-Up Mandona approach

Follow-Up Mandona (FUM) is a structured follow-up process designed to accelerate ODF progress, and encourage the development of more hygienic and sustainable sanitation services. The Follow-Up Mandona approach was developed by MCDI, the implementing agency for the Global Sanitation Fund (GSF) supported programme in Madagascar.

Initially, the FUM approach spread through GSF programmes to Benin, Nigeria, Togo, Uganda and Kenya (where it was utilised by the GSF-supported K-SHIP programme implemented by AMREF). The FUM approach has proved popular, and has now been adopted and promoted by national agencies in a number of these and other countries.

FUM uses “community models” or “model latrines” to demonstrate small, immediate and doable actions that can be used to improve the functionality and hygiene of sanitation and hygiene facilities, or overcome other sanitation issues (such as continued open defecation at some sites), and which can be quickly and easily replicated by other community members.

A typical “community model” is upgrading of an unhygienic toilet: the FUM process is used to encourage the owner of an unhygienic latrine to identify (with community help) the issues with the toilet, and to find simple solutions to improve the hygiene, functionality and durability of the facility. The FUM process encourages people to solve problems immediately (in front of the watching community), with community support provided where available or required, with emphasis from the facilitators that the ingestion of faeces will continue until everyone is using a hygienic toilet and washing their hands with soap and water. A range of community models are used to trigger other households to make similar rapid improvements, and accelerate progress towards a fully ODF community.

The FUM manual notes that the first FUM session should be conducted soon after the CLTS triggering event, and that the community should set the date and time of the next visit (either at the triggering event, or during a separate planning visit) so that it fits with their availability. Importantly, the FUM guidance instructs that a high participation in the FUM session is critical: the facilitation team should **aim for 70% minimum attendance, including at least one adult from each household**. Where it proves difficult to foster participation, the FUM manual suggests that local leaders should be involved to mobilise as many people as possible, or that the session should be delayed until a time when the community is confident that the participation will be adequate.

Source: WSSCC (2016) *Follow-up MANDONA: A field guide for accelerating and sustaining open defecation free communities through a Community-Led Total Sanitation approach* Geneva: Water Supply and Sanitation Collaborative Council (WSSCC).

<https://sanitationlearninghub.org/resource/follow-up-mandona/>

Other approaches used to increase the effectiveness of CLTS approaches:

- **Identify key influencers and social networks** for the main community groups, and plan for their involvement in CLTS activities.
- **Identify barriers to toilet use** (taboos, beliefs, customs) and tools to address them.
- Encourage **public declarations of support** by key influencers.
- Require **public household pledges to stop open defecation**.
- **Schedule CLTS activities** to account for seasonal factors such as flooding or rainy season (when toilets may be difficult to dig), harvest time, and when materials are available for toilet construction.
- **Emphasise the low costs and effort of toilet construction and maintenance** to counter perceptions that toilets will generate an ongoing burden
- Arrange community meetings and one-to-one visits to **address resistant households or individuals**.
- **Encourage community social norms** using bylaws, sanctions and training
- **Mobilise political and community capital** by actively promoting and sharing CLTS success stories through media coverage, WhatsApp groups, county exchanges, and annual reviews (highlighting successes and innovations).

While CLTS encourages communities to find their own local solutions to solve sanitation problems, there can be benefits to sharing the lessons learned, good practices and innovations developed in other local communities (facing similar contextual challenges). In particular, remote communities may find it difficult to access market goods and services, hence require non-market technical support to help them develop higher levels of service.

The key principle is that any technical guidance should aim to offer multiple examples of how other people have solved similar technical challenges (e.g. how to build more climate resilient toilet slabs using local materials), as options for people to consider (and adapt as appropriate depending on their resources, experience and preferences), rather than promoting fixed designs that have to be followed by everyone. Community-based approaches should allow household choice, and recognise that outsiders are often unaware of many of the factors that influence household decisions.

In CLTS communities, non-market technical support can be used to:

- Identify sanitation and sustainability issues in the community (including equity and accessibility issues)
- Highlight potential hygiene and sustainability issues (e.g. share experiences and problems faced by other people in the area)
- Provide information on technical options and innovations that are tried-and-tested in the area (e.g. menu of options to tackle potential problems)
- Encourage households to choose technical options for toilet upgrading and improvement based on their capacity, resources and preferences
- Closely monitor the status of toilets identified as having sanitation or sustainability issues (and routine monitoring of all other toilets).

G1 outcomes: Example 2. Toilet improvements alongside CLTS approaches

The SNVTanzania Sustainable Sanitation and Hygiene for All (SSH4A) provided technical advice on upgrading and improving sanitation facilities during follow-up visits. Specific improvements introduced through this technical support included:

- Compacted soil floors to increase durability and hygiene
- Construction of toilet roofs to protect soil floors and unlined pits
- Use of tight-fitting squat hole covers to reduce fly nuisance

Plan Kenya trained artisans on block making to improve toilet superstructures and floors, and provided simple block-making machines to each sub-county in the project area. Local communities borrowed the block making machines, allowing interested households to make soil blocks for their toilets.

The WASHPlus supported WaterAid Bangladesh programme used “Community Situation Analysis” to develop do-it-yourself toilet improvements including:

- Raising the toilet plinth above the height of annual floods
- Diverting drain pipes into pits
- Upgrading the toilet platform and changing behaviours to safely handle and dispose of child faeces.

Sources: IDS (2018) *East and Southern Africa Regional Rural Sanitation Workshop* Institute of Development Studies CLTS Knowledge Hub, Learning Brief; Coombes Y, 2017. *User-centred latrine guidelines – integrating CLTS with sanitation marketing: a case study from Kenya to promote informed choice* Practical Action Publishing; and, FHI 360 (2015) *CLTS-Plus: Value added sanitation programming* USAID WASHplus, Brief.

Adapted CLTS to achieve G1 ODF status in ASAL communities

ASAL communities face multiple, reinforcing challenges that make sanitation and hygiene development more difficult than in other rural communities:

- Scattered and low density populations
- Fully and partially nomadic populations
- Cultural barriers to sanitation and hygiene practices (e.g. tribal beliefs that *morans*²⁴ do not defecate; taboos against sharing of toilets by some family members²⁵)
- Little visible open defecation (OD often far from house; hot and dry climate results in faeces drying up rapidly)
- Bad and climate-affected roads
- Water scarcity
- Lack of construction materials and construction tools.

24 Maasai or Samburu warriors (members of the warrior age-set).

25 For example, the belief that in-laws should not share the toilet used by the rest of the family.

Many ASAL communities practice largely pastoralist livelihoods (due to the challenges of agricultural livelihoods in areas of low and irregular rainfall). The regular proximity of livestock, and the high level of contact between animals, herders and pastoralist families, means that the unsafe management of animals and animal wastes (see **Section 7.2**) is more likely to affect child health than in most rural communities.

Another key issue in ASAL communities is that open defecation by adults is often practiced far from the house. Cultural beliefs mean that some household members do not want to be seen by others while defecating; and ASAL households sometimes demarcate the land around the household compound and animal enclosures into sections, with specific sections allocated to each family group (e.g. children in one area, adult males in another etc). The hot and dry climate also means that faeces dry up quickly (or are eaten by animals)

As a result, in some ASAL communities, adult faeces from open defecation are scattered widely (low density of OD); may not be evident in and around the household compound; and may have a relatively low impact on health (due to the low density). In contrast, infants and children defecate close to home, often in and around the house. Similarly, young animals and small ruminants (goats and sheep) are often kept close to the house, so animal wastes and child excreta are often visible in and around the house. While child excreta and animal wastes are generally highly pathogenic, they are not usually considered harmful by ASAL communities, who consequently make little effort to safely manage or dispose of these wastes.

Adapted CLTS approaches should focus strongly on the risks (both public health risks and the CLTS message about the risk of ingesting excreta) associated with the presence of child excreta and animal wastes around (or in) the home, in areas where young children play and young animals are tethered.

Livestock are the main assets held by pastoralist communities in most ASAL areas. As a result, the health and well-being of their animals is a central concern for pastoralist households, with significant time and effort spent to find adequate water and grazing, and care for their animals. The understanding that animal and child health are closely associated in ASAL communities, with sick animals associated with higher infections in young children, and sick children associated with higher infections among young animals, has been used by some implementers to trigger sanitation and hygiene improvements²⁶.

Given the strong value placed on animal health by ASAL communities, the knowledge that **animal health could potentially be affected by open defecation by adults and children**, and that **safe management of animals and animal wastes (including the separation of animals from young children) could contribute to both improved animal health and improved child health**, is a powerful triggering tool for the achievement of G1 outcomes.

26 Aquaya (2020) Presentation of preliminary findings of USAID-supported research activity on *Approaches for sanitation access in pastoralist areas within the arid and semi-arid lands of Kenya*.

G1 outcomes: Example 3. AMREF sanitation movement

AMREF implemented the GSF-supported K-SHIP programme in 11 counties in Kenya.

In Kwale, AMREF and its partners used a “sanitation movement” approach, with extensive institutional triggering (see Section 5 WASH Governance), to involve all key stakeholders from the county and from lower levels in the sanitation activities. County and local administration officials, elected officials, local leaders and local influencers were all involved, which proved effective for enacting change and accelerating progress.

G1 outcomes: Example 4. AMREF menstrual hygiene triggering

In Wajir, AMREF and its partners found that menstrual hygiene was an effective trigger for sanitation improvements in pastoralist Muslim communities.

The lack of adequate facilities and privacy for menstrual hygiene is a significant challenge for women and girls in this ASAL area, but was not something that had previously been discussed with the men in these communities. The CLTS activities helped women to talk about the challenges that they faced, as well as the shame and disgust associated with some of these unhygienic and undignified practices. The men in these communities had not previously been aware of the menstrual hygiene issues faced by the women and girls in their households, or the lack of dignity felt. The discussions helped the families to realise that a well-constructed toilet could provide adequate privacy and facilities for menstrual hygiene, which triggered many of these households to build improved toilets, and contributed significantly to the achievement of 94 ODF communities in Wajir county.

Source: AMREF (2021) *Kenya Sanitation and Hygiene Improvement Programme: Annual Review* Nairobi: AMREF report (shared by AMREF).

The main ASAL-specific sanitation and hygiene development approach reported was the approach implemented by the AMREF K-SHIP programme in Wajir county. The public health team in Wajir county confirmed that the K-SHIP programme had taken two years to develop a tailored approach for the Wajir context. In the first two years, while the approach was developed, only 11 ODF communities were achieved; but in the subsequent 5 months, this number increased significantly to 94 ODF communities²⁷ (suggesting that the approach was now effective).

The main adaptations to the approach were reported to be:

- **CLTS tools and messages adapted to align with Islamic teaching and way of life** (e.g. using the Koran to promote cleanliness, and to note that men should be responsible for providing privacy for women in their sanitation and hygiene practices)

²⁷ The RTMIS data (29 Jan. 2021) for Wajir suggests that 95 communities have claimed ODF status, including 88 verified as ODF, of which 69 have been ODF certified by the county.

- **CLTS process adjusted to the pastoralist way of life** (e.g. timing of sessions, involvement of men, promotion of the use of livestock to finance toilets)
- **Menstrual hygiene management as a catalyst for behaviour change** (shame and disgust linked to current conditions; and raised awareness that toilets can provide women and girls with a private place for menstrual hygiene).

Other similar recommendations to adapt CLTS for use in ASAL communities:

- **Adapt to the seasonality of pastoralist livelihoods:** people tend to be close to home in the rainy season, and have more time for involvement in community development activities
- **Adjust the timing of CLTS activities to suit pastoralist timings:** herders often leave early in the morning, and are away for most of the day.
- **Use animal health as a CLTS triggering tool:** highlight the associations between animal health and child health, and explain that “eating either animal or human shit” is bad for both young animals and young children.
- **Ensure involvement of both men and women in CLTS activities:** previous CLTS activities have struggled to involve men, due to their frequent absences (and other priorities)
- **Target large pastoralist meetings and cultural festivals:** livestock markets, cultural festivals and seasonal events are major gathering places for pastoralist men and decision-makers, and can be used to trigger key influencers.
- **Child participation in CLTS activities** is effective in communities and cultures where education is strongly valued.

All activities are more difficult, and often more expensive, in remote rural areas. A significant proportion of ASAL communities are remote with poor accessibility. As a result, **the unit costs of implementation, monitoring and support activities in ASAL communities tend to far higher than in other rural areas:**

- Low population density and scattered settlements (which means it is harder to cover an entire community, as families and compounds can be spread over a large area)
- Longer travel times to communities (which means fewer can be visited per day, and per week; and fuel and transport costs are higher)
- Difficult access (few public transport options, and often a need for vehicles with off-road capabilities; access can be limited during the rainy season)
- Adapted interventions required for different cultural and livelihood challenges (conventional CLTS is not adapted for dry contexts where people defecate far from the house, and open defecation is rarely visible).

Investment plans and implementation programmes should recognize that activity costs depend on context, and use actual costs (from cost-effective programmes) to plan, design and budget for implementation, monitoring and support in ASAL areas.

Adapted CLTS to achieve G1 ODF status in nomadic communities

Nomadic movement contributes to the transmission of diseases (including neglected tropical diseases such as trachoma, soil transmitted helminths/worms, dracunculiasis, trypanosomiasis, schistosomiasis and leishmaniasis), with potential for pathogens to be introduced into new areas, or lead to the exposure of vulnerable populations in new risk zones. The health impacts of these infections are then worsened by the limited medical services available to these mobile populations.

Few examples of adapted interventions for nomadic ASAL communities were found. In most cases, implementers have focused on sanitation and hygiene improvements among settled ASAL communities.

Some principles and potential approaches for sanitation and hygiene improvement among nomadic communities were suggested by stakeholders working on sanitation and hygiene in ASAL areas:

1. **Trigger at water points:** nomadic pastoralists converge on large water points during the dry season, providing an opportunity for sanitation and hygiene promotion.
2. **Use remote processes:** some community health volunteers are part of nomadic communities, and travel with them. Mobile processes (including mobile monitoring) should be developed to allow these CHVs, and other progressive local leaders, to undertake activities among nomadic communities.
3. **Provide digging tools:** UNICEF found that few nomadic communities in Turkana own or carry digging tools, and achieved improved results through the loan of digging tools to health posts and CHVs (who then on-loaned them to communities).
4. **Promote lightweight and portable products:** plastic SATO pans, SATO stools or other lightweight pans or slabs can be sited over shallow depth borehole pits (e.g. dug with small boring tools, such as an auger), and used for short periods before closing and covering with soil; portable canvas tented superstructures (as used in safari camps) can provide privacy and then be easily folded and transported; and portable handwashing facilities (such as the SATO tap) can provide easily assembled and attractive handwashing stations.

Adapted CLTS to achieve G1 ODF status in refugee communities

Peace Winds Japan (PWJ) developed an adapted CLTS approach (in consultation with the county government and UNHCR) to improve sanitation conditions in the Kakuma Camp and Kalobeyei Integrated Settlement in Turkana West.

Previous efforts to improve sanitation had not proved successful, with 63% of the population estimated to practice open defecation in 2019. Some previously subsidised communal toilets were found to be in poor condition or abandoned, and a significant number of households were largely dependent on aid for food and resources. Humanitarian partners continue to support the construction of shared or household toilets that meet humanitarian standards, with further dialogue and action planning required to encourage proper utilisation and maintenance of these new and existing toilets.

In 2019, PWJ adapted CLTS for use in the settlement in areas where refugees do not receive full latrine construction support. The adapted approach incorporates provision of the minimum latrine materials, based on a community needs assessment of the availability of latrine construction materials (which are in short supply to some households), and a series of CLTS participatory activities and follow-up visits. Poles (for superstructure) and latrine slabs were provided to vulnerable households, and a careful facilitation process was used (in recognition of the complex social structure of the camp, and the traumatic experiences of the refugees) to emphasize enjoyment of and pride in the new sanitation services (instead of the more negative shame and disgust triggers that are often part of a CLTS process).

The intervention aimed to restore people's dignity through sanitation and hygiene improvement. Despite the difficult starting conditions, the entire 40,000 population of the Kalobeyei Integrated Settlement was recently certified as ODF, and one of the four camps in the Kakuma camp is now close to ODF achievement.

Adapted CLTS to achieve G1 ODF status in rural growth centres

Rural growth centres, and other rural communities with congested settlement patterns and low rates of open defecation, will require different approaches to those used in other rural communities.

Rural growth centres face the following challenges to sanitation and hygiene development:

- Rapidly growing
- Unplanned
- Mixed social groups (with lower social cohesion than other rural communities)
- Transient populations
- Tenants (in rented accommodation, with limited authority to construct toilets)
- Congested settlements with lack of space for toilet construction
- Higher rate of shared, communal and public toilet use (due to the lack of space)

Key principles for adapted CLTS in rural growth centres:

1. **Institutional triggering:** involve government and other administrative actors, local political and religious leaders, landlords and representatives from other neighbourhood groups or associations (residents, women, youth).
2. **Neighbourhood approach:** break down large populations into smaller neighbourhoods, with local and natural leaders responsible for development and monitoring in each neighbourhood.
3. **Recognition that higher levels of service often demanded:** people living in rural growth centres may have higher expectations for their sanitation services. Low-cost sanitation marketing approaches should be used to introduce more durable and attractive sanitation products and services.
4. **Sanctions and enforcement:** some level of sanctions and enforcement are often necessary in more urban settings (where unsafe sanitation practices happen in close proximity to large groups of people, creating significant public health hazards).

5. **Reframe sanitation as a housing issue:** consider the use of building regulations and local taxes to incentivize the construction and safe management of sanitation and hygiene services.
6. **Monitor faecal sludge management:** the lack of space for replacement toilet pits increases the risk of unsafe faecal sludge management (FSM). Therefore, monitoring and improvement of FSM practices, and development of FSM services (e.g. safe emptying, transport and disposal services) should start much earlier in the protocol process than in other rural communities.

G1 outcomes: Example 5. Sectional triggering in rural growth centres, Ghana

“Sectional triggering” is used in Ghana to accelerate sanitation development in rural growth centres. Key groups (sections) are identified at the start of the process, with separate triggering sessions held for each of these different cohorts, including religious groups, community and traditional leaders, and landlords. Mass media and public announcements are used to promote sanitation products.

Source: SNV (2019) *The missing middle: rural growth centres in area-wide sanitation* SNV SSH4A programme learning event proceedings (Jirapa, Ghana).

Low-cost sanitation marketing to achieve G1 ODF status

In many rural communities, CLTS has proved an effective approach to trigger the development and use of flyproof and clean household toilets. However, where rural communities are on-road, have good access to markets, and can afford sanitation products and services, efforts should be made to develop sanitation markets, and encourage household use of market-bought toilet components that increase the durability, comfort and cleanliness of their toilets.

Key elements for sanitation market development during the G1 ODF phase include:

- **Availability of sanitation products:** increase awareness and availability to improve function, convenience & aesthetics of toilets and handwashing facilities
- **Availability of credit:** for payment by instalment (by households), and loans to sanitation enterprises
- **Local services:** develop services for toilet installation, technical assistance and toilet upgrading (e.g. addition of durable slab or durable pit; installation of a SATO pan)
- **Sales and support capacity:** involve other local actors in promotion, sales and support (retailers, local youth groups, women’s groups).
- **Link suppliers and service providers with CLTS events:** where markets are accessible, and prices affordable, the involvement of local suppliers and service providers can generate rapid sales and increase the interest of the private sector in future support of sanitation development (e.g. to achieve G2 outcomes).

G1-3 Toilet use: Example 6. SATO pan to upgrade simple pit latrines

Plastic SATO pans provide an affordable and attractive upgrade to simple pit latrines. SATO pans use a weighted flap, which is designed to retain a small amount of water from the last flush, to seal the pan from flies and smells. SATO pans are available in several different designs (including a stool version that allows the user to sit), and are easy to clean.

SATO pans are relatively easy to install in existing concrete toilet slabs, and can be retro-fitted to most types of toilets. However, it is recommended that a trained installer is used, as it is important that the pan is fixed solidly and remains level after installation.

LIXIL reports sales of tens of thousands of SATO pans in some counties in Kenya, with particularly high sales reported in the ODF counties (Siaya and Kitui).

Where SATO pans are installed in toilet slabs made from non-durable materials (e.g. wooden slabs), the SATO pan does not increase the strength or durability of the toilet slab. For durability, SATO pans should be installed in durable toilet slabs, and flush into durable toilet pits. SATO pans installed on non-durable toilet slabs will have to be upgraded (to use durable or climate resilient toilet slabs) to meet the G2 toilet criteria.

Some examples of other low-cost solutions to latrine construction and sustainability problems reported in Kenya include:

- **Offset pour-flush latrine pits:** to reduce slab collapse due to loose soils and heavy rains (often without water seal pans, using open pipes to connect to the pit)
- **Raised toilets and strengthened foundations:** use blocks (soil or cement) or bricks to raise the slab and pit in flood-prone areas or in rocky soils
- **Lined latrine pits: line pits using local materials** (woven mats, and use of other local cost linings) in loose or collapsible soils
- **Watertight latrine roofs:** protect the latrine slab and pit by installing a roof that keeps water away from the slab and pit.
- **Awareness that solid waste disposal in toilets causes pits to full up rapidly:** the disposal of solid wastes (including disposable diapers, clothing, bottles, cans) into toilet pits (or other containment systems) causes pits to fill up more quickly, and can cause blockages and problems. Where pits are emptied, solid waste also causes emptying problems (as it is hard to remove, and interferes with digging).

G1 outcomes: Example 7. Sanitation strategy for beaches and islands, Siaya County

UNICEF supported the Siaya county government to develop a specific sanitation strategy for communities in the beaches and islands of lake Victoria.

The mixed social groups and highly transient nature of the population in the Siaya beaches and islands meant that conventional CLTS approaches, which are based

on social cohesion and cooperation, had not worked well. The new strategy uses a more urban CLTS approach, involving landlords and other key duty bearers through institutional triggering, and adapting the triggering process to fit with the fishing community timetable (as people are often fishing at night, and sleeping in the day).

Initial assessments of the strategy noted that good baseline information (including situation and stakeholder analyses) is important before successful triggering can be undertaken.

Source: UNICEF (2017) *Sanitation strategy for communities in the beaches and islands: Lake Victoria, Siaya County, Kenya*

Local administration support to achieve G1 ODF status

In some extreme situations, where people from marginalised groups struggle to build and use toilets (e.g. due to lack of construction materials or tools, lack of labour, disability etc), and communities are unable to support these households to build appropriate facilities, local administrations may consider the use of specialist support and sanitation finance.

See **Section 10** on Sanitation Finance for further information.

G1-1 Use of flyproof and clean household toilets

100% household use of toilets means that **all households in the community** report use of toilets, and observations confirm that **all households** are using toilets. 100% household use of toilets can include shared use, i.e. all households use toilets, but some households share use of the same toilet (or other sanitation service).

G1-1 Use of flyproof and clean toilets

Indicator criteria	Notes
G1-1.1 Presence of functional household toilet with privacy	<p>Assessment: observation of household toilet</p> <p>Functional: working as intended; can be used</p> <p>Privacy: superstructure meets local criteria for privacy; animals are prevented from entering the toilet.</p> <p>Toilet: facility for containment of human excreta (or for transport into a sewer)</p>
G1-1.2 Toilet use by all household members	<p>Assessment: observation & household interview to confirm that everyone uses the toilet, and check shared use</p> <p>Sharing threshold: 10-15 people</p>
G1-1.3 Flyproof toilet	<p>Assessment: observation of household toilet</p> <p>Flyproof: flies prevented from reaching excreta in the pit</p>
G1-1.4 Clean toilet	<p>Assessment: by observation of slab and toilet interior</p> <p>Clean: no visible faeces, urine or soiled cleaning materials in or around the toilet</p>

For G1 status, all households should use flyproof and clean toilets, with confirmation that all members of the household either use the toilet, or are assisted to use the toilet (e.g. disabled or older people, or young children that need assistance). Where children are too young to use the toilet, see indicator **G1-3 for safe disposal of child excreta and safe management of diapers**.

G1-1.1 Functional toilet with privacy: service levels

G1 Functional toilet with privacy observed	
G0/1 No toilet observed (<i>check shared use in G1-1.2</i>)	
G0 Toilet observed but INADEQUATE privacy	
G0 Toilet observed but NOT functional (collapsed, full, abandoned)	

Assessment: by observation of the household toilet (in compound, functional, and provides adequate privacy).

Functional toilet with privacy

When observed, the household toilet should appear to be functional and in regular use. Abandoned and collapsed toilets, or toilets with signs of disuse (e.g. materials blocking the entrance or squat hole area; cobwebs and other signs that the toilet has not been used for some time), should be marked as NOT functional.

The toilet superstructure should meet local criteria for privacy, as agreed by the County Public Health Office. In most cases, toilet superstructures will include walls and a door, which allow use of the toilet without external observation. The superstructure should also prevent animals from entering, to limit contact between animals and human excreta.

There are many different ways to assure privacy in household toilets. Different people in different contexts will have different privacy standards and requirements, which is why the privacy criteria should be minimal (to avoid too many restrictions when people build or upgrade their toilets) and determined locally. One of the first steps in assuring that a toilet has adequate privacy is to ask women and girls about the features that would enhance the privacy of the toilet - all households should be encouraged to check that all members of the household are comfortable with the level of privacy offered. Inadequate privacy may affect toilet usage, with some household members likely to resort to open defecation if they are reluctant to use the toilet.

Toilet privacy should be assured through the design of the superstructure, including use of some (but not necessarily all) of the following options:

- Walls that provide an adequate barrier to external view
- Doors or offset entrances that conceal the user from external view
- Roof that prevents view from above (and protects the toilet slab and user from rain and sun)
- Internal latch or lock to close the toilet to entry during use

G1-1.2 Toilet use by all household members: service levels

G1 Use of own toilet by all household members	
G1 Shared use of own toilet with 10-15 (or less) people (including other HHs)	
G1 Shared use of other toilet with 10-15 (or less) people	
G0 Shared use of own toilet with more than 10-15 people	
G0 Shared use of other household toilet with more than 10-15 people	
G0 No toilet, practice open defecation	

Assessment: by observation and household interview.

Household interview to assess **G1-1.2 Toilet use by all household members:**

1. Identify the head of household or main caregiver, and interview them to assess whether the toilet is used by all household members. Where neither is available, interview someone aged 18 or above, or interview each household member.
2. Confirm the number of people in the household.
3. Confirm the number of under-5 children, and whether there are any people with functional disability in the household (e.g. disabled, or older people).
4. Assess whether all members of the household defecate in the open, or use a toilet (e.g. asking a question such as: Do members of your household defecate in the open, or use a toilet?)
5. Assess whether any members of the household are unable to use the toilet (or choose not to use the toilet)? If so, check whether these household members are assisted to use the toilet? If not, ask what happens when they defecate (where do they defecate; what happens to the excreta?)
6. Assess whether this household shares the toilet they use with any other households? If so, assess how many people (in total: adults and children) share use of the toilet?
7. For G1, the toilet has to be shared by less than 10-15 people.

Observation to assess **G1-1.2 Toilet use by all household members:**

1. Assessment of toilet use requires that the toilet is functional (see G1-1.1 Presence of a functional toilet with privacy) and has no signs of disuse (e.g. spider webs in the pan or squathole, dry water seal, or objects blocking the squathole or pan).
2. Other signs of toilet use (e.g. well-trodden path, presence of anal cleansing materials e.g. paper, leaves or water) should be checked, but these signs can be highly variable depending on context (e.g. in some contexts, people use toilets even with overgrown paths; in others regular use may not be visible from the hard-packed soil or rock; and people practice many different forms of anal cleansing, and the materials used may not be visible inside the toilet at the time of observation).

Shared toilet use

Shared toilet use is classed by the WHO-UNICEF Joint Monitoring Programme (JMP) as a limited service²⁸, because of the higher risk that shared use results in unhygienic outcomes or in open defecation. When more people use a toilet, and when people from different households use a toilet, the risk increases that people will not want to clean excreta left by other people, and that, when the toilet is occupied e.g. at peak morning or evening times, some people may temporarily revert to open defecation.

However, shared toilet use can have hygienic outcomes, particularly when shared by people from the same extended family, and when attention is paid to keeping the toilet clean and functional at all times. **Regular monitoring and observation can confirm whether shared toilets meet cleanliness (and other hygiene) standards.**

The pits (or tanks) in toilets used by large households, or multiple households, also fill up faster than those used by small households. In general, the more people that use a toilet, the higher the risk of problems. For this reason, it is recommended that **shared toilet use should only be counted if the toilet is shared by 10-15 people or less**. Where more than 10-15 people use the toilet, even if they are from the same household, the risk of unsafe outcomes increases greatly.

The average size of rural households in Kenya ranges from 3.1 people per household in Nyeri, up to 7.0 people per household in Mandera, with an average of 4.4 people per household. On average, two rural households are likely to contain 10 or less people, and could share a toilet. Due to the larger household sizes found in most ASAL communities, the threshold for G1 toilet use may be increased up to **shared use of a toilet by 15 people**.

The 2019 Kenya Population and Housing Census found that Mandera county had the highest average household size of all 47 counties, at 7 people per household. The higher threshold for G1 toilet use of 15 people should mean that shared use by two (average) households is acceptable in all ASAL counties. However, even where shared use is more common and is generally well managed, **shared use by more than 15 people increases the risk that the facility will be occupied**, and that users will revert to open defecation; or that users will be reluctant to clean faeces left behind by other users, which can lead to dirty toilets and unhygienic outcomes.

Key principles around shared use of toilets:

- Shared use of toilets (by more than 10-15 people) has a higher risk of unsafe outcomes
- **Identify and list toilets used by large or multiple households** (more than 10-15 people, or shared by more than one household)
- **Monitor and report outcomes in these shared facilities separately**
- Adjust sharing criteria where monitoring shows that shared use is working well, or not working well

²⁸ JMP service levels: use of a shared toilet (limited sanitation service) is below use of an improved toilet (basic sanitation service), which is below use of a safely managed toilet (safely managed sanitation service).

G1-1.3 Flyproof toilet: service levels

G1 Pit latrine with tight-fitting cover (in place)	
G1 VIP latrine with screened vent pipe	
G1 Pour-flush latrine with water seal pan (with water)	
G1 Pour-flush latrine with SATO pan (functional)	
G1 Other flyproof latrine	
G0 Pit latrine where flies can enter pit (missing or inadequate squat hole cover)	
G0 VIP latrine with missing or inadequate insect screen on vent pipe	
G0 Pour-flush latrine with broken water seal, or no water in pan	
G0 Pour-flush latrine with non-flyproof SATO pan (no flap)	
G0 Pour-flush latrine with open pipe to pit	
G0 Other non-flyproof latrine	

Assessment: by observation of the household toilet (type of latrine and flyproofing).

Flyproof toilets

The previous CLTS protocol promoted squat hole covers to reduce flies and limit smell. However, squat hole covers are not appropriate for all toilet technologies (e.g. pour-flush latrines and VIP latrines), and need careful design and use (e.g. tight-fitting and always in position) in order to be flyproof.

Flyproof does not mean that there are no flies. **Flyproof toilets are designed to prevent flies from reaching the excreta in the pit** (or other containment system). Water seal pans, screened ventilation systems, and tight-fitting squat hole covers help to make toilets flyproof. But it is also important that there are no gaps in the slab or platform, and no (unscreened) openings in the pit or tank. Flies are attracted to the smell of excreta, with unscreened openings to the pit, or other gaps, encouraging fly entry and fly breeding in the excreta.

Flyproof toilet types (which also limit smell):

1. **Pour-flush pit latrine** with functioning water seal pan.
2. **VIP latrine** with screened vent pipe, dark interior and no squat hole cover (so that airflow and flies are attracted to the vent pipe).
3. **Dry pit latrine** with tight-fitting squat hole cover that is in place.

In addition to the use of flyproof toilets, effective fly control at household or community level requires several other outcomes to be achieved:

- G1: no open defecation & safe child excreta disposal.
- G2: safe animal excreta management, and safe food storage.
- G3: safe solid and liquid waste management, clean homes & compounds.

In dry pit latrines (with no water seal or SATO flap), the addition of wood ash to the toilet pit after defecation can help to reduce fly nuisance and odours. Wood ash also makes the pit contents drier and lowers the pH, which may assist decomposition and pathogen inactivation²⁹.

G1-1.4 Clean toilet: service levels

G1 Clean: no visible faeces, urine or soiled cleaning materials	
G1 Clean: minor traces of faeces, soiled materials (easily cleaned)	
G0 Significant traces of faeces or soiled cleaning materials	
G0 Visible faeces, urine and soiled materials, smelly and dirty toilet	

Assessment: by observation of the household toilet (cleanliness of toilet pan, floor & walls).

Clean toilets

When observed, the household toilet should appear clean, with no visible faeces, urine or soiled cleaning materials (e.g. toilet paper, other paper, leaves, or other anal cleansing materials) in or around the toilet.

Minor traces of faeces, or small quantities of cleaning materials, e.g. from recent use, are acceptable, providing that these can be easily cleaned and the toilet appears otherwise to be regularly cleaned. Where there is evidence of significant traces of faeces, or large quantities of soiled cleaning materials; where the toilet has obviously not been cleaned for some time; or where the toilet is smelly and generally dirty, the toilet does not meet the G1-1.4 criteria.

G1-2 Presence of handwashing facility with water and soap

Indicator criteria	Notes
G1-2.1 Presence of household handwashing facility	Assessment: observation of handwashing facility
	Handwashing facility: confirm number of handwashing facilities, and location of handwashing facilities.
G1-2.2 Water available at handwashing facility	Assessment: observation of handwashing facility
	Water: confirm water is available at main facility
G1-2.3 Soap available at handwashing facility	Assessment: observation of handwashing facility
	Soap: confirm soap is available at main facility

G1-2 Presence of household handwashing facilities with water & soap

For G1 status, all households should have a handwashing facility with water and soap available, either at the toilet, or in the house or kitchen (if the toilet is nearby).

²⁹ Although decomposition and pathogen inactivation processes are highly complex, with many different factors that influence them (e.g. moisture, temperature, pH, chemical composition of pit contents, diet of users, number of users, groundwater level, soil type, pit technology etc).

G1-2.1 Presence of handwashing facility: service levels

G1 Observed by toilet and in kitchen	
G1 Observed by toilet	
G1 Observed in home (portable basin, jug, container)	
G0 No handwashing facility observed	

Assessment: by observation of the handwashing facility, and household interview.

The G1-2 handwashing outcome should be assessed by asking a household respondent to confirm:

1. Where do you and other members of your household most often wash your hands?
2. What do members of your household usually use to wash your hands?

The main handwashing facility should then be visited and the type of handwashing facility, its location, and the presence of water and soap at the facility, should be noted.

Promotion of handwashing with soap

CLTS approaches encourage handwashing with soap, usually through promotion of the construction of homemade facilities like tippy-taps, but often lack specific tools to change hygiene behaviours or strengthen and sustain the practice of handwashing with soap.

As a result, handwashing facilities built following CLTS triggering and follow-up visits are often temporary³⁰, and may provide a lower level of service than most households would like. More specific and targeted triggering tools are required for more effective and permanent hygiene behaviour change, including the development and promotion of more durable and user-friendly handwashing facilities.

Context cues and nudges are powerful mechanisms for hygiene behaviour change and the formation of good handwashing habits, including:

- A designated and visible place for handwashing with soap, with easy to use water and soap containers, located to reduce user effort after defecation or before eating
- Handwashing facilities are more likely to be used if the soap smells nice, and the facility is clean, attractive and easy to use.
- Piggyback off existing habits (e.g. place a mirror above the handwashing facility, to encourage regular access and increased use)
- Target people when habits are disrupted (e.g. after having a child; while building or upgrading a toilet)
- Reduce friction (e.g. place the handwashing facility in the path of the latrine exit, or in a place where people frequently pass)

³⁰ Tippy taps are often made from small branches, plastic bottles and string. While some tippy-taps are well-made and durable, numerous sustainability challenges have been observed and reported: the branches are easily damaged; the bottles are small and degrade in the sun; children drink the water; the soap may be stolen or eaten by animals; and the users rarely enjoy using the facility.

- Introduce external cues (e.g. rewards or recognition to those who practice handwashing with soap; glo-germ activities to remind people that dirty hands may not be visible)
- Encourage handwashing practice and repeated action to form habits (e.g. daily group handwashing in schools; handwashing by all members of the family at fixed times, or before particular activities)

G1-2 Handwashing with soap: Example 8. Malawi triggering for handwashing

UNICEF Malawi developed 10 different tools to trigger and assess handwashing with soap, following field research and testing by UNICEF and Salima District Council.

The basis of the 10 triggering tools were community realisations that:

1. There are many sources of hand contamination from faeces and other pathogens.
2. Handwashing with soap is a good way to remove all contaminants (dirt, smell and germs).
3. Hands that appear clean can still have dirt on them.

In the small group of villages where the triggering tools were tested, access to handwashing facilities increased by an average of 69%, and the presence of soap increased by 15%.

To review the 10 handwashing triggering tools, use this link:

<https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/3272>

Source: UNICEF Malawi (2013) *How to Trigger for Hand Washing with Soap - A Guide to CLTS Triggering Tools that Result in Hand Washing Practice* Lilongwe: UNICEF Malawi.

The practice of handwashing with soap is rarely well monitored (i.e. few data are available on current handwashing rates or practices). More reliable and regular measurement of the presence of handwashing facilities, soap and water; and more frequent reminders of the critical times for handwashing with soap, help to assess the effectiveness of hygiene promotion, and encourage the development of more effective approaches.

G1-2 Handwashing with soap: Example 9. Hygiene promotion in the SNV Mozambique SSH4A project

In the SNV Mozambique Sustainable Sanitation and Hygiene for All (SSH4A) project, the first household survey of handwashing practice took place six months after the launch of a large-scale hygiene promotion campaign in five districts of Nampula province.

The SSH4A project team had been confident that the handwashing promotion was well designed (based on formative research), but the household survey found that there had

been no change in the presence of handwashing facilities after six months of hygiene promotion activities.³¹ As a result, the hygiene promotion campaign was completely revised. A year later, the next household survey reported a 15 per cent increase in the presence of handwashing facilities (SNV 2020), after which the project team continued to strengthen and adapt the promotional activities and materials.

The presence of soap was another critical issue (across all 9 countries in the SNV SSH4A programme): in the final 2020 survey, soap was observed in only 25 per cent of household handwashing facilities, even though 86 per cent of households were aware of the two critical times for handwashing with soap that were promoted (before eating and after defecation). **Monitoring and evaluation of handwashing practice need to be undertaken regularly** (to provide feedback on response rates and changes in practice over time) and continue for several years after any intervention (to check on sustained handwashing behaviour).

Source: 2015 interview of the Mozambique SSH4A project team, and 2020 review of SNV SSH4A outcome data, by Andy Robinson.

Where available, appropriate and low-cost handwashing products should be introduced to communities, and marketed by local suppliers and service providers. Several handwashing innovations have been piloted in Kenya, including the Pova Poa (Cool Foam) portable handwashing station, which used a foaming soap dispenser and a hygienic “swing” water tap. But few of these new products have been successfully marketed at scale.

Coultas M and Iyer R (2020) *Handwashing compendium for low resource settings: a living document* **Brighton:** Institute of Development Studies, Edition 3.

<https://sanitationlearninghub.org/resource/handwashing-compendium-for-low-resource-settings-a-living-document/>

UNICEF (2020) *Hand hygiene for all* **New York:** United Nations Children’s Fund (UNICEF)

<https://sanitationlearninghub.org/resource/hand-hygiene-for-all/>

Handwashing with soap in ASAL contexts

ASAL communities face more severe challenges for handwashing with soap, and for other hygiene practices that require the use of water, because of the generally low or inadequate quantity of water available for washing. Communities with severe water scarcity should be identified through baseline monitoring of the quantity of water collected and used by most households. Where the quantity of water available is less than 8 liters per person per day, the community should be marked as water-scarce and should be included in a priority list for water supply development by the county. The achievement of G2 and G3 hygiene outcomes will be extremely difficult in water-scarce communities, unless support is provided to increase the quantity (and quality) of water available to these households.

31 Based on 2015 interview of the Mozambique SSH4A project team by the author.

G1-2.2 Presence of water at handwashing facility: service levels

G1 Water available at handwashing facility	
G0 No water available at handwashing facility	

Assessment: by observation of the handwashing facility (presence of water).

Presence of water at the handwashing facility: water should be observed at the handwashing facility. Where an empty water container is observed, the presence of wet ground (or wet materials) under the handwashing facility can be accepted as proof of the recent presence of water at the handwashing facility.

G1-2.3 Presence of soap at handwashing facility: service levels

G1 Solid, liquid or powder soap available at handwashing facility	
G0 Soap in house, but not available at handwashing facility	
G0 Only ash, mud or sand available at handwashing facility	
G0 No soap or other hand cleanser available	

Assessment: by observation of the handwashing facility (presence of soap).

Presence of soap at the handwashing facility: soap should be observed at the handwashing facility. Soap can be in the form of solid soap, liquid soap (e.g. soapy water³²) or soap powder. Where soap is unavailable or expensive, local manufacture of soap has been promoted with some success (e.g. as an income-generating activity for women's groups).

Use of alcohol-based hand rub: most rural households do not have access to alcohol-based hand rub (ABHR). In addition, ABHR is not recommended when hands are visibly dirty, soiled with blood (or other bodily fluids), or after using the toilet (or having contact with excreta) as it is less effective than handwashing with soap and water³³.

Use of ash as a hand cleanser: The presence of ash (or other cleaning agents such as sand, soil or plants) should be recorded as a lower level of service (not meeting the G1 requirements), because ash is a less effective detergent (i.e. does not remove dirt and pathogens from hands as well as soap) and can be contaminated (i.e. the ash or soil may contain pathogens).

32 Centre for Disease Control How to Make Soapy Water: <https://www.cdc.gov/vhf/ebola/pdf/chlorine-solution-liquid-soapy.pdf>

33 WHO (2021) State of the World's Hand Hygiene: A global call to action to make hand hygiene a priority in policy and practice World Health Organization (WHO) and United Nations Children's Fund (UNICEF).

G1-3 No exposed human excreta

Indicator criteria	Notes
G1-3.1 No exposed human excreta in household compound	Assessment: observation of household compound
	No exposed human excreta: no visible human faeces in the household compound (or in the house, toilet or in any other buildings or facilities in the compound)
G1-3C No exposed human excreta in communal areas	Assessment: observation of communal areas
	No exposed human excreta: no visible human faeces in communal areas (including previous OD sites)

For G1 status, open defecation has to be eliminated from the community. All households should confirm that they are using toilets, and there should be no exposed human excreta.

G1-3.1 No exposed human excreta in household compound: service levels³⁴

G1 OD: No visible OD (child or adult) in household compound	
G0 OD: Child or adult excreta observed in household compound	

Assessment: by observation of the household compound, house, toilet or any other buildings or facilities in the compound (for visible or exposed human faeces).

G1-3C No exposed human excreta in communal areas: service levels

G1 ODF: Communal areas free of OD (child or adult)	
G0 Child or adult excreta observed in communal areas	

Assessment: by observation of communal areas (for visible or exposed human faeces).

Open defecation in water bodies: where groups or communities (e.g. people living near beaches, lakes or rivers) practice open defecation in nearby water bodies, human excreta may not be visible in and around household compounds and communal areas. In these cases, household interviews should be used to assess whether people practice open defecation or use a toilet, in combination with observation of the presence of functional toilets (to verify claims of toilet use).

34 Household outcomes should be marked with a large cross (either in the G1 box, or the G0 box).

G1-4 Safe management of child excreta and diapers

Indicator criteria	Notes
G1-4.1 Safe management of child excreta in household compound	Assessment: household interview (main caregiver)
	Child excreta disposal: child faeces are safely managed and disposed, and implements are cleaned in a safe place.
G1-4.2 Safe management of diapers in household compound	Assessment: observation & household interview
	No used diapers: no used diapers visible within the household compound
	Diaper management: washable cloths and diapers are cleaned in a safe place; used disposable diapers are safely disposed
G1-4C Safe management of diapers in communal areas	Assessment: observation of communal areas
	No used diapers: no used diapers visible in communal areas

For G1 status, all households should practice **safe management of child excreta and diapers**. Households that do not contain children under five years old should be classed as having safe management of child excreta and diapers. Households that contain children under five years old should be assessed to check whether child excreta and diapers are safely managed.

G1-4.1 Safe management of child excreta: service levels³⁵

G1 Child uses toilet without assistance	
G1 Child uses toilet with assistance	
G1 Child uses potty with faeces put or rinsed into toilet	
G1 Child faeces put or rinsed into toilet (safely managed)	
G1 Child faeces buried (safely managed)	
G0 Child faeces disposed with solid waste	
G0 Child faeces unsafely disposed or left in open/field/drain	
G0 Soiled potty or other collection tool unsafely washed	

Assessment: Where the household contains under-5 children, the main caregiver should be asked where the youngest child defecates, and (if the defecation is not in a toilet) how the child faeces are collected and disposed (e.g. using a diaper, potty, or other material or implement):

- Q.** The last time [name of child] passed stools/defecated, where did they defecate?
- Q.** How were the child faeces collected and disposed?
- Q.** Where was the collection tool (e.g. potty or diaper) cleaned?

³⁵ Household outcomes should be marked with a large cross (either in the G1 box, or the G0 box).

The same questions should be asked for all other under-5 children, to check that all child excreta and all diapers are safely managed.

Child excreta are often unsafely disposed to the open in and around household compounds, with excreta sometimes washed from reusable diapers in unsafe places (e.g. close to the home, or at the water point), and used disposable diapers (where used) often disposed to the open, or dumped with solid waste that is not safely managed. The unsafe return of pathogenic child excreta to the local environment through these practices is not currently addressed by most rural sanitation interventions. The RuSH Protocol encourages improvement of these unsafe practices, and better monitoring of these outcomes.

Even where adults use toilets, children's faeces are often not safely contained due to parental fears about children falling into latrines, and the perception that children's faeces are harmless. Unsafe child excreta disposal often happens close to the home, and may contaminate the areas where young children play and spend most of their time. As a result, faecal contamination of soil in and around rural homes appears to be a big factor in child faecal exposure. A 2015 study in Tanzania³⁶ found that children placing contaminated hands in their mouths accounted for 97% of the total quantity of ingested faecal matter.

Cultural resistance to safe infant excreta disposal should be examined as a potential issue in ASAL regions of Kenya. Research in Northwest Tanzania found that some tribal groups reported cultural beliefs that prevented safe disposal of child excreta. For instance, the handling of child faeces was thought to affect child health, including that disposal of child faeces into the toilet pit was associated (in local beliefs) with putting the child into the toilet pit (with the potential for death or serious consequences). As a result, most people in these tribal communities refused to put child excreta into the toilet, and preferred instead to dispose child excreta in other ways (including into the open). A related issue was that the use of sharp-edged implements to pick up child faeces was thought to have the potential to cut or harm the child, so only soft-edge implements were used to handle child faeces.

Unsafe disposal of infant excreta close to the home may be a more serious faecal exposure risk than open defecation by adults, particularly for people living in small, scattered rural settlements such as ASAL pastoralists (as open defecation by adults often takes place a long way from the home, in dry conditions with limited risk of contamination through surface run-off). Therefore, careful attention should be paid to any cultural resistance to safe disposal of child excreta, with targeted behaviour change tools and activities developed wherever required.

Caregivers should be made aware that **infant and child excreta are highly pathogenic**, and that:

- all infant and child faeces should be safely disposed (put or rinsed into the toilet, or buried);

36 Mattioli M, Davis J, Boehm A (2015) *Hand-to-mouth contacts result in greater ingestion of feces than dietary water consumption in Tanzania: a quantitative fecal exposure assessment model*. Environmental Science & Technology 2015; 49(3):1912–20.

- all surfaces, cloths and implements that come into contact with the excreta should be carefully and thoroughly washed with soap; and
- hands and any other parts of the caregiver’s body that come into contact with the excreta should also be carefully and thoroughly washed with soap (see **Section 7.2** for more information on outcome indicator **G2-2 Handwashing with soap at critical times**).

G1-4.2 Safe management of diapers in household compound: service levels

G1 Washable cloths or diapers emptied & washed in safe place	
G1 Disposable diapers put into covered waste pit	
G1 Disposable diapers buried in household compound	
G1 Disposable diapers collected for disposal in safe communal site	
G0 Used diapers unsafely disposed or unsafely emptied and washed	
G0 Used diapers visible in household compound	

G1-4C Safe management of diapers in communal areas: service levels

G1 Safe diaper management: no discarded diapers in communal areas	
G0 Unsafe diaper management: discarded diapers visible in communal areas	

Assessment: by observation (discarded diapers) and household interview.

Potential household interview questions include:

- Q.** The last time [name of youngest child] passed stools/defecated, where did they defecate?
- Q.** If washable cloths/diapers used: How were the child faeces disposed?
- Q.** If washable cloths/diapers used: Where was the cloth/diaper cleaned?
- Q.** If disposable diapers used: How was the disposable diaper disposed?

Used diapers contain fresh infant excreta, which is highly pathogenic. Disposable diapers are also bad for the environment – most disposable diapers are manufactured using dangerous chemicals, and are very slow to degrade. A typical baby requires 5,000 diaper changes during its infancy, generating up to 1,000kg of diaper waste per year.

A 2015 study in Nakuru³⁷ found that:

- **74% disposable diapers were disposed with other solid waste**
- 19% disposable diapers were put into pit latrine
- 5% used washable cloths
- 1%-2% disposable diapers were disposed into waste pit or other

37 Wambui, Joseph & Makindi 2015 Soiled diaper disposal practices among caregivers in poor and middle income urban settings IJSRP Vol 5, Issue 10.

Few current interventions focus on the safe management of child excreta and safe management of diapers. **These practices are generally undertaken by caregivers**, so any intervention has to ensure that the primary caregivers of young children (and the caregivers of any other community members who have to wear diapers) are involved in promotional activities and in any monitoring of these practices.

Key diaper management behaviours to change:

- Unsafe disposal of child excreta or used diapers in or around the household compound, or in nearby ditches and drains
- Unsafe disposal of child excreta or used diapers with solid waste
- Unsafe emptying or washing of used diapers close to water points, water sources or in the household compound (in and around the house, or near child play areas)

Safe management of washable cloths or diapers: where washable cloths or diapers are used to contain child excreta, the cloths or diapers should be cleaned and washed in a safe place (e.g. so that the child excreta do not contaminate household compounds or water points), and any faeces should be safely disposed (e.g. put or rinsed into the toilet, or buried).

The use of washable cloths and washable diapers should be encouraged in rural communities to avoid the significant disposal problems associated with single-use (disposable) diapers (see below). Globally, few good solutions have been found for safe management and disposal of single-use diapers, with used diapers consuming an increasingly high proportion of landfill space. Efforts are now focused on developing new types of diaper that use biodegradable materials (which will degrade when buried, reducing the long-term environmental impacts), and on encouraging the use of washable diapers that provide a sustainable solution in rural communities.

Unsafe disposal options for diapers:

- Used diapers should NOT be put into open containers or open solid waste disposal points (accessible to animals, people and other potential contamination vectors)
- Used diapers should NOT be put into open spaces, drains, fields or water bodies

Safe management of disposable diapers: where disposable diapers are used to contain child excreta, the diapers should be properly closed and safely disposed (e.g. to a covered waste pit, or buried, or collected for disposal at a safely managed communal disposal site).

Disposable diapers do not degrade well in pit latrines (or in any other disposal site), thus disposal of used diapers into the toilet pit greatly reduces the lifespan of the pit (as it will fill up much more quickly). In rural contexts, where communal waste collection services and safely managed landfill sites are rare, **burial in covered waste pits** (either household or communal) is often the best option.

Burial of solid wastes (including used diapers) should only take place in locations with low risk of groundwater contamination, and low risk of contamination of other nearby farming, livestock or rural livelihood practices. Waste pits should be:

- covered (to prevent access by animals)
- small (to ensure that the covers are structurally sound, so that people and animals do not fall into the waste);
- deep enough that the full waste pit can be covered with at least 0.5m of soil (to prevent the solid waste being uncovered by subsequent farming or other activities); and
- located in areas that are unlikely to be used for farming, livestock or other activities that might involve digging, or consuming products that have been in contact with the soil.

Burning of disposable diapers: burning of disposable diapers is not recommended. Safe burning of combustible wastes requires a well-designed incinerator, with measures to control air pollution, as well as budget and capacity for operation and maintenance. The use of incinerators is rare in rural areas, due to the high capital and operating costs.

Informal burning of disposable diapers (along with other combustible solid waste) does take place in rural communities. However, used diapers do not burn well, as they contain wet materials. The addition of fuel (e.g. kerosene or diesel) is often required to burn used diapers, which increases the cost and generates additional air pollution.

Handwashing with soap at critical infant times: caregivers should wash their hands with soap immediately after handling infant or child excreta, after handling or washing diapers, or after cleaning an infant of excreta. See **Section 7.2** for more information on outcome indicator **G2-2 Handwashing with soap at critical times**.

G1 outcomes: Example 10. Safe diaper disposal in the Philippines

Safe diaper disposal was added to the ODF requirements in the Philippines, which resulted in dramatic improvements in attention to, and safe management of, used disposable diapers (which had not previously been considered a sanitation issue). At the outset, many communities failed to be certified ODF due to diaper disposal problems. However, local solutions were soon found for safe management & disposal of the used diapers, and the practice of safe diaper disposal has now become the social norm in most rural communities.

Source: Personal experience of author (Andy Robinson)

G1+G2+G3 outcomes: Example 11. Sanitation Nutrition (SanNut) pilot project

The UNICEF-supported Sanitation Nutrition (SanNut) pilot project was implemented in 320 villages (in 5 out of the 8 subcounties in Kitui). The aim of the SanNut pilot was to integrate nutrition messages into CLTS programming, in the understanding that all faecal matter causes diarrhoea (and other diseases related to faecal exposure) and can lead to child stunting. The pilot also recognised that CLTS focuses largely on adult sanitation and hygiene practices, thus aimed to increase the attention paid to child sanitation and hygiene practices (through caregivers), and to the impacts of faecal exposure among young children.

The SanNut pilot promoted three main sanitation and hygiene practices (in addition to the practices already promoted by CLTS):

- proper disposal of all child faeces (G1)
- removal of all faecal matter (including animal faeces) from child environment (G1-G2)
- correct handwashing at critical times for children and adults (G2)

The SanNut pilot also promoted five additional nutrition messages:

- good food hygiene (G2)
- exclusive breastfeeding up to 6 months, with complementary feeding after 6 months (G3)
- Vitamin A supplement from 6 months (G3); and
- deworming 12-23 months (G3).

The SanNut process involved **the addition of two “caregiver meetings” to the CLTS process**, after the initial triggering event (during the period of CLTS follow-up), and then SanNut follow-up visits to households.

Caregiver meeting 1 (infant hygiene) focused on the following key messages:

1. Outline of the causes and consequences of diarrhoea (including stunting).
2. Potential sources of faecal contamination within the home (F-diagram).
3. Sanitation and hygiene practices required to prevent child faecal exposure:
 - a) Cleaning the courtyard of faecal matter (human, animal, poultry) and encouraging a designated child play area with clean surface.
 - b) Correct disposal of infant and child faeces (burying or throwing in latrine pit).
 - c) Washing both adult and child’s hands at critical times.

Caregiver meeting 2 (infant nutrition) focused on the following key messages:

1. Nutrition practices that are critical to promote child health & good nutrition:
 - a) Importance of breast milk
 - b) Children under 6 months should be exclusively breastfed.
 - c) Children between 6 months and 2 years should be fed complementary food.
2. Food should be prepared and stored in a hygienic environment.
3. Children should be taken to the health facility routinely for deworming treatment and Vitamin A supplementation (as well as when they are sick).

The SanNut impact evaluation found small increases in selected behaviours after only 9 months of the pilot project. Importantly, the impact evaluation also demonstrated the viability of the inclusion of additional baby WASH and nutrition messages into a CLTS process.

Sources: Gimaiyo et al (2018) *SanNut: Integrating sanitation programs & nutrition messaging* Nairobi: UNICEF and ID Insight Policy Brief; and, ID Insight (2017) *SanNut program note: integrating sanitation and nutrition programs* Nairobi: UNICEF and ID Insight.

G1-S Sustainability Indicators

Indicator criteria	Notes
G1-S1 Functional G1 monitoring system	Assessment: focus group discussion
	Monitoring system: functional and up-to-date.
G1-S2 Monitoring of at-risk households	Assessment: review of monitoring data
	Monitoring of at-risk households: list of at-risk households available, with separate G1 data available
G1-S3 Action plan for G2 status	Assessment: review of action plan
	Action plan: available, approved and in use

Assessment: focus group discussions with key sanitation stakeholders (local leaders, committee members, natural leaders).

For G1 status, the community should also have achieved the three sustainability indicators.

Monitoring system: the community (or local administration) should have established a sustainability monitoring system for the G1 outcomes (including toilet use and handwashing with soap), which is functional and provides up-to-date information.

Monitoring of at-risk households: households using shared toilets, new households, and other households at higher risk of unhygienic, unsafe or unsustainable sanitation practices, should have been identified, and their sanitation and hygiene outcomes should be monitored and reported separately (i.e. disaggregated from other household data).

Action plan: the community (or local administration) should have developed, approved and started using an action plan for the achievement of a **G2 Safe & Sustainable environment**.

7.2 Guidelines for achievement of G2 Safe & Sustainable outcomes

G1 ODF communities should aim to progress to Grade 2 Safe & Sustainable status as quickly as possible. **The aim is that all rural communities achieve G2 status by 2030** as required by the Kenya Environmental Sanitation and Hygiene Policy 2016-2030, and the 2030 SDG target 6.2 for sanitation and hygiene. Communities with supportive conditions can progress directly to G2 status, providing that the G1 outcomes are checked and certified at the same time as the G2 outcomes.

Figure 10 Outcome indicators for G2 Safe & Sustainable environment

G2: SAFE & SUSTAINABLE	G2-1 Individual use of durable toilets with safe containment
	G2-2 Handwashing with soap at critical times
	G2-3 Safe food hygiene
	G2-4 Safe water management
	G2-5 Safe management of animals and animal wastes

G2: Sustainability indicators	G2-S1 Monitoring system for G2 outcomes
	G2-S2 Disaggregated monitoring of at-risk households
	G2-S3 Action plan for G3 achievement
	G2-S4 Re-verification of G1 outcomes

Achievement of the G2 outcomes requires that all households in a rural community (or local administration) are using durable toilets, can demonstrate handwashing with soap at critical times, and are safely managing food, water and animal wastes within their homes and household compounds. In addition, safe water and animal waste management must be confirmed in communal areas, e.g. safe management of communal water points, and safe management of animal wastes in communal areas within 500m of household compounds.

Approaches to achieve G2 Safe & Sustainable status

While some households and communities will already have achieved the outcomes required for G2 status, or will progress quickly to G2 status, households in other rural communities will require specific interventions, monitoring and support to achieve these outcomes.

The main implementation approaches to be used for G2 achievement include:

1. **Strengthened governance** (see **Section 5**): to finance and manage the implementation strategy; develop monitoring and learning systems; improve equity and inclusion; provide sustainability support; and develop appropriate capacity.
2. **Behaviour change communications**: to target improvements in handwashing, food hygiene, water management and animal management practices.
3. **Market-based sanitation**: to provide services and support for the development of durable latrines with safe containment.
4. **Sanitation finance**: for households unable to build durable toilets with safe containment, and for the development of sustainable sanitation services.

Behaviour change approaches to achieve G2 status

Behaviour change approaches should be based on five steps (ABCDE):

- **Assess** what is known about the selected sanitation and hygiene behaviours.
- **Build** or carry out formative research, which informs the creative brief.
- **Create** (the intervention) with the help of programming professionals.
- **Deliver** (the intervention) through appropriate channels (including mass media, community and school events, local extension workers and implementation agencies).
- **Evaluate** (the intervention) to learn what has worked, and what has not, in order to strengthen future interventions.

The concept of a **Hygienic Family** should be encouraged, with efforts to encourage good behavior by all family members, encouragement by others within family, and the use of memory aids (hygiene songs, personalized risk messages, and daily routine plans).

Other factors that influence sustained hygiene behaviour change³⁸:

- **Time and cost:** sustained behaviour change is not normally cheap – nor is it quick to design and implement. Intensive follow-up, monitoring and support are important to effective behavior change interventions.
- **Repeated engagement:** most behaviour change programmes need to interact with target populations on multiple occasions, over an extended period of time, in order to be effective. This is because populations have a range of other priorities and may only be triggered to act after hearing messaging numerous times and through a range of sources.
- **Multiple delivery channels:** behavior change programmes are more successful when they use multiple strategies to engage with the target audience. Ideally, programme implementers should consider combining mass media strategies with more personal approaches in order to engage populations
- **Adaptation:** interventions are rarely perfect the first time. Set up mechanisms to learn about what is working, and what could be improved. One simple way to do this is to set aside time at the end of each day where the whole hygiene promotion team can share their feedback and ideas.

G2 achievement: Example 1. Community health clubs in Rwanda and Zimbabwe

Community health clubs (CHCs) promote healthy environmental health practices through comprehensive, structured group promotion sessions held at community level.

In Rwanda, CHCs participate in a series of 20 planned sessions on: village mapping, personal hygiene, handwashing, diarrhoea, water sources, safe storage of drinking water, sanitation, common diseases, skin diseases, infant care (weaning and immunisation), worms and intestinal parasites, food hygiene, nutrition, food safety and food security, the model home, good parenting, respiratory disease, malaria, bilharzia and HIV/AIDS.

All sessions are open to any community members, with associated homework assignments to reinforce learning, attendance cards, and graduation ceremonies at which participants receive certificates (with no other material incentives).

The CHC approach addresses the key faecal exposure pathways using a structured approach, and has been implemented at scale in Rwanda and Zimbabwe. The following lessons were drawn from a review of CHC results in Rwanda:

- proper timing is essential for good response;
- more time (at least one year) is required to trigger behaviour change;
- more reinforcement is needed to sustain behaviour change; and
- wider holistic development is required to prevent poverty and disease.

38 Sian White (2021) *A summary of what works to change handwashing and hygiene behaviours*. <https://resources.hygienehub.info/en/articles/3863686-a-summary-of-what-works-to-change-handwashing-and-hygiene-behaviours>

The CHC model has been refined based on this learning, and extended by major agencies in Rwanda (including USAID and UNICEF), and replicated in Uganda and the DRC.

Source: Waterkeyn J (2016) *Analysis of the community health club intervention in Rusizi district, Rwanda* UNCWATER and Health Conference presentation <https://www.africaahead.com/wp-content/uploads/2016/10/2016-UNC-Waterkeyn.J.-Analysis-of-CHC-in-Rusizi.pdf>.

Market-based sanitation to achieve G2 durable toilets with safe containment

Interventions to develop local sanitation markets may accelerate progress towards the use of durable toilets with safe containment. The following factors are important to successful market-based sanitation approaches:

- **Products:** offer a range of products to cater to local needs and preferences, with a focus on durable components and safe containment
- **Promotion:** messages are more effective when focused on functional and emotional attributes of the product or service, and when delivered in-person
- **Place:** business models that consolidate different parts of the supply chain (towards a “one-stop shop” can simplify customer decisions and purchasing processes
- **Price:** seasonal variations in income and expenses are significant in rural communities, and may be eased by the use of credit mechanisms
- **Finance:** MFI and SACCO loans (to HH & enterprises)
- **Other sanitation services:** repair and replacement services; emptying and disposal services

To date, **market-based sanitation interventions to develop toilets with durable slabs and pits have had only limited success in rural Kenya:** The WSP Selling Sanitation programme invested around USD 2 million in the development of structural plastic toilet slabs between 2013 and 2018, but eventually commercial distribution was abandoned due to low sales. A 2019 Aquaya research study³⁹ found that:

- 70% of households did not purchase because they were unfamiliar with the product (despite extensive promotion)
- 99% of households who were familiar with the plastic slab liked it, but it was perceived to be too expensive (even at the reduced price of KES 1,600-2,500)
- most rural households were only willing to spend KES 480 on a plastic slab
- 11% of households (with higher incomes) spent considerably more (an average of KES 14,400) to upgrade to toilets with concrete slabs.

The WASTE-supported Financial Inclusion Improves Sanitation and Health in Kenya (FINISH-INK) programme sold around 40,000 toilets in Busia and Kilifi counties between 2013 and 2019. All of these toilets have concrete slabs, lined pits and solid superstructures, with just

39 Peletz et al (2019) *Assessing the demand for plastic latrine slabs in rural Kenya* American Journal of Tropical Medicine and Hygiene 101(3) pp.555-566.

under half being more expensive pour-flush toilets with offset pits or septic tanks (85% purchased using toilet loans). Toilet prices vary from KES 12,000 for a single pit VIP toilet, up to KES 70,000 for a pour-flush toilet with a septic tank. The FINISH-INK programme has managed to sell toilets to around 8% of the households in Busia and Kilifi, but the high prices mean that these toilets are largely purchased by better off households. FINISH-INK also provides finance and develops business development skills for sanitation producers and service providers, and bulk finance to SACCOs (for lending to households).

Similar findings were drawn from the DFID-supported SNV Kenya SSH4A project (2014-2019) and the USAID-supported KIWASH programme (2015-2020): improved toilet designs (such as the SAFI latrine) proved to be too expensive for most rural households, thus sales of durable toilets were very low (toilet sales reported in only around 1% of target population).

Key principles for development of durable toilets with safe containment:

1. **Sanitation markets take time to develop**, and may not develop if the products and prices are not appropriate to local needs and preferences.
2. **Several different promotional models and products are required:** as no single model has been able to scale up in Kenya, or be sold to a substantial proportion of the rural population⁴⁰.
3. **Low-cost and portable products are essential** for sales to poor or remote communities
4. **Most toilet loans and credit are targeted at better off households:** households with limited assets or cash income are rarely eligible for formal loans or credit.
5. **Transport costs can be a significant barrier:** innovative solutions are required to reduce transport costs (otherwise most sales will be confined to urban and on-road contexts).
6. **Remote rural communities often require alternative solutions:** because of low market access, high transport costs and limited willingness to pay.

Alternatives to market-based sanitation in remote rural communities:

- Local savings and credit associations (SACCOs) that enable household purchase and transport of market products and services
- Local production of sanitation products (although these products are generally difficult to sell at any distance from the production site)
- Market facilitation: in-direct subsidy of essential toilet components and services by local administrations (e.g. by supporting local producers to travel to un-serviced ODF communities to sell and install durable toilet components, as a reward for ODF achievement and support to achieve G2 status)

⁴⁰ SATO pan sales have been made to around 1% of the population in most counties, with increased sales to 5%-10% of rural households in Siaya, Kitui and Makueni. But the installation of a SATO pan does not create a durable toilet, or ensure safe containment.

Climate resilience and disaster management

Interventions should also ensure that⁴¹:

1. WASH infrastructure and services are sustainable, safe and resilient to climate-, disaster-related risks (including drought, flooding, heatwaves, disease outbreaks, landslides, sea-level rise, insecurity and conflict).
2. Resilient WASH systems contribute to reduce vulnerability and build community resilience to adapt to the impacts of climate change, disasters and conflict.
3. Advance towards a low carbon WASH sector.

In practice, this means that county implementation, monitoring and support systems should recognise the risks associated with climate change and disaster management in the contexts that their rural communities face, and undertake four specific activities to ensure resilience:

- **Understand the problem:** assess and analyse the risks that climate change and disasters pose to sanitation and hygiene services in your county context
- **Identify and appraise options:** examine and appraise options to improve resilience (e.g. technical options to combat flooding or toilet pit collapse)
- **Deliver solutions:** integrate options into existing strategies and plans, and ensure that these resilient options are implemented
- **Monitor and move forward:** undertake monitoring and learning to capture and share the lessons learned from these resilient development activities

Kohlitz J and Iyer R (2021) *Rural sanitation and climate change: Putting ideas into practice*
Brighton: Institute of Development Studies, Frontiers of Sanitation Issue 17.

<https://sanitationlearninghub.org/rural-sanitation-and-climate-change/>

Where county governments have developed a Disaster Risk Management (DRM) Policy, such as the 2020 DRM Policy developed by the Turkana County Government, county sanitation and hygiene policy and implementation should be aligned with the DRM Policy, and recognise the climate change (and other disaster risks) detailed in the documents.

G2-1 Individual use of durable toilets with safe containment

Indicator criteria	Notes
G2-1.1 Individual use of toilet	Assessment: by household interview
	Individual use: all household members are individually confirmed (by name) to use the toilet, or be assisted to use the toilet

41 UNICEF (2017) *WASH Climate Resilient Development: Strategic Framework* New York: United Nations Fund for Children (UNICEF) and Global Water Partnership, Updated report.

G2-1.2 Durable toilet slab	Assessment: by observation
	Durable toilet slab: made from durable materials, or approved climate resilient local materials
G2-1.3 Durable toilet pit	Assessment: by observation & household interview
	Durable toilet pit: made from durable or climate resilient local materials (unstable soils), or unlined (stable soils)
G2-1.4 Safe containment	Assessment: by observation & household interview
	Safe containment: excreta are safely contained in the pit with no evidence of surface outflows or unsafe emptying
G2-1C Low risk of groundwater contamination	Assessment: community level assessment (using online SFD tool, or other)
	Low risk of groundwater contamination: on-site sanitation has a low risk of faecal contamination of drinking water obtained from groundwater sources

For G2 status, **all individuals in all households should use durable toilets with safe containment**, with individual confirmation (by name) that all members of the household either use the toilet, or are assisted to use the toilet (e.g. disabled or older people, or young children that need assistance). Where children are too young to use the toilet, see indicator **G1-3 for safe disposal of child excreta and safe management of diapers**.

The G2-1 outcome requires the use of durable toilets, including durable toilet slab and durable toilet pits with safe containment, to address the sustainability and climate resilience issues faced in rural communities in Kenya. However, durable materials are not always easily available in remote rural communities, or in ASAL areas, so the protocol also promotes the use of climate resilient toilets made from approved local materials that are resilient against climate change and local sustainability factors (see G2-1.2 below).

G2-1.1 Individual use of toilet: service levels

G2 All household members use the toilet at all times	
G2 All household members use the toilet, some with assistance, at all times	
G0 One household member sometimes defecates in the open	
G0 One household member always defecates in the open	
G0 More than one household member sometimes defecates in the open	
G0 More than one household member always defecates in the open	
G0 All household members defecate in the open	

Assessment: household interview.

Potential household interview questions include:

Q. What is the total number of people (adults and children) in the household?

For each household member:

Q. The last time [name] defecated, did they defecate in the open or use a toilet?

Q. Do any members of the household require assistance to use the toilet? What sort of assistance?

Q. Do any members of the household use the toilet sometimes, and defecate in the open at other times?

100% individual use of toilets means that **every individual in every household in the community** is reported to use a toilet all of the time, and observations confirm that **all individuals** are using toilets all of the time. As for the G1-3 Toilet use outcome, 100% individual use of toilets can include shared use, i.e. all individuals use toilets, but some households share use of the same toilet (or other sanitation service).

Individual use: a household interview should be used to assess whether all members of the household use the toilet (or have another safe sanitation practice). Each household member should be assessed individually, either through a question to that person (if available, and old enough to respond reliably), or through questions to a household respondent. Where household members cannot use the toilet unassisted (e.g. young children, older or disabled people), the assessment should confirm whether they are assisted to use the toilet, or how their excreta are collected and whether (and where) they are safely disposed.

G2-1.2 Durable toilet slab: service levels

G2 Tiled concrete slab	
G2 Concrete slab	
G2 Structural plastic slab	
G2 Other durable slab materials	
G2 Resilient slab (using local materials resistant to local sustainability factors)	
G1 Not durable, cement-covered wooden slab	
G1 Not durable, mud-covered wooden slab	
G1 Not durable, wooden slab	
G1 Other non-durable slab materials	
G0 Partial slab (openings to pit or containment, excreta not fully contained)	

Assessment: by observation (toilet slab or floor materials).

Durable toilet slab: the toilet slab should be made of durable materials. The range of materials that are considered durable will depend on local contexts. Hardwood or treated timbers may be considered durable toilet slab materials when resistant to all local degradation factors, installed to form a smooth and continuous floor, and easily cleanable.

The County Public Health Office should approve the use of resilient local materials that will not degrade rapidly under local conditions, and which provide similar lifespans, functionality and cleanliness to toilet slabs made from conventional durable materials (e.g. concrete, structural plastic).

Key sustainability factors to consider:

- Moisture and water effects (flooding, high groundwater, heavy rain, damp conditions)
- Insect damage (termites and other wood-eating or boring insects)
- Fungal damage (wood rot).

Note: Concrete slabs trap uric acid crystals when in contact with urine, which generates unpleasant ammoniac smells that are hard to remove. Waterproof coatings or finishes (such as tiles), and the use of plastic pans or ceramic pans (that limit urine contact with the slab) are recommended to avoid the unpleasant smells often found in concrete toilet slabs.

Resilient toilets are sanitation facilities (and related services) designed using local materials to resist the main local sustainability challenges. Where durable materials are not readily available, or are unaffordable for many households, interventions should encourage households, communities and local administrations to find appropriate local solutions to toilet sustainability challenges. Where even local materials are not available, or are inadequate for the construction of resilient toilets, local administrations should consider the provision of support to rural communities (financial, in-kind or through development of services) to enable them to obtain adequate materials to build resilient or durable toilets and reach G2 status.

Options for **resilient toilet slabs**:

- Hardwood timber slabs
- Treated timber slabs
- Compacted mud or cement screed (to protect and improve durability of slab material)
- Plastic pan with (non-structural) plastic surround to slab (easy to clean)
- Corbelled brick or block pit lining (to minimize the slab width above the pit)
- SATO stool over borehole pit (e.g. narrow diameter bored or augured pit)
- Watertight roofs to protect slabs.

G2-1.3 Durable toilet pit: service levels

G2 Pit lined with earthen blocks, concrete blocks or bricks	
G2 Pit lined with concrete rings	
G2 Pit lined with resilient local materials	
G2 Pit unlined (soil is stable)	
G1 Lined with inadequate local materials (soil is unstable)	
G1 Unlined pit (soil is unstable)	
G0 Not durable (collapsed or abandoned pit)	
G0 No pit (excreta discharge into the open)	

Assessment: by observation (toilet pit, tank or other excreta containment system) and household interview.

Where pit lining and soil type cannot be observed, potential household interview questions include:

Q. Were any materials used to support the sides of the pit?

Q. Does the soil collapse without support?

Q. Has the toilet pit collapsed in the last 12 months?

Observe: does the toilet pit appear durable in local conditions?

Durable toilet pit:

- in unstable soils, the toilet pit should either be lined with durable materials (e.g. from blocks, bricks and mortar, or concrete rings), or lined with resilient local materials that will not degrade rapidly under local conditions, and which provide similar lifespans and support to pit linings made from durable materials.
- in stable soils, unlined pits may be assessed as durable, providing the unlined pits are stable and long-lasting.

Where soils are unstable and require support, the County Public Health Office should approve the use of resilient local materials that will not degrade rapidly under local conditions, and which provide similar lifespans, functionality and cleanliness to toilet pits lined with conventional durable materials (e.g. blocks, bricks or concrete rings).

Options for **resilient toilet pits:**

- Select size and shape of pit to improve stability (e.g. round pits are more stable; small diameter pits are more stable; shallow pits are more stable);
- Select resilient local lining materials, and add cut-off drains and plinth lining to avoid erosion (e.g. divert surface run-off from the pit; support the top 30cm of unstable soil with a brick or block lining)
- Address loose soil conditions by lining the pits with locally available trapezoidal blocks to avoid collapse (World Vision, 2020)
- Use local reinforcement materials to strengthen pit lining (AMREF in Tharaka Nithi).
- Use lime stabilized soil construction⁴² (to build low-cost flood resilient building components, including foundations, wall blocks, renders and plasters that remain stable even when wet or under water)
- Use off-set toilet pits to reduce the load on pit covers (i.e. the toilet slab is on solid ground, with the toilet pit set to one side, covered with a load-bearing slab); reduce the risk that the user might fall into the toilet pit; and reduce the chances that the toilet superstructure collapses if the pit is damaged or collapses).



42 Holmes S and Rowan B (2021) *Building with lime-stabilized soil* Practical Action.

In frequently flooded or high groundwater areas, pits can be raised above ground to limit the risk of flooding out of the excreta, and reduce the risk of pit collapse. Toilet pits can be raised through construction of a raised earth bank (properly compacted for structural integrity), or through the use of structures that allow the entire toilet to be raised above ground, e.g. concrete rings, brick or block masonry.

Unfortunately, the cost of raising the toilet pit above ground is usually high, and this may not be an affordable solution for rural households. In challenging contexts, where households cannot afford safely managed sanitation services, and few low-cost alternatives are available for durable toilets with safe containment, the local authorities should consider providing support to assist poor and marginalised households to build adequate toilets that will allow sustained use over time (i.e. addressing local sustainability factors).

G2-1.4 Toilets with safe excreta containment: service levels

G2 Safe containment with no surface outflows (not yet full)	
G2 Safe containment with no surface outflows (replaced when full)	
G2 Safe containment: twin alternating pit with storage more than 2 years before emptying	
G2 Safe containment: septic tank with outlet connected to soakpit	
G1 Unsafe latrine pit (occasional surface outflows)	
G1 Unsafe twin pit (storage less than 2 years before emptying)	
G0 Unsafe latrine pit (regular & visible surface outflows)	
G0 Unsafe septic tank (outlet discharges to open)	

Assessment: by observation (evidence of surface outflows from pit e.g. increased vegetation around the pit) and household interview.

Potential household interview questions include:

- Q. Are surface outflows from the pit ever visible?
- Q. How often are surface outflows from the pit visible? [*G2 Never; G1 Only once or Rarely; G0 Regularly or Continuously*]
- Q. Has the toilet pit (or other containment system) ever filled up?
- Q. What happened when the toilet pit filled up? [*G2 Covered and dug new pit; or Added second pit; G? Emptied; G1 Continued to use or Shared another toilet; G0 OD*]
- Q. If using septic tank: Where does the septic tank outlet discharge? [*G2 Soakpit or leach field or sewer; G0 Open spaces, fields, drain or water bodies*]

The JMP conditions for the use of safely managed sanitation services are:

- i. Use of improved sanitation facilities that are not shared with other HHs.
- ii. Excreta are: a) **Safely disposed on-site**; or b) **Transported and treated off-site**.

The G2 outcomes include the use of toilets with safe excreta containment, which is equivalent to safe on-site sanitation services. The safe management of off-site sanitation services has been included in the G3 outcomes, as this outcome is relevant for only a small proportion of rural households in Kenya, and is more complex to achieve because it involves working with and regulating formal and informal service providers, and local authorities.

In Kenya, few rural households empty faecal sludge from toilet pits (or from tanks, or other containment systems). Household survey data from the GSF Kenya outcome survey (2018) and the SNV Kenya SSH4A survey (2019) suggested that less than 2% of rural households emptied their toilet pits, with the remaining 98% replacing toilet pits when they fill up.

While the proportion of households that empty toilet pits is likely to increase as rural communities develop and invest in higher levels of sanitation service, the vast majority of rural households currently close full toilet pits, dig a replacement pit, and relocate the toilet above the new pit. In addition, rural households generally dig large toilet pits, to increase the filling time. As a result, most rural communities use very few off-site sanitation services (such as transport, treatment or disposal services), which justifies the focus on on-site sanitation services in the G2 outcome indicators.

Safe containment criteria:

- excreta are safely contained in a pit, tank or other containment system;
- no surface outflows or deliberate discharges from the containment system;
- no emptying (or other discharges) of fresh faecal sludge;
- separation and storage of faecal sludge for at least two years before emptying (in alternating twin pit latrine systems); and
- low risk of groundwater contamination;

Examples of toilets with safe excreta containment:

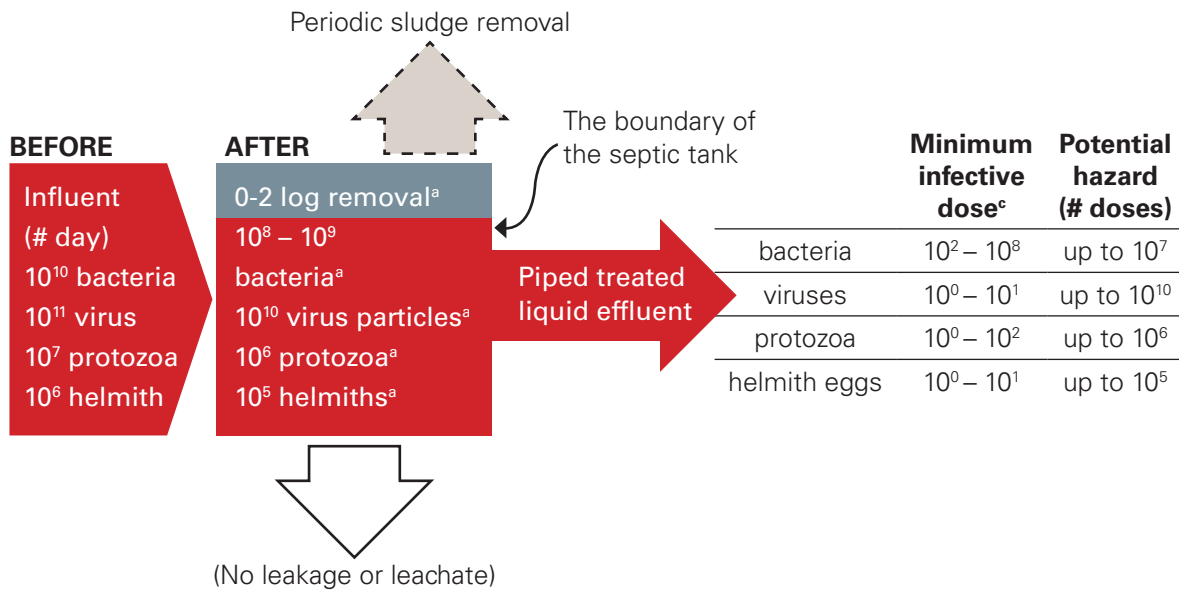
1. **Improved pit latrine or VIP latrine:** where the latrine pit is covered, closed and replaced when full. In most cases, the superstructure has to be relocated or rebuilt over the new pit.
2. **Alternating twin pit latrine:** only one pit is in use at any one time; when full, the active pit is closed (with fresh excreta then directed into the empty pit), and the faecal sludge is stored in the closed pit for at least two years before opening and emptying.

Monitors should check that there are **no surface outflows visible from the pit** (or other containment system), and ask the head of household whether there have been any surface outflows from the pit (options: never, once, occasionally, frequently, continuously).

Surface outflows from pits (or other excreta containment systems) are highly pathogenic and unsafe (e.g. outflows due to heavy rain/flooding, effluent overflows, or deliberate discharges to “flood out” pit contents and prolong pit life). Any toilet with surface outflows (either occasional, frequent or continuous) should be classed as having unsafe excreta containment.

Toilets connected to septic tanks have a particularly high risk of unsafe containment, as most septic tanks have a continuous effluent outflow (which should be connected to a sub-surface soakway or trench) and have to be emptied when they fill with faecal sludge. Where septic tank effluent discharges to the surface, or to nearby drains, water bodies or open spaces, the toilet should be classed as having unsafe excreta containment (as the pathogen load is generally similar to the pathogen load of the septic tank solids).

Figure 11: Pathogen hazard diagram for septic tank (Mitchell et al, 2016)



A recent analysis of the pathogen hazard from well-sealed and well-functioning septic tanks⁴³ estimated that septic tank influent (from infected individuals) might contain one million to one hundred billion pathogens (see 'pathogen hazard diagram' in Figure 9). The pathogen hazard diagram illustrates that the daily inflow (influent) to the septic tank (Before box) may contain high levels of a range of pathogens, and the sealed tank (assuming no leakage) may only reduce the pathogen content by 68%-99% (0.5-2.0 log₁₀ removal⁴⁴). While 99% removal of pathogens sounds significant, the pathogen hazard diagram illustrates that there are still likely to be a huge number of pathogens in the septic tank effluent⁴⁵: if the influent contains 10¹⁰ bacteria then, after retention in the septic tank, the treated effluent (After box) will still contain at least 10⁸ bacteria (ten million bacteria)⁴⁶.

43 Mitchell C, Abey Suriya K & Ross K (2016) *Making pathogen hazards visible: a new heuristic to improved sanitation investment efficacy* Practical Action: Waterlines Vol. 35 No. 2.

44 Log removal value: is the logarithm of the ratio of pathogen concentration in the influent and effluent liquid of a treatment process. A log removal value of 1.0 is equivalent to 90% removal of pathogens; a log removal value of 2.0 is equivalent to 99% removal of pathogens.

45 The pathogen reduction achieved by the septic tank depends on its design, volume, retention time, leakage etc. Feachem et al (1983) estimated up to 99% (0-2 log₁₀) removal in well-designed septic tanks with retention times from 1 to 3 days; whereas Stenström et al (2011) estimated only 905 (1 log₁₀) removal for helminths (hookworm and Ascaris) and 68% (0.5 log₁₀) removal for bacteria.

46 Robinson A and Peal A (2020) *Safely Managed Sanitation Services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council, Legacy Publication.

The 'pathogen hazard diagram' above also considers the minimum infective dose⁴⁷ of different pathogens: the WHO (2006) *Guidelines for the safe use of wastewater, excreta and greywater* state that the minimum infective dose of helminths (worms), viruses and protozoa are very low (e.g. *Ascaris* roundworm 1-10 eggs, rotavirus 1-10 organisms, 1-100 cysts for protozoa like *Giardia*). While the minimum infective dose is higher for other bacteria (100-100,000,000 organisms), the limited pathogen removal achieved by even well-designed septic tanks, makes it clear that the potential hazard is very high: **septic tank effluent may contain many thousands of 'human infective doses' per day** (up to 100,000 infective doses of helminth eggs, millions of infective doses of protozoa, and many millions of infective doses of viruses and bacteria)⁴⁸. Consequently, any surface flows from septic tanks are extremely hazardous, and these facilities have unsafe containment (and cannot be classed as safely managed sanitation services).

G2-1C Low risk of groundwater contamination: service levels

G2 Low risk: no groundwater sources	
G2 Low risk: groundwater sources not used for drinking water	
G2 Low risk: less than 25% groundwater use; protected water supply	
G2 Low risk: fine soils, 5-10m deep groundwater, separated and protected water supply	
G1 High risk: shallow groundwater, coarse/fractured soils, drinking water from GW sources	
G1 High-risk: shallow, nearby and unprotected groundwater supply, high use for drinking water	

Assessment: by community-level check (see below).

A community-level check should be made on **the risk of groundwater contamination by on-site sanitation** in each rural community⁴⁹. The use of a simple tool, such as the Groundwater Pollution Risk Estimation tool on the Shit Flow Diagram (SFD) website, is recommended:

<https://sfd.susana.org/risk-groundwater>

The key criteria to examine in the community groundwater risk check are:

- Household use of groundwater as drinking water
- Protected or unprotected water supply source

47 Human (or minimum) infective dose: minimum number of this pathogen organism required to cause an infection in a human.

48 Robinson A and Peal A (2020) *Safely Managed Sanitation Services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council, Legacy Publication.

49 The JMP does not currently consider the risk of groundwater contamination from on-site sanitation because the relevant data are not usually available from nationally-representative household surveys.

- Minimum depth of groundwater table (usually in rainy season)
- Soil (or rock) type
- Proximity of sanitation facilities to water points or water sources

These criteria are entered into the SFD groundwater pollution risk estimator, which then returns an estimate of the overall level of groundwater contamination risk (low or high/significant). **G2 status requires that the groundwater contamination risk is confirmed to be low.** In the rare cases where the groundwater contamination risk is estimated to be high/significant, further work will be required to protect or revise the water supply source, or reduce subsurface outflows from excreta containment systems in the area of vulnerable groundwater.

Unsaturated (dry) soils generally provide effective secondary treatment of leachate or effluent from toilet containers. The biological mat⁵⁰ around the base and walls of the container acts as a physical barrier to larger pathogens (helminths and protozoa)⁵¹. The soil then provides filtration, absorption and various other physical and biological pathogen removal and inactivation mechanisms (including desiccation, persistence and temperature).

Generally, the risk of faecal groundwater pollution is minimal when the depth of relatively fine (< 1mm) continuous unsaturated soil beneath the base of the latrine is greater than 2 m, provided the hydraulic loading does not exceed 50 mm/day. Exceptions are where soils are highly transmissive, such as coarse sands or fractured rock, or where hydraulic loading is very high (i.e. large quantities of wastewater leaching into the soil) which may allow pathogenic wastewater to pass quickly through the soil before these natural processes have acted on the pathogens, or may exceed the capacity of these natural pathogen reduction processes. **The risk of groundwater contamination is higher in saturated soils**, as pathogen reduction by natural processes in the soil is decreased (due to lower adsorption, filtration and temperature effects), with pathogen die-off then becoming the primary factor affecting pathogen reduction⁵⁴.

Leachate or effluent from toilet pits, or other containment systems (or from related soak pits or leach fields) may also cause chemical contamination, notably from the biodegradation of

50 Biological mat = multi-layered sheet of microorganisms that grows at interfaces between different types of materials, mostly on submerged or moist surfaces. In pit latrines, generally formed by the filtration and absorption of solids and organisms by the soil surrounding the toilet container.

51 Mitchell et al (2016).

52 Hydraulic loading = volume of wastewater applied to the surface of the soil in a given period, here expressed in mm (height of wastewater per square mm) per day.

53 Lewis J, Foster S and Drasar B (1982) *The risk of groundwater pollution by on-site sanitation in developing countries* International Reference Centre for Wastes Disposal (IRCWD).

54 Robinson A and Peal A (2020) *Safely Managed Sanitation Services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council, Legacy Publication.

nitrogen (contained in both urine and faeces) in the waste, which can result in nitrification and nitrate formation. Nitrate is persistent and mobile in soils, difficult to remove, and poses health concerns if it enters drinking water⁵⁵. Denitrification of faecal sludge (e.g. through the addition of carbon-rich materials, such as wood shavings or sawdust, to increase the Carbon-Nitrogen ratio) should be considered where water quality testing suggests that nitrate contamination is prevalent⁵⁶.

G2-2 Handwashing with soap at critical times

Indicator criteria	Notes
G2-2.1 Handwashing with soap at critical toilet times	Assessment: by household interview
	Handwashing with soap: with water and soap
	Critical toilet times: after toilet use; after anal cleansing
G2-2.2 Handwashing with soap at critical food times	Assessment: by household interview (main caregiver)
	Handwashing with soap: with water and soap
	Critical food times: before eating, before preparing food, and before feeding children (including breastfeeding)
G2-2.3 Handwashing with soap at critical infant care times	Assessment: by household interview (main caregiver)
	Handwashing with soap: with water and soap
	Critical infant care times: after cleaning an infant of excreta, after handling child faeces, or after washing or disposal of a used diaper
G2-2.4 Handwashing with soap at critical animal times	Assessment: by household interview
	Handwashing with soap: with water and soap
	Critical animal times: after contact with animals, animal products or animal wastes (before and after milking)

For G2 status, all members of the household should practice **handwashing with soap at critical times** (in addition to the G1 requirement for the presence of a household handwashing facility with water and soap available). Household interviews should be used to confirm that members of the household usually use water and soap to wash their hands, and to check when members of the household usually wash their hands.

The promotion of handwashing with soap at critical times should build on the improvements in hygiene awareness and handwashing behaviour generated by the COVID-19 pandemic guidelines, community-level promotion and media campaigns. Many rural households and institutions have installed and improved household handwashing facilities, and been encouraged to wash their hands more frequently with water and soap.

55 Templeton M et al (2015) *Nitrate pollution of groundwater by pit latrines in developing countries* AIMS Environmental Science Vol. 2, Issue 2, 302-313.

56 Robinson A and Peal A (2020) *Safely Managed Sanitation Services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council, Legacy Publication.

Handwashing with soap should take place under running water (e.g. from a tap, handsfree water container or tippy tap) **for at least 20 seconds**. The quality of water used for handwashing does not need to meet drinking water standards⁵⁷. Evidence suggests that “even water with moderate faecal contamination when used with soap and the correct technique can be effective in removing pathogens from hands”. However, efforts should be made to use and source water of the highest quality possible (e.g. an improved water source), and to wash hands in running water wherever possible.

Where water supplies are highly contaminated, there is a risk that handwashing with soap (using this contaminated water) may not be effective in reducing hand contamination. In these cases, households should treat all water supplies in the home, including water used for handwashing⁵⁸.

The use of higher quantities of water for handwashing with soap is associated with reduced contamination of hands. **Where water is limited**, hands can be wetted with soap, the water then turned off while lathering with soap and scrubbing for at least 20 seconds, and then the water can be turned on again to rinse. Water should always be allowed to flow to a drainage area or receptacle, and **hands should not be rinsed in a communal basin, as this may increase contamination**⁵⁹.

According to recent research (on COVID-19 effects on handwashing practice⁶⁰), the following factors tend to increase the chances of handwashing with soap under running water for a minimum of 20 seconds at least 5 times a day:

1. **Gender:** females typically wash their hands more frequently than males (which means promotion activities should make sure that men and boys are well targeted, and that monitoring of handwashing with soap by men and boys is reliable).
2. **Age:** older people were found to wash their hands more frequently than younger, perhaps because of greater concerns about vulnerability to COVID-19 (which means promotion activities should make sure that young people are well targeted, and that monitoring of handwashing with soap by children and young adults is reliable).
3. **Water supply:** people with water supplies inside their house or compound were more likely to wash their hands frequently than people who collected water from outside their compound (which means promotion activities should ensure that people using communal water supplies are well targeted, and their handwashing is well monitored).

57 WHO (2020) *Interim guidance: Water, sanitation, hygiene and waste management for the COVID-19 virus* World Health Organisation (WHO) and United Nations Children’s Fund (UNICEF).

58 Verbyla M et al (2019) *Safely managed hygiene: a risk-based assessment of handwashing water quality* Environmental Science & Technology 2019, 53, 2852-2861.

59 WHO (2020) *Interim guidance: Water, sanitation, hygiene and waste management for the COVID-19 virus* World Health Organisation (WHO) and United Nations Children’s Fund (UNICEF).

60 Amuakwa-Mensah et al (2021) *COVID-19 and handwashing: implications for water use in Sub-Saharan Africa* Water Resources and Economics 36 (2021) 100189.

The potential for faecal-oral transmission from hands is very high if good handwashing is not practiced, particularly at critical times such as:

- after defecation or handling faeces (e.g. cleaning infants, disposing of infant or child excreta, or cleaning or disposing of diapers or soiled clothes);
- before handling food (e.g. before preparing or cooking food, before eating, before feeding infants or children); and
- after contact with animals, animal products and animal wastes.

Handwashing is required at different times of the day (related to multiple different daily practices), often in several different places (e.g. kitchen, washing place, dining place, outside, toilet), and is affected by the knowledge, attitudes, skills, habits and resources of the individual. Handwashing practice is highly variable over time and space, and between individuals and, therefore, is hard to measure.

The best method of assessment of handwashing with soap at critical times is through direct observation of household practices. However, direct observation is time-consuming and expensive, as it requires one trained observer per household (for several hours of observation). The best alternative, particularly for regular progress monitoring, is to use a household interview to check when people currently wash their hands with soap.

While household interviews tend to over-estimate practice (because of social desirability bias: people may report what they believe is the correct behaviour, or exaggerate good practice, rather than reporting actual practice), regular checking and discussion of the critical times for handwashing improves knowledge and has a promotional effect that encourages improved behaviours. The inclusion of a handwashing outcome among the required outcomes at all three grades (G1, G2 and G3) recognises that the establishment of good handwashing habits (and installation of permanent handwashing facilities) may take time, and that regular nudges and sustained checks on handwashing behaviour are required to move people towards the use of permanent handwashing facilities with water and soap, and handwashing with water and soap at all of the critical times.

G2-2.1 Handwashing with soap at critical toilet times: service levels

G2 Handwashing with soap: after toilet use or anal cleansing	
G1: No mention of handwashing with soap at critical toilet times	
G0: No handwashing facility, no water or no soap	

The G2-2 **Handwashing with soap at critical times** outcome should be assessed by asking a household respondent to confirm:

1. What do you and other members of your household usually use to wash your hands?
2. When do you usually wash your hands? [prompts: before or after what activities? at what different times of the day?]
3. When do your children wash their hands? What do they use?

The first question is used to confirm that the everyone in the household is washing their hands with water and soap, and the second question is used to determine whether they wash their hands at the four critical times identified:

- Critical toilet times: after toilet use; and after anal cleansing
- Critical food times: before eating; before preparing food; before feeding children
- Critical infant times: After cleaning or handling child faeces; and after washing or disposal of a used diaper
- Critical animal contact times: after contact with animals, animal products and animal wastes.

The monitor should first check whether the household includes any infants (under-two years of age), or any 2-5 year old children. Where infants or young children are present in the household, the questions should be asked of the main caregiver, including checks whether young children’s hands are washed with water and soap, or whether they are assisted to wash their hands with water and soap.

Handwashing with soap at critical toilet times: all members of the household (including children, who may have to be assisted or supervised) should wash their hands with water and soap at the following critical times:

- After toilet use (or other defecation, e.g. potty use, or child OD that is collected)
- After anal cleansing (i.e. after washing or wiping up the body after defecation).

Use of soap after toilet use in ASAL areas: the use of water and soap is required to achieve this outcome. Some ASAL pastoralists are in the habit of carrying water for anal cleansing after toilet use and defecation (which takes place in the toilet, usually without the use of soap). Therefore, it is critical that a handwashing facility with clean water and soap is available outside the toilet, so that users develop the habit of using water and soap to remove pathogens (and smell) from their hands after anal cleansing; and recognise that this is a separate habit from anal cleansing after defecation, which requires different materials.

The inclusion of a mirror above the handwashing facility at the toilet, and other visual cues that attract the attention of those exiting the toilet (e.g. bright colours and an attractive and well-designed facility that is accessible to all members of the household), as well as promotion that people who wash their hands with soap after toilet use and anal cleansing are clean and sweet-smelling, can help to remind and encourage toilet users to wash their hands at this critical time.

G2-2.2 Handwashing with soap at critical food times: service levels

G2 Handwashing with soap: before eating, food preparation & feeding children	
G1: No mention of handwashing with soap at critical food times	
G0: No handwashing facility, no water or no soap	

Assessment: see G2-2.1 Handwashing with soap at critical toilet times.

Handwashing with soap at critical food times: all members of the household (including children, who may have to be assisted or supervised) should wash their hands with water and soap at the following critical times:

- Before food preparation or cooking (people who handle, prepare, cook or serve food)
- Before feeding young children, including before breastfeeding (i.e. caregivers)
- Before eating (all members of household)

G2-2.3 Handwashing with soap at critical infant times: service levels

G2 Handwashing with soap: after cleaning or handling infant faeces; after washing or disposal of a used diaper	
G1: No mention of handwashing with soap at infant times	
G0: No handwashing facility, no water or no soap	

Assessment: see G2-2.1 Handwashing with soap at critical toilet times.

Handwashing with soap at critical infant times: all members of the household (including children, who may have to be assisted or supervised) should wash their hands with water and soap at the following critical times:

- After cleaning an infant (baby) of excreta
- After handling infant or child faeces
- After handling, washing or disposing of a used diaper

G2-2.4 Handwashing with soap at critical animal times: service levels

G2 Handwashing with soap: after contact with animals, animal products or animal wastes	
G1: No mention of handwashing with soap at critical animal times	
G0: No handwashing facility, no water or no soap	

Assessment: see G2-2.1 Handwashing with soap at critical toilet times.

Handwashing with soap at critical animal times: all members of the household (including children, who may have to be assisted or supervised) should wash their hands with water and soap at the following critical times:

- After contact with animals
- After contact with animal products
- After contact with animal wastes
- Before and after milking (in households that milk animals)

Animal products: includes meat, milk, eggs, blood, other animal tissues (e.g. organs and offal), animal skins, and other animal parts (e.g. feathers, bones etc).

Animal wastes: comprise animal excreta mixed with a wide variety of other materials, including bedding (e.g. straw and other materials), washing water, spilled feed and water, animal parts, blood, skin, feathers, and other contaminated wastes and residues.

Manure (a form of animal wastes used in agriculture) is a highly valued product in most agricultural households. Manure management requires regular collection of animal wastes and frequent handling of the manure (e.g. to mix, transport and use). Significant new behaviour change interventions will be required to make people aware that manure contains zoonotic pathogens that can make those handling the manure, and their children, seriously ill; and that, for this reason, they should always wash their hands with soap and water after handling or contact with manure (or other animal wastes).

See below for further information on manure management in **G2-5 Safe management of animals and animal wastes**.

Milk hygiene: is another critical barrier to contamination by animal wastes. The milking of animals often takes place in locations that are highly contaminated with animal wastes, and the animals themselves may be covered in animal wastes. As the milk is Therefore, before milking animals people should: clean the teats of the animal, and wash their hands with water and soap. The hands of those milking the animals should also be washed after milking, to remove any contamination collected in the process of milking (e.g. from handling contaminated utensils, or handling the animals during milking).

See below for further information on milk hygiene in **G2-3 Safe food hygiene**.

G2-3 Safe food hygiene

Indicator criteria	Notes
G2-3.1 Clean and safely stored food	Assessment: by observation
	Clean food: washed (no visible dirt or contamination)
	Safely stored food: off ground, in covered storage
G2-3.2 Clean and safely stored kitchen utensils	Assessment: by observation
	Clean utensils: washed (no visible dirt or contamination)
	Safely stored utensils: off ground, in covered storage
G2-3.3 Clean and safely stored milk containers (in households that collect milk from livestock)	Assessment: by observation
	Clean containers: washed (no visible dirt or contamination)
	Safely stored containers: off ground, covered storage

For G2 status, households should practice **safe food hygiene** (in addition to handwashing with soap at critical food times) including: reduction in the potential faecal contamination of food, kitchen utensils and milk containers by thorough washing and by storage off the ground, inside the house, in covered or closed stores.

Potential interventions to block human exposure to human and animal faeces associated with food safety and food hygiene include:

- Food safety: hygienic butchering practices, safe food storage
- Personal, household and food hygiene: handwashing with soap and water, fly management, washing food before preparing and cooking, avoidance of soil ingestion
- Milk hygiene: washing of milk containers before and after milking; handwashing with soap before and after milking; washing animal teats before milking; and pasteurisation of milk (to inactivate pathogens before using or selling the milk).

Three indicators of safe food hygiene have been selected among the **G2-3 Safe food hygiene** outcomes:

1. **Clean and safely stored food:** all raw food should be washed to remove dirt or other contamination; all other food should be kept clean; and all food (raw, other produce, cooked food) should be safely stored (raised off the ground, inside the house, in covered or closed stores e.g. cupboards, shelves, boxes or containers) and protected from animal contact.
2. **Clean and safely stored kitchen utensils:** all kitchen utensils (pots, pans, plates cutlery, cups, glasses, and any cutting, stirring or serving utensils) should be washed to remove dirt, food or other contamination; and all kitchen utensils should be safely stored (raised off the ground, inside the house, in covered or closed stores e.g. cupboards, shelves, boxes or containers) and protected from animal contact.
3. **Clean and safely stored milk containers:** all milk containers should be washed (before and after milking) to remove milk residues, dirt or other contamination; and all milk and milk containers should be safely stored (raised off the ground, inside the house, in covered or closed stores e.g. cupboards, shelves, boxes or containers) and protected from animal contact.

These safe food hygiene outcomes have been selected because they can be assessed through easy and reliable observations at the household, and they also act as proxies for wider food safety and food hygiene practices within the household. As where households make efforts to clean food and kitchen utensils, and safely store them, it is more likely that they will also observe other good food hygiene practices.

Other good hygiene food practices to encourage:

- Washing of all foods and food products before preparation, cooking or eating
- Thorough cooking of raw food (including meat, vegetables, produce)
- Thorough reheating of cooked food (leftovers) – check that reheated food is very hot all the way through before eating (as pathogens multiply in cooked food, and need high-temperature heating to kill or inactivate them – food should reach a temperature above 70C for at least two minutes)
- Cover all food and leftovers to limit contamination (e.g. flies, dust, animal contact, other contamination)
- Store raw and cooked food in a cold place
- Keep cooked meat separate from raw meat and other ready-to-eat foods
- Eat leftovers within 1-2 days (or within 3 days if refrigerated)

CLTS guidelines often promote the use of raised dish drying racks. Rural households have been encouraged to construct raised racks outside their houses to dry kitchen utensils (plates, pans, cutlery, cups and glasses) after washing them with water and detergent. Dish drying racks should be raised off the ground (to limit contamination by the dirt), and designed to allow air drying of the utensils (rather than cloth drying, which risks re-contamination from the cloth) in direct sunlight (which provides heat and ultraviolet light, which can also reduce pathogens).

The aim of the raised dish drying racks is to dry the kitchen utensils quickly and easily, without using (potentially dirty) dish cloths. As soon as the utensils are dry, the clean utensils should be safely stored inside the house. In practice, many rural households store the kitchen utensils on the dish drying racks, and re-use utensils directly from the rack (without storing them inside at any point). This practice reduces the benefits, as leaving the kitchen utensils outside for longer periods increases the risk of contamination from dust or other contaminants carried in the air, or from animal contact (e.g. birds, rodents, dogs, cats, small ruminants etc).

Safe milk hygiene

Milk products are major sources of nutrition in some areas, particularly in ASAL pastoralist communities (where up to 86% of households consume milk, and milk is a major source of micronutrients like Vitamin A and iron⁶¹). Informal sales of raw milk also account for approximately 90% of the milk market in Kenya⁶².

Milk collected from the household's own animals is at risk of contamination at multiple points in the milk supply chain: during milking; during collection and storage (in milk containers); and during consumption. At 26C, milk can be stored for around 16 hours before bacterial counts begin to increase rapidly. The two most common methods used to extend the life of milk products are heating to sterilise the milk, or chilling to preserve it. In most rural communities, chilling is not a viable option, thus heating is most commonly used.

In rural communities, milk should be boiled or pasteurised as soon as possible after collection. Boiling is the more common method, but uses more fuel, and affects the taste of the milk. Pasteurisation is the optimal method, as it uses less fuel and takes less time, but it requires the use of a cooking thermometer to check that the required temperature is reached for the specified time (see below).

Milk boiling: requires heating milk to 100C, and can negatively impact the taste and nutritional content of the milk⁶³. This is the most common approach used by rural households (as boiling is easily observable).

61 Johns T et al (2009) *The Maasai food system and food and nutrition security*, Chapter 11 in FAO (2009) *Indigenous People's Food Systems: the many dimensions of culture, diversity and environment for nutrition and health* Rome: Food and Agriculture Organisation (FAO) of the United Nations.

62 Muriuki H (2003) *A review of the small-scale dairy sector – Kenya* Rome: Food and Agriculture Organisation (FAO) of the United Nations.

63 Donaldson K and Hoell H (2011) *Milk to market: low-cost methods to pasteurize milk in East Africa* Palo Alto: Design Revolution, report.

Milk sterilisation: Ultra-high temperature (UHT) sterilisation heats milk to 110C for 2 seconds (to kill spores and other pathogens that survive lower temperatures), and also requires that pre-sterilised containers are used (otherwise the milk will be re-contaminated).

Milk pasteurisation: low-temperature (LT) pasteurization requires heating milk to 63C for 30 minutes. High Temperature Short Time (HTST) pasteurization requires heating milk to 72C for only 15 seconds. Both methods require use of a reliable cooking thermometer.

As noted earlier, steps should be taken to improve milk hygiene during the milking process (see G2-2.4), in the use and storage of clean milk containers (see G2-3.3 above), and through the boiling or pasteurisation of milk before consumption (to inactivate any pathogens that may have contaminated the milk).

Milk bought from outside is often pooled from multiple sources, which increases the risk that an infected cow has contributed to the bulk milk supply⁶⁴. Pathogen reduction steps are required in the milk marketing chain, such as the pasteurisation of all milk, in addition to the domestic boiling of milk (many Kenyans boil milk before consumption⁶⁵).

Traditional practices, such as the addition of herbs or animal dung (e.g. burnt donkey dung) to dairy products (fresh milk, fermented milk, cream, yoghurt and cow colostrum) because of local beliefs about the medicinal and nutritional properties of these mixtures, and the preference to drink some milks without boiling (e.g. camel milk, which some groups believe loses its medicinal and nutritional qualities if boiled) increase the risk of faecal contamination in these products. Promotional activities should balance the nutritional and socio-cultural benefits of these traditional food practices against any local evidence of disease and death (associated with the consumption of contaminated food products), with behaviour change messages focused on the highest risk practices (e.g. those found to have the greatest level of hazard, i.e. most likely to make people ill, and the highest exposure, i.e. highly prevalent practices that affect large populations).

Animal slaughter and butchery

All communities should have access to slaughtering facilities (either public or private facilities), with regular inspection, monitoring and enforcement of standards. Where animals are slaughtered outside slaughterhouses, the animals should be slaughtered and butchered on a raised slab to avoid contamination with faecal pathogens from contact with soil.

Safe food handling practices require clean removal of the animal's abdominal contents, appropriate meat storage and handwashing with soap after contact with the animals, animal products or animal wastes. Sick animals should be assessed by a veterinary specialist before slaughter, butchery or consumption. After slaughter, animal carcasses should also be inspected for internal signs of disease.

64 Kiambi S et al (2020) *Risk factors for acute human brucellosis in Ijara, north-eastern Kenya* PLoS Negl Trop Dis 14(4):e0008108

65 Muriuki H (2003) *A review of the small-scale dairy sector – Kenya* Rome: Food and Agriculture Organisation (FAO) of the United Nations.

Animals suspected of having notifiable diseases⁶⁶ should be reported to the County Director of Veterinary Services; removed from the slaughter process and safely disposed; and the public should be notified of the occurrence of the disease, with measures taken for safe management of the outbreak⁶⁷.

Dead animals should be safely managed and disposed, along with all related animal parts and wastes. Where appropriate communal disposal sites are not available, the dead animals should be buried (see **G2-5 Safe management of animals and animal wastes and G3-3 Safe waste management**).

Bush meat consumption

The buying and selling of bushmeat⁶⁸ is illegal in Kenya, and anyone arrested faces a jail term of not less than three years (without the option of a fine). Nonetheless, bushmeat continues to play an important role in some rural livelihoods, acting as a safety net for income smoothing and reducing household expenditure during times of economic hardship.

Unfortunately, bushmeat can be a source of deadly diseases (including anthrax, brucellosis and Q fever) and its consumption has contributed to the emergence of several infectious diseases of zoonotic origin (such as Ebola, HIV and SARS)⁶⁹. Given the high risks associated with the hunting, transport and consumption of bushmeat, and its illegal status in Kenya, rural communities should be advised to avoid its consumption.

Promotion of safe food hygiene

A study on complementary food hygiene in rural Malawi⁷⁰ suggested that the food hygiene promotion process could be integrated into existing programs such as nutrition caregiver group activities, and promoted by village health committees and health volunteers.

G2-3.1 Clean and safely stored food: service levels

G2 Clean and safely stored food	
G1 Food not adequately washed, or not safely stored	
G0 Food not clean and not safely stored (e.g. on ground, outside, in open)	

66 Notifiable diseases reported in Kenya: Foot and mouth disease, lumpy skin disease, surra and trypanosomiasis, brucellosis, anthrax, african swine fever, east and coast fever, contagious caprine pleuro pneumonia, sheep pox and goat pox, rabies, rift valley fever, bacillary white diarrhoea, contagious bovine pleuro pneumonia, Johnes disease, tuberculosis, sheep scab, heart water and peste des petits ruminants.

67 MoALF (2015) *Kenya Veterinary Policy* Nairobi: Republic of Kenya, Ministry of Agriculture, Livestock and Fisheries.

68 Bushmeat: meat from wild animals that are hunted for human consumption.

69 Kurpiers et al (2015) *Bushmeat and emerging infectious diseases: Lessons from Africa* Problematic Wildlife 2015 Sep 21: 507-551

70 Chidziwisano, Mosler et al (2020) Improving complementary food hygiene behaviors using the risk, attitude, norms, ability and self-regulation approach in rural Malawi *American Journal of Tropical Medicine and Hygiene* 102(5), 2020 pp.1104-1115.

Assessment: by observation (cleanliness of raw food, produce and cooked food; storage of raw food, produce and cooked food) in the main cooking and food storage areas e.g. kitchen.

Clean food: wash raw food (e.g. fruit and vegetables) to remove dirt or other contamination before preparing, cooking or storing

Safely stored food: safe storage of raw food, other produce, and cooked food (leftovers). Food storage should be off the ground, inside the house (or kitchen), and protected from animal contact in covered or raised storage (e.g. cupboards, shelves, boxes, containers).

G2-3.2 Clean and safely stored kitchen utensils: service levels

G2 Safe storage: food and utensils are safely stored	
G1 Kitchen utensils not adequately washed, or not safely stored	
G0 Kitchen utensils not clean and not safely stored (e.g. on ground, outside)	

Assessment: by observation (cleanliness of kitchen utensils; storage of kitchen utensils) in the main cooking and storage areas e.g. kitchen, dish drying racks, cupboards.

Clean kitchen utensils: wash used or dirty kitchen utensils (e.g. pots, pans, plates, cutlery, cups, glasses, and any cutting, stirring or serving utensils) before storage or re-use.

Safely stored kitchen utensils: safe storage of clean kitchen utensils. Utensil storage should be off the ground, inside the house (or kitchen), and protected from animal contact in covered or raised storage (e.g. cupboards, shelves, boxes or containers).

G2-3.3 Clean and safely stored milk containers: service levels

G2 Safe storage: food and utensils are safely stored	
G1 Milk containers not adequately washed, or not safely stored	
G0 Milk containers not clean and not safely stored (e.g. on ground, outside)	

Assessment: by observation (cleanliness of milk containers; storage of milk containers) in the main milking, washing and utensil storage areas e.g. milking shed or area, kitchen, cupboards, or other storage areas for farm implements and food containers.

Clean milk containers: the containers used to collect and store milk should be thoroughly washed before each milking, so that they are free of dirt or other contamination.

Safely stored milk containers: when empty, the containers used to collect and store milk should be safely stored off the ground, inside the house (or kitchen), and protected from animal contact in covered or raised storage (e.g. cupboards, shelves, boxes or containers).

G2-4 Safe water management

Indicator criteria	Notes
G2-4.1 Safe management of household drinking water	Assessment: by observation and household interview
	Household drinking water: water used by the household for drinking and cooking
	Safe management: drinking water is collected in clean containers; adequate quality; safely stored, and safely used
G2-4.2 Safe management of household water sources	Assessment: by observation
	Household water sources: water sources within or nearby the household compound
	Safe management: water sources are clean, protected and well-drained
G2-4C Safe management of communal water sources	Assessment: by observation
	Communal water sources: water sources located in communal areas, or used by larger groups
	Safe management: water sources are clean, protected and well-drained

For G2 status, all households should practice **safe water management** including safe management of household drinking water, and safe management of drinking water sources.

Three indicators of safe water management have been selected among the G2 outcomes:

1. **Safe management of household drinking water:** whether household drinking water is safely collected, stored and used, and is of adequate quality.
2. **Safe management of household water sources:** whether household water sources are clean, protected and well drained.
3. **Safe management of communal water sources:** whether communal water sources are clean, protected and well drained.

G2-4.1 Safe household water management: service levels

G2 Drinking water: safely collected, stored and used; and adequate quality	
G1 Drinking water not well managed: unsafe collection, or storage, or use, or low quality	
G0 Drinking water unsafely managed (unsafe collection, storage & use; low quality)	

Assessment: by observation (containers used to collect water; drinking water storage; method of using drinking water) and household interview.

Potential household interview questions include:

- Q. Is the water supplied by your main source usually of acceptable quality?
- Q. What do you usually do to the water to make it safer to drink? [G2 Boil, Add chlorine, Strain through cloth, Use water filter, Solar disinfection, Settlement; Other or Not required]

Safe management of household drinking water

Four main criteria (assessed by observation and household interview):

1. Drinking water is collected in clean, covered containers (free of visible contamination)
2. Drinking water is of adequate quality:
 - drinking water is already adequate quality at the collection point (e.g. groundwater or treated surface water, such as water treated by use of chlorine dispensers); or
 - drinking water is treated by the household (e.g. settled, filtered, boiled or chemically treated, for example with chlorine solution or tablets)
3. Drinking water is safely stored (in clean, covered containers; separate from water used for other purposes; and away from animals)
4. Drinking water is safely used (from containers with spigots and taps, or from narrow-mouthed containers, or using a dedicated clean utensil)

Safely collected: all water for domestic use (e.g. for drinking, washing and cooking) should be collected in clean, covered containers that are free of visible contamination. Water containers should be regularly cleaned to prevent the growth of biofilms and bacteria.

Safely stored: all water for domestic use should be stored in clean, covered containers with narrow openings that can be sealed. Water storage containers should be regularly cleaned.

Safely used: the use of drinking water in the household should minimise the contact between external (potentially contaminated) items and the water. Water storage containers should have:

- taps that allow use without opening the container; or
- narrow openings that allow drinking water to be poured from the container into other receptacles (e.g. cups or glasses); or
- openings that allow specific utensils (e.g. ladles or other dipping devices) to collect water and transfer it to other receptacles (e.g. cups or glasses). The water ladle or dipper should have a long handle; should not be used for anything else; should only be handled by the end of the long handle (to prevent any contamination from entering the stored water); and should be stored in a clean and sheltered place.

Adequate quality: requires that the drinking water is from an improved source, and is free from faecal (and other priority) chemical contamination. In most cases, drinking water should be either from a water supply source that provides water suitable for drinking (e.g. protected groundwater of good quality; other water supply that is adequately treated before supply; or water supply that is treated at the point of collection, for example using a single-

dose chlorine dispenser); or, where the water is considered to be of inadequate quality, the household has treated the drinking water using an appropriate household treatment method (e.g. settlement, filtration, boiling, chemical treatment or other physical treatment e.g. solar disinfection, or some combination of these).

In most cases, only drinking water should receive household treatment, in order to minimise the cost and time required for household water treatment. Water for other domestic uses (e.g. washing and cooking) should only be treated at home where water quality is very low, where the low water quality affects the other uses, or where the treatment method is considered affordable and easy to use.

Community health workers should ensure that rural households are aware of the quality of the water obtained from their main water supply source, and know whether (or not) they need to use household water treatment to obtain safe drinking water. The community health workers should then assess whether the household is following the guidance provided (e.g. using household treatment where required) to ensure that all drinking water is of adequate quality.

Water for other domestic uses: as noted earlier, the quality of water used for handwashing and other personal hygiene does not need to meet drinking water standards⁷¹.

However, efforts should be made to use and source water of the highest quality possible (e.g. an improved water source) and, where water supplies are highly contaminated, households should treat all water supplies in the home, including water used for handwashing with soap⁷².

Point of use chlorine dispensers

A number of counties in Kenya have introduced chlorine dispensers at communal (and household) water points. These dispensers offer a single dose of chlorine solution (adequate for a 20 litre water container), which is drawn by the user and dosed directly into the water collection container. This point-of-collection chlorine dosing ensures that the water has a chlorine residual⁷³ for several days to protect from recontamination during the collection, storage and use of the water.

Where chlorine dispensers are used, no household treatment is likely to be necessary (as chlorine dispensers are only installed at water points that provide reasonable quality water, which means that the chlorine residual will protect the water from recontamination, providing that the water is safely stored and safely used).

71 WHO (2020) *Interim guidance: Water, sanitation, hygiene and waste management for the COVID-19 virus* World Health Organisation (WHO) and United Nations Children's Fund (UNICEF).

72 Verbyla M et al (2019) *Safely managed hygiene: a risk-based assessment of handwashing water quality* Environmental Science & Technology 2019, 53, 2852-2861.

73 Chlorine residual: presence of free chlorine in the water that is available for disinfection of any recontamination. When chlorine is initially added to the water, it reacts with any organic and inorganic compounds in the water and some chlorine is used up in these reactions. The remaining chlorine is known as the chlorine residual. Where water is highly contaminated, all of the chlorine dose may be used up in the initial reaction (and some pathogens may remain). Where the water is of reasonable quality, the chlorine dose should provide a chlorine residual that protects the water for several days.

G2-4.2 Safe management of household water sources: service levels

G2 Household water points are clean, protected and well drained	Green
G1 Household water points are either dirty, unprotected or badly drained	Yellow
G0 Household water points are unsafely managed (dirty, unprotected and badly drained)	Orange

G2-4C Safe management of communal water sources: service levels

G2 Communal water points are clean, protected and well drained	Green
G1 Communal water points are either dirty, unprotected or badly drained	Yellow
G0 Communal water points are unsafely managed (dirty, unprotected and badly drained)	Orange

Assessment: by observation of household water sources (cleanliness, protection and drainage of water points).

Assessment: by observation of communal water sources (cleanliness, protection and drainage of water points).

For G2 status, all household water points (e.g. water points inside the household compound, or nearby water points used exclusively by the household) and all communal water points (e.g. water points in communal areas, used by more than one household, or with communal or public access) should be safely managed: the water points should be clean, protected and well drained.

Safe management of household and communal water sources

Three main criteria (assessed by observation):

1. Water sources are clean: free from debris, solid waste, human or animal faeces, and any other potential sources of contamination)
2. Water sources are protected:
 - surface water sources (e.g. pans, dams, lakes, rivers) are fenced to prevent animal access
 - water supply source catchments are protected from wastes and pollutants, including human excreta and animal wastes (e.g. by the exclusion of animals and the prohibition of unsafe activities, such as the use of manure or chemical fertilisers, in catchment areas around water supply sources)
 - separate water troughs provided for animal watering
 - groundwater sources (e.g. springs, wells, handpumps, boreholes) are protected from contamination, wastes and pollutants (e.g. by construction of a spring box, raised parapet wall and cover, wellhead protection and sealed borehole casing)
3. Water sources are well-drained: no standing water visible at or around the water source (drainage and soakpits may be required in low permeability soils)

Water supply sources and water points should be kept clean through regular removal of any solid waste, human or animal faeces, or other debris or contamination in the immediate area around the source or water points, or in the catchment area for the water supply source (e.g. where surface water is collected from a wider catchment, or where shallow groundwater sources, e.g. springs or wells, collect water from nearby areas).

Animals should be kept out of catchment areas for water supply sources, and water points should be fenced or appropriately protected to avoid contamination by animals or animal wastes. The use of manure or chemical fertilisers (or other treatments) should be avoided in catchment areas around water supply sources. Wherever possible, animals should use separate water supply sources from people (to limit the risk of contamination); where animals and people have to use the same water supply source (or water point), animals should be provided with separate, raised water troughs that are located away from the point at which people collect their water.

Water supply sources should also be well-drained, to remove excess and contaminated water from the area around the source or water point. Drainage and soakpits (or other infiltration facilities) should be used either to conduct wastewater away from the water point, or ensure that the water soaks into the ground. Soakpits (or other infiltration facilities) should be designed to provide sufficient below-ground storage for wastewater during the time it takes to infiltrate into the soil (which will vary with the permeability of the soil). No standing water should be visible at or around the water source or water point.

G2-5 Safe management of animals and animal wastes

Indicator criteria	Notes
G2-5.1 No animal wastes in or around the house	Assessment: by observation
	Animal wastes: include animal faeces, urine, bedding, washing water, spilled feed and water, animal parts, blood, skin, feathers, and other wastes and residues.
	In or around the house: no animal wastes inside the house, or around the house in the household compound (other than in sites where manure is stored)
G2-5.2 Safe management of animal wastes in the household compound	Assessment: by observation
	Animal wastes: include animal faeces, urine, bedding, washing water, spilled feed and water, animal parts, blood, skin, feathers, and other wastes and residues.
	Safe management: animal wastes are collected, stored and managed in an appropriate facility, located away from the house
G2-5.3 Safe separation of animals from under-5 children	Assessment: by observation
	Safe separation: penning and confinement of animals in the household compound away from house

For G2 status, households should practice **safe management of animals and animal wastes**, including safe management of animal wastes in the household compound, and safe separation of animals from under-5 children.

The G2-5 safe management of animals and animal wastes outcome concerns two major public health threats: **emerging zoonotic diseases** and **antimicrobial resistance** (AMR). These threats are likely to increase with time, as human and animal populations grow, and as the density of people and animals increases (particularly in and around urban areas) with the risk of hotspots for the emergence of zoonotic diseases in the future⁷⁴.

Overuse and misuse of antibiotics in human and veterinary medicine has become a serious public health issue. Antibiotics are widely used in livestock production (particularly in pigs and poultry), with antibiotic residues then found in the environment because of unsafe management of animal wastes and manure application on agricultural lands. AMR requires improved livestock and waste management strategies: including interventions related to diet, proximity between animals, waste treatment, use of additives, and operating conditions. For further information on addressing AMR see the following:

1. MoH (2017) *National Policy on Prevention and Containment of Antimicrobial Resistance* Nairobi: Republic of Kenya, Ministry of Health.
2. MoH (2017) *National Action Plan on Prevention and Containment of Antimicrobial Resistance 2-17-2022* Nairobi: Republic of Kenya, Ministry of Health.

<https://www.afro.who.int/publications/national-action-plan-prevention-and-containment-antimicrobial-resistance-2017-2022>

The 2017 Emory University Systematic review of exposure to animal feces and human health identified the following risks associated with the management of animals and animal wastes⁷⁵:

- Fluids: compromised water sources (animal faeces and use of contaminated water)
- Fields: use of animal manure, and animal excreta disposed in the open
- Flies: from animal faeces to food
- Food: unsafe slaughtering, and unsafe handling and use of animal products
- Fingers: contact with animal faeces; soil ingestion
- Fomites: household objects and surfaces contaminated with animal faeces

Other research confirms strong associations between animal and child health, with young children more likely to become infected when nearby animals are sick; and young animals more likely to become infected when nearby children are sick. Consequently, it is important that either sick or young animals are kept apart from young children; and that **pastoralists are aware that both their animals and their children are at higher risk of infection if they live in close proximity, or if either child excreta or animal wastes are not safely managed.**

74 FAO (2020) Kenya: *One Health legal framework – a livestock value chain perspective on emerging zoonotic diseases and antimicrobial resistance* FAO & USAID: Africa Sustainable Livestock 2050.

75 Freeman M (2017) Exposure to animal feces and human health: a systematic review and proposed research priorities *Environmental Science & Technology* 2017, 51, 11537-11552

Safe animal management within the RuSH Protocol concerns three main practices:

1. **Safe management of animal wastes:** in household compound; and in communal areas within settlement.
2. **Safe management of animal products:** hygienic butchering, safe storage of animal products, handwashing after contact with animal products (e.g. meat, blood, milk or eggs) and handwashing after contact with animals, animal products or animal wastes (see G2-2 outcome).
3. **Safe separation of animals:** penning or confinement of animals within compounds, keeping animals out of the house; and protection of water sources.

Public health officers and community health workers need to collaborate with animal health, veterinary, and disease surveillance officers to promote a One Health approach: to address challenges at the interface between people, animals, plants and their environments. The formation of County One Health units is a stated priority for all counties, but these units are yet to be implemented in every county.

Which animals (and wastes) need to be managed?

The main focus of this outcome is on wastes from livestock, including ruminant livestock (cattle, buffalo, goats and sheep) and monogastric livestock (pigs and poultry, e.g. chickens), as the majority of the animal wastes that need to be managed in rural households come from livestock. However, animal wastes from rodents (rats and mice) and from domestic animals (dogs and cats) also need to be managed, as their wastes can also transmit diseases to people (e.g. Echinococcosis, or dog tapeworm infection, that develops from hydatid cysts and can infect sheep, cattle, goats and pigs if they consume tapeworm eggs in soil contaminated with dog faeces; and infect people who have contact with an infected animal or soil, or consume water or food that has been contaminated).

Pig farming is relatively small-scale in Kenya at the moment, but is expected to grow significantly as pork consumption in Kenya is estimated to rise by 268% between 2010-2050. Pigs in many rural areas of Kenya are free-roaming with access to human faeces in areas where open defecation occurs, and often defecate in close proximity to human domestic environments, which may facilitate zoonotic transmission (e.g. of non-typhoidal *Salmonella*, which has the potential to cause diarrhoeal disease in humans)⁷⁶.

Key principles⁷⁷ to limit the shedding of zoonotic pathogens in farm or production facilities for domestic livestock include:

- Prevent illness in livestock
- Minimise exposure to pathogens
- Increase immunity (e.g. through vaccination)

76 Wilson C et al (2020) *Salmonella identified in pigs in Kenya and Malawi reveals the potential for zoonotic transmission in emerging pork markets* PLOS Neglected Tropical Diseases 14(11):e0008796

77 Dufour A, Bartram J, Bos R and Gannon V (2012) *Animal waste, water quality and human health* Geneva: WHO Emerging Issues in Water and Infectious Disease Series.

- Manipulate animal gastrointestinal tract microbial ecology
- Manage and treat animal waste to reduce the release of zoonotic pathogens into the local environment.

Animal waste management

Animal wastes include animal excreta (faeces and urine) mixed with other materials and wastes associated with livestock husbandry. The other materials and wastes include animal bedding (e.g. straw), spilled feed and water, contaminated washing and wastewater, as may also include animal parts and products (e.g. blood, skins, feathers, animal parts). When animal excreta are mixed with other wastes, and used in agriculture (or aquaculture), the wastes are usually called manure.

The **presence of animal excreta (or animal parts contaminated with zoonotic pathogens) in these wastes** (or manure) means that they have to be carefully managed at all stages of the animal waste or manure management processes. In many cases, farmers value the manure for its agricultural benefits, with only limited recognition of the public health risks associated with its handling, management and use.

Animal carcasses should be safely managed and safely disposed. Animals suspected of having notifiable diseases should be reported to the County Director of Veterinary Services; removed from the slaughter process and safely disposed; and the public should be notified of the occurrence of the disease, with measures taken for safe management of the outbreak.

The use of animal excreta as manure (soil conditioner) in agriculture is a common (and traditional) practice in areas where both livestock rearing and agriculture are practiced, e.g. Kitui county. Even in non-agricultural areas, manure is used for a range of different practices, from application to the walls, floors and roofs of buildings, to its use as a cooking fuel. In most cases, the manure is handled extensively by women and children, with little recognition of the disease risks associated with frequent contact with animal wastes (e.g. little or no handwashing with soap after contact with the animal wastes).

Key principles⁷⁸ promoted by legislation on animal health, livestock management and environmental management in Kenya⁷⁹ include:

- Grazing grounds and dairy premises have to be kept clean, and kept a minimum distance from human dwellings (subject to inspection by health or sanitary officials)
- Farmers are required to isolate and confine any animal suspected to be infected by a notifiable disease and report any suspected case to an administrative, veterinary or inspecting officer.

78 FAO (2020) Kenya: *One Health legal framework – a livestock value chain perspective on emerging zoonotic diseases and antimicrobial resistance* FAO & USAID: Africa Sustainable Livestock 2050.

79 Key legislation includes: 1968 Animal Diseases Regulations; 1979 Public Health Rules; 1999 Environmental Management and Coordination Act; 2003 Environmental Impact Assessment Regulations; 2006 Pest Control Products Disposal Regulations; 2010 Meat Control Regulations; 2011 Veterinary Surgeons and Veterinary Paraprofessionals Act; 2012 Animal Diseases Act; 2012 Dairy Industry Act; 2013 Wildlife Conservation and Management Act; 2013 Food, Drugs and Chemical Substances Act; 2015 Environmental Management and Coordination (Amendment) Act; 2021 Livestock Bill.

- Disposal of infected carcasses should be carried out under the instruction of a veterinary officer or inspector.
- Large-scale agricultural operations are required to undertake an Environmental Impact Assessment (EIA) to assess whether their operations are harmful to the environment, and should be monitored by the National Environmental Management Authority (NEMA)

The Global Good Agricultural Practice (GlobalGAP) guidelines recommend that farmers **should not use untreated raw manure on agricultural food within 60 days of harvest** time; and that untreated raw manure should not be applied from the time of planting of leaf vegetables (i.e. during the entire growth period), or from the beginning of bud burst in tree-based cultivation⁸⁰.

Manure management

Some key principles of manure management:

- Frequent collection of animal manure from pens and confinement areas (ideally on a daily basis)
- Use of a **manure storage area** located away from the house, and away from child play areas, in which manure is stored and managed
- Construction of a roof over the manure storage area (to prevent nutrients and pathogens from washing out of the manure into the local environment)
- Use of a waterproof floor, low walls and netting around the manure storage area (to prevent nutrients and pathogens from seeping out, or being carried out e.g. by birds or small animals, into the local environment)
- Composting to improve the quality of the manure by killing pathogens⁸¹ and weed seeds (NB effective composting requires frequent turning of the manure heap for aeration, and addition of water, to produce heat from microbial activity – in many cases, rural farmers do not undertake these activities, and do not compost manure)
- Anaerobic digestion: use of a digester to break down manure in the absence of oxygen to produce biogas, with the digestate (slurry) then used as soil conditioner
- Wearing of personal protective equipment while handling manure (e.g. gumboots, gloves, use of a shovel or spade) and frequent handwashing with soap.

Animal watering facilities

Animal watering is a potential route for animal disease, and for contamination (or re-contamination) of animals with the pathogens found in animal (and human) wastes, which can in turn be passed on to people. Water supplied to livestock (and other animals) should be from adequate and safe water sources. Most groundwater or surface water is satisfactory for livestock, with the exception of water that is excessively saline, has high nitrate or alkalinity content, or is highly contaminated with chemicals or pathogens.

80 https://www.globalgap.org/uk_en/media-events/news/articles/Sixty-plus-GLOBALGAP-Standard-V5-Defines-Risk-Prevention-for-Raw-Manure-of-Animal-Origin/

81 Composting that achieves thermophilic conditions (40C to 60C) can kill or inactivate pathogens (and antibiotics) in less than a week (one week at 46C; one hour at 62C).

The water troughs used by animals should be raised above ground (to prevent wastes from washing into the water), and the water should be regularly emptied and replaced with clean water, while the troughs should be regularly cleaned (during the water replacement process) to minimise the risk of animals drinking contaminated water.

Minimise infection risk from dogs

The following key principles should be followed to minimise the risk of infection from dogs:

- Wash fruit and raw vegetables before eating (in households where dogs may have contact with the fruit and vegetables)
- Wash hands before eating or smoking, after handling dogs, and after handling items that may be soiled with dog faeces
- Discourage dogs from licking people, and do not kiss dogs
- Do not allow dogs to defecate near vegetable gardens or children’s play areas
- Reduce the amount of disease in dogs:
 - » Keep dogs away from areas of animal slaughter, and do not allow them to scavenge on animal carcasses or wastes
 - » Prevent dogs from eating uncooked offal
 - » Dispose of infected offal by deep burial or burning
 - » Reduce dog populations to the minimum required
 - » Seek veterinary advice on treatment to prevent infection in dogs

In ASAL areas, dogs sometimes consume human faeces, and may have close contact with children during defecation events. The principles above emphasize that dogs should not be allowed to lick people (particularly in areas where zoonotic diseases are prevalent), and should not be allowed to eat unsafe foods (such as human faeces).

G2-5.1 No animal wastes in or around the house: service levels

G2 No animal wastes in or around the house	
G1 Small amounts of animal wastes present (inadequate collection & management)	
G0 Large quantity of animal wastes present	

Assessment: by observation (presence of animal wastes in the house, or in the area around the house – except in places where manure is properly stored and managed).

No animal wastes in or around the house: the house and household compound should be free of animal wastes, except in areas where manure is properly stored and managed. Regular collection of animal wastes (e.g. daily collection of animal faeces and other wastes) should be evident from observation of the house and household compound. Where animal wastes have accumulated around the house, and there is no sign of regular collection or management, the household does not meet the G2 criteria.

The distance around the house from which animal wastes should be cleared is not fixed, as it will depend on whether there is a household compound (with clearly demarcated boundaries), and the size of the household compound. Where the compound is small, or not clearly demarcated, the area immediately around the house (say within 5-10m) should be cleared of animal wastes, and any child play areas (e.g. where young children are left during the day), should be kept clear of animal wastes. The manure storage area should be located away from the house and child play areas – in small compounds, the manure storage area should be as far away as possible; in larger compounds, the manure storage area should be at least 10m away from the house and any child play area.

G2-5.2 Safe disposal of animal wastes in the household compound: service levels

G2 Safe management of animal wastes in household compound	
G1 Inadequate management of animal wastes (unsafe storage or management)	
G0 Unsafe management of animal wastes close to the house	

Assessment: by observation (location of animal waste management facility; storage and management of animal wastes).

Safe management of animal wastes in the household compound: through regular collection, storage and management in an appropriate facility that is located away from the house, and away from child play areas. The animal waste facility should prevent animal and child access to the wastes, and limit the leaking or discharge of solid or liquid animal wastes into the area around the animal waste storage facility.

G2-5.3 Safe separation of animals from under-5 children: service levels

G2 Safe separation: animals penned or confined away from under-5 children	
G1 Inadequate separation: animals penned or confined close to house	
G0 Unsafe separation: animals not penned or confined, and allowed close/into the house	

Assessment: by observation (presence of animals in the house or household compound; location of animals; penning or confinement of animals).

Safe separation of animals from under-five children: penning and confinement of animals in the household compound, in a location away from the house and from child play areas (i.e. as far away from the house as possible in small compounds).

G2-S Sustainability Indicators

Indicator criteria	Notes
G2-S1 Functional G2 monitoring system	Assessment: focus group discussion
	Monitoring system: functional and up-to-date.
G2-S2 Monitoring of at-risk households	Assessment: review of monitoring data
	Monitoring of at-risk households: list of at-risk households available, with separate G2 data available
G2-S3 Action plan for G3 status	Assessment: review of action plan
	Action plan: available, approved and in use
G2-S4 Re-verification of G1 status	Assessment: verification process
	G1 status: all G1 outcome indicators are re-verified

Assessment: focus group discussions with key sanitation stakeholders (local leaders, committee members, natural leaders).

For G2 status, the community should also have achieved the four sustainability indicators.

Monitoring system: the community (or local administration) has established a monitoring system for the G2 safe and sustainable outcomes (toilet, handwashing, food, water and animal waste management), which is functional and provides up-to-date information.

Monitoring of at-risk households: households using shared toilets, new households, and other households at higher risk of unhygienic, unsafe or unsustainable practices, have been identified and their sanitation and hygiene outcomes are monitored and reported separately (i.e. disaggregated from other household data).

Action plan: the community (or local administration) has developed, approved and is using an action plan for the achievement of a **G3 Clean & Healthy environment**.

Re-verification of G1 status: all households have sustained the G1 ODF outcomes, as confirmed by a G1 verification process.

7.3 Guidelines for achievement of G3 Clean & Healthy outcomes

Figure 12: Outcome indicators for G3 Clean & Healthy environment

G3: CLEAN & HEALTHY	G3-1 Use of safely managed household sanitation services
	G3-2 Permanent handwashing services
	G3-3 Safe waste management
	G3-4 Good personal hygiene
	G3-5 Good nutrition
	G3-6C Safely managed institutional sanitation services
	Endemic counties: malaria-safe and worm-free homes
G3: Sustainability indicators	G3-S1 Monitoring system for G3 outcomes
	G3-S2 Disaggregated monitoring of at-risk households
	G3-S3 Re-verification of G1 & G2 outcomes

G2 Safe and Sustainable communities should aim to progress to Grade 3 Clean & Health status wherever possible. By 2030, progressive rural communities in each county should have demonstrated how to achieve the G3 outcomes, including re-verification of the G2 and G1 outcomes to ensure sustainability.

G3 Clean & Healthy status includes a range of household outcomes (safely managed sanitation, waste management, hygiene and nutrition outcomes), and an outcome for sanitation services in institutions (schools, health care facilities, government offices, public buildings, market places and transport hubs).

Not all rural communities will achieve G3 status. The higher level of the collective outcomes required for G3 status means that only more progressive rural communities, supported by active local administrations, are likely to achieve these outcomes by 2030.

Nonetheless, the G3 outcomes are important to public health and well-being in rural communities. The analysis of disease transmission routes, and of interventions to block these routes, suggests that, while the G1 and G2 outcomes tackle most of the primary faecal-oral transmission routes, the **G3 outcomes are likely to become more important for public health as sanitation and hygiene outcomes improve**, and in some contexts the health (and other) benefits may not be fully realised until G3 status is achieved.

The RuSH Protocol encourages progressive rural communities to work towards G3 Clean & Healthy status, in fulfilment of the outcomes required by the Kenya Environmental Sanitation and Hygiene Policy 2016-2030, and to demonstrate to other rural communities, and rural sanitation and hygiene stakeholders, how these outcomes can be achieved, as well as showcasing the benefits that arise from G3 status.

G3-1 Use of safely managed household sanitation services

Indicator criteria	Notes
G3-1.1 Safe management of household faecal sludge	Assessment: by household interview & by local authority and service provider interviews (where required)
	Safe management: all on-site or off-site sanitation services related to faecal sludge from household toilets (including emptying, transport, treatment, disposal or use) are safely managed
G3-1C Safe management of faecal sludge in communal areas	Assessment: by observation & by household, local authority and service provider interviews
	Safe management: services for the transport, treatment, disposal and use of faecal sludge are safely managed in communal areas (e.g. at communal disposal sites)

For G3 status, **all households should use safely managed sanitation services**. The JMP defines safely managed sanitation services⁸² as: *the use of improved sanitation services, with excreta either safely disposed on site, or transported and treated off site. Where rural latrine pits are covered and replaced when full (without emptying), and safe containment is certified, the sanitation services should be classed as safely managed.*

The G2 criterion for household toilets with safe containment addresses the requirement for safe on-site disposal of excreta, but does not address what happens if faecal sludge is removed from the containment system, or discharged into communal systems. In these cases, where faecal sludge or wastewater leaves the containment system, further checks are required to verify whether emptying and related sanitation services are safely managed, including surveys of households, service providers and local authorities (where appropriate).

Safe management of household faecal sludge

There are five main options for safe management of household faecal sludge:

1. **Safe excreta containment with no emptying:** faecal sludge remains in the pit, and the full pit is closed and replaced with a new pit
2. **Safe on-site management with burial:** faecal sludge is emptied to a covered pit in the household compound
3. **Safe on-site management with alternating pits:** only one pit is in use at any time; when this pit is full, the other pit is connected, and the faecal sludge is stored in the full pit for more than 2 years before being emptied for use on fields or in the garden
4. **Safe off-site disposal:** faecal sludge is safely emptied and transported to a safe disposal site
5. **Safe off-site treatment:** faecal sludge is safely emptied and transported to a safe treatment site.

82 JMP (2017) *Progress on drinking water, sanitation and hygiene: 2017 update and SDG baselines* Geneva: World Health Organization (WHO) and United Nations Children's Fund (UNICEF) Joint Monitoring Programme for Water supply, Sanitation and Hygiene.

As noted in the G2 guidelines (Section 7.2), most rural households in Kenya that use a durable toilet with safe containment meet the criteria for the use of safely managed sanitation services (as long as the faecal sludge does not leave the pit, and there are no surface outflows from the pit).

Where people want to re-use the toilet pit (or other containment system) for any reason, for example if the toilet pit is lined, the preferred option should always be to build a second pit and turn the toilet into an alternating twin pit latrine. Alternating twin pit systems avoid the need to handle and dispose of fresh faecal sludge, and provide a safe and sustainable system for long-term use.

Alternating twin pit latrines

Alternating twin pit latrines can use direct pits (e.g. dry toilets with a squat hole above the pit) or offset pits (in which excreta are flushed into the pit through a pipe or channel). In both cases, some sort of barrier is required between the two pits to prevent pathogens from the fresh excreta in the active pit contaminating the faecal sludge in the resting (inactive) pit.

The best option is a soil barrier, which should be approximately the same width as the depth of the latrine pit (i.e. a 1.5m deep latrine pit should have at least 1.5m (horizontal) of soil between it and the second pit) in order to limit the transmission of pathogens from the fresh excreta in one pit to the resting sludge in the other pit. Where direct pits are used, and the pits need to be close to each other, a watertight wall needs to be built between the two pits.

Some worm (helminth) eggs, notably roundworm eggs (*Ascaris*), have hard shells and remain viable for long periods of time. Various processes, such as heat, desiccation, pH and biological action, can make pathogens (including helminth eggs) inactive or harmless in less than two years. However, evidence from sanitation research around the world confirms that variable conditions (i.e. climate variations, changes in moisture and pH etc) often mean that pathogens remain viable for longer than expected. Where faecal sludge has to be emptied, e.g. in an alternating twin pit system, **two years is recommended as the minimum safe resting period**⁸³ before the faecal sludge is emptied, handled or used.

Safe on-site disposal of faecal sludge

Where the toilet owners need to empty the toilet pit, and are unable to build another pit, the safest option in most cases (if space is available in the household compound, and groundwater contamination is a low risk) is for burial of the faecal sludge in a covered pit within the household compound. The aim is to minimize the handling and transport of the faecal sludge, as the more handling required, and the further the faecal sludge is transported, the higher the risk of contamination and unsafe disposal.

In most rural communities, the pit contents are likely to be largely solid and will have to be dug or bucketed out. **Anyone involved in the emptying or transport of faecal sludge, either household, community or other sanitation workers, should wear personal protective equipment** (hat, goggles, mask, gloves, boots and protective clothing), minimize their contact



83 Tilley et al (2014) *Compendium of sanitation systems and technologies* Geneva: EAWAG, Second Edition.

with the faecal sludge, then wash all of the equipment and clothing used, and wash their hands, faces, hair and bodies with soap, in a safe place where the waste water from washing will not contaminate homes, water points, water bodies, or other communal areas.

Where the faecal sludge is more liquid, e.g. in septic tanks or pits connected to pour-flush latrines, it may be possible to pump out the pit contents directly to a pit dug in the household compound. In general, pumping using a diaphragm or manual pump and piping is safer than manual emptying, as it reduces the need to enter the containment system.

The site of the disposal pit should be away from houses, other structures, water points and water bodies, and the pit should be of similar dimensions to the containment system. After placing the faecal sludge in the pit, it should be covered with around 30cm thickness of soil, and left for undisturbed for at least two years.

Off-site sanitation services

In the few rural situations where there is no safe place available to dispose of faecal sludge within the household compound, and no alternative to emptying the faecal sludge, the household will have to arrange to empty, transport and treat or dispose of the faecal sludge to an off-site location.

The safe management of the faecal sludge needs to be checked along the entire sanitation service chain: through emptying, transport, treatment and/or disposal. These services will either be provided by an informal local provider (household members, community members, informal local sanitation workers), or by a formal service provider (trained pit emptiers with equipment, either for manual, pumped or vacuum emptying).

In all cases, those responsible for monitoring the safe management of household sanitation services need to check where the faecal sludge ends up. **The heavy weight of faecal sludge, and the high cost of emptying and disposal services in rural areas, mean that unsafe disposal close to the home is common.** The majority of informal and formal service providers are reported to dispose of faecal sludge to nearby fields, open spaces, drains and water bodies. There is rarely good monitoring of faecal sludge disposal, or of the use of faecal sludge (e.g. in agriculture), hence these unsafe practices are rarely addressed.

Where off-site sanitation services are required in rural communities, e.g. in rural growth centres or in other places where people prefer to empty latrine pits, tanks or other containment systems, local administrations should consider the establishment of safe communal disposal sites. Safe communal disposal sites should be located in areas with low risk of groundwater contamination that are away from settlements, and away from other facilities that might be adversely affected by the burial of faecal sludge. Safe communal disposal sites are usually either:

- **In high demand contexts: continuously-managed trenching sites** with fencing and controlled access (where faecal sludge is disposed into trenches dug using mechanized equipment, which are covered when full)
- **In low demand contexts: temporary disposal pits or trenches** (where faecal sludge is safely disposed during periodic scheduled emptying and disposal times, e.g. for two weeks every year).

Further information on the use of safely managed sanitation services in rural areas is available from these references:

Robinson A and Peal A (2020) *Safely managed sanitation services in the Global Sanitation Fund* Geneva: Water Supply and Sanitation Collaborative Council.

UNICEF (2020) *What does safely managed sanitation services mean for UNICEF programmes* New York: United Nations Children's Fund, WASH Discussion Paper no. 3.

Verhagen J and Scott P (2019) *Safely managed sanitation in high-density rural areas: turning faecal sludge into a resource through innovative waste management* Washington DC: The World Bank, Water Global Practice

Key principles for Safely Managed Sanitation Services⁸⁴

1. **Improve monitoring of safe management:** observe safe containment
2. Identify unsafe facilities & practices: use these data to trigger responses to address unsafe management
3. **Map groundwater vulnerability to contamination:** identify high-risk areas where specific water supply or sanitation strategies are required
4. **Keep excreta in ground:** avoid the emptying of faecal sludge wherever possible
5. **Bury fresh faecal sludge:** if faecal sludge has been stored for less than 2 years, it should be buried (or treated) until safe
6. **Encourage appropriate communal emptying and disposal services:** periodic use of communal pits or trenches to dispose of faecal sludge from nearby communities
7. **Increase household awareness:** of the costs and requirements of safely managed sanitation services (e.g. how toilet design and pit size influence options)
8. **Raise awareness of risks from agricultural use of faecal sludge.**

Agricultural use of faecal sludge⁸⁵

The use of faecal sludge should be monitored (and regulated), particularly in settings where faecal products (either direct from the pit or tank, or after some form of treatment or processing) are used as fish or poultry feed, or where raw faecal sludge is used as soil conditioner in gardens or farms (i.e. with potential to contaminate both food and non-food items).

There are three main options for land disposal of faecal sludge or wastewater:

- **Land spreading:** surface deposits can lead to problems with pathogen exposure, flies and other vectors
- **Sub-surface incorporation:** sludge ploughed into the land immediately after discharge
- **Burial:** trenching, burial in pits, co-composting in pits

The 2006 WHO guidelines for the safe use of wastewater, excreta and wastewater summarise the health risks associated with the use of wastewater for irrigation. The WHO

84 After: Robinson and Peal (2020) *Safely managed sanitation services in the Global Sanitation Fund*

85 Ibid.

guidelines report that the greatest health risks (in places where wastewater is used without adequate treatment) are usually associated with intestinal helminths:

- **Consumer risks:** significant risk of *Ascaris* (roundworm) infection; cholera, typhoid and shigellosis outbreaks; evidence of parasitic protozoa found on wastewater-irrigated vegetable surfaces.
- **Farm workers:** significant risk of *Ascaris* (roundworm) infection; increased risk of diarrhoeal disease and *Salmonella* infection in children; increased risk of amoebiasis.
- **Nearby communities:** significant risk of *Ascaris* (roundworm) infection where flood or furrow irrigation used; sprinkler irrigation with high aerosol exposure associated with increased rates of bacterial infection.

In particular, after surface application of faecal sludge, attention should be paid to:

1. Fruit or vegetables that grow on the ground (likely to be unsafe).
2. Crops that are consumed unwashed (likely to be unsafe).
3. Workers that apply sludge or work with crops (at risk of faecal exposure).
4. Nearby populations (at risk due to surface run-off containing faecal pathogens).

Agricultural use of faecal sludge should trigger increased monitoring and regulation, including regular surveys of the practices of service providers, agricultural workers, and crop consumers. Testing for signs of contamination should also be conducted of:

- products associated with the use or disposal of faecal sludge (e.g. soil conditioner made from latrine pit humus, or crops grown where faecal sludge has been applied); and
- people at higher risk of infection (e.g. sanitation workers and crop consumers).

G3-1.1 Use of safely managed household sanitation services: service levels

G3 Safe excreta containment with no emptying	
G3 Safe on-site management with burial (to covered pit in the household compound)	
G3 Safe on-site management with alternating pits (stored for 2 years before emptying)	
G3 Safe off-site disposal (emptied and transported to safe disposal site)	
G3 Safe off-site treatment (emptied and transported to approved treatment site)	
G1 Unsafe on-site management (emptied to open pit in compound)	
G1 Faecal sludge stored for less than 2 years before use	
G0 Faecal sludge transported to unsafe disposal site, or unapproved treatment site	
G0 Faecal sludge unsafely disposed to fields (more than 500m away from village)	
G0 Faecal sludge unsafely disposed to open, drain or water body (less than 500m away)	

Assessment: interviews with households, service providers (formal and informal) and local authorities (where involved in the sanitation service chain, e.g. management of treatment).

Potential household interview questions include:

- Q.** Has the toilet pit (or containment system) every been emptied?
- Q.** The last time the pit was emptied, who emptied it?
- Q.** Where was the faecal sludge from the pit disposed (or transported to)?
- Q.** Did anyone enter the pit during emptying?
- Q.** Did you store or use any of the faecal sludge?
- Q.** Where did you store the faecal sludge?
- Q.** How long did you store the faecal sludge before use (or other)?
- Q.** After storage, how did you use the faecal sludge?

Safely emptied: faecal sludge is emptied from the containment system without spillage or contamination of the local environment. Any spilled faecal sludge is contained and cleaned up, and the faecal sludge is either immediately buried in a nearby pit, or transported off-site. All containers and equipment used to empty the faecal sludge are thoroughly cleaned in a location that avoids contamination of the local environment (including the household compound, areas around water points or water bodies, and other communal areas).

It is unsafe to enter toilet pits, because of the risk of hazardous gases, dangerous materials (e.g. needles, glass, or other sharps) and the risk of contamination from faecal matter. Emptying processes should avoid pit entry, using remote emptying equipment (e.g. mechanised or manual pumps with flexible pipes that discharge the faecal sludge directly into tankers, tanks or pits) and personal protective equipment to minimise the risk of contact with the faecal sludge.

Safely transported: faecal sludge is transported in a vehicle or storage container that does not leak or spill faecal sludge during the transportation off-site. Any spilled faecal sludge is contained and cleaned up. All vehicles, containers and equipment used to transport the faecal sludge are thoroughly cleaned in a location that avoids contamination of the local environment (including the household compound, areas around water points or water bodies, and other communal areas).

Safe disposal site: faecal sludge disposal sites (e.g. disposal pits or trenches) should be located away from settlements and other facilities that might be affected by the burial of faecal sludge, in areas with low risk of groundwater contamination. Where the disposal sites are in communal areas of the community (or a nearby community), the local administration should supervise, monitor and regulate faecal sludge disposal practices.

Safe treatment site: treatment sites should be appropriate for the treatment of the faecal sludge from local sanitation facilities, and the products and effluents from the treatment processes should meet national standards for waste management.

G3-1C Safe management of faecal sludge in communal areas: service levels

G3 Safely managed: communal disposal of faecal sludge is safely managed	
G1 Unsafely managed: disposal sites are open or not safely managed (> 500m away)	
G0 Unsafely managed: faecal sludge disposed to open, drains, water bodies (< 500m)	

Assessment: by observation (evidence of unsafe faecal sludge disposal in communal areas) and interviews.

Potential communal areas interview questions include:

- Q.** Where is faecal sludge disposed (in communal areas)?
- Q.** Is faecal sludge buried in a safely managed disposal site?
- Q.** Is faecal sludge treated in an approved treatment site?

G3-2 Permanent handwashing services

Indicator criteria	Notes
G3-2.1 Permanent handwashing facility	Assessment: by observation
	Permanent facility: durable handwashing facility with piped water or water storage, in a fixed and appropriate location
G3-2.2 Hands-free operation of handwashing facility	Assessment: by observation
	Hands-free operation: water is available with minimal handling or hands-free operation of the handwashing facility
G3-2.3 Drainage of wastewater from handwashing facility	Assessment: by observation
	Drainage: water is collected and drained from the handwashing facility into a safe disposal point

For G3 status, households should use **permanent handwashing services** (in addition to the G1 and G2 handwashing criteria) such as:

- **Piped water supply:** tap with continuous water supply, wash basin and drainage
- **Other permanent facility:** Manufactured handwashing station with closed water storage, tap or handsfree water drawing system (e.g. foot pedal), and drainage

For G3 status, all households have to be observed to be using permanent handwashing facilities. The intention is that households gradually improve their handwashing facilities and handwashing practices as they progress through grades G1 and G2, and eventually invest in a more permanent handwashing facility with handsfree operation, some form of basin to collect the wastewater, and a drainage system to channel the wastewater to a soakpit or other waste water disposal system.

Three different types of permanent handwashing station can meet the criteria for **G3-4 Permanent handwashing facilities**:

1. Tap from piped water supply, with basin and drainage.
2. Market-bought handwashing station with water storage, tap and drainage (e.g. SATO tap or other manufactured handwashing stations)
3. Durable handwashing station with water storage, handsfree operation and drainage.

Handwashing stations made from non-durable materials, or that are not permanently installed in designated places near the toilet or kitchen, with adequate wastewater drainage and disposal, do not meet the G3-4 criteria (e.g. portable basins, containers and jerrycans do not count as permanent handwashing stations).

The handwashing criteria from the G1 and G2 outcomes also have to be checked and re-confirmed as part of the G3 certification processes:

- Presence of soap and water at handwashing facility
- Handwashing with soap at critical times

Market-based approaches to achieve G3-4 permanent handwashing facilities

Market-based approaches should be expanded during the G2 and G3 implementation processes to encourage the production, promotion, sale and support of permanent household handwashing facilities.

A range of innovative and low cost products should be encouraged, including products such as the SATO tap (which stores water in existing plastic bottles that are inserted into a plastic receiver with the water flow triggered by a large handle that requires minimal contact to operate): <https://www.sato.lixil.com/satotap/>

Wherever possible, the availability of affordable soap and foaming-soap solutions should also be improved through market-based approaches (given the increased market size generated by widespread use of permanent handwashing facilities at critical times).

G3-2.1 Permanent household handwashing station: service levels

G3 Tap from piped water supply, with basin (or other water collection device)	
G3 Manufactured handwashing station with adequate water storage	
G1 Homemade tippy tap	
G1 Jerrycan or other closed container	
G1 Portable basin or other open container	
G1 Other temporary handwashing facility	
G0 No handwashing facility	

Assessment: by observation of the handwashing station (type and location).

Permanent facility: the handwashing facility should be made of durable materials, with a piped water connection or adequate water storage, and located in a fixed place that is appropriate for handwashing at critical times (see G2-2).

G3-2.2 Handsfree operation of handwashing station: service levels

G3 Tap with piped water supply	
G3 Tap from water storage	
G3 Other handsfree operation (e.g. foot pedal)	
G1 Manual operation of water flow	
G0 Unwashed hands enter the water storage/container	

Assessment: by observation of the handwashing station (mechanism to trigger water flow; whether handsfree or not).

Hands-free operation: the operation of the handwashing station should be by tap, or other hands-free mechanism that minimises contact with the handwashing facility (e.g. foot pedal).

G3-2.3 Drainage of wastewater from handwashing station: service levels	
G3 Washing water is collected and drained to safe disposal point	
G1 Washing water is collected, but there is no fixed drainage or disposal point	
G0 No collection, drainage or disposal of washing water	

Assessment: by observation of the handwashing station (drainage of washing water from the handwashing station).

Drainage: the dirty washing water from handwashing should be collected (e.g. in a basin or other container) and directed to an appropriate disposal point (e.g. soakpit). No standing water should be observed beside or underneath the handwashing station.

G3-3 Safe waste management

Indicator criteria	Notes
G3-3.1 Safe management of liquid wastes and stormwater in the household compound	Assessment: by observation
	Liquid wastes: used, polluted or other waste water from homes, kitchens, and gardens
	Stormwater: run-off water or flooding from rain storms
	Safe management: adequate soakpits and drainage, with no visible erosion or liquid wastes in the household compound

G3-3.2 Safe management of solid wastes in the household compound	Assessment: by observation
	Solid wastes: litter, food wastes, and all other solid wastes generated by households
	Safe management: clean compound with well-managed solid waste facility
G3-3.3 Good vector control in the household compound	Assessment: by observation
	Vector control: no standing water or untreated larval breeding sites are visible in the household compound
G3-3.C1 Safe management of liquid wastes and stormwater in communal areas	Assessment: by observation
	Liquid wastes: used, polluted or waste water from households, farms, businesses and communities
	Stormwater: run-off water or flooding from rain storms
	Safe management: no building erosion or visible liquid wastes in communal areas
G3-3.C2 Safe management of solid wastes in communal areas	Assessment: by observation
	Solid wastes: litter, food wastes, and all other solid wastes generated by households, farms, businesses and communities
	Safe management: clean communal areas with well-managed solid waste services
G3-3.C3 Good vector control in communal areas	Assessment: by observation
	Vector control: no standing water or untreated larval breeding sites are visible in communal areas

For G3 status, household compounds and communal areas should have **safe waste management** including:

- No visible liquid wastes
- No visible erosion of buildings
- Clean areas (free of solid waste)
- No standing water or untreated larval breeding sites

The (draft) Ministry of Water, Sanitation and Irrigation (MoWSI) *National Sanitation Management Policy* (NSMP) states that county health services are responsible for refuse removal, refuse dumps and solid waste disposal; and for storm water management. County governments should promote integrated and inclusive sanitation and waste management planning, as well as the provision of services for drainage, stormwater management, solid waste management, and water resources protection and conservation.

The *2016 Kenya Environmental Sanitation and Hygiene Strategic Framework (KESH Strategic Framework) 2016-2030* confirms that the government follows the “polluter pays” principle, whereby any polluters (whether individuals or organisations) are responsible for

all the damages caused by their contamination and pollution, and for the required cleanup measures. Therefore, households should manage their own solid and liquid wastes, and communities should manage any wastes in communal areas (while holding individuals and households responsible for cleanup where required).

The 2016 KESH Strategic Framework also promotes the principle of the 4Rs of waste management (reduce, reuse, recycle and recover) and encourages waste separation to maximise resource use and conservation.

The G3-3 safe waste management outcome covers all three areas of waste management:

1. Safe management of liquid wastes and stormwater
2. Safe management of solid wastes
3. Vector control (to limit standing water and larval breeding sites in the community)

Water resource protection is covered by **G3-4 Safe water management**, which includes specific outcome indicators for safe management of household and communal water sources.

G3-3.1 Safe management of liquid wastes and stormwater: service levels

G3 Safe liquid waste management: soakpit, drainage, no erosion and no visible wastewater	
G2 Unsafe management: erosion, or wastewater, or inadequate soakpit	
G1 Visible wastewater, erosion and no soakpits or drainage	

G3-3.C1 Safe management of liquid wastes & stormwater in communal areas: service levels

G3 Safe liquid waste management: no building erosion and no wastewater in communal areas	
G2 Unsafe management: visible erosion, wastewater & inadequate drainage	

Assessment: by observation of the household compound (drainage and wastewater disposal facilities, erosion of buildings and facilities, presence of wastewater).

Assessment: by observation of communal areas (drainage and wastewater disposal facilities, erosion of buildings and facilities, presence of wastewater).

Safe management of liquid wastes and stormwater in the household compound has several objectives:

- Safe disposal of contaminated wastewater (from washing, cooking and other household activities)
- Elimination of wastewater
- Prevention of erosion of buildings, toilets or other household facilities (through provision of drainage and stormwater disposal facilities where required)

The most common options for safe management and disposal of liquid wastes, including wastewater and stormwater, include:

- Cut-off drains to channel stormwater away from buildings, toilets and facilities
- Pipes or drains to transport wastewater from collection points (handwashing facilities, washrooms, kitchens) to covered soakpits, tanks, infiltration trenches or other wastewater disposal facilities
- Drains to kitchen gardens, smallholdings or tree plantations.

Where liquid waste flows are small and soils are permeable, simple soakpits may be sufficient to contain liquid waste flows and allow time for these flows to infiltrate into the soil. Where liquid waste flows are larger, or where soils are impermeable (e.g. clay or rocky soils), larger facilities or communal facilities⁸⁶ may be required.

Safe management of stormwater may be the most challenging, particularly in areas that receive heavy rainfall and tropical storms. The main aim of the stormwater drainage services should be to control surface flows to avoid erosion of buildings, toilets and other household or communal facilities; and avoid leaving areas containing wastewater.

G3-3.2 Safe management of solid wastes in the household compound: service levels

G3 Safe SOLID waste management: clean compound with well-managed solid waste facility	
G2 Unsafe management: inadequate management with some solid waste visible	
G1 Unsafe solid waste: no management and lots of solid waste visible	

G3-3.C2 Safe management of solid wastes in communal areas: service levels

G3 Communal areas free of solid wastes with well managed solid waste services	
G2 Unsafe management: visible solid wastes and inadequate solid waste services	

Assessment: by observation of the household compound (presence of solid wastes; solid waste management facility).

Assessment: by observation of communal areas (presence of solid wastes; solid waste management facility).

Solid waste management is a major environmental hazard in Kenya⁸⁷. Food waste, paper and plastic make up around 80% of solid waste, with some chemical and hazardous wastes associated with farm inputs (e.g. fertilizers and veterinary wastes).

⁸⁶ Communal facilities for liquid waste management may include networked open drain systems, large-scale infiltration trenches, wastewater treatment works, or river and sea outfalls.

⁸⁷ MoH (2016) *Kenya Environmental Sanitation and Hygiene Strategic Framework* Nairobi: Republic of Kenya, Ministry of Health.

Safe management of solid wastes in the household compound has several objectives:

- Safe management of food wastes (vegetables, fruit and other raw or cooked foodstuffs)
- Safe management of paper, plastic, bottles, tins, clothing and other non-biodegradable materials (including electronic, industrial and chemical wastes).

Any animal carcasses or animal parts⁸⁸ should also be carefully managed and disposed either in a safe communal disposal site, or by controlled burning or deep burial⁸⁹. Anyone handling animal carcasses or other wastes should wash their hands with soap immediately after contact with the wastes (see **G2-2 Handwashing with soap at critical times**).

The main options for safe management and disposal of solid wastes are:

- Covered food composting pit (or other composting container)
- Household disposal facility: garbage pit, or fenced and roofed area
- Communal waste collection service (with nearby collection point)
- Separation and recycling of solid waste (through communal services)
- Incineration of combustible waste (e.g. paper, leaves).

Rotten food wastes may attract flies, rodents and other disease vectors. Wherever possible, biodegradable food wastes should be disposed to a covered composting pit or container, which is designed to encourage the food wastes to decompose for future use as soil conditioner. Generally, two composting facilities are required (or one composting facility with two compartments) so that when one facility (or compartment) is full, the other facility can be emptied, ensuring that adequate time is provided for the full facility to decompose (i.e. the facilities should be sized so that it takes around one year to fill with biodegradable material).

Non-biodegradable wastes (plastic, bottles, tins, coated paper, clothing etc) should not be disposed into toilet pits, as these wastes are slow to degrade (or do not degrade) and their addition to the pit means that the pit will fill more quickly. The addition of solid wastes to the pit also limits the use of the pit contents from alternating twin pits.

Used disposable diapers, and other soiled clothing, should not be disposed to toilet pits for the same reasons (slow decomposition and faster pit filling time); and should not be added to solid waste, except where there is a municipal garbage collection service that provides disposal to regulated landfill sites (see **G1-4.2 Safe management of diapers**).

Hazardous wastes, including electronic, industrial or chemical wastes, should be separated from other solid wastes, and either be disposed in communal facilities that are managed by local administrations, or collected for disposal at waste management facilities at higher level (with appropriate monitoring by local administrations).

88 Animal carcasses and animal wastes may be contaminated with zoonotic diseases.

89 Miller et al (2020) *Carcass management guidelines – Effective disposal of animal carcasses and contaminated materials on small to medium-sized farms* Rome: Food and Agriculture Organization (FAO) Animal Production and Health Guidelines No. 23.

In the long-term the separation and recycling of non-biodegradable solid wastes (particularly plastics, glass and tin cans) should be encouraged in order to reduce the amount of waste that is buried in pits. Wherever possible, waste pits should be covered (either permanently or with a removeable lid) to prevent wastes from being blown around, taken by animals, or washed out during storms.

Location of waste pits: waste pits should be located as far away as possible from water points; away from all open water bodies (e.g. ponds, lakes, streams and rivers); above the groundwater level (i.e. should be raised above ground in areas of high groundwater); and away from other habitations or communal facilities (to avoid smell or fly nuisance, and reduce the risk of contamination).

G3-3.3 Good vector control in household compound: service levels

G3 Good vector control: no standing water and no untreated larval breeding sites	
G2 Inadequate vector control: some standing water or some untreated breeding sites	
G1 Lack of vector control: larval breeding sites in compound not controlled or treated	

G3-3.C3 Good vector control in communal areas: service levels

G3 Good vector control: no untreated larval breeding sites in communal areas	
G2 Inadequate vector control: larval breeding sites not controlled in communal areas	

Assessment: by observation of the household compound (presence of standing water and mosquito larval breeding sites) and household interview.

Potential interview questions include:

- Q.** Are any forms of treatment used to reduce mosquito breeding (in the household compound, or in water bodies within the household compound)?

Assessment: by observation of communal areas (presence of standing water and mosquito larval breeding sites within 500m of houses) and focus group discussion.

Potential FGD questions include:

- Q.** Are any forms of treatment used to reduce mosquito breeding (in communal areas, or in water bodies within 500m of houses)?

Good vector control: no standing water or untreated larval breeding sites visible in household compounds or communal areas. Where water bodies are close to households and settlements, treatment and vector control activities should be used to limit mosquito breeding.

Standing water is a breeding ground for harmful bacteria, attracts insects and rodents, and can damage buildings and roads. In particular, mosquito larvae develop within a few days in

any small or large pools of water, and in streams and at river edges, including the larvae of:

- Anopheles mosquitoes (such as *An. gambiae*, *An. arabiensis*, *An. funestus* and *An. merus*), which are one of the primary vectors of malaria in Kenya.
- Culex mosquitoes (*Cx. pipiens*, *Cx. quinquefasciatus*), which are vectors of chikungunya, West Nile fever and Japanese Encephalitis
- Aedes mosquitoes (*Ae. aegypti*, *Ae. mcintoshi* and *Ae. vexans*), which are a primary vector of dengue fever, Rift Valley fever, yellow fever, zika virus and chikungunya.

Examples of typical mosquito breeding sites in rural household compounds include:

- Old tyres
- Laundry tanks
- Uncovered tanks and cisterns
- Drums barrels
- Discarded buckets and containers
- Pet dishes
- Construction blocks (e.g. cement blocks with openings)
- Bottles
- Discarded tin cans
- Tree holes and bamboo
- Bottle pieces on tops of walls
- Old shoes
- Flower pots
- Garden containers and tools
- Holes or depressions in the ground (including hoof prints)
- Gutters, ditches and drains
- Ponds, lakes, streams, rivers and other open water bodies

There are four main approaches to vector control⁹⁰:

1. **Source reduction:** removal or permanent destruction of mosquito breeding sites, by filling in depressions that collect water, by draining swamps or by adding drains to marshy or frequently flooded areas to remove standing water.
2. **Chemical treatment:** where source reduction is difficult, chemical insecticides can be applied directly to the larval breeding sites. Or insect growth regulators, such as methoprene, can be applied. However, chemical treatment may have harmful environmental effects.
3. **Alternative treatments:** apply biodegradable oils to the water surface (to suffocate the larvae and pupae); use bacterium (*Bacillus thuringiensis* var. *israelensis*) in the same way as chemical insecticides (with fewer harmful effects).

90 Centers for Disease Control and Prevention website: Malaria > Larval Control and Other Vector Control Interventions https://www.cdc.gov/malaria/malaria_worldwide/reduction/vector_control.html

4. **Other interventions:** fogging or area spraying is effective in malaria-endemic areas, where it should be timed to coincide with the time of peak adult mosquito activity. Fogging and area spraying need to be repeatedly applied to have an impact, which is costly to maintain.

Source reduction measures⁹¹:

- Make sure all tanks, water deposits and containers are covered and sealed to keep out mosquitoes
- Change the water and brush the insides of sinks and water barrels at least once a week
- Pour out water from flower pots and planters and replace with damp sand
- Turn over containers that cannot be thrown away and protect them from the rain
- Change the water in flower vases at least once a week, pouring the used water over the ground
- Safely dispose of any unused containers and objects that can accumulate water and serve as breeding sites
- Change the water in pet bowls at least once a week
- Clean all drains and gutters
- Keep grass short and weed-free, and keep your compound clean

Communal areas should also be kept free of standing water. Where water bodies exist (and are used) within 500m of housing, treatment should be considered to control larval breeding. The distance flown by mosquitoes is highly variable, depending on variety, context and climatic conditions. Mosquitoes have been known to travel up to 50km⁹², but (in most species) few mosquitoes travel more than 500m from the larval breeding site. Therefore, vector control should be applied to all standing water in communal areas within 500m of housing.

G3-4 Good personal hygiene

Indicator criteria	Notes
G3-4.1 Clean face & hands	Assessment: by observation of all under-5 children and main caregiver
	Clean face: no visible dirt on face
	Clean hands: no visible dirt on hands
G3-4.2 Good menstrual health	Assessment: by observation & interviews with adult female members of the household
	Menstrual health: availability of adequate menstrual hygiene materials, a private washing place, and a safe disposal point

91 WHO Mosquito breeding guidance: <https://www.who.int/mediacentre/infographic/zika-virus/mosquito-breeding.pdf>

92 Verdonshot P and Besse-Lototskaya A (2014) Flight distance of mosquitoes: a metadata analysis to support the management of barrier zones around rewetted and newly constructed wetlands *Limnologica* Volume 45, March 2014 Pages 69-79.

For G3 status, households should have good personal hygiene including:

- Clean face and hands
- Good menstrual health

G3-4.1 Clean face and hands: service levels

G3 All under-5 children and caregiver have clean hands and faces	
G2 Inadequate personal hygiene: some with dirty hands or dirty faces	
G1 No personal hygiene: all with dirty hands and dirty faces	

Assessment: by observation (cleanliness of faces and hands of all under-5 children; cleanliness of face and hands of main caregiver)

Personal hygiene (through the washing of hands, faces, bodies and hair with clean water and soap) contributes to reductions in diarrhoeal disease, and to reductions in the spread of other tropical diseases (e.g. trachoma; schistosomiasis/bilharzia; body, head and pubic lice; worms; and scabies).

Personal hygiene is more challenging when clean water and soap are scarce. However, most rural communities (outside water-scarce communities in ASAL areas) have access to washing water, and should be encouraged to ensure that children and adults have clean hands, clean faces, clean bodies and clean hair.

For ease of monitoring, the G3-11 Personal Hygiene outcome is assessed using two criteria:

- Clean hands
- Clean faces

The hands and faces of all children, and the main caregiver, in each household have to be checked for cleanliness. Where all children and the main caregiver are observed to have clean hands and faces (with no visible dirt on hands or faces), the G3-11 outcome is achieved.

The clean hands criterion provides a double check on the effectiveness of handwashing practice. Where all household members practice regular handwashing with soap at critical times, and households have permanent handwashing facilities with soap and water available, it should be more likely that both children and adults will present clean hands.

The assessment of clean faces and hands should take place at the household, at a time when the under-5 children and main caregiver are likely to be available. The assessment is designed to check the cleanliness of faces and hands at that moment, without any warning (that might allow them to change their normal appearance).

While many people in rural households are outside the house during much of the day in the fields or herding, or at school (or nursery school), work, markets or undertaking other external activities, household members (including children) should adopt the habit of washing their faces and hands after coming home, before moving on to any other activities. In this way, they should always have clean hands and faces before touching food, or undertaking any other chores in the household.

G3-4.2 Good menstrual health: service levels

G3 Good menstrual health: good materials, private washing place & safe disposal	
G2 Inadequate menstrual health: inadequate materials, washing place or disposal facility	
G1 No menstrual health: no materials and no washing place	

Assessment: by observation (availability of menstrual hygiene materials; privacy of washing place or toilet; disposal point for used menstrual hygiene materials).

Menstrual health should be assessed in households with female members. **Good menstrual health** requires:

- Private and clean place available for washing and menstrual hygiene
- Adequate menstrual hygiene materials
- Safe disposal site for used menstrual hygiene materials.

Menstrual health in rural communities is mandated by:

- **2016 Kenya Environmental Sanitation and Hygiene Policy** Section 5.4.9 Menstrual Hygiene: *“ensure the provision of safe, adequate and appropriate sanitary facilities including adequate water, cleansing and washing materials and private spaces for managing menstrual flows hygienically and privately and with dignity in the home, schools, work places, public spaces, institutions and emergency situations”*
- **2020 Kenya Menstrual Hygiene Management Policy**⁹³
- **SDG 6.2:** adequate sanitation and hygiene for all ... paying special attention to the needs of women and girls.

As noted earlier (**Section 7.1 Example 3**), AMREF Kenya found through its GSF-supported K-SHIP programme that **promotion of menstrual hygiene management was an effective trigger for sanitation development** (and ODF achievement), particularly in Muslim pastoralist communities. In Wajir (and in other counties), AMREF and its partners reported that men were shocked to discover the difficult conditions in which their wives and daughters had to undertake menstrual hygiene, and quickly resolved to build toilets that provided adequate privacy and materials for safe and dignified menstrual hygiene. As a result, AMREF has started to use the promotion of menstrual hygiene management as a triggering tool in all its sanitation programmes.

Menstrual hygiene is an essential element of sanitation and hygiene services (for at least 50% of the population). However, this sort of hygiene behaviour change is generally more effective and sustainable once other basic services (e.g. toilets and handwashing facilities) are in place, thus it is included among the G3 outcomes.

93 <https://www.health.go.ke/wp-content/uploads/2020/05/MHM-Policy-11-May-2020.pdf>

Where menstrual hygiene is used as part of the G1 ODF triggering process, households may develop menstrual hygiene services before the rest of the G3 outcomes. Nonetheless, the G3-12 Menstrual health outcome is retained as a G3 outcome because it is not considered one of the primary barriers to faecal exposure in rural communities.

UNICEF (2020) *Guidance for monitoring menstrual health and hygiene* New York: United Nations Children’s Fund (UNICEF).

<https://sanitationlearninghub.org/resource/guidance-for-monitoring-menstrual-health-and-hygiene/>

G3-5 Good nutrition

Indicator criteria	Notes
G3-5.1 Fully Immunized Children	Assessment: by observation of vaccination records
	Children: Under-5 years old
	Fully immunized: all under-5 children have received the relevant vaccinations
G3-5.2 Vitamin A supplements	Assessment: by observation of supplement records
	Vitamin A supplements: all under-5 children have received a Vitamin A supplement in the last 6 months.
G3-5.3 Exclusive breastfeeding	Assessment: by interview with the mother
	Exclusive breastfeeding: all infants are exclusively breastfed until 6 months old
G3-5.4 Nutritious diet	Assessment: by observation and household interview
	Nutritious diet: all under-2 children receive foods from 5 or more food groups

For G3 status, the children in all households should have **good nutrition**, including:

- Protection: Fully immunized children (all under-5 children)
- Protection: Vitamin A supplements (all under-5 children have received a supplement in the last 6 months)
- Nutrient intake: Exclusively breastfed (for first 6 months)
- Nutrient intake: Nutritious diet (eating from 5 or more food groups for first two years)

Improvements in sanitation and hygiene block faecal-oral (and other disease) transmission routes, with reductions in diarrhoeal disease, environmental enteropathy and soil-transmitted helminth infections (worms) thought to increase the chances that rural children will be able to absorb micro- and macro-nutrients, and grow to full and healthy weights and heights, with complete cognitive (brain) development.

However, good nutrition is more likely when, in addition to sanitation and hygiene improvements:

- other health protections are in place (including deworming and vaccinations);
- micro-nutrients are provided to those who lack them (e.g. vitamin A supplements); and
- infants and young children receive an adequate and well-balanced diet (including exclusive breastfeeding until they are six months old, and a varied diet including food from the five main food groups until they are at least two years old).

Most sanitation and hygiene frameworks (and programmes) neglect these other aspects of good nutrition, as they are considered beyond the scope of the WASH sector, even though the behaviours and services that influence these nutrition outcomes are strongly influenced by environmental sanitation and hygiene services (including exposed human excreta and animal wastes; food, water and personal hygiene; and waste management). The inclusion of a **G3 Good Nutrition outcome** in the RuSH Protocol is intended to encourage coordination and collaboration between public health officials and nutrition specialists, including joint monitoring, harmonised messaging and aligned activities.

G3-5.1 Fully immunized children: service levels

G3 All under 5 children are fully immunized (all relevant vaccinations)	
G2 Not fully immunized: some or all under 5 children not vaccinated	

Assessment: by observation of Mother and Child Health (MCH) booklets, and checks against vaccination records (in health posts).

Fully vaccinated: all under-5 children are fully vaccinated under the immunization programme (as per national and county government health requirements). Vaccination records should be checked for each under-5 child.

G3-5.2 Vitamin A supplements: service levels

G3 All under 5 children received Vitamin A supplements in the last 6 months	
G2 Some under 5 children have not received Vitamin A supplement (in last 6 months)	

Assessment: by observation of Mother and Child Health (MCH) booklets, and checks against Vitamin A supplementation records (in health posts).

Vitamin A supplements: all under-5 children should receive Vitamin A supplements every 6 months, with mothers receiving Vitamin A supplements within 6 weeks of delivery in order to pass the vitamin on to the newborn child through breast milk. Assessment should confirm that all under-5 children in the household have received a Vitamin A supplement in the last 6 months.

G3-5.3 Exclusive breastfeeding: service levels

G3 Exclusive breastfeeding: under 6 month children only fed on breast milk	
G2 Under 6-month children have received water or other food on a few occasions	
G1 Under 6-month children regularly receive water or other food	

Assessment: in households with under 6-month old children, by interview with the mother of the infants.

Potential interview questions include:

- Q. How are you feeding your baby? [*G2 Exclusive breastfeeding; G1 Breastfeeding and milk substitutes; G1 Milk substitutes; G0 Breastfeeding plus water or other food*]
- Q. Has your baby been given anything other than breast milk since it was born? [*G2 Only breastmilk; G1 Milk substitute; G0 water or sugar water; other fluids; food*]

Exclusive breastfeeding: all infants are exclusively breastfed until 6 months old. No other food or water should be given to the infant during the first 6-month period, because of the risk that this food or water may be contaminated and cause illness. Assessment is by interview with the mother to determine whether other foods and water have been given to the baby during its first 6 months.

The Baby-Friendly Community Initiative (BFCl) in Kenya aims to protect, promote and support optimal maternal, infant and young child feeding practices to improve child survival. The guidelines below are designed to operationalise the National Nutrition Action Plan (NNAP) and the County Nutrition Action Plans (CNAP), and provide strategic guidance for implementation of community-focused interventions as detailed in the Kenya National Health Strategy (to deliver the Kenya Essential Package for Health).

The BFCl includes measures to improve and encourage the monitoring of breastfeeding practices. This monitoring should be used to inform the outcome status assessed under the RuSH Protocol.

Ministry of Health – Nutrition and Dietetic Unit, Baby Friendly Community Initiative:

<https://www.nutritionhealth.or.ke/programmes/maternal-infant-child/baby-friendly-community-initiative/>

Kenya Baby-Friendly Community Initiative Implementation Guidelines:

<https://toolkits.knowledgesuccess.org/toolkits/breastfeeding-advocacy-toolkit/kenya-baby-friendly-community-initiative-implementation-guidelines>

G3-5.4 Nutritious diet: service levels

G3 All 6-month to 2 year old children eat from 5 or more food groups	
G2 Inadequate diet: some or all children (6m to 2y) eat from 3-4 food groups	
G1 Low nutrition diet: some or all children (6m to 2y) eat from 1-2 food groups	

Assessment: by observation (what food types are present in the home) and household interview.

Potential household interview questions (for main caregiver) include:

Q. Which of these foods have been fed to under-2 children in the last 7 days? [*Breast milk; dairy; grains/roots/tubers; pulses/nuts; meat/offal/fish; eggs; Vitamin A rich fruit & vegetables; other fruit and vegetables*]

Nutritious diet: all under-2 children received foods from 5 or more food groups during the previous day. Assessment is by household interview, supported by observation of the foods available in the house to confirm the reported diet of the under-2 children.

Food groups: for minimum dietary diversity (five or more foods from the following eight food groups)⁹⁴:

1. Breast milk
2. Grains, white roots and tubers, and plantains
3. Legumes and nuts
4. Dairy
5. Flesh foods (meat, fish, poultry and liver & organ meats)
6. Eggs
7. Vitamin-A rich fruits and vegetables (e.g. sweet potato, kale, carrot, red pepper, mango, pink grapefruit, watermelon)
8. Other fruits and vegetables

Kitchen gardens offer an opportunity for families to access healthy and nutritious diets throughout the year from growing fruits, vegetables, legumes, roots and tubers that contain adequate macro- and micro-nutrients. The current Government of Kenya Big Four agenda targets food and nutrition security, with the Ministry of Agriculture, Livestock, Fisheries and Cooperative (MALF) launching its **1 Million Kitchen Garden Campaign** in 2020, which aims to ensure availability of vegetables, fruits, legumes and herbs in over one million households across the country through the use of kitchen gardens.

Phase 1 of the GoK Kitchen Garden Campaign resulted in over 200,000 households building kitchen gardens in less than one year. MALF has also developed a training manual on kitchen garden technologies as well as the Kenya Recipe Book, which contains simple recipes made using locally available foods that can be used by communities to prepare healthy snacks and meals:

Kitchen garden training manual: <https://kilimo.go.ke/2021/SIMPLE-TECHNOLOGIES-FOR-PRODUCING-NUTRITIOUS-FOODS.pdf>

Kenya Recipe Book: [http://www.nutritionhealth.or.ke/Kenya Recipe Book 2018.pdf](http://www.nutritionhealth.or.ke/Kenya%20Recipe%20Book%202018.pdf)

94 Ministry of Health (2018) Kenya Nutrition Monitoring and Evaluation Framework 2018 to 2022 Nairobi: Republic of Kenya, Ministry of Health.

Interventions to improve nutrition and food security should build on existing programmes such as the National Safety Net Program, which provides a common operating framework for the government's four Cash Transfer programmes⁹⁵, including:

- Persons with severe disabilities Cash Transfer
- Older Persons Cash Transfer
- Cash Transfer for Orphans and Vulnerable Children; and
- Hunger Safety Net Cash Transfer

These programmes provide vital support to marginalised groups, including cash transfers designed to help these household meet basic expenses, including the consumption of regular nutritious food. Where these programmes exist, interventions should encourage recipients to use the transfers to ensure that their children are fed from at least five food groups.

In Zambia, the provision of simple growth charts to households⁹⁶ (which included nutrition messages on the key food groups to feed children, and aspirational images of healthy, tall and successful children) with no follow-up was found to be more effective than regular community-based interventions held by trained health or nutrition workers. Caregivers liked the growth chart focus on children who will be successful later in life. The study suggested that the poster design may have increased parents' aspirations and encouraged them to spend additional resources on their children's nutrition.

The lessons learned in Zambia included that advice on nutritious feeding of children (including the use of roller meal⁹⁷, beans, eggs, groundnuts and fruit) led some parents to change their children's diet, with reports of visible improvements (height and weight gains, and increased energy). The four main recommendations:

- Involve men in the nutrition training and growth monitoring (as they have critical role in food purchase).
- Community input is required to encourage caregivers to engage with the process.
- Emphasize the message that caregivers can have a positive impact on child growth, even with limited resources.
- Improve the design of the household growth charts (clarify colour coding, show local foods, use normal local children in pictures).

95 <https://www.socialprotection.or.ke/social-protection-components/social-assistance/national-safety-net-program>

96 Fink G et al (2018) Zambia growth charts projects: qualitative follow up report Innovations for Poverty Action.

97 Coarsely ground maize flour including the shells, which contain some protein.

G3-6 Safely managed institutional sanitation services: Community outcome

Indicator criteria	Notes
G3-6.C1 Safely managed and usable institutional toilets	Assessment: by observation
	Institutional toilets: in schools, health care facilities, public and private institutions, and in public places
	Safely managed: flyproof, clean and durable toilets with safe containment and safe faecal sludge management
	Usable: facilities are available, functional and provide privacy
G3-6.C2 Permanent institutional handwashing services	Assessment: by observation
	Institutional services: in schools, health care facilities, public and private institutions, and in public places
	Permanent handwashing: durable handwashing facility with piped water or water storage, in a fixed and appropriate location, with hands-free operation, adequate drainage, and presence of water and soap.

For G3 status, **all schools, health care facilities and institutions should have safely managed and usable toilets and permanent handwashing facilities.**

Institutional sanitation comprises sanitation and hygiene services in all public institutions (e.g. schools, health care facilities, public buildings and offices) and other public places (e.g. markets, transport hubs, public toilets). The intention is that all non-household buildings and spaces provide safely managed sanitation and hygiene services:

- **Safely managed toilets:** flyproof, clean, durable toilets with safe containment and safe faecal sludge management.
- **Permanent facilities for handwashing with soap:** including adequate water supply, soap and regular cleaning & repair.
- **Usable facilities:** facilities are available, functional and private (not locked, not broken or dirty, with lockable doors).

G3-6.C1 Safely managed and usable institutional toilets: service levels

G3 Toilet presence: functional toilet observed at all institutions	
G3 Flyproof toilets: all institutions have flyproof toilets	
G3 Clean toilets: all institutions have clean and smell-free toilets	
G3 Durable toilet slabs: all institutional toilets have durable slabs	
G3 Durable toilet pits: all institutional toilets have durable pits	
G3 Safe containment: all institutional toilets have safe containment	
G3 Faecal sludge: safely emptied and disposed from all institutional toilets	

Assessment: by observation (all institutional toilets: flyproof and clean; durable toilets with safe containment; safe faecal sludge management) and interviews.

Potential interview questions include:

- Q.** What happens to full pits or full containment systems?
- Q.** Where is faecal sludge disposed?
- Q.** Is faecal sludge buried in a safely managed disposal site?
- Q.** Is faecal sludge treated in an approved treatment site?

School toilets: all schools (primary, secondary and other) in the community shall provide safely managed and usable toilets for students, with separate toilets for girls and boys, and at least one toilet for every 25 girls enrolled, and one toilet for every 35 boys enrolled. All schools should provide at least one toilet unit for girls and one for boys that is designed for access and use by children with disabilities. Separate disability-friendly toilets should be provided for male and female teachers. All school toilets should be designed to consider the security, privacy and hygiene needs of girls, female teachers and female workers, and enable them to manage their hygiene needs during menstruation.

Mooijman A (2012) Water, Sanitation and Hygiene (WASH) in Schools New York: United Nations Children's Fund.

<https://sanitationlearninghub.org/resource/water-sanitation-and-hygiene-wash-in-schools/>

School WASH Plus SWASH+ website: <https://www.washinschools.info/page/1380>

Health care facility toilets: all health care facilities (including health posts and dispensaries) in the community shall provide safely managed and usable toilets for health staff, patients, other workers and other visitors. Separate toilets should be provided for males and females, and all toilets should be disability-friendly, with female toilets designed to consider the security, privacy and hygiene needs of women and girls, including during menstruation.

WASH in Health Care Facilities website and resource centre: <https://washinhcf.org>

WHO (2019) WASH in health care facilities: Global Baseline Report 2019

<https://apps.who.int/iris/bitstream/handle/10665/311620/9789241515504-eng.pdf>

Other institutional toilets: all public and private institutions (hotels, restaurants, guest houses, garages, centres of worship, factories, nursing homes, camps, office premises and other centres of learning) in the community shall provide an appropriate number of safely managed and usable toilets.

WaterAid technical guidelines for construction of institutional and public toilets:

<https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/annexes-to-technical-guidelines-for-construction-of-institutional-and-public-toilets.pdf>

Public toilets: all markets, fairs, recreational areas (playgrounds, beaches, halls), transport centres (train stations, bus stations), fishing camps, mining camps, burial places, warehouses, and fuel stations shall provide an appropriate number of safely managed and usable public toilets.

Water Services Trust Fund (WSTF) Toolkit for public sanitation projects in Kenya:

<https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/1273>

Safely managed toilets

All institutional toilets shall meet the following criteria:

- Flyproof and clean (see G1-1 outcome for detailed criteria)
- Durable slabs and pits (see G2-1 outcome for detailed criteria)
- Safe containment (see G2-1 outcome for detailed criteria)
- Safe faecal sludge management (see G3-1 outcome for detailed criteria).

Usable toilets: all institutional toilets should be available, functional and private. These toilets should have doors that can be locked from the inside, but should not be locked from the outside (unless the key is readily and immediately available from the institution). Institutional toilets that are locked, with the key unavailable to people who want to use the toilets, do not meet the G3 criteria.

Why not include institutional sanitation in the G1 or G2 outcomes?

Sanitation and hygiene services in schools, health care facilities and other public places often require public investment, both to develop, repair and replace facilities; and to operate and sustain the services (including cleaning services, routine maintenance and provision of soap and sanitary materials, and safe emptying and disposal of faecal sludge).

The development of the systems that support sustainable institutional sanitation services (finance, capacity, service providers, monitoring) requires time and resources, including close coordination with water supply service providers (to ensure adequate and sustained water supplies). Where good services already exist, institutional sanitation may be addressed earlier. Where finance and capacity are scarce, and existing facilities are basic, the development of safely managed institutional sanitation services may take longer to achieve, hence this outcome has been included among the G3 outcomes.

All institutional toilets used by, or within, the community should be monitored to check whether these toilets meet the G3-8 outcome criteria. Where any institutional toilet does not meet the criteria (listed below, and on the G3 community monitoring form), the community and local administration will have to work with the relevant authorities to meet the required service levels and solve any sustainability problems.

G3-6.C2 Permanent institutional handwashing services: service levels

G3 Permanent institutional handwashing services: with handsfree operation, adequate drainage and presence of water and soap	
G2 Inadequate institutional handwashing: some institutions with inadequate services	
G0 Some institutions with no handwashing facilities	

Assessment: observation of institutional handwashing facilities (all institutional handwashing facilities: type of facilities, handsfree operation, drainage, and presence of water and soap).

Permanent handwashing services: all schools, health care facilities, institutions and public places should provide permanent handwashing facilities beside the institutional toilets. The handwashing facilities should be durable with piped water or adequate water storage, in a fixed and appropriate location nearby the toilet, with hands-free operation and adequate drainage. All institutional handwashing facilities should have water and soap available.

Centre for Disease Control and Prevention: *Handwashing – clean hands save lives* website:

<https://www.cdc.gov/handwashing/index.html>

WSUP School Hygiene manual (from Bangladesh):

https://www.wsup.com/content/uploads/2018/02/School-Hygiene-Manual_English.pdf

WHO Hand hygiene technical reference manual:

http://apps.who.int/iris/bitstream/handle/10665/44196/9789241598606_eng.pdf?sequence=1

WaterAid (2020) Technical guide for handwashing facilities in public places and buildings:

<https://washmatters.wateraid.org/sites/g/files/jkxoof256/files/technical-guide-for-handwashing-facilities-in-public-places-and-buildings.pdf>

G3-E Endemic outcomes

Indicator criteria	Notes
G3-E1 Malaria-endemic counties: malaria-safe homes	Assessment: by observation
	Malaria-safe homes: use of insecticide-treated bed nets on all beds, or insect screens on all doors, windows and other openings into the house.
G3-E2 Soil-transmitted helminth endemic counties: dewormed homes	Assessment: by checking of deworming records
	Dewormed homes: all children and all at-risk adults have received deworming treatment in the last 12 months

In Malaria-endemic counties, G3 status also requires that all households have a **malaria-safe home** including:

- Protection: Insecticide-treated bed nets, and closed or screened openings

In Soil-Transmitted Helminth (STH) endemic counties, G3-status also requires that all households have **dewormed homes** in which all children and at-risk adults have received deworming treatment in the last 12 months.

G3-E1 Malaria-safe homes: service levels

G3 All household members sleep under insecticide-treated bed nets (or all openings protected)	
G2 Inadequate protection: some beds without nets, or some house openings unprotected	

Assessment: in malaria-endemic areas, by observation (of home and presence of bed nets; or presence of insect screen on doors, windows and other openings).

Three-quarters of the population of Kenya are at risk of malaria, with high prevalence among children in the lake endemic region (27%) and the coast endemic region (8%). Vector control through the treatment and removal of larval breeding sites for mosquitoes (see **G3-3.3 Good Vector Control**) is an important aspect of the 2019 *Kenya Malaria Strategy (2019-2023)*, but the more important aspect of malaria prevention is personal protection through the distribution of long-lasting insecticidal nets, and the screening or closure of openings in homes.

The environmental sanitation and hygiene improvements associated with achievement of the G1, G2 and G3 outcomes will contribute to vector control through: the removal of standing water; safe food, water and animal hygiene and management; solid waste management; and the elimination of exposed human and animal excreta. But these improvements alone will not have the required impact on malaria unless the personal protection aspects are also addressed.

Malaria risk in different zones⁹⁸:

- **Endemic counties:** Lake endemic zone (27% average prevalence in Kisumu, Siaya, Migori, Homa Bay, Kakamega, Busia, Bungoma and Vihiga) and Coast endemic zone (8% prevalence in Kilifi, Kwale, Lamu and Taita-Taveta)
- **Malaria epidemic areas:** western highlands face seasonal transmission, with considerable year to year variation and epidemics when climatic conditions support larval breeding (3% prevalence)

98 Ministry of Health (2019) *Kenya Malaria Strategy 2019-2023: Towards a malaria-free Kenya* Nairobi: Republic of Kenya, Ministry of Health, National Malaria Control Programme.

- **Seasonal malaria transmission:** arid and semi-arid areas on northern and south-eastern Kenya, with short periods of intense malaria transmission during the rainy season (less than 1% prevalence)
- **Low-risk malaria areas:** central highlands (including Nairobi), where temperatures are usually too low for the malaria parasite. However, climate change may increase the areas suitable for mosquito breeding, leading to malaria transmission in new areas (less than 1% prevalence)

Malaria-safe homes: in endemic counties, where insecticide-treated bed nets are distributed to rural communities, all members of all households should either sleep under insecticide-treated bed nets, or live in homes with insect screens on all doors, windows and other openings (e.g. gaps around roof eaves of house).

Most sanitation and hygiene frameworks (and programmes) neglect these other aspects of malaria prevention, as they are considered beyond the scope of the WASH sector. The inclusion of a G3 Malaria-safe Home outcome in the RuSH Protocol is intended to increase coordination and collaboration between public health officials and malarial health specialists, and encourage the full achievement (and benefits) of malaria prevention.

Achievement of the Malaria-safe outcome will be dependent on other environmental health and malaria services. The outcomes included in this outcome (G3-E1) are not usually monitored or promoted by sanitation and hygiene actors, even though the behaviours and services that influence these health outcomes are strongly influenced by environmental sanitation and hygiene services (including liquid waste management and vector control). The inclusion of this outcome is intended to encourage cooperation and collaboration between the public health and environmental health teams, including joint monitoring, harmonised messaging and aligned activities.

G3-E2 Dewormed homes: service levels

G3 All children and at-risk adults dewormed in last 12 months	
G2 Not dewormed: some children or at-risk not dewormed in last 12 months	

Assessment: in STH-endemic areas, by observation of Mother and Child Health (MCH) booklets, and checks against deworming records (in health posts).

Counties covered by National School-Based Deworming Programme:

- **Lake region STH-endemic counties** (Bungoma, Busia, Homa Bay, Kakamega, Kisii, Kisumu, Migori, Nyamira, Siaya, Vihiga)
- **Coastal STH-endemic counties** (Kilifi, Kwale, Lamu, Mombasa, Taita Taveta, Tana River)
- **Rift Valley counties** (Bomet, Kericho, Nandi, Narok, Trans Nzoia)
- **Central counties** (Kirinyaga)

In 2019, the Ministry of Health *National Breaking Transmission Strategy for Neglected Tropical Diseases (soil-transmitted helminthiasis, schistosomiasis, lymphatic filariasis and trachoma) 2019-2023*⁹⁹ signalled a major shift in the elimination and control approaches for soil-transmitted helminths (STHs). Previously, schools were the platform for administration of deworming treatment (known as mass drug administration, or MDA), but evaluations found that while treatment of school-age children reduced the level of infection, it was insufficient to prevent re-infection due to the reservoir of helminths in adults and other children. The new strategy promotes a community-based approach for broader deworming activities through households, schools, training institutions, market places, health facilities and other venues.

The new deworming strategy will target:

- All pre-school age and school-age children.
- At-risk adults: groups with occupations that result in contact with infested media (e.g. soil, water or excreta) including farmers, fishermen, irrigation workers, sanitation workers, women of child-bearing age, and
- Entire communities (all people) in highly endemic areas.

G3-S Sustainability Indicators

Indicator criteria	Notes
G3-S1 Functional G3 monitoring system	Assessment: focus group discussion
	Monitoring system: functional and up-to-date.
G3-S2 Monitoring of at-risk households	Assessment: review of monitoring data
	Monitoring of at-risk households: list of at-risk households available, with separate G3 data available
G3-S3 Re-verification of G1 & G2 status	Assessment: verification process
	G1 status: all G1 outcome indicators are re-verified
	G2 status: all G2 outcome indicators are re-verified

Assessment: focus group discussions with key sanitation stakeholders (local leaders, committee members, natural leaders).

For G3 status, the community should also have achieved the three sustainability indicators.

Monitoring system: the community (or local administration) has established a monitoring system for the G3 Clean and Healthy outcomes (toilet, handwashing, waste management, personal hygiene, nutrition), which is functional and provides up-to-date information.

99 Ministry of Health (2019) *National Breaking Transmission Strategy for Soil-transmitted Helminthiasis, Schistosomiasis, Lymphatic Filariasis and Trachoma* Nairobi: Republic of Kenya, Ministry of Health.

Monitoring of at-risk households: households using shared toilets, new households, and other households at higher risk of unhygienic, unsafe or unsustainable practices, have been identified and their sanitation and hygiene outcomes are monitored and reported separately (i.e. disaggregated from other household data).

Re-verification of G1 and G2 status: all households have sustained the G1 ODF outcomes and G2 Safe & Sustainable outcomes, as confirmed by G1 and G2 verification processes.

8 Equity and inclusion

All county and sub-county policies and approaches should recognise the greater challenges in developing and sustaining sanitation and hygiene services among people from marginalised groups, including those with the following “**universal markers of marginalisation**”¹⁰⁰:

- Gender
- Age
- Disability
- Health status

Furthermore, there are many other **context-specific marginalisation factors** to consider, including:

- Place of residence
- Economic status
- Ethnicity or tribe
- Religion
- Class or caste
- Sexual orientation and gender identity
- Education level
- Landlessness
- Refugee, migration or nomadic status
- Other local factors (e.g. social, cultural, or political minorities)

While most of these factors are common across many contexts, marginalised groups are often different, or found in different proportions, with different outcomes, in each area and context. As a result, it is important that equity and inclusion policies and practices recognise that the first step in any inclusive approach is to identify who is marginalised in the target area, and ensure that policies, guidelines, implementation activities, and monitoring and support processes recognise and account for the different barriers faced, and different outcomes found, in these critical marginalised groups.

Policies and practices should also recognise other impacts, including the possibility of negative impacts such as exclusion, exploitation, coercion and corruption. People from marginalised groups may not be able to:

- participate in, contribute to or influence decisions related to sanitation and hygiene services;

100 Robinson A (forthcoming) *Monitoring and evaluation for rural sanitation and hygiene: guidelines and framework* Brighton: Institute of Development Studies, Sanitation Learning Hub.

- changes in behaviour and services may not empower women and girls, or other disadvantaged and vulnerable people; and
- service users (particularly those with the lowest level of service) may not be satisfied with the services, or with their sanitation and hygiene outcomes.

During progress towards G1 & G2:

- **Identify at-risk groups:** households with risk of reversion to open defecation, failure to construct, or households using unsafe facilities
- **Develop inclusive policy, plans & targets:** for at-risk and marginalized groups
- **Allocate appropriate budget:** for targeted approaches, for monitoring and support
- **Build specialist capacity:** specific staff & training required to reach at-risk groups
- **Design targeted activities & support:** for at-risk groups and people in challenging contexts that cannot be reached by other approaches
- **Encourage internal support:** mobilise communities to support at-risk households
- **Disaggregated monitoring:** report separately on progress towards outcomes in at-risk and marginalized groups

USAID (2020) Gender equality and female empowerment in WASH Washington DC: USAID Water and Development Technical Series, Technical Brief 04.

<https://genderandenvironment.org/usaids-water-and-development-technical-series-gender-equality-and-female-empowerment-in-wash/>

Plan International Gender and WASH monitoring tool:

<https://sanitationlearninghub.org/resource/gender-and-wash-monitoring-tool/>

Wilbur J and Jones H (2014) Disability: Making CLTS fully inclusive Brighton: Institute of Development Studies, Frontiers of Sanitation No. 3

<https://sanitationlearninghub.org/resource/disability-making-clts-fully-inclusive/>

UNICEF (2015) Inclusive and accessible WASH in UNICEF: Good practices by country New York: United Nations Children's Fund (UNICEF)

<https://www.unicef.org/media/91276/file/UNICEF-Accessible-Inclusive-WASH-Matrix-2-2.pdf>

Sanitation finance and support for equity and inclusion: some people from marginalized groups may struggle to achieve G2 or G2-ASAL outcomes without additional finance and support. For instance, people with disability may require more expensive facilities and services than others; people living in challenging areas (e.g. flood-prone) may require more expensive technical solutions (e.g. raised or sealed containment systems); and people living in remote ASAL areas may lack the building materials or tools to construct either resilient or durable toilets.

Where local administrations assess that households are unlikely to achieve the required outcomes without external support, and communities do not have the resources or capacity to provide this support, they should consider using local administration resources to support these households to achieve the same outcomes as other rural communities.

Higher sustainability risks: people from marginalized groups often face higher sustainability risks than other people. People who lack labour, or are chronically poor, tend to build low-cost and non-durable facilities; other marginalized groups are sometimes coerced into building facilities that they do not want or use; and others are supported to build facilities that later they cannot repair or maintain. All of these factors increase the risk of sustainability losses in these groups (including collapsed facilities, failed services and reversion to unsafe practices), and require more intensive monitoring and support of households that contain people from marginalized groups.

9 Sanitation finance and sustainability support

Key principles of sanitation finance and sustainability support:

1. **No external toilet subsidies before G1 ODF** (except where there is no alternative).
2. **Community support should be used first** (to assist marginalized and at-risk households).
3. **Targeted local administration support (e.g. from ward) should be used to support households in challenging contexts** (where costs are more expensive than in other contexts; and where local administrations can find cost-effective solutions).
4. **Institutional triggering should be used to increase investment and support.**
5. **Rewards should be provided to G1 ODF communities** (finance and support towards G2 status, to generate incentives for other communities to achieve G1)
6. **Higher rewards should be provided to G2 Safe & Sustainable communities** (finance and support towards G3 status, to generate incentives for other communities to achieve G2).
7. **CDF grants can be used to finance school toilets** (FINISH-INK experience)
8. **National Safely Net Protection system can be used to identify people from poor and marginalized groups** (use in targeting interventions and support)

Sanitation finance: Example 1. Post-ODF finance in the Philippines

Post-ODF financial support from local governments in the Philippines led to a 600% increase in ODF progress. Conditional grants (and some targeted toilet subsidies) were provided to rural communities that achieved ODF status, to support progress towards the next collective outcomes.

Other communities and local governments were more interested in higher levels of service (durable toilets with safe containment) than in ODF status, but began to realize that, if they demonstrated good sanitation behavior by achieving ODF status, they would be rewarded with further support towards the higher level outcomes they were interested in. As a result, ODF progress accelerated rapidly.

Source: Robinson A and Gnilo M (2016) *Promoting choice: smart finance for rural sanitation development* Practical Action.

Sanitation Finance & Support

- Design finance to support (not undermine) CLTS and market-based sanitation through increased demand for services
- Toilet subsidies: the best options are cash or vouchers that allow household choice (to avoid favouring one particular technology, supplier or service provider)
- Service providers: support development of appropriate services (encourage and train more providers and expand options)
- Systems: develop markets and address barriers (tax, availability, outreach, transport)

Lessons

1. **Some households and areas need support** to develop sustainable sanitation services (otherwise revert to OD)
2. **Toilet subsidies provide only short-term assistance** (what happens when pits fill, toilets need repair etc)
3. **County or local administration finance is best** (used efficiently)
4. **Also need longer-term targeted support systems** (policies, support, monitoring)
5. **Sanitation finance can accelerate progress!**

10 Management and capacity development

CLTS projects are easier to manage because of a number of factors:

- Fixed budget & fixed number of communities
- Same approach used in every community
- Select communities so that conditions are supportive
- Same training provided to all facilitators

Area-wide implementation strategies are more complex and difficult:

- Multiple different approaches required (within strategy)
- Different protocols followed in different contexts
- Phased approach includes additional outcomes (and different routes to final outcomes)
- Adaptive management required (feedback on what works, and what does not)
- Capacity development for targeted approaches and processes
- Refresher training to address transfers and new processes
- Budget and capacity required for programme management & capacity development

Some capacity development is provided by national stakeholders, such as the Ministry of Health WASH Hub, to ensure that capacity development is consistent across the country. Other capacity development should come from county level or below, including training for newly recruited or newly transferred staff, refresher training (annually or every two years, to update skills and ensure that everyone's training is relevant and up to date).

Capacity development has costs and requires training capacity. Budget and capacity allocations for the development of appropriate rural sanitation and hygiene capacity need to be considered in county development plans and sector development plans. Where new implementation approaches are required (e.g. to achieve some of the G2 and G3 outcomes), new training courses may be required, and new master trainers with appropriate skills and experience.

Capacity for programme management

Programme management capacity is critical to programme effectiveness. As programmes become more complex (i.e. multi-year interventions involving multiple components and approaches, systems strengthening, monitoring and learning), additional management capacity may be required to manage all aspects of large-scale programmes.

In some counties and subcounties, public health officers (PHOs) have little time available for additional activities. In these cases, additional management capacity can be brought in through the use of programme management units staffed by government officials, key stakeholders, consultants and any other actors with appropriate skills and experience. A strong management team can be central to the success of large-scale programmes and, if required, should be established early in the programme design process.

11 Cost tracking

Area-wide approaches tend to be more expensive:

- Strategies need to include approaches for all people and all communities (including those in challenging contexts)
- Unit costs may be higher for specialist approaches, and in remote areas
- Cost tracking helps to identify the most cost-effective approaches

The AMREF K-SHIP and FINISH-INK programmes both tracked the relative implementation costs and effectiveness of the different approaches used, and worked to select and refine the most cost-effective implementation approaches. Using cost tracking, FINISH-INK was able to reduce unit costs (e.g. cost per product sold) by around 50% over a 5-year period. Similarly, AMREF reports that the cost per ODF community was reduced by 80% over the 5-year programme life. These programmes both invested in continuous learning and feedback (with a focus on cost-effective approaches) which strengthened overall effectiveness and greatly increased value-for-money.

Costs to be tracked:

- Planning & design & capacity development costs
- Direct implementation costs
- Follow up and monitoring costs
- Evaluation and learning costs
- Cost tracking costs (and adaptive management costs)

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