



**EU-UNICEF FUNDED
KLINPELA KOMUNITI PROJEK
2017 - 2022
PAPUA NEW GUINEA
Evaluation Report (August 2023)**

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ACRONYMS

AROB	Autonomous Region of Bougainville
ATP	Appropriate Technologies Project
BCC	Behaviour Change Communication
CLTS	Community-Led Total Sanitation
DDA	District Development Authority
DEO	District Education Officer
DHM	District Health Manager
DNPM	Department of National Planning and Monitoring
EHO	Environment Health Officer
EU	European Union
FF	Feedback Foundation
HCFs	Health Care Facilities
KAP	Knowledge, Attitudes and Practices
KEQ	Key Evaluation Question
KII	Key-Informant Interview
KKP	Klinpela Komuniti Project
LLG	Local-Level Government
MHM	Menstrual Hygiene Management
MIS	Management Information System
MoU	Memorandum of Understanding
NDOE	National Department of Education
NDOH	National Department of Health
O&M	Operation and Maintenance
ODF	Open Defecation Free
PMU	Programme Management Unit
PNG	Papua New Guinea
SDA	Service Delivery Arrangement
SDG	Sustainable Development Goals
SLIP	School Learning Improvement Plan
TTU	Touching The Untouchables
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WiHCF	WASH in Health Care Facilities
WinS	WASH in Schools
WVI	World Vision International

EXECUTIVE SUMMARY

BACKGROUND

Papua New Guinea (PNG) is a diverse nation with a population of 10.1 million and 10,000 ethnic clans, residing across 600 islands and speaking more than 800 languages. The majority of its population lives in rural areas with limited access to basic services. PNG is considered a lower-middle-income country with a medium human development ranking and high gender inequality. With nearly 39% of the population living below the poverty line, the country strives to achieve the goals in the PNG Vision 2050 and the Development Strategic Plan (2010-2030).

PNG faces significant challenges in meeting the Sustainable Development Goal (SDG) targets related to water, sanitation and hygiene (WASH), with rural areas having low access to basic sanitation and hygiene services. Estimates by the WHO-UNICEF Joint Monitoring Program demonstrate disparities in service levels between urban and rural areas, between districts, and between types of WASH services, with the need for improvements in underserved areas to enhance public health, human potential, and socio-economic development.

The PNG Constitution recognizes the primacy of Provincial and Local Level Governments (LLG), with law making responsibilities for WASH, education and health assigned to the LLGs and provinces under the Organic Law for Provincial and Local Level Governments. Although the National WASH Policy (2015-2030) does not accord priority to districts, they have received greater focus since the approval of the District Development Authority (DDA) Act of 2014 that established DDAs as a vehicle for the creation and transfer of assets.

OVERVIEW OF THE INTERVENTION

The EU-UNICEF Klinpela Komuniti Project (KKP) began in late 2017 with the first phase focusing on district selection and the preparation of costed five-year WASH plans. The project, funded by the European Union (EU) and UNICEF, aims to enhance the quality of life for women, men, and children in PNG by improving access to safe water, sanitation, and hygiene practices in alignment with the National WASH Policy. The project has two primary objectives: to create a healthier and safer environment, reducing waterborne and hygiene-related illnesses, and to enhance governance and service delivery in the WASH sector. It targets schools, health care facilities (HCF), and communities with a focus on community-led total sanitation (CLTS) in four districts: Hagen Central, Goroka, Nawaeb, and Bougainville Central. The project beneficiaries include school children in 200 schools, patients, mothers and newborns in 36 HCFs, people in 800 communities around the beneficiary schools, and the general population with a goal to increase their awareness of sanitation and hygiene. The project's three main output results are (1) improving sanitation and handwashing facilities in schools and HCFs, (2) increasing public awareness of hygiene and sanitation, and (3) strengthening the institutional framework for WASH service delivery.

EVALUATION PURPOSE, OBJECTIVES, & INTENDED AUDIENCE

The purpose of this evaluation is to provide sound and credible evidence on the KKP with the aims to trigger UNICEF PNG Country Office and National Partners' learning, enhance accountability with respect to UNICEF's work on improving WASH for children and their families and to inform decision-making on national policies and budgets for WASH and for programme design for scale-up. The key intended users of the evaluation are the WASH Section within UNICEF PNG and the EU donor. The secondary audience of the evaluation are relevant government institutions and authorities in charge of WASH, rights holders, future contracted project implementers and experts, and other UNICEF Offices. The evaluation covers the period from 2017 until 2022, in the four projects districts, and thematically covering the three KKP results areas outlined above.

The evaluation's objectives are:

1. To assess the major factors enabling or constraining the achievement of project results;
2. To identify key lessons learned, including success and failures, good practices and innovations from implementation of the project;
3. To validate and reconstruct the project's theory of change, including its underlying assumptions and risks;

4. To generate a set of clear, forward-looking, and actionable recommendations logically linked to the findings and conclusions.

EVALUATION METHODOLOGY

The KKP evaluation had formative and summative elements, with a focus on the latter to gather lessons for the next programme and assess the programme's interventions' value and contributions to intended and unintended results. While non-experimental, efforts were made to include a comparative and external perspective. Due to limited monitoring data, qualitative methods such as key informant interviews, desk reviews, and transect walks were used. The evaluation encompassed cross-cutting themes of gender equality and disability, aiming to reach vulnerable and marginalized groups. The process was participatory, providing ongoing feedback to implementers and primary users, with various interactions, including field visits, feedback workshops, and data validation meetings.

The key criteria and questions that frame the evaluation are:

Relevance

1. How do the stakeholders view the appropriateness of the project - and its planned results - to the local context, given the improving conditions in the country, and the remaining WASH challenges?
2. To what extent did the project address the WASH needs of children, particularly those in the lowest wealth quintile, the remote populations and ones with the worst sanitation and hygiene conditions? To what extent did the implementation strategies of the project address gender, disability, and climate change issues?

Effectiveness

3. To what extent did the project help households climb up the sanitation ladder and improve children's access to improved WASH, particularly for girls, and children living with disabilities and special needs?
4. How did collaborations with counterparts and implementing partners contribute to achieving the project outputs and outcomes?

Efficiency

5. How well was the project implemented in terms of fidelity to the model, design, and plans, and management of costs and timelines? How did external factors – technical, financial, institutional, environmental, social - modify the level of achievement of outputs and outcomes?
6. What were the strengths and gaps in capacity of the implementation team composition (UNICEF and partners together)? How did they contribute to the timeliness and cost of the project?

Sustainability

7. Are the toilets provided in schools / HCFs cleaned and looked after?
8. Considering the emergency context and need for response under scenarios such as COVID-19, what are key programmatic adaptations needed to ensure handwashing practices, Open Defecation Free (ODF) status and the associated social norm sustain following certification?

Coherence

9. To what extent was the KKP delivery model appropriate to the PNG context?
10. To what extent did the project align with implementation of the National WASH Policy 2015-2030? And how can it better target its contribution to the WASH SDGs?

Data collection included desk reviews of 49 items including reports, documents, databases, and secondary data. The site visits occurred between the 3rd and 26th of October 2022, and included 21 schools, 11 HCFs and 9 communities across the four districts. In the absence of a well-maintained monitoring and evaluation system, the evaluation relied on a purposive sample of sites proposed by the implementing partner. Interviews of 15 key informants supplemented the data. Data was thematically reviewed, by the two evaluation team members for reliability, and the emerging themes were connected to the key evaluation questions. Qualitative data was triangulated from multiple sources to substantiate findings, and analysed by relevant social stratifiers where possible, and corroborated with quantitative data from secondary sources that was analysed using descriptive

statistics. Consultations and workshops held with partners and UNICEF helped validate and refine the findings and draft recommendations.

KEY CONCLUSIONS ON FINDINGS

Relevance

The significance of KKP is considered to be high, in the light of the limited access to basic sanitation services (only 15% in rural areas), limited access to basic hygiene services (25% in rural areas), inadequate WASH facilities in schools and HCFs, and the high prevalence of chronic undernutrition in children (45% of rural children under five are stunted).

In terms of needs addressed, the KKP aimed to target the neediest districts and children affected by the lowest levels of sanitation and hygiene. However, the equal allocation of facilities and targets to each of the four districts did not account for the differing needs between the target districts. Baseline data indicating that many schools and HCFs already had limited access to sanitation and hygiene services, did not necessarily affect their selection for improving sanitation and handwashing facilities. So while addressing significant WASH challenges in PNG, the KKP may not have targeted the neediest areas and beneficiaries.

Effectiveness

All the target project outputs have been successfully delivered by KKP, despite the numerous challenges posed by the ambitious targets, capacity constraints, and the restrictions imposed by COVID-19. These outputs include:

- the delivery of sanitation and hygiene facilities in 200 schools and 36 HCFs.
- the promotion of sanitation and hygiene with 796 communities declared ODF.
- the preparation of WASH Plans, service delivery assessment and application of the bottleneck analysis tool.
- the development of national guidelines for WASH in schools, national protocols for the declaration of ODF communities and deployment of the national monitoring information system.

Despite the success in the achievement of these outputs, the KKP is unlikely to deliver the intended sanitation and hygiene outcomes, the intended health and education impact (i.e. human capital development), or the strengthening of the institutions necessary to ensure sustained sanitation and hygiene services for all. This conclusion is primarily derived from findings that:

- most of the sanitation and hygiene facilities in the 200 schools and 36 HCFs are not being routinely used. Among those being used, over half will likely experience the premature backing-up of the toilets, and none of the remote rural toilet blocks can be managed safely when full, in the absence of sludge trucks.
- the modeling of the CLTS approach without improvement to the wider enabling environment challenges the sustaining of newly acquired hygiene and sanitation behaviours.
- the District WASH baseline data and WASH plans have not been used, the District WASH Committees appear to be inactive, and the members do not appear to have influence over sanitation and hygiene investments. In addition, the DDAs do not hold law-making responsibility for WASH, education, or health service provision although they can construct and transfer WASH assets.
- while the responsible national institutions were engaged in the setting of standards for sanitation and hygiene services in schools, HCFs and communities, they were not involved in the monitoring, evaluation and learning from KKP. There is little evidence of the LLGs and provinces with law making powers for sanitation and hygiene, education and health service delivery being engaged by the KKP.

The net result of choices to pursue targets over the managing of processes, to prioritise target successes above that of monitoring progress or understanding challenges, to roll-out a standardized approach without sufficient piloting and testing, may have compromised the intended outcomes of KKP and left behind flawed designs and processes that could negatively impact future progress in the PNG WASH sector.

While sanitation and hygiene behaviour change are a priority sub-sector for rural PNG, it is well recognized to be extremely challenging to affect change, particularly in schools and HCFs. In the context of the capacity challenges posed by the remote rural settings in PNG, 'bottom-up' approaches that prioritize operation and maintenance over asset creation likely provide better incentives for outcomes than 'top-down' infrastructure-led approaches. In this sense, the 3 Star approach to WASH in schools and HCFs, which links facility provision with a commitment to behaviour change, is a better alternative in remote rural settings.

Efficiency

KKP successfully delivered school and HCF WASH facilities on time and on budget, despite challenging conditions in remote areas and restrictions due to COVID-19. Evaluation findings point to concerns with the fidelity to the model design and plans. Issues arose primarily due to the lack of attention given to the substructure, particularly the effluent absorption capacity in more structured soils and the permeability of pit lining materials in less structured soils. Failure to develop designs that can be emptied when full and the premature filling of pits contributed to the abandonment of toilets. While the centralized deployment of a standard design was efficient, the failure to sufficiently consider site-specific factors, such as soil type, rainfall, and cultural preferences, resulted in facilities that are not being used or cannot be maintained.

The KKP model surpassed the 60% target of 800 communities for ODF declaration, achieving a remarkable 99.5% verified and certified ODF by the DDAs within an extremely tight time frame. While the evidence of open defecation from the site visits may have been due to slippage, the absence of a robust monitoring and learning system undermines the credibility of the open defecation certification data. The absence of a third-party monitoring firm, lack of consolidated input, output, and outcome monitoring against baseline, and a lack of endline assessments makes assessment of efficiency challenging.

Sustainability

The technical sustainability of many toilet facilities is undermined because the pits cannot be emptied when full. The safeguarding of water for sanitation and hygiene was a common cause of failure in usage and routine cleaning of WASH facilities in all districts.

The capacity of the various departments responsible for planning, monitoring and evaluation in the WASH sector requires strengthening for institutional sustainability. There was inadequate engagement with the Departments of Education and Health in rigorous monitoring, evaluation, and learning processes of sanitation and hygiene service delivery and the Department of Provincial and Local-Level Government Affairs in deploying legal and social instruments to ensure universal access to sanitation and hygiene services.

Coherence

The evaluation finds several challenges in the alignment of KKP activities with policy implementation. Namely, the lack of clear legislation supporting the role of District WASH Committees, 5-year District WASH plans, or instruments for their enforcement, which presents a risk to the district-level delivery of sanitation and hygiene facilities. Also, the sequence of project activities lacked logical progression, with many steps not building on the preceding ones. For instance, baseline assessments and planning were often conducted after the design phase, and standardized targets were set before District WASH Plans were prepared.

The WASH in Schools Infrastructure Design Manual produced by UNICEF did not incorporate lessons learned from the project implementation. The standard designs for water-based and dry pit toilets did not address critical issues posed in construction, the premature filling of pits, and their maintenance, which are vital for understanding the principles that should guide sanitary system design. The standard designs for water-based toilets repeated mistakes like the discharging blackwater to septic tanks that cannot be emptied in rural areas, the lack of design details of the septic tanks or the soakaways, and failure to address water supply system demand management issues. Similarly, the standard designs for dry pit toilets did not address issues like pit collapsing risks, immovable concrete slabs and superstructures.

LEARNINGS

The key lesson from the KKP is the need to embed a learning culture in the project. This requires engaging organizations committed to systems that encourage listening and learning, and people who value the experiences of local practitioners and policymakers. The KKP experience shows that each detail of sanitation and hygiene facilities should be systematically trialed, refined, gradually improved and lessons documented before developing standardized designs. It also shows that the absence of effective demand management for water supply systems plays a crucial role in the failure of sanitation and hygiene systems.

Another lesson from the KKP is that in politically contested environments, it is vital to have a robust understanding of the legislative assignments for sanitation and hygiene to avoid falling victim to political patronage incentives. Furthermore, the CLTS approach's emphasis on bottom-up strategies needs careful tailoring to individual settings, particularly in areas with low open defecation rates and a culture of shame that hinders community participation.

RECOMMENDATIONS

Project Design

The evaluation recommends the creation of institutional incentives to prioritize beneficiary demand creation and capacity development, above the public provision of infrastructure and information products within these low-capacity environments.

Sanitation and Hygiene in Schools and HCFs

The evaluation makes specific recommendations for emptying of sanitation systems in rural settings, alongside review and revision of National Construction Guidelines for Schools and HCFs. It also recommends complementing additional water storage for increased water security with strategies to reduce the risks of water wastage.

Sanitation and Hygiene in Communities

The evaluation recommends developing an appropriate approach and incentives for the PNG context, building on the experiences of applying CLTS in different contexts as part of the KKP in PNG.

1 BACKGROUND

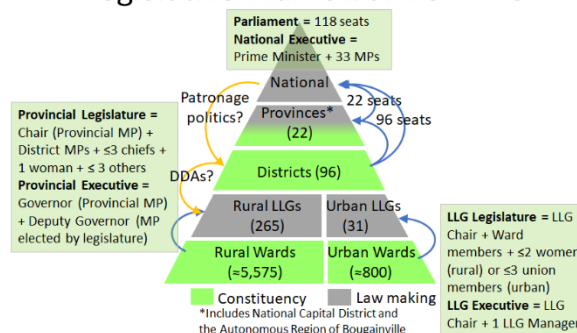
Papua New Guinea is one of the most diverse countries in the world, home to 10.1 million people (UNDESA, 2022) and more than 800 different languages spoken among a population divided into more than 10,000 ethnic clans across 600 islands (The World Bank, 2023). PNG's population is young and growing, with 56% under the age of 25, 11% under 5 years old (NSO, 2022), and a fertility rate of 4.2% (DNPM, 2020). Between 70-80% of the population live in rural areas, many considered remote with poor access to roads and basic services.

PNG is classified as a lower middle-income country. The human development index (HDI) puts the country in the medium human development category, ranking 155th out of 189 countries on the index. The 2019 Gender Inequality Index (GII) ranks PNG 161 out of 162 countries (UNDP, 2020). About 39 percent of the population live below the poverty line of less than US\$1.90 per day (DNPM, 2020). The PNG Vision 2050 aspires for PNG to be a to be a "Smart, Wise, Fair, Healthy and Happy Society by 2050" and be in the top 50 countries in the HDI ranking. Recognizing the aspirations of the 2050 vision, the Development Strategic Plan (2010-2030) sets objectives around strategic planning, systems and institutions, human development, wealth creation, security and international relations, and environment and climate change (DNPM, 2010).

The Constitution of the Independent State of Papua New Guinea recognizes the primacy of Provincial and Local Level Governments (LLG)¹, the necessity of an elected legislature, with an executive and an office of the head of the executive² as defined in an Organic Law for Provincial and Local Level Governments³. The Organic Law on Provincial Governments and LLGs assigns law making powers:

- to the LLGs for the provision of water supply, sanitation and hygiene, housing and the improvement of villages, towns, cities & communities⁴.
- to the Provincial Legislatures for primary, secondary, technical and vocational education (but not curriculum) and for rural health⁵.

Legislative Framework of PNG



Although the district does not exercise any law-making powers, decentralization is a critical development agenda issue for PNG that continues to evolve. Districts have been established as a constituency for political representation on the Provincial Legislature and the National Assembly. In 2014, the District Development Authority (DDA) Act⁶ was passed, establishing DDAs as an administrative vehicle of the government, and giving

¹ 187A: There shall be a system of Provincial Governments and Local-level Governments for Papua New Guinea

² 187C: (2) For each Provincial Government and Local-level Government, there shall be established - (a) a mainly elective (elected directly or indirectly), legislature with such powers as are conferred by law; and (b) an executive; and (c) an office of head of the executive

³ 4. An Organic Law shall make provision for and in respect of- (a) grants by the National Government to Provincial Governments and Local-level Governments; and (b) subject to Subsection (4A), the imposition, collection and distribution of taxation by Provincial Governments and Local-level Governments, and may make other financial provisions for Provincial Governments and Local-level Governments, to an extent reasonably adequate for the performance of their functions.

⁴ 44. Law making powers of the Local-level Governments. (1) Subject to the *Constitution*, this Organic Law, and a Provincial Government law, a Local-level Government may make laws on the following subject matters—(c) self-help and tokples schools, but not curriculum; (e) provision of water supply; (g) improvement of villages, towns, cities & communities; (j) town, city, village and community planning; (r) housing; (t) human settlements; (x) hygiene and sanitation; (ac) village communities; (ad) local aid posts and clinics;

⁵ 42. Law-making powers of the Provincial Legislatures. (1) Subject to the Constitution and this Organic Law, a provincial legislature may make laws on the following matters— (b) primary, secondary, technical and vocational education, but not curriculum; (j) community, urban and rural development; (n) rural health; (q) town and urban planning;

⁶ 33A. District Development Authorities. (1) A DDA is established in each District. (2) An Act of the Parliament shall make provision for the functions and powers of, and other matters relating to, DDAs

districts increased authority to manage themselves (but not law-making powers), including to improve sanitation service delivery and to exercise local accountability and transparency (ADB, 2020). The Act confers powers on the DDA - headed by the District Member of Parliament - to build and transfers assets in any sector. However, only a few districts have functioned as hoped and have delivered expectations according to the Act. Specifically for Water, Sanitation and Hygiene (WASH), the National WASH Policy (2015-2030) does not accord any primacy to the provision of WASH infrastructure via the DDAs or the District WASH Committees. Nevertheless, the Service Improvement Programmes continue to channel more resources to districts to streamline service delivery in line with the National Service Delivery Framework (DNPM, 2020).

The Sustainable Development Goal (SDG) targets on drinking water, sanitation and hygiene are:

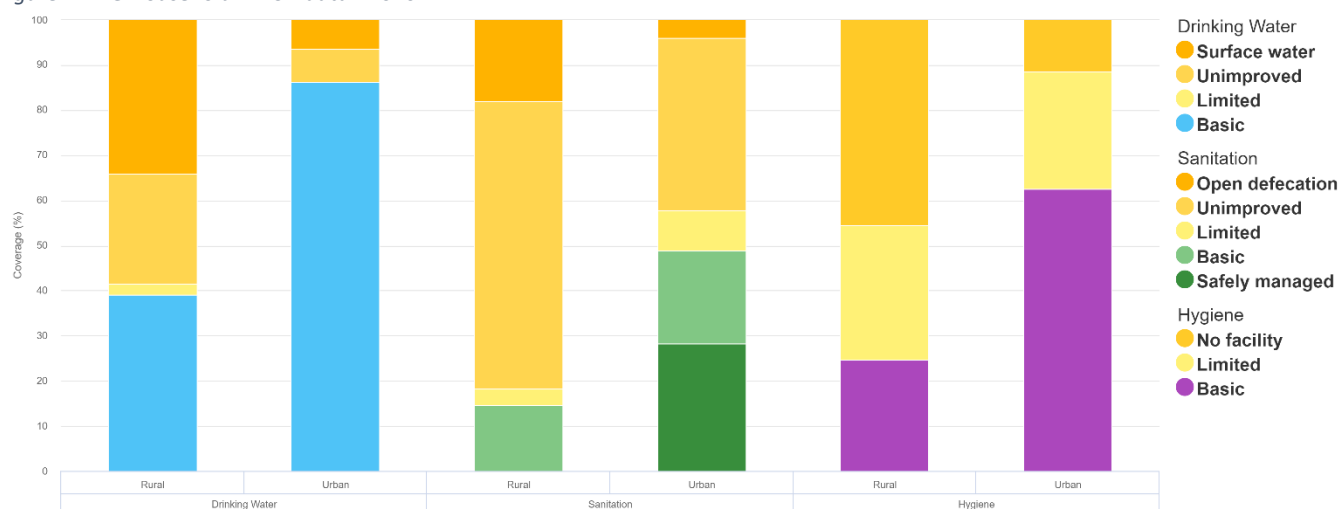
- SDG 6.1: By 2030, to achieve universal and equitable access to safe and affordable drinking water for all
- SDG 6.2: By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

These targets are measured with three indicators:

- SDG 6.1.1: Proportion of the population using safely managed drinking water services
- SDG 6.2.1a: Proportion of population using safely managed sanitation services
- SDG 6.2.1b: Proportion of population with handwashing facilities with soap and water at home

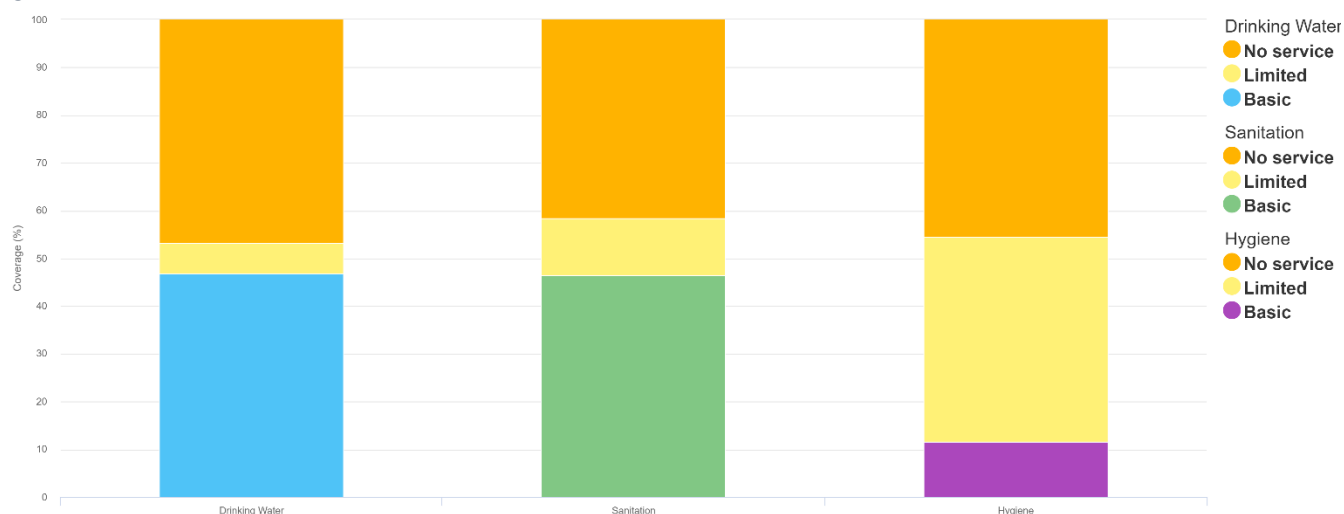
Rural access to basic sanitation and hygiene services in PNG is the lowest in the Pacific Region and amongst the lowest in the World, with 45% without access to handwashing facilities, and 85% without access to basic sanitation (WHO/UNICEF, 2020). Figure 1 shows the household drinking water, sanitation and hygiene service levels in PNG in 2020, while Figure 2 and Figure 3 show service levels in schools and health care facilities (HCF). Coverage of facility types in the four provinces of relevance to this evaluation are provided in Figure 4. Improvements in sanitation and hygiene services, particularly in the rural areas where most of the PNG population reside, is not only crucial to the health but also the physical and intellectual potential of the population, and ultimately the socio-economic development of the nation (Hutton, Haller, Water, & WHO, 2004; Water and Sanitation Program, 2008).

Figure 1 PNG Household WASH data - 2020



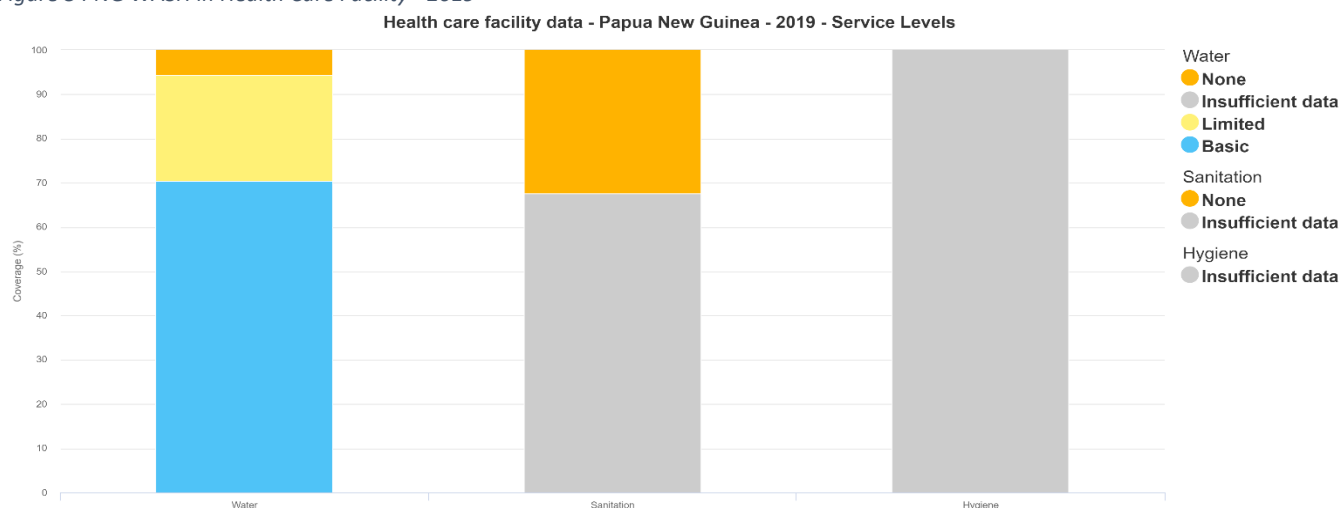
Source: World Health Organization–United Nations Children’s Fund. 2020. Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. <https://washdata.org/>

Figure 2 PNG School WASH data - 2021



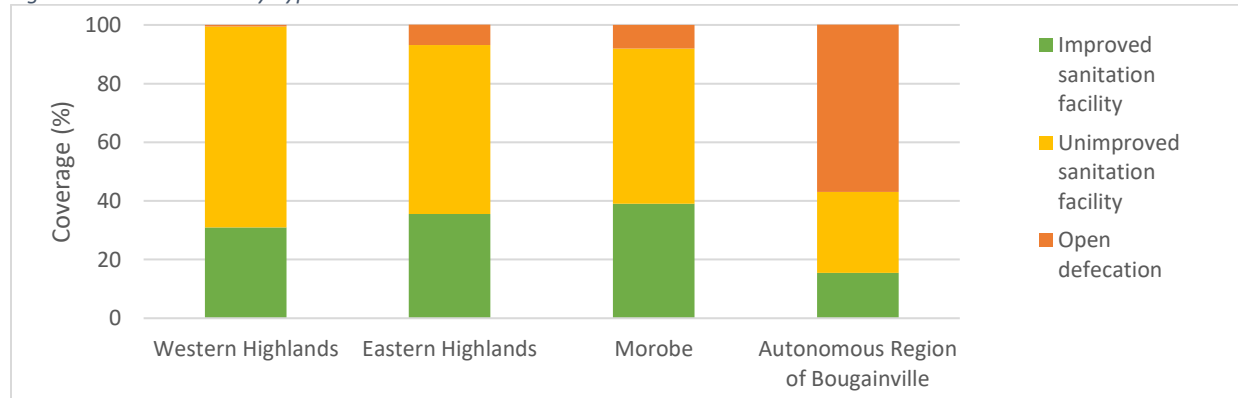
Source: WHO–UNICEF. 2021. Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. <https://washdata.org/>

Figure 3 PNG WASH in Health Care Facility - 2019



Source: WHO–UNICEF. 2021. Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. <https://washdata.org/>

Figure 4 Sanitation Facility Type in Four Districts



Source: National Statistical Office (NSO) [Papua New Guinea] and ICF. 2019. Papua New Guinea Demographic and Health Survey 2016-18. Port Moresby, Papua New Guinea, and Rockville, Maryland, USA: NSO and ICF.

1.1 The Klinpela Komuniti Projek

The EU–UNICEF Klinpela Komuniti Projek (KKP) scoping in PNG began in late 2017. The first phase of the project involved district selection and preparation of costed five-year WASH plans for project districts. The second implementation phase, started in April 2019 in three districts (Goroka in Eastern Highlands; Nawaeb in Morobe; and Bougainville Central in the Autonomous Region of Bougainville) and in September 2019 in Hagen Central in Western Highlands. The project was funded with a European Union (EU) contribution of EUR 22.3 million and a UNICEF contribution of EUR 1 million with the goal to *“Contribute to improve the quality of life for women, men and children through increased access to and utilization of a safe, adequate and sustainable water supply, sanitation and improved hygiene practices in line with the National WASH Policy”* (UNICEF, 2018).

The specific outcome objectives of the project were to:

1. Enable a healthier and safer environment, particularly for women and children, thereby reducing the impact of waterborne and hygiene-related illnesses.
2. Improve governance and the quality-of-service delivery in the WASH sector.

The KKP targeted children in select schools, health centre and rural hospital personnel and families in communities surrounding selected schools with the introduction of the community-led total sanitation (CLTS) approach⁷ in the four target PNG Districts: Hagen Central in Western Highlands; Goroka in Eastern Highlands; Nawaeb in Morobe; and Bougainville Central in the Autonomous Region of Bougainville.

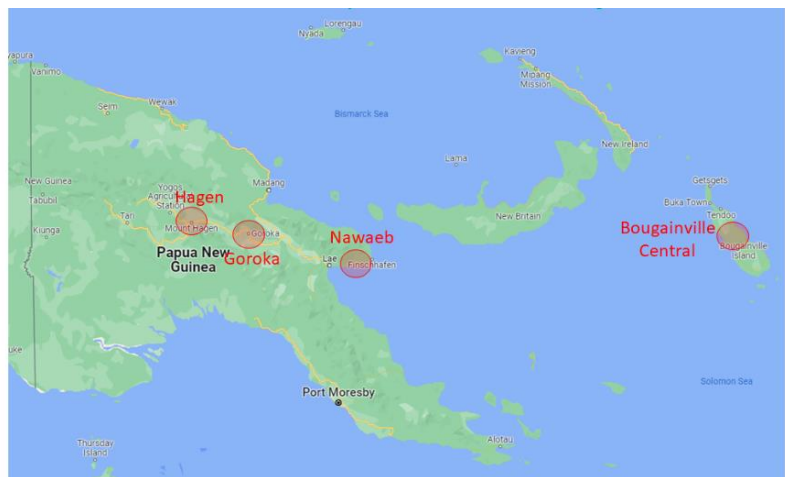
The intended beneficiaries of the project are:

- About 40,000 school children in up to 200 schools in the 4 districts.
- About 36,000 patients and about 3,600 pairs of mothers and new-borns per year in up to 36 health centres.
- Approximately 96,000 people in 800 communities (with 480 declared open defecation free) surrounding the 200 targeted schools.
- General population to have increased knowledge on sanitation and hygiene.
- Key decision makers who are influenced to invest in sanitation.

The three expected output results of the KKP, along with the main activities that contribute to those results are:

1. Improved sanitation and handwashing facilities in schools and health centres, with particular focus on the neediest districts:
 - a. Pre-select, according to well-defined criteria, 200 schools, and construct gender-sensitive and disability-friendly sustainable WASH facilities.
 - b. Pre-select, according to well-defined criteria, 36 health centres in the four districts, and rehabilitate or construct sex-segregated and disability-friendly sustainable WASH facilities in each centre.
2. Increased awareness among the population on the importance of hygiene and sanitation, and increased number of ODF (Open Defecation Free) Communities.

Figure 5 Targeted districts of KKP



⁷ CLTS was introduced in PNG and integrated with the Healthy Island concept by Oxfam (2008), Live & Learn (2009) and scaled-up by the EU funded RWSSP in 12 Provinces (2012).

- a. Design and implement regular mass-media, digital media and social media communication campaigns that will influence improved hygiene behaviours at the national level and in the selected districts.
 - b. Design targeted regular mass media, digital media and social media campaign supplemented with inter-personal communication and community mobilization campaign in the four selected districts to achieve greater awareness and visibly improved hygiene behaviours in the health centres, schools, and communities in the project areas.
 - c. Following the Healthy Islands and the Healthy Villages approaches, begin triggering communities with the CLTS methodology in all communities around the schools selected for the project, to achieve open defecation-free communities.
 - d. Use CLTS as an entry point and continue with community visits and community-led initiatives to improve hygiene and work towards generally healthy villages. Focus on three hygiene practices: handwashing, water conservation and treatment, and the proper use and maintenance of home latrines.
3. Strengthened institutional framework and enabling environment for WASH delivery service, leading to improved governance in the WASH sector.
 - a. Support the Programme Management Unit (WASH PMU) to implement the five-year national strategy and action plan of National WASH Policy.
 - b. Support national partners (WASH PMU, the Department of Education, and the Department of Health) to improve their ability to plan for and support the implementation of WASH initiatives.
 - c. Support district partners to deliver services more efficiently, in accordance with the National Service Delivery Framework and the National WASH Policy 2015-2030.

The logical framework for the KKP is presented in the Annexes.

The KKP fed into the national WASH coordination platform led by the WASH PMU and the national task force under its auspices. UNICEF and the WASH PMU co-chaired the National WASH Technical Committee with progress feeding into the different working committees under the National WASH task force. All the four district WASH technical committees fed progress into the National WASH Technical committee.

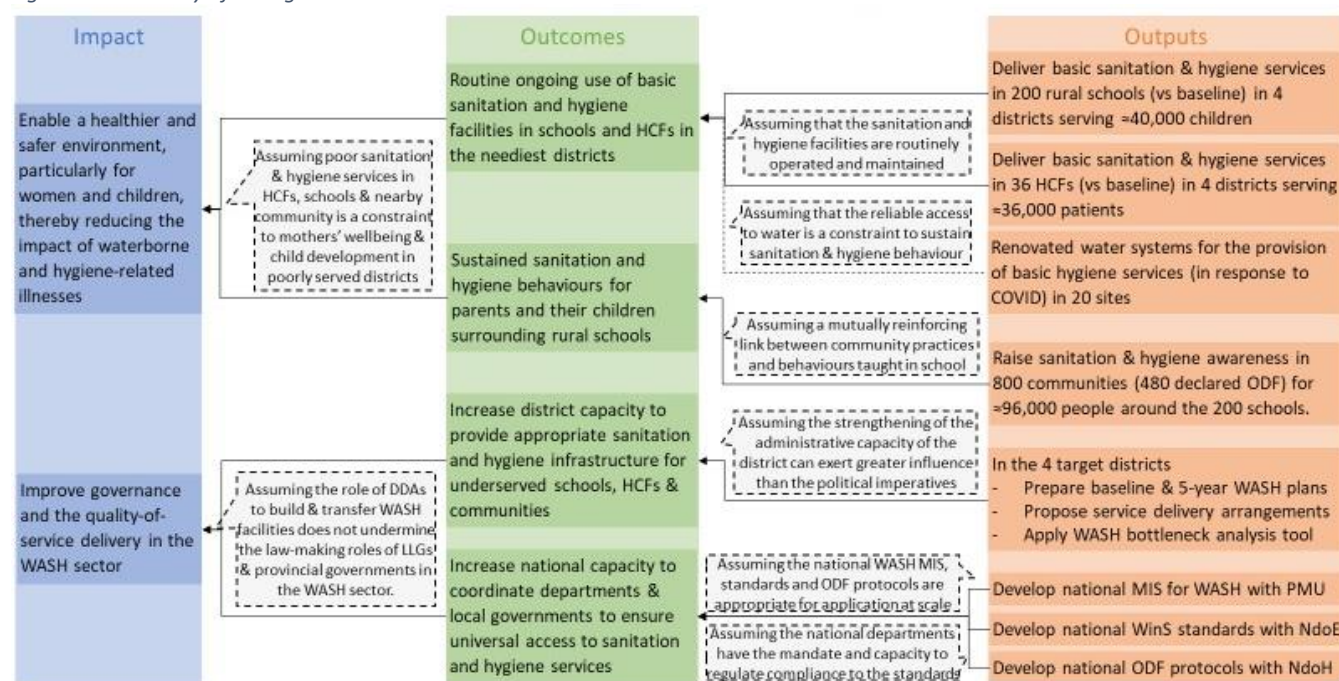
2 EVALUATION PURPOSE, OBJECTIVES, SCOPE AND THEORY OF CHANGE

The purpose of this evaluation is to provide sound and credible evidence on the KKP about what works, what does not work, how and why. This formative and summative evaluation aims to trigger UNICEF PNG country office and National Partners' learning, enhance accountability with respect to UNICEF's work with national and subnational institutions, provincial authorities, development partners, donors, NGOs, civil society organizations, and other duty bearers on improving WASH for children (rights holders) and their families and to inform decision-making on national policies and budgets for WASH and for programme design for scale-up. This end-term evaluation has been commissioned at this point in the project cycle to provide UNICEF and other key stakeholders with an overall independent assessment of the performance of the KKP against its expected objectives and the reasons underpinning such results. The key intended users of the evaluation are the WASH Section within UNICEF PNG and the EU donor. The secondary audience of the evaluation are relevant government institutions and authorities in charge of WASH, rights holders, future contracted project implementers and experts, and other UNICEF Offices.

2.1.1 Theory of Change

The project's theory of change has been validated and reconstructed as follows with the underlying assumptions between the outputs and the intended outcomes and impact.

Figure 6 KKP Theory of Change



2.1.2 Scope

In line with the terms of reference, chronologically, the evaluation covers the period from 2017 until the data collection started in 2022. The geographical areas covered by the evaluation are Hagen Central in Western Highlands Province, Goroka in Eastern Highlands, Nawaeb in Morobe and Bougainville Central in the Autonomous Region of Bougainville. Thematically, the three key results areas supported by the KKP, as outlined in section 1.1, are within the scope of the evaluation.

2.1.3 Objectives

The evaluation seeks to address four main objectives:

1. To assess the major factors enabling or constraining the achievement of project results;
2. To identify key lessons learned, including success and failures, good practices and innovations from implementation of the project;
3. To validate and reconstruct the project's theory of change, including its underlying assumptions and risks;
4. To generate a set of clear, forward-looking, and actionable recommendations logically linked to the findings and conclusions.

3 EVALUATION DESIGN AND METHODOLOGY

3.1 Evaluation Approach

The evaluation took a combined formative and summative view, with an emphasis on the latter, drawing lessons to inform the next country programme and potential adoption and scaling of the programme approaches, while also assessing the merit and worth of the programme interventions and their contribution to results (direct and indirect; intended and unintended). The evaluation was non-experimental, although whenever possible, a comparative and external perspective was sought to assess the evaluation criteria and identify potential variations in perceptions. As there was limited monitoring data available about the extent to which the project was operating, an exploratory method was warranted. Qualitative methods were used, including key informant

interviews, desk reviews and transect walks. The potential of a quantitative mobile-phone survey was not undertaken due to the paucity of mobile phone numbers for project stakeholders.

The evaluation methodology adheres to the UNICEF Evaluation Policy (UN, 2018); UNICEF procedure for ethical standards in research, evaluation, data collection and analysis (UNICEF, 2021); UNEG Ethical Guidelines (UNEG, 2020); UNEG Evaluation Norms and Standards (UNEG, 2016); and UNICEF Evaluation Report Standards (UNICEF, 2017). The evaluation is premised on the notion that duty bearers have an obligation to ensure the design and implementation of evidence-informed interventions. The cross-cutting themes of Gender Equality and Disability are assessed as part of the evaluation to enable impact and reach of the project direct and indirect beneficiaries, including a range of groups which could be considered vulnerable or marginalized within specific contexts. In this regard, the Convention on the Rights of the Child (OHCHR, 1989), as well as other key guidance relating to gender equality, human rights and intercultural perspectives (UN Women, 2014) and disability inclusion (UNICEF, 2022) framed the evaluation including the data collection tools.

The evaluation was participatory, and utilization focused, providing continuous and rapid feedback to the implementers and the primary users during the evaluation process. This included inception discussions conducted in May 2022, engaging the KKP partners in framing the lessons to be learned and identifying the existing common data sets that could be utilized to evaluate the KKP. The KKP assessment framework and the potential data requirements were presented to UNICEF in June 2022. Following field visits to Bougainville (October 3-7), Mt. Hagen (October 10-11), Goroka (October 13-15), Nawaeb (October 17-19) and Port Moresby (October 21-25) individual feedback to each KKP partner was provided. A collective virtual feedback workshop was held with UNICEF and all KKP partners on 25 October 2022 after the completion of the field work, followed by written / verbal feedback solicited from partners and UNICEF throughout November 2022. A further data validation meeting was held with UNICEF PNG WASH Section in May 2023.

3.2 Evaluation Framework

The key questions which guide this evaluation are framed around five of the six OECD/DAC Criteria of relevance, effectiveness, efficiency, sustainability, and coherence (see Table 1). Impact is not included as there is insufficient data available to enable assessment of that criteria. These criteria and questions, the evaluation objectives and the sub-criteria/sub-questions (Table 2) informed the developed of the evaluation matrix (See Annexes).

Table 1 Key evaluation questions framed under OECD/DAC criteria

Relevance	1. How do the stakeholders view the appropriateness of the project - and its planned results - to the local context, given the improving conditions in the country, and the remaining WASH challenges?
	2. To what extent did the project address the WASH needs of children, particularly those in the lowest wealth quintile, the remote populations and ones with the worst sanitation and hygiene conditions? To what extent did the implementation strategies of the project address gender, disability, and climate change issues?
Effectiveness	3. To what extent did the project help households climb up the sanitation ladder and improve children's access to improved WASH, particularly for girls, and children living with disabilities and special needs?
	4. How did collaborations with counterparts and implementing partners contribute to achieving the project outputs and outcomes?
Efficiency	5. How well was the project implemented in terms of fidelity to the model, design, and plans, and management of costs and timelines? How did external factors – technical,

	financial, institutional, environmental, social - modify the level of achievement of outputs and outcomes?
	6. What were the strengths and gaps in capacity of the implementation team composition (UNICEF and partners together)? How did they contribute to the timeliness and cost of the project?
Sustainability	7. Are the toilets provided in schools / HCFs cleaned and looked after?
	8. Considering the emergency context and need for response under scenarios such as COVID-19, what are key programmatic adaptations needed to ensure handwashing practices, ODF status and the associated social norm sustain following certification?
Coherence	9. To what extent was the KKP delivery model appropriate to the PNG context?
	10. To what extent did the project align with implementation of the National WASH Policy 2015-2030? And how can it better target its contribution to the WASH SDGs?

Key evaluations questions 7 and 9 were added during the inception phase. Together with the sub-questions in Table 2, these questions reflect the evidence needs of the stakeholders, understanding of the project strategies under the scope of the evaluation and understanding of the period of multiple concurrent emergencies during which the project operated.

3.3 Data Collection

The data sources and the sub-questions, or indicators and benchmarks, designed to address the key evaluation questions (KEQ) are summarized in Table 2.

Table 2 Data sources, criteria and key evaluation questions, and their sub-criteria and sub-questions

Criteria /KEQ	Sub-criteria: sub-questions	Data source
Relevance		
KEQ 1	Significant: Did the KKP target a priority sector within the PNG development context?	JMP Data
KEQ 2	Needed: Was the KKP targeting within the target districts appropriate to the development challenge and the highest needs (most needy) in PNG?	KKP data
Effectiveness		
KEQ 3	Outputs: Did the KKP meet the project targets (to provide sanitation & hygiene facilities in 200 schools & 36 HCFs, hygiene BCC in 800 communities, WASH Plans in 4 Districts & national WASH protocols)?	KKP data
KEQ 4		
	Outcomes: Are the KKP provided services being used (i.e. school & HCF sanitation and hygiene facilities, community hygiene BCC, District WASH Plans and national protocols)?	Site observations & KII
Efficiency		
KEQ 5	Modality: Was the KKP modality efficient in the delivery of appropriate sanitation and hygiene facilities and behaviour change?	KII
KEQ 6	Management: Was the KKP management model efficient in deploying the respective capacities of UNICEF staff and NGO partners?	KII
Sustainability		
KEQ 7	Technical / Environmental: Can the toilets provided in schools / HCFs be emptied when they fill-up? Are there provisions for the safe disposal of faecal sludge when this occurs?	Site observations
KEQ 8	Behavioural / Social: Are the behaviours necessary to sustain sanitation & hygiene facilities (i.e. water-wise management & routine cleaning) being practiced?	Site observations & KII
Coherence		
KEQ 9	Fit-for-purpose: To what extent was the KKP designed for the PNG context?	KII
KEQ 10	Rational: To what extent did KKP outputs inform decision making by KKP and the	KII

	government?	
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3.3.1 Desk review

Project documentation related to the KKP was sought and reviewed, including those related to the design, implementation, and monitoring. The purpose of this desk review was to understand the project design, the nature and extent of implementation, draw initial reflections from routine and ad hoc monitoring, and to investigate the gender equality and disability considerations throughout the project cycle. The list of documents, databases, and secondary data sought, received, and reviewed, as well as commentary on their quality and completeness, is summarized in the Annexes.

3.3.2 Site Visits

The site visits schedule was proposed by UNICEF PNG from the 3rd-26th October 2022. The logistics were arranged by KKP partners. Sample of schools, HCFs and communities is presented in Table 3. A set of steps outlined for site visits to the four districts, including the approach to purposeful sampling of sites, to understand the achievements and the approach adopted for the delivery of WASH services in the 50 schools, 9 HCFs and 200 communities, as well as a site visit guide are presented in the Annexes. With the completion of the contracts for the KKP partners in 2021 and associated logistical constraints, not all these process steps were possible in all the four KKP districts.

Table 3 Sample of schools, health care facilities, and communities visited in the four districts.

Districts (dates of visit)	Bougainville (4-6 Oct 2022)	Mt. Hagen (10-11 Oct 2022)	Goroka (13-14 Oct 2022)	Nawaeb (17-19 Oct 2022)
Schools	8	7	2	4
Health Care Facility	4	2	2	3
Community	2	1	3	3

3.3.3 Key Informant Interviews

Interviews with key project partners engaged in the KKP helped inform the evaluation. These interviews prioritized both the current and previous senior management within UNICEF, as well as the implementing partners within the four Districts. To understand the availability of data to assess progress, interviews also prioritized the responsible agencies for the management of mWater (WASH PMU and WaterAid), for district baselines (Sustineo) and for the district service delivery arrangements / bottleneck assessment tool (Even flow Consulting). The WASH PMU, the National Department of Education (NDOE) and the National Department of Health (NDOH), among other partners were also prioritized for key informant interviews.

A total of 24 key informant interviews were planned and 15 face-to-face or remote interviews were completed with the support of UNICEF PNG to make referrals and introductions. Details of the planned and completed key informant interviews are found in the Annexes. While the interviews were largely unstructured, open-ended questions were used to frame the discussion (See Annexes for interview guides and informed consent).

3.4 Data Analysis

Thematic review of qualitative data from interviews, desk review, and transects identified themes and connected them to the key evaluation questions. All data were analyzed by the two evaluation team members to further validate the findings. Qualitative data was triangulated, such that multiple sources of data were used to substantiate findings. Where possible and appropriate, data were analysed by relevant social stratifiers, including the respondents' sex, disability, age, location and any other relevant strata.

Quantitative data from secondary sources was analysed using simple descriptive statistical methods in Microsoft Excel and corroborated with qualitative analysis.

The findings and recommendations were initially developed by the evaluation team. Subsequent consultations and workshops held with partners and UNICEF helped validate and refine the team's findings and draft recommendations. The reflections from these encounters were captured and served as feedback on the preliminary and revised findings and were fed into the analysis (in addition to the formal review and feedback process), to inform this final report.

3.5 Ethics

The evaluation was consistent with the [UNEG Ethical Guidelines](#), the [UNEG Code of Conduct](#), the [Integrating Human Rights and Gender Equality in Evaluations](#), the [UNICEF procedures for ethical research involving children](#), the [UNICEF Procedure on Ethical Standards in Research, Evaluation and Data Collection and Analysis](#), and ensured:

- Respect for rights of individuals and institutions: The evaluator accorded informants the opportunity to participate voluntarily while maintaining their anonymity, and to make an independent decision to participate without pressure or fear of penalty (informed consent/assent). Also, interviewers assured respondents that information would be confidential and that reports would be written such that responses/contributions would not be traced back to them. Interview notes and any recordings are accessible to the team members only.
- Respect for cultural identities and sensitivities: Variances in ethnicities, culture, religious beliefs, gender, disability, and age were respected.
- Professional responsibilities and obligations of evaluators: The evaluator exercised independent judgement and operated in an impartial and unbiased manner. During data collection, any sensitive issues and concerns were addressed through the appropriate mechanisms and referral pathways.

Children, vulnerable and marginalized groups, or household members were not part of the data-gathering efforts.

The evaluator undertook the evaluation according to the following values:

- *Independence*: The evaluator is completely independent, and has had no prior engagement in the design, implementation, or supervision of the KKP, nor will any be accepted during the life of the current Project.
- *Impartiality*: The evaluator is committed to providing a comprehensive and balanced assessment of the KKP's strengths and weaknesses. The evaluation process has been unbiased at all stages and fairly considers all views and opinions received from stakeholders – such stakeholder views are considered primary evidence in the process of forming the external assessment of the Project.
- *Transparency*: The evaluator has communicated as openly as possible the purpose of the evaluation, the criteria that will be applied and the expected use of the results. This evaluation report provides transparent information on its sources, methods, and approaches.
- *Disclosure*: The evaluation report serves as a mechanism by which the findings and lessons identified will be disseminated to management and programme staff in the regional and UNICEF PNG country office, as well as to external stakeholders such as the PNG Government, EU donor, etc.
- *Credibility*: The evaluation is based on data and observations that are demonstrably reliable and trustworthy with respect to the quality of the instruments, procedures and analyses used to collect and interpret them.
- *Usefulness*: The evaluator has strived to be as well informed as possible, and ensure the evaluation report is as relevant, timely and concise as possible. The evaluation draws on the principles and values of Utilization Focused Evaluation approaches that put client needs at the center of the evaluation and understands the evaluation process as a learning exercise for the client as much as for accountability, where the utility of the final product determines all steps taken through the evaluation process.
- *Conflicts of interest*: The evaluators have no conflict of interests, as reflected in comments with regards to Independence above with their role as evaluators of the EU-UNICEF Funded KKP.

The evaluation has always maintained strict confidentiality among participants. All data are anonymized, password-protected and encoded. The evaluation findings will be owned by UNICEF PNG country office, and they will have authority over any public dissemination/publication following the conclusion of the evaluation.

The evaluation received ethics approval from an internal ethical review panel.

3.6 Limitations and Challenges

An overarching results framework against which the outputs and outcomes of the project could be assessed was never completed. To mitigate this, an initial series of discussions was conducted with the KKP partners during the inception phase to understand and document the framework. The inception discussions conducted in May 2022 sought to engage the KKP partners in framing the lessons to be learned and identifying the existing common data sets that could be utilized to evaluate the KKP. The KKP assessment framework and the potential data requirements were presented to UNICEF PNG WASH Section in June 2022. In lieu of the available data, primary data collection, utilizing mobile phone surveys of KKP asset owners / counterparts, was proposed to be undertaken to quantify specific gaps in understanding. With delays due to parliamentary elections in July-October 2022, the inception phase was postponed, while the end of project goalpost remained the same. With limited time to pilot and conduct a reliable mobile phone survey, analyze the data to inform the final report by the intended end date of the evaluation, and in view of the utility focus of the evaluation, the mobile phone survey did not take place.

The inception phase investigation found very little evidence of the collation of data, the analysis of progress or the application of learning processes. While donor reporting requirements appeared to have been fulfilled, the dearth of a well-constructed monitoring and evaluation system presented significant challenges to the undertaking of this evaluation. In the absence of a well-maintained monitoring and evaluation system, this assessment relied heavily on a non-probabilistic sample of sites (schools, HCFs and communities). These sites were a purposive sample proposed by the implementing partner, that were in many cases the same sites visited by previous evaluation missions, that were assumed to have been chosen because these were the sites where the best outcomes would be likely to have occurred. While the absence of collated data on the intervention sites was one major impediment to the undertaking of a mobile phone survey, it also became apparent that the litany of issues in the "best sites" would be indicative of similar issues in the other sites across the district. Nevertheless, the assumption that the evaluation team visited the best sites in each district, and the assumption that the underlying technical flaws in these best sites are repeated across all the sites, do not provide an infallible basis on which to draw district-wide conclusions.

4 FINDINGS

The findings have been framed against the OECD/DAC criteria, the key evaluation questions, the sub-criteria and their basis of assessment.

4.1 RELEVANCE

KEQ1. How do the stakeholders view the appropriateness of the project - and its planned results - to the local context, given the improving conditions in the country, and the remaining WASH challenges?

KEQ2. To what extent did the project address the WASH needs of children, particularly those in the lowest wealth quintile, the remote populations and ones with the worst sanitation and hygiene conditions? To what extent did the implementation strategies of the project address gender, disability, and climate change issues?

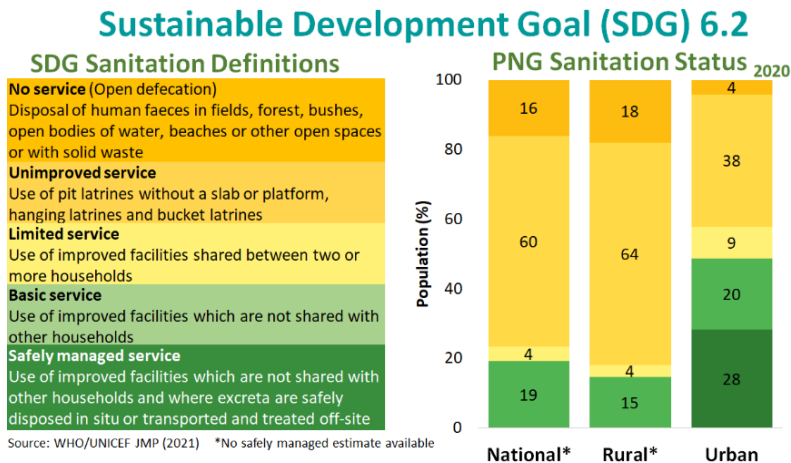
The relevance of the KKP is approached by first establishing the significance of the challenges of WASH in PNG in general, and then assessing if the KKP districts were relevantly targeted based on their needs, particularly the needs of the most left behind, in view of the broader significance of WASH challenges in PNG. In addition, the unintended consequences of the KKP approach while targeting the needs are also assessed. In establishing the significance of the challenges of WASH, the underlying sub-question is if the KKP targeted a priority sector within

the PNG development context? In establishing the needs being relevantly targeted, the underlying sub-question is if KKP targeting within the target districts was appropriate to the development challenge and the highest needs in PNG?

4.1.1 Significant

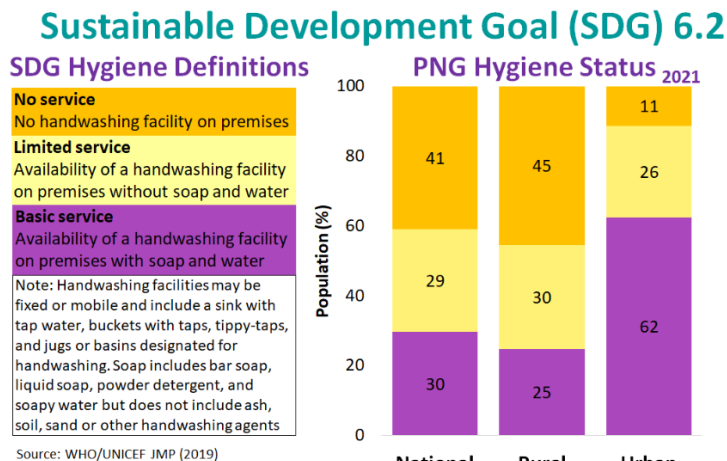
4.1.1.1 Sanitation in PNG

Less than one in five people in PNG have access to a basic sanitation service. In rural areas, it is estimated that only 15% of the population had access to a basic sanitation service (WHO/UNICEF, 2020). While the practice of open defecation by 18% of the rural population (with a modest increase of 1% between 2015 and 2020) presents a major faecal exposure risk, the prevalence of unimproved latrines accessed by 64% of the rural population is judged by the evaluation to be a greater service delivery challenge in PNG.



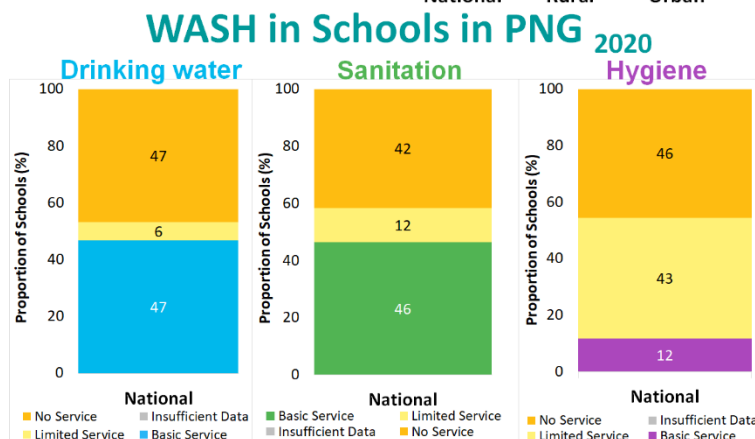
4.1.1.2 Hygiene in PNG

Less than one third of the population of PNG have access to a basic hygiene service. In rural areas, it is estimated that while 55% of the population had access to a limited hygiene service, only 25% of the population had access to a basic hygiene service (WHO/UNICEF, 2020). While almost half of the rural population do not have access to a handwashing facility on the premises, four fifths of the 30% of the population with a limited service lacked soap rather than water. It is also generally well established that the access to a basic hygiene service does not necessarily translate into routine handwashing.



4.1.1.3 WASH in Schools in PNG

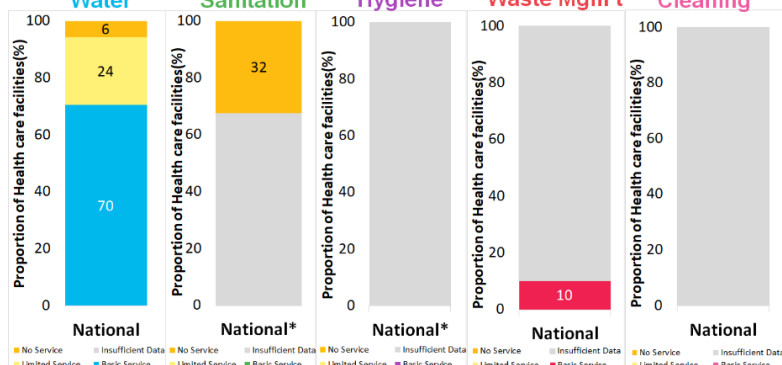
An estimated 47% of schools had drinking water from an improved source available on the premise, 46% of schools had improved toilet facilities which were single sex and available, while only 12% of schools had handwashing facilities with soap and water available (WHO/UNICEF, 2020). The extremely low levels of access to basic hygiene services in schools is a major cause for concern.



4.1.1.4 WASH in Health Care Facilities in PNG

There are no estimates of access to a basic sanitation service, however an estimated 32% of HCFs have unimproved or no toilet facilities (WHO/UNICEF, 2020). Only 10% of HCFs have access to a basic waste management service (where waste is safely segregated into at least three bins and sharps / infectious waste are treated and disposed of safely). There is insufficient data on access to hand hygiene or environmental cleaning services. The absence of data on sanitation and hygiene services in HCFs is in itself a major indicator of a service failure.

WASH in Health Care Facilities in PNG 2020

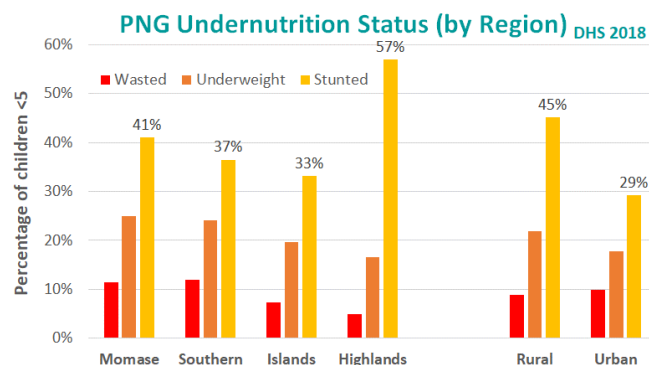


4.1.1.5 Undernutrition in PNG

Child undernutrition in PNG is among the worst in the world. According to the Demographic and Health Survey (DHS) 2018,

- 45% of rural children under five years of age were chronically undernourished (i.e. stunted)
- 8% of rural children under five years of age were acutely undernourished (i.e. wasted)

Faecal exposure of children under five years of age via poor sanitation and hygiene is associated with an increase in chronic undernutrition (Spears, 2013; Budge, Parker, Hutchings, & Garbutt, 2019). Stunting can limit the physical and cognitive development in children under five years of age, limiting the human development potential of communities and the nation.



4.1.2 Needed

KKP baseline data in the four target districts generated by KKP partners in the national MIS indicated low levels of access to basic sanitation and hygiene services in schools and HCFs, with access being slightly below the national averages. The Knowledge, Attitudes and Practices (KAP) baseline study performed by Sustineo, highlighted the high levels of open defecation in Bougainville, as compared to the other three Districts. The KAP did not generate differentiated behaviours on hygiene between the districts, which is surprising given the contradictions between incidence of stunting and the practice of open defecation between the highlands and the islands.

The KKP was intended to target the neediest districts, however the open tender cost-and-quality based selection process likely resulted in districts with the greatest demand and the greatest capacity being selected. The project was also intended to target children that suffer from the impact of the lowest levels of sanitation and hygiene in their communities, schools and HCFs. However, the sites selected for the implementation of KKP were not necessarily the sites with the lowest levels of baseline access. In fact, there is no evidence of the use of the mWater KKP baseline data in the selection of the schools, HCFs or communities to be targeted within each district, neither is there any evidence of the use of the mWater KKP baseline data for the tailoring of the response to a selected school, HCF or community.

4.1.2.1 Sanitation and Hygiene in Schools in 4 Districts

According to the baseline survey conducted by KKP in the target districts during the planning phase in 2018, one third of the 383 schools surveyed already had access to a basic sanitation service (i.e. improved sanitation facilities at the school that are single-sex and available, functional and private)

or limited sanitation service (i.e. improved

sanitation facilities at the school that are either not single-sex or not usable) at the time of the survey. However, the ratio of the number of students to toilet seats for the sites with basic access is generally below the school standard of 25:1 for girls and 40:1 for boys (with urinals). Toilet facilities were consistently viewed as problematic by teachers due to high

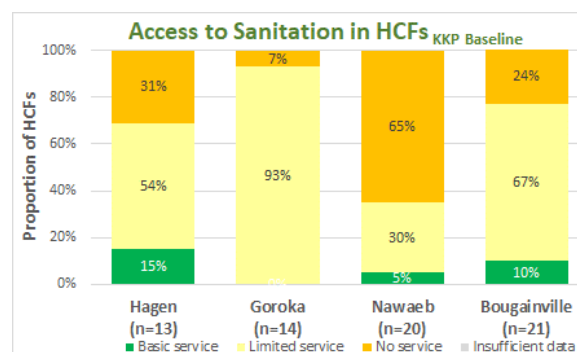
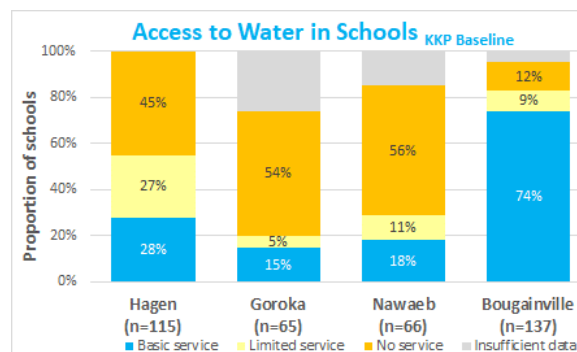
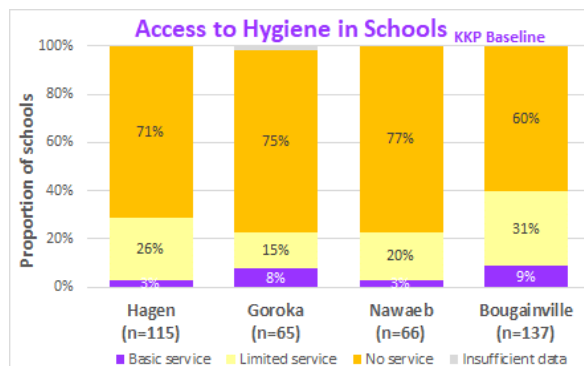
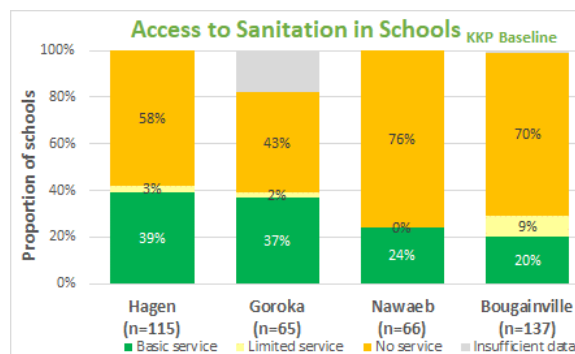
student to toilet ratios, poor maintenance, and water shortages. Schools classified as having no-service were predominantly having pit latrines without a slab.

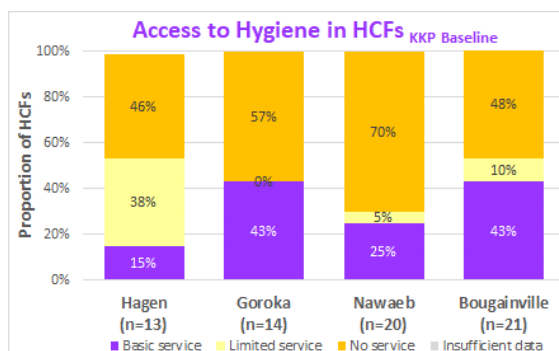
While only 6% of the 383 schools surveyed in the KKP target districts had basic access to hygiene facilities (i.e. handwashing facilities with water and soap available at the school at the time of the survey), almost one third had at least limited access to hygiene facilities (i.e. handwashing facilities with water but no soap). In the time of COVID, there has been a dramatic increase in the demand for hand hygiene within schools.

Access to water in schools is a pre-requisite for the provision of hand hygiene services and the management of menstrual hygiene within toilet facilities. While over half of the 383 schools surveyed in the KKP target districts already had access to a basic water service (i.e. drinking water from an improved source and water is available at the school at the time of the survey) or limited water service (i.e. drinking water from an improved source but water is unavailable at the school at the time of the survey) but most are reliant on rainwater. Teachers and students identified common problems with supply shortages of drinking water due to a lack of storage and/or the damage to pipes and/or the wastage of water.

4.1.2.2 Sanitation and Hygiene in HCFs in 4 Districts

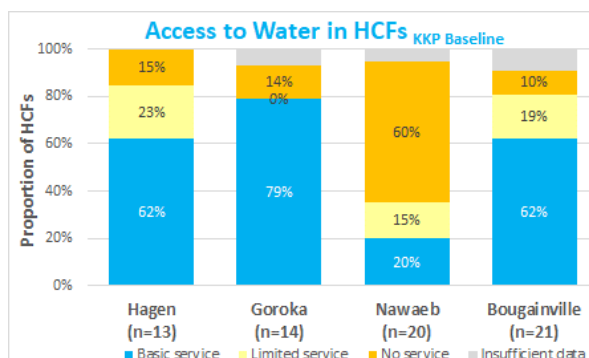
While only 6 of the 68 HCFs surveyed in the 4 KKP Districts during the preparation of the baseline met the basic sanitation service standard (i.e. improved sanitation facilities are usable, with at least one toilet dedicated for staff, at least one sex-separated toilet with menstrual hygiene facilities, and at least one toilet accessible for people with limited mobility) over two thirds met the limited access standard (i.e. at least one improved sanitation facility is available, but not all requirements for basic service are met).



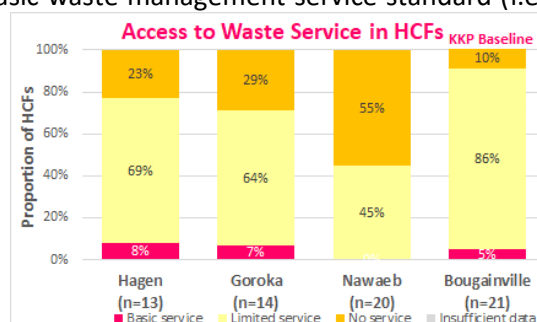


While one third of the 68 HCFs surveyed in the 4 Districts met the basic hygiene service standard (i.e. functional hand hygiene facilities with water and soap and/or alcohol-based hand rub are available at points of care, and within five metres of toilets) almost half of the HCFs had at least limited access to a hygiene facility (i.e. functional hand hygiene facilities that are available either at points of care or toilets but not both).

While just over half of the 68 HCFs surveyed in the 4 Districts met the basic water supply service standard (i.e. water is available from an improved source on the premises) over two thirds met the limited access standard (i.e. an improved water source is within 500 metres of the premises, but not all requirements for basic service are met). HCF managers identified the safety and reliability of water supply as key challenges.



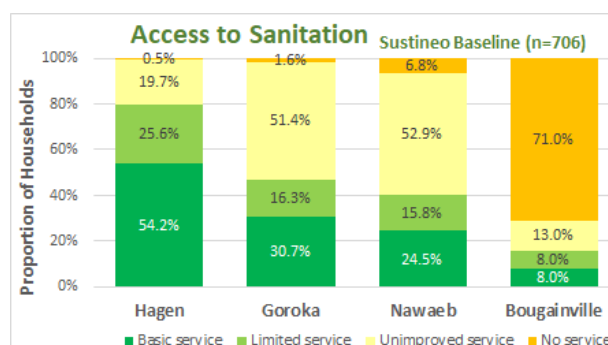
While only 3 of the 68 HCFs surveyed in the 4 Districts met the basic waste management service standard (i.e. waste is safely segregated into at least three bins, and sharps and infectious waste are treated and disposed of safely) over two thirds of the HCFs had at least a limited waste management service (i.e. limited separation and/or treatment and disposal of sharps and infectious waste, but not all requirements for basic service are met). HCF managers identified a lack of adequate waste disposal pits and/or functioning incineration as key challenges.



Across the 4 KKP Districts surveyed, Bougainville had the highest levels of access to at least a limited WASH service in their HCFs, while the levels of access to at least a limited WASH service in the HCFs in Nawaeb were roughly half that of the other Districts.

4.1.2.3 Sanitation & Hygiene in Communities in 4 Districts

The baseline household survey data for the four KKP Districts generated by Sustineo, indicates high access to either basic, limited or unimproved sanitation facilities in Hagen, Goroka and Nawaeb. This suggests that the major challenge in these three districts lies in improving the quality of toilet facilities and reducing the prevalence of the sharing of toilet facilities. This is in stark contrast to Bougainville where the prevalence of open defecation is very high.



The baseline household data on defecation practices for the four Districts also reveals an extremely high prevalence of open defecation in Bougainville, in contrast to the very low prevalence of open defecation in Hagen, Goroka and Nawaeb. While the baseline data for communities generated through mWater is not sufficiently representative in Goroka and Bougainville, it does suggest that all communities in Mt. Hagen and three quarters of the communities in Nawaeb already had access to sanitation facilities prior to the project.

The principal approach adopted by KKP for hygiene behaviour change in the 800 communities has been the CLTS approach. Whereas CLTS has proven to be effective in eliminating open defecation in some contexts, other approaches (i.e. sanitation marketing) have proven to be more effective in assisting households to move-up the sanitation ladder.⁸

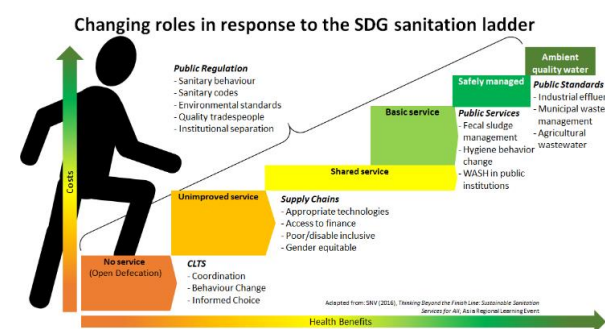
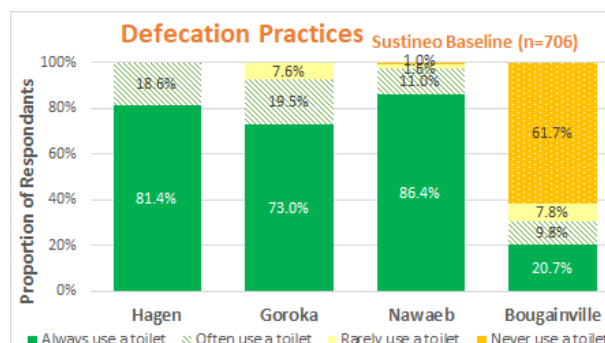
The Sustineo baseline data found that 20% of the households surveyed in the KKP target districts had basic access to hygiene facilities (i.e. availability of a handwashing facility on premises with soap and water) while 51% had limited access to hygiene facilities (i.e. availability of a handwashing facility on premises without soap and watery). About half of all households used a bucket, jug or kettle to wash their hands, while another quarter had a fixed facility, either in the house or in the yard.

Mid-upper arm circumference (MUAC) testing undertaken by Sustineo in the four KKP Districts found that only 2.3% of the children suffered from moderate acute malnutrition (MAM) and only 1 of the 809 children tested suffered from severe acute malnutrition (SAM). However, according to the DHS 2018, while the prevalence of chronic undernutrition in PNG is amongst the highest in the world (i.e. 45% of children under the age of five are stunted), the prevalence of acute undernutrition is relatively low (i.e. 9% of children under the age of five are wasted). The decision not to measure chronic undernutrition during the baseline fostered a flawed perception that undernutrition was not a challenge in the KKP target districts. It also failed to facilitate any comprehension of the complex interaction between acute and chronic undernutrition and the multiple manifestations posed by the exposure to poor sanitation and hygiene.

4.1.2.4 District Selection

In its design, the KKP was intended to pilot the delivery of sanitation and hygiene services for hard-to-reach areas. The KKP proposal states that the project will focus on the neediest and previously most poorly served districts. A comprehensive selection process with detailed criteria was outlined in the proposal.

In the decision to adopt an open tender selection process, UNICEF allowed all the 89 districts in PNG to submit a DDA-iNGO bid. At this point, the selection was no longer based on the highest needs, but on the quality of the proposal and (thus) the likeliness of success, followed by the cost. Of the roughly 60 proposals received, only 14



Malnutrition

Table 46: Responses to "Details of the child – MUAC"

Colour code	Rating	Count	%
Green	Child is properly nourished	789	97.5%
Yellow	Child is at risk of malnutrition	19	2.3% (MAM)
Red	Child is acutely malnourished	1	0.1% (SAM)
Total		809	100%

⁸ Adapted from SNV (2016), *Thinking Beyond the Finish Line: Sustainable Sanitation Services for All*; Asia Regional Learning Event

passed the quality-criterium. Following the financial analysis, only seven proposals remained to enter negotiations resulting in the selection of the four districts with the greatest capacity and commitment to implement the KKP.

The selection of the four districts (Mt. Hagen, Goroka, Nawaeb, Bougainville) with the greatest capacity to implement KKP may have been justified if the project had also invested significant resources into monitoring, evaluation & learning (MEAL) for the potential replication in the lower capacity districts. In the absence of any significant commitment to the learning of lessons from the four pilot districts during implementation for the replication nationwide, the justification for the selection of the four districts with the greatest capacity and demand to implement the KKP is not strong.

4.1.2.5 Beneficiary Selection

The 200 schools, 36 HCFs and 800 communities were to be selected following the WASH Baseline assessment and during the development of the 5-year District WASH plans.

The minimum selection criteria included:

- the existence of birth facilities with inadequate or non-existent WASH facilities in HCFs
- the willingness of school management to allocate funds for operation and maintenance in schools
- the selection of 4 communities surrounding each school

The criteria for the prioritization of schools and HCFs were to be based on:

- (i) their present WASH infrastructure,
- (ii) the most marginalized and most in need schools and health facilities,
- (iii) their degree of commitment to improving their WASH situation,

There is no evidence to suggest that this prioritization process was followed, for instance:

- The proposal indicated that the KKP would support WASH facilities in 200 schools, 36 HCFs and 800 communities. The exactly equally divided allocation of WASH facilities in 50 schools, 9 HCFs and 200 communities to each of the 4 districts does not respond to the differing baseline access to basic sanitation and hygiene service levels in those districts. This is exemplified in the case of Nawaeb, where the target of 200 rural communities for sanitation and hygiene promotion exceeded the 169 rural communities that actually exist within Nawaeb district.
- The project conducted a baseline first as part of the planning based on a checklist. However, the baseline data did not adequately describe the basic level sanitation and hygiene facilities in the selected schools.⁹ The evaluation team observed multiple schools with toilet blocks of unknown sanitation and hygiene classification fitted with an additional KKP basic toilet block. Considering this observation, and noting the aforementioned limitations in the baseline data, it is not possible to assess the extent to which KKP addressed the needs of schools with the worst sanitation and hygiene conditions for children.
- The selection of communities for sanitation and hygiene promotion surrounding the schools does not appear to have always been followed. Community selection for sanitation and hygiene promotion appears to have been largely 'left-up' to the implementing partners, without drawing any obvious connection between a particular school and the feeder communities. This meant that in some districts (i.e. Goroka), the peri-urban migrant communities with low access to sanitation facilities with a legacy NGO engagement were prioritised over the communities surrounding the target schools.

The District WASH committee under the guidance of DDA were involved in selection of schools and HCFs, with NDOE and NDOH completing the selection criteria. However, in the locations visited by the evaluation team in the four districts, none of the stakeholders interviewed were familiar with the rationale for the equal split of the target

⁹ The baseline data, self-reported by schools, provide ratio of pupils (disaggregated by sex) to limited – or no – toilets, which is insufficient to assess how much basic level access improved by building basic level toilets.

200 schools, 36 HCFs and 800 communities between the four districts. The criteria for the selection of the HCFs or schools targeted by KKP was also not known to the stakeholders (even when they performed the baseline assessments). The selection of the communities for sanitation and hygiene behaviour change appears to have been left open to the implementing partners. In some cases, these communities clearly did not meet the criteria of being proximate to the school (where there might be co-benefits of investing in the school as well as the community) but their selection may be an indication of decentralized decision-making agility to prioritise communities in greater need than those in the immediate vicinity of the school.

4.2 EFFECTIVENESS

KEQ3. To what extent did the project help households climb up the sanitation ladder and improve children's access to improved WASH, particularly for girls, and children living with disabilities and special needs?

KEQ4. How did collaborations with counterparts and implementing partners contribute to achieving the project outputs and outcomes?

The assessment of effectiveness measures the extent to which the project achieved, or is expected to achieve, its objectives and results amongst the different target groups. The two key evaluation questions under effectiveness are separated under the sub-criteria of output and outcome and assessed independently. Within the discussion of the outputs and outcomes, the collaborations with counterparts and implementing partners (KEQ4), and the choices therein, are discussed. In addition to sanitation services this section assesses other activities of KKP and their outputs. The focus on girls and children with disabilities and special needs is assessed across both project outputs and outcomes.

4.2.1 Outputs

Basis of Assessment: Did the KKP meet the project targets (to provide sanitation & hygiene facilities in 200 schools & 36 HCFs, hygiene BCC in 800 communities, WASH Plans in 4 Districts & national WASH protocols)?

4.2.1.1 Sanitation and Hygiene Facilities in 200 Schools

According to the KKP Reports, WASH facility construction has been completed in the 200 schools targeted for student and teachers (see Figure 7) (EU-UNICEF, 2022). These facilities serve an estimated 58,000 school children, including 27,100 girls (EU-UNICEF, 2022). At a pupil-teacher ratio of 36:1 (UNESCO Institute for Statistics, 2020), WASH facilities served an estimated 1,611 teachers. The estimates are consistent with the 2019 World Vision count of 38,187 school children (of which 18,232 girls) in 146 schools in Goroka, Nawaeb and Hagen Central and count of 1,231 teachers in the same schools (World Vision, 2019). In each of the target schools this comprised of:

- A teachers toilet block with its own rainwater harvesting and storage system providing water to two (male and female) water-based toilets (SaTo pans or water seal commodes) and a handwashing station
- Student toilet blocks that were serviced by a rainwater harvesting and storage system (from the school buildings) comprising of separate male toilets (comprising of toilet cubicles with a student to seat ratio less than 40:1, urinals, a separate disability toilet and handwashing station) and female toilets (comprising of toilet cubicles with a student to seat ratio less than 25:1, a separate disability/MHM toilet, an incinerator for Menstrual Hygiene Management products and a handwashing station).

The project conducted a baseline first and budgeted to provide a basic level of sanitation and hygiene service assuming greenfield conditions (i.e. no access to services) in all of the 200 target schools. While this should ensure universal access to at least a basic sanitation and hygiene facility, it does risk the duplication of resources, since baseline data was not adequately considered in budgeting (see 4.1.2.5).

Figure 7 Construction status WASH in Schools as of August 2021

Construction of WASH facilities	WASH in Schools			
	Student facilities		Teacher Toilets	
District	Target	Achieved	Target	Achieved
Nawaeb	50	50	50	50
Goroka	50	50	50	50
Hagen Central	50	50	50	50
C. Bougainville	50	50	50	50
Total	200	200	200	200

In Bougainville field visits a primary and an elementary school's WASH facilities were observed to not be completed (water tanks and septic tank/soakaway provided but not installed) due to a dispute between the contractor and the school committee. A primary school in Mt. Hagen was yet to be commissioned and handed over to the school committee. While these facilities may have been constructed, they were not completed.

4.2.1.2 Sanitation and Hygiene Facilities in 36 HCFs

According to the KKP Reports, WASH facilities were completed in 9 HCFs in each of the 4 target districts (EU-UNICEF, 2022). From the site visits this variously comprised of:

- Separate male and female toilet facilities for inpatients and/or outpatients with handwashing facilities that also potentially included urinals, showers and access for the disabled
- Rainwater harvesting systems discharging to a storage tank with electric/solar/manual pumps lifting to an elevated tank providing water for sanitation and hygiene for inpatients and outpatients
- Handwashing stations installed for outpatients and visitors on arrival at the HCF
- Incinerators for the disposal of hospital waste
- Rehabilitation of the HCF (i.e. the covered waiting areas for outpatients, lighting, painting)

The KKP 'bottom-up' approach to WASH in HCF enabled the provision of sanitation and hygiene facilities to respond to the HCF demand.

- The contracting approach adopted by Oxfam and World Vision International (WVI) in Goroka, Nawaeb and Bougainville districts, largely resulted in the replication of standardized toilet blocks for outpatients or the standardized replication of plumbing services within HCFs for inpatients. This is largely a consequence of Oxfam and WVI allowing the definition of site requirements for the HCFs to be established by the contractor.
- The supervised artisan approach adopted by Care International in Mt. Hagen appears to have enabled the provision of facilities to be fully tailored to site demand. In the absence of any 3rd party monitoring, it is unclear if this resulted in these HCFs achieving the SDG 'basic' sanitation and hygiene service standard.

The endline monitoring data for the HCFs against the baseline data would have enabled the change in access to sanitation and hygiene in the HCFs or within the district to be quantified, however the evidence of this analysis is missing in the KKP. Notably, the checklist provided for the assessment of the WASH status in each HCF in the four districts does not provide a logical link between the status, the agreed facility upgrades and the change in status from SDG 'limited' or 'no service' to a 'basic service level'. Field visits revealed that some HCFs received just an incinerator or a handwashing station for outpatients, while other HCFs just received the rehabilitation of their water supply system, while other HCFs received full toilet blocks and water supply systems. Selection data revealed that multiple target HCFs in different districts were classified as urban rather than rural.

4.2.1.3 Sanitation and Hygiene Promotion in 800 Communities

According to KKP Reports (EU-UNICEF, 2022), sanitation and hygiene behaviour change was promoted in 796 communities in the 4 districts and a total of 796 communities in the four districts have reached ODF status, verified and certified by the DDAs (see Figure 8).

Figure 8: ODF Status of Communities as of August 2021

District	Target	Certified	Total Beneficiaries
Nawaeb	200	169 (total in district)	35,490
Goroka	200	215	45,150
Cent. Bougainville	200	203	33,785
Mount Hagen	200	209	26,170
Total	800	796	140,595

Through this process, over 28,000 households have built or improved more than 40,000 toilets benefiting over 140,000 people living in ODF communities in the four districts. Compared to CLTS global success rates of 25-40%, and considering KKP's ambitious target of 60% of the 800 targeted communities, the 99.5% success rate is an incredibly high toilet construction rate, given that:

- 100% of the rural households in all 169 triggered communities in the district of Nawaeb built new toilets (even though 94% of households already had a toilet of unknown classification)
- 100% of the rural households in the 203 triggered communities in the district of Bougainville built new toilets (including the 29% that already had a toilet of unknown classification)

UNICEF engaged an international NGO to build local capacity and provide supervisory support to the three KKP partners (Oxfam, CARE and World Vision) in the 4 districts on the application of the CLTS approach. Feedback Foundation provided government stakeholders, KKP partner staff and community motivators training on the triggering and follow-up processes in CLTS to nudge local leaders and community members to eliminate the practice of open defecation in their community. The intended result of the triggering process was the formation of sanitation committees and the setting of an agreed date for ODF attainment by the community. In addition to the preparation of CLTS training materials for the triggering of a collective desire to eradicate open defecation, Feedback Foundation also worked with the KKP partners at the district level to establish ODF declaration, verification and certification protocols.

4.2.1.4 Strengthened institutional framework and enabling environment for WASH delivery service

The strengthening of the institutional framework and enabling environment for WASH delivery service, leading to improved governance in the WASH sector was to be achieved through three strategic areas of engagement:

- National WASH Policy is Implemented by the WASH PMU: sought to strengthen the capacity of the WASH PMU by contributing to the national WASH Monitoring Information System (MIS), the national WASH Service Delivery Arrangements (SDA), the national WASH Bottleneck Analysis Tool (BAT) and national WASH Communication Strategy.
- National Service Delivery Framework is implemented by the selected DDAs: sought to strengthen the capacity of the district by contributing to the preparation of District WASH Plans, District WASH SDAs and the District WASH BAT.
- National WASH Policy is incorporated into the sector plans of the Departments of Education and Health: sought to strengthen the capacity of the units within NDOE by contributing to the delivery of the national WASH in Schools (WinS) Policy and Construction Standards and the NDOH by contributing to the delivery of the national CLTS triggering manual and the ODF protocol.

The objectively verifiable outputs against these three institutional strengthening areas of engagement have been fully achieved. These outputs are further detailed in the three sections below.

ODF Definitions

National Department of Health

Open defecation free (ODF) status is the termination of fecal-oral transmission, defined by:

- No visible human feces found in the community and surrounding environment
- Children's feces are safely disposed in a safe toilet*
- Households and public institutions use a safe toilet* for the disposal of human feces

Open Defecation Free Plus (ODF+): In addition to ODF status, requires every household and institutional toilet/latrine has a handwashing facility with soap/ ash and handwashing is regularly practiced.

Total Sanitation (Healthy Community): In addition to ODF+ status, requires every school and public places to have sufficient, safe, segregated toilets; household greywater to be discharged to soakpits; solid waste (biodegradable and non-biodegradable) to be managed separately; and public spaces to be beautified.

NB: * A safe toilet prevents contact between human beings and human excreta; prevents access to the excreta by insect vectors and domestic or wild animals; does not pollute water bodies; prevents foul smell

4.2.1.4.1 National WASH Policy is Implemented by the WASH PMU

The KKP delivered two reports on the sub-national SDA for WASH for rural jurisdictions and urban jurisdictions respectively. These two reports were based on the draft SDA prepared by the WASH PMU for consultation. During the period from Feb – Dec. 2020, KKP undertook consultations in the four KKP Districts on the roles of the DDAs and the LLGs for WASH service delivery in urban and rural jurisdictions in relation to the responsibilities of the DNPM, NDOH, NDOE, Provincial Public Works and Provincial Administration.

The KKP delivered a combined report on the application of the WASH BAT in July 2022. While all the capacity building outputs have been delivered in the 4 districts, the WASH BAT process identified the bottlenecks to be the very District WASH planning, budgeting and SDAs that KKP sought to strengthen. These common failures of the WASH capacity building process across all four districts implemented by three different partners (despite the success in the delivery of all capacity building outputs) suggests a failure of the approach to District capacity building. In contrast to the recommendations of the WASH BAT, this may call for a rethinking, rather than a reinforcing, of the existing approach.

The KKP delivered baseline data on WinS, WASH in HCFs, and WASH in communities in the four KKP Districts. This data was primarily populated by the KKP planning partners on paper copies, that was entered into Excel and uploaded into the national MIS by the WASH PMU. The data was generated by a combination of interviews during workshops (with head teachers, health service providers and community leaders) and site visits.

- The variation in the quantity, quality and means of collection of the baseline data between the KKP districts makes comparability difficult (i.e. WASH data for just 22 communities in Bougainville versus 367 communities in Mt. Hagen).
- The failure to generate endline data for the target schools, HCFs and communities in the 4 target districts undermines the validity of the national WASH MIS (because the pre-KKP status for these 4 Districts is now grossly inaccurate).

mWater baseline data on WASH (entered by KKP)			
District	# schools	# HCFs	# communities
Nawaeb	66 (60 rural)	20 (19 rural)	137 (135 rural)
Goroka	65 (46 rural)	14 (10 rural)	110 (80 rural)
Bougainville	137 (121 rural)	22 (18 rural)	22 (22 rural)
Mt. Hagen	116 (77 rural)	13 (7 rural)	367 (296 rural)

The KKP produced numerous WASH advocacy documents and undertook multiple communication activities. This includes the drafting of the WASH Advocacy and Communication Strategy Framework for PNG (2020 – 2025), as well as COVID-19 messaging via radio and TV talk shows, billboards and branded public motor vehicles.

4.2.1.4.2 National Service Delivery Framework implemented by the selected District Development Authorities

4.2.1.4.2.1 District WASH Plans

In all four project districts, the 5-year WASH plans were completed by the end of 2018 – middle of 2019. The agencies supporting the districts in the preparation of the WASH plans were selected at the time of the award of contract to Mt Hagen (Infra Tech), Goroka (Oxfam), Nawaeb (World Vision International) and Central Bougainville (Plan International). All of the District WASH plans were coordinated by the District WASH Committees established for this purpose and managed by the contracted agency responsible for the workshops, assessments and socialization of the WASH Plan. In all four districts, the national MIS system was utilized to generate baseline data against the WASH SDGs for WinS, WinHCFs, WASH in Communities. The WASH PMU with the support of UNICEF and WaterAid conducted the training of the staff and the uploading of the baseline data onto the national MIS.

While all the district WASH plans summarized the WASH baseline status, established mid-term targets and medium-term budgetary requirements, there is no evidence of any of the district WASH Plans being used by anyone (not even KKP). For example:

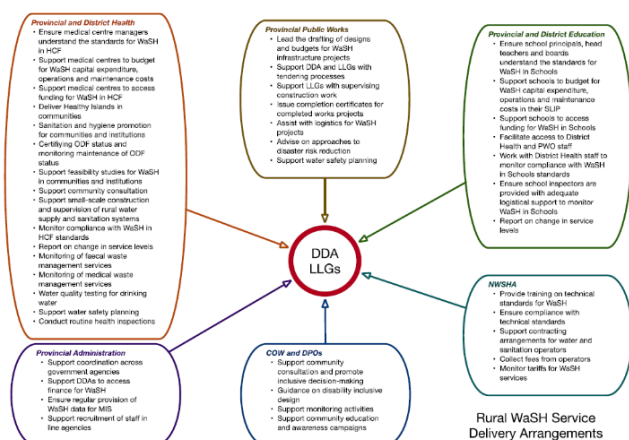
- While all the district WASH plans included a baseline assessment of WinS, WASH in HCFs and WAS in communities, there is no evidence of this data being analysed or used by KKP in the sizing or budgeting for the provision of sanitation and hygiene facilities (i.e. none of sizing / pricing for WASH facilities in schools, HCFs or communities was based on bridging the service delivery gap).

- While all the district WASH plans included the proposed KKP investments in 50 schools, 9 HCFs and 200 ODF communities, and procedures were followed for site selection together with DDAs, the WASH plans do not specify the criteria for the selection of the proposed sites nor the necessary commitments for their ongoing operation and maintenance.
- All the district WASH plans communicated the importance of investments in WASH, and DDAs demonstrated commitment to support the implementation of the district WASH plans. However, there were no incentives for compliance or any means of enforcement, and the evaluation did not find any evidence of government or non-government entities utilizing the plan to prioritise investments.¹⁰ While some District MPs allocated water supply schemes to communities that had achieved open defecation free (ODF) status, neither the prioritization nor the criteria for selection was included in any of the district WASH plans.

4.2.1.4.2.2 Service Delivery Arrangements

In all four project districts, KKP undertook consultations on the appropriate SDAs. The KKP support for consultation on the SDA drafted by the WASH PMU in 2019¹¹ was requested in February 2020, completed in December 2020 with the consultation report compiled in March 2021.

While these SDA consultations were too late to inform the implementation arrangements for the 4 KKP target districts, they were potentially useful in improving the robustness of the SDA. However, it does not appear that the consultations addressed some of the evident institutional challenges experienced in the implementation of KKP. For instance:

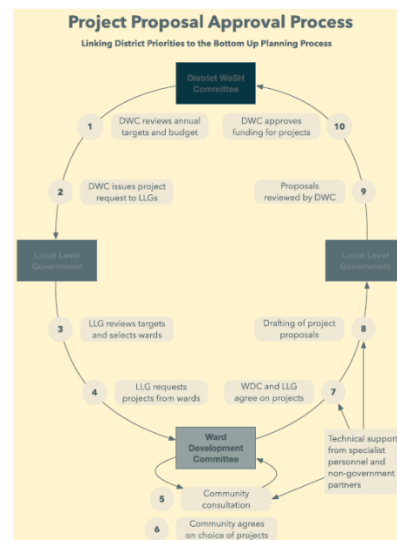


- While the project proposal approval process describes how the capital infrastructure projects proposed by LLGs (for the WASH services delivered by the LLGs) might be funded by the DDAs, this does not define how the capital infrastructure projects proposed by the education or health departments (for the WASH services provided by schools or HCFs) might be funded by the DDAs.
- The SDAs fail to address the question of how the 5-year District WASH plan relates to the medium-term budgetary framework for the DDA (committing funds to sectors), that enables LLGs, schools and HCFs a window to apply for capital works funding to deliver WASH services within their respective mandates of local government, health and education.

In the absence of this, the delivery of WASH capital works projects by the DDA will risk being defined by political patronage rather than the proposed SDAs.

4.2.1.4.2.3 Bottleneck Analysis Tool

UNICEF applied the BAT in all four of the KKP districts to evaluate the bottlenecks in the implementation of the proposed SDAs. Commencing in Goroka in May 2021, this process was completed in all 4 Districts by May 2022.



¹⁰ The absence of evidence does not in itself disprove utilization of the WASH plans, however the WASH BAT comes to the same conclusion that the District WASH plans were not utilized which provides additional support to this supposition.

¹¹ Drafted by the Departments of National Planning and Monitoring, Department of Education, Department of Health, Department of Works, Conservation and Environment Protection Authority, Department of Provincial and Local-Level Government Affairs

The BAT is a collaborative approach to identifying the gaps in the coordinating, planning, financing, building, operating and maintaining, monitoring and evaluating resources in the WASH sector. Although the BAT reports were successfully delivered in the four KKP districts, the timing of the BAT was too late to inform any project implementation. However, given the extremely late timing of the BAT, the consistent identification of the following issues across the four KKP districts (UNICEF, July 2022) constitutes an evaluation of the effectiveness of the KKP approach:

- District WASH Plans are not influencing government investment.
- Subnational governments have not taken ownership of the District WASH Plans.
- Subnational governments have not taken ownership of the survey data stored in mWater.
- District WASH Committees have been dependent on NGO support.
- Subnational governments have not established clear SDAs for WASH.
- Subnational governments do not have dedicated staff to support service delivery.
- Subnational governments need guidance on their responsibilities for monitoring compliance with WASH-related regulations and service standards.

These findings of the WASH BAT indicate low effectiveness of the KKP in the strengthening of the utilization of District WASH baseline data, 5-year WASH plans, WASH SDA and District WASH Committees. Despite the WASH BAT identifying the very bottlenecks that the KKP sought to address, the key recommendation of the WASH BAT process is to increase the financial, planning, technical and human resourcing at the district level.

4.2.1.5 National WASH Policy incorporated into the sector plans of the Departments of Education and Health

In addition to the delivery of sanitation and hygiene services in schools, HCFs and surrounding communities, the KKP sought to showcase the building of service delivery capacities at the district level, within a national framework facilitating the scale-up and regulation of the lessons learned. This enabled national regulatory instruments to be tested at the district level, and lessons learned at the district level to inform the revision of national regulations. Given the institutional complexity at the national level various outputs were coordinated with the Department of National Planning and Monitoring (WASH PMU), NDOH, and NDOE.

4.2.1.5.1 National Department of Health

The KKP developed national guidance documents on the protocols for the declaration, validation and certification of open defecation free (ODF) communities. This includes national definitions on ODF, ODF+ and Total Sanitation that was not aligned with the WHO/UNICEF definition of “safely managed sanitation” or “basic sanitation” or the national MIS for the measurement of progress towards the SDG goals.

The KKP prepared CLTS guidance documents on the triggering of communities to achieve ODF status. The KKP also prepared ‘training of trainer’ documents for government and non-government staff to generate the capacity to apply the CLTS approach. These documents compile global knowledge on the application of the CLTS approach and apply this to the local context.

The KKP is currently working with the NDOH on the documentation of guidelines for the construction of WASH in HCFs, while WaterAid has just commenced working with the NDOH on the development of a WASH in HCFs policy.

4.2.1.5.2 National Department of Education

The KKP has assisted the WASH unit within the NDOE in the drafting of a National WinS Policy and Construction Standards.

- The National WinS Policy details the minimum requirements for the provision of WASH services in schools in terms of the quality of the services (i.e. privacy and inclusion requirements, student/toilet and student/handwashing access ratios).
- The National WinS Construction Standards replicates the KKP designs of the superstructures implemented in the schools. This has not included the lessons learned from the application of these designs within KKP.

The KKP has assisted the WASH unit within the NDOE in the documentation of the 3 Star approach to WinS. This includes an assessment of the perspective requirements and the associated costs for the operation and maintenance of WASH facilities in schools. This seeks to facilitate the budgeting and raising of funds through either the school learning improvement plan (SLIP), or the Board of Management, or the students and their parents.

4.2.2 Outcomes

Basis of Assessment: Are the KKP provided services being used (i.e. school & HCF sanitation and hygiene facilities, community hygiene BCC, District WASH Plans and national protocols)?

4.2.2.1 Sanitation and Hygiene Services in 200 Schools & 36 HCFs

The planning of schools was based on developed checklists and needs assessments. However, the detailed 'bottom-up' requirements (i.e. the capacities, the needs, the demands, the soil) at each school and HCF site were not generated for planning.¹² The sanitation and hygiene facilities provided were generally not appropriate to the local capacity (except potentially for Goroka where dry pit squat toilets were installed in all the schools) or the local context (except potentially for Mt. Hagen where the HCFs including WASH services were renovated in response to client demand).

- The removal of faecal sludge was not considered in the design of toilets for remote rural settings, since sludge management does not exist in rural PNG, and only available in Port Moresby and Lae.¹³ This means that none of the remote rural toilets in the 200 schools and 36 HCFs can be emptied when they fill up.¹⁴
- The hardware allocated to some sites were not appropriate for the pre-existing context. This may be partly related to limitations of the baseline data (see 4.1.2.5).
- There is little evidence of 'resilience' considerations in the event of failure. Only in Mt. Hagen was there evidence of back-up plans for electricity failures (i.e. back-up handpumps for the electric pumps to the high level tanks, grids over solar panels to reduce the risk of vandalism, hidden/locked valves to 'turn-off' water supplies). Given the vulnerability of water seal toilets to water shortages, there was no evidence within KKP of any back-up for potential wet pit toilet failures. In the event of a water supply failure, as had occurred in many sites visited, the schools with water seal toilets would have no functional toilets.
- Although assessments were done prior to planning of design sets, no evidence was found of individual WASH facility site assessments and site layout drawings. This limited the ability of the school board/teachers/health staff or the EHO/DEO to analyse the sanitation and hygiene infrastructure being proposed for each site.

Sanitation and hygiene behaviour change in schools/HCFs largely followed the provision of facilities. As a result, achieving sustained behaviour change in the use, operation and maintenance of sanitation and hygiene facilities in schools and HCFs was largely hit and miss. There was limited evidence of the linking of the provision of WASH facilities to schools and HCFs with a demonstrated commitment to WASH behaviour change. This is in stark contrast to the 3 Star approach where the commitment by schools and HCFs to improving operation and maintenance (O&M) procedures triggers support for the provision of sanitation and hygiene facilities. The 3 Star approach is generally considered by UNICEF to provide better incentives for sustained sanitation and hygiene behaviour change in schools and HCFs in low capacity and weak regulatory service delivery environments.

¹² The proposal submitted to the EU committed that the KKP hardware interventions by the NGO would include topographical surveys, hydrogeological assessments, identification of beneficiaries and social investigations. Some of these assessments are cost prohibitive in PNG.

¹³ UNICEF discussed with authorities the introduction of twin pit toilets, but it was not agreed. Hence VIP toilet and septic tanks installed where available.

¹⁴ The recommended feasible options for rural areas are a) Dry Pit Toilets: with moveable superstructures so the old pit can be covered when full and the toilet moved to a new pit, b) Water seal toilets: with offset pits that can be deployed in either a dual alternating modality or by adding new pits that can be brought on-line when the old pit fills.

4.2.2.1.1 Sanitation and Hygiene Services in 200 Schools

There was low evidence of the routine usage of the sanitation and hygiene facilities in the schools by teachers or students. Of the twenty-two of the best school sites chosen by KKP partners to visit:

- None of the teachers' sanitation and hygiene facilities were unlocked and being routinely used in any site visited. The major reason for this is that teachers are embarrassed to be seen by the students going to the toilet. This problem is exacerbated with SaTo pan toilets (due to the clapping noise when the flap shuts), and/or when the toilets are sited near to the children's toilets and/or facing the playground, and/or when the teachers live on a rural school campus (so they can go home to go to the toilet), and/or when the teachers' toilets are sited close to teachers' homes (potentially causing odour problems).
- None of the menstrual hygiene incinerators were routinely being used in any site visited. The major reasons for this were that the exhaust fumes and the heat from the incinerator were transferred into the Menstrual Hygiene Management (MHM) toilet (melting the cistern in one case) and/or the incinerators were sited opening onto the playground, and/or the incinerator chimney was not covered allowing water into the incinerator, and/or the design was not user friendly (i.e. lacked 3 separate chambers for the MHM waste, fuel and ash, and vent for temperature control).
- Only eight (roughly one third) of the students' sanitation and hygiene facilities were routinely being used at the time of the visit. The reasons for the failure of students to routinely use these sanitation and hygiene facilities varied between the different districts.
 - o In Bougainville, the lack of student use was primarily due to the low student acceptability of the SaTo pan and Tasman Tuff toilets and secondarily due to the lack of water for flushing and handwashing.
 - o In Mt. Hagen, the lack student use was primarily due to water supply theft/vandalism rendering the sanitation and hygiene facilities inoperable and secondarily due the low acceptability of the SaTo pan.
 - o In Goroka, low student use was primarily due to the lack of water for handwashing and the smell of dry pit toilets transitioning from an anaerobic to aerobic state (due to a lack of water).
 - o In Nawaeb, low student use was primarily due to the low acceptability of the Tasman Tuff toilet seats and the premature filling of the SaTo pan/waterseal toilet pits (due to concreting the sides of the pits).

Addressing the problem of the low usage of the wet pit toilets (i.e. the SaTo pan and waterseal toilets) in the schools in Bougainville and Nawaeb will unfortunately lead to the backing-up of effluent in the toilets caused by the concreting of the sides of the pits. This is a consequence of a failure to focus on the appropriate design of the sub-structure to accommodate the absorption of the faecal effluent, in addition to the storage of the faecal sludge.

4.2.2.1.2 Sanitation and Hygiene Services in 36 HCFs

There was low evidence of the routine usage of the KKP provided sanitation and hygiene facilities in HCF's by patients. The sanitation and hygiene facilities were generally not responsive to the demands/needs of HCF staff and patients (potentially except for Mt. Hagen). In only one of the nine of the best HCF sites chosen by KKP partners to visit (an urban site) the sanitation and hygiene facilities provided by KKP were appropriately used. The reasons for this were:

- sanitation and hygiene facilities had been constructed near or in HCFs with no staff or patients
- sanitation and hygiene facilities had been sited well away from the HCF (even though they are water-based)
- sanitation and hygiene facilities for outpatients were locked (to avoid them being used incorrectly or to prevent wastage of water)
- sanitation and hygiene facilities for outpatients had been co-opted (for exclusive use by staff living on-site)
- sanitation and hygiene facilities were non-functional (due to a lack of water associated with either a failure in the demand management of water or a failure of the pumps to lift the water to overhead storage systems)

Hospital waste incinerators provided by KKP were not being used in any of the HCFs visited. This is either because:

- the shutes were unsafe (i.e. hospital sharps had to be pushed rather than dropped into the incinerator)
- the incinerators were poorly sited (limiting access for staff and/or complaints from nearby residents)
- the incinerators did not combust plastics/sharps cleanly (creating a bad smell and leaving too much deposit)
- the incinerators lacked protection from the rain (limiting peak temperatures and hospital waste storage)

4.2.2.2 *Sanitation and Hygiene Services in 800 Communities*

CLTS is a bottom-up methodology for communities to set their own targets for the eradication of open defecation. The incidence of open defecation have been extremely low in 3 of the 4 districts, and changes in the supply chains in the access to sanitation and hygiene behaviour change hardware or software were not visible. Also, evidence of social and political incentives for the attainment of ODF were not found. The ODF communities in the four districts were externally verified in line with the KKP developed ODF Verification and Certification Protocols as developed and adopted by the government. However, the verification and certification was reported by the Feedback Foundation (FF) who, as an implementer of the CLTS in the districts, are not independent assessors. Furthermore, the Verification and Certification Protocols loosely define what is certifiable ODF¹⁵, and the conformance to the Protocol was not strongly enforced.¹⁶ With the verifications having taken place in 2020, and this evaluation occurring two years later, the observed slippage is consistent with global observations of slippage after CLTS (Kouassi, et al., 2023). Based on this evidence, the ODF rate may be said to have been high at some points in time, but at the time of the evaluation, there seems to be little likelihood of the 99.5% declaration of ODF in the 800 communities. Nevertheless, the KKP districts were pilots to model the CLTS approach, without improvements to the wider enabling environment. Therefore, it is conceivable that there are challenges with sustainability, and it does not indicate that positive behaviour, as witnessed by the episodic ODF verification and the School Hygiene Clubs, did not happen. Some further considerations of outcomes in the communities:

- It was proposed that CLTS was to be situated within the broader Healthy Island context. While front-line motivators may have been aware of the association between WASH and chronic undernutrition, they were not informed sufficiently about the pathology of how environmental enteric dysfunction links faecal exposure of infants with chronic undernutrition, stunting and the smaller stature of adults.
- In Goroka, the NGO Touching the Untouchables (TTU) has developed a model that places CLTS in a local self-help agenda. Their approach involves living with communities, visioning, identifying risks and engaging in self-help activities. This neatly situates CLTS within a Healthy Island framework that offers a significant opportunity for local transformation if the young staff can be provided with the technical/social skills to be useful.
- KKP proposed to follow-up ODF declarations with sanitation marketing. There was however no evidence in the 4 districts of production systems enabling households to 'move-up' the sanitation ladder. There was some evidence of MPs allocating water supply schemes to communities that achieved ODF status on an ad-hoc basis through the DDAs.
- In Mt. Hagen, Care International deployed an excellent model of working through trained local artisans and engaging paid local volunteers to assist with the construction of WASH facilities in schools and HCFs. This leaves behind a two-tier system of trained tradesmen and local personnel who can maintain, learn and replicate these designs within the local community.

4.2.2.3 *Strengthened institutional framework and enabling environment for WASH delivery service*

4.2.2.3.1 *National WASH Policy is Implemented by the WASH PMU*

- The national government stakeholders were not empowered to regulate KKP decision making. For instance while the WASH PMU were involved in District selection, and shared in the development of the mWater baseline and the District SDAs with KKP, they were not involved in any monitoring visits or learning from KKP.

¹⁵ A random sample of 20% of households all having usable toilets at the time of the visit is considered to be verified as ODF according to the Verification and Certification Protocols

¹⁶ For instance, in one of the communities only 8% of households were verified as having useable toilets.

- Under the Organic Law on Provincial Governments and LLGs, the LLGs are assigned law making powers for water supply, hygiene and sanitation. There is little evidence of KKP engagement with the LLGs (either the LLG managers or the LLG Ward Councillors).
- Under the KKP there was no engagement with the Department of Provincial and Local-Level Government Affairs which is the regulatory departments responsible for provincial and LLGs.

4.2.2.3.2 National Service Delivery Framework is implemented by the selected District Development Authorities

- The baseline assessments by mWater and Sustineo consumed considerable resources (time and cost) however there was no evidence of any data from these assessments being used by anyone to inform decision making. For instance, the low open defecation rates in Mt Hagen (0.5%), Goroka (1.6%), Nawaeb (6.8%) do not appear to be well suited to the CLTS approach. There also seems to be little point in undertaking baseline assessments when the same targets are going to be set for each KKP partner in each district irrespective of need. This is exemplified when the district targets (i.e. 50 schools, 9 HCFs, 200 ODF communities) actually exceeded the number of rural schools, HCFs and communities that were actually present in some districts.
- The District WASH plans did not define how the services would be provided through KKP. While the plans included the KKP targets, they did not include any criteria for the 'top-down' selection of schools/HCFs/communities for technical/financial support nor did they include criteria for the 'bottom-up' incentivisation of improved behaviours for the operation and maintenance of sanitation and hygiene facilities in these schools/HCFs/communities.
- The District WASH Committees do not appear to have played any role in the execution of the District WASH plan. While the BAT applied by UNICEF has identified the lack of a dedicated WASH public service at the district level as the major constraint, it is not clear that "*a lack of human resources at the district level*" is the major constraint to the sustainable provision of WASH services in schools, HCFs and communities.
- The DDAs established and controlled by District MPs in the national legislature carry a risk of political patronage. DDAs are designed to build and transfer WASH assets without legislative responsibility for the WASH liabilities, which compromises the likelihood of following the District WASH plans.

4.2.2.3.3 National WASH Policy is incorporated into sector plans of the Departments of Education and Health

The national government stakeholders were not empowered to regulate KKP decision making. For instance:

- while the NDOE were involved in the approval of the designs and routine progress reporting meetings, they were not included in any reviews or lesson learning from KKP (while being asked to endorse KKP guidelines). Due to the lack of support from KKP to join review missions, the NDOE were required to allocate their own limited financial and human resources to review WASH facilities in sample KKP schools.
- the NDOH indicated that they were not involved in the deliberation on any standard designs nor were they involved in the reviews of the WASH facilities in HCFs established through KKP.

Under the Organic Law on Provincial Governments and LLGs, the provincial governments are assigned law-making powers for education and health services. However, under KKP neither the provincial health officers or Provincial Education Advisors were involved in the allocation of resources and/or the monitoring of the provision of WinHCF or WinS. While the EHO/DEO were mobilised by KKP through the district WASH committee, it appears that they were only engaged at the start and the end of the KKP cycle (i.e. in the 'introduction', the clearing of 'road-blocks', and the 'sign-off' on the provision of WASH facilities in schools/HCFs) but not in the ongoing decision making.

4.3 EFFICIENCY

KEQ5. How well was the project implemented in terms of fidelity to the model, design, and plans, and management of costs and timelines? How did external factors – technical, financial, institutional, environmental, social - modify the level of achievement of outputs and outcomes?

In terms of management of costs and timelines, KKP delivered sanitation and hygiene facilities (with the associated water delivery systems) on time in all 200 schools and 36 HCFs targeted by September 2022. KKP also delivered

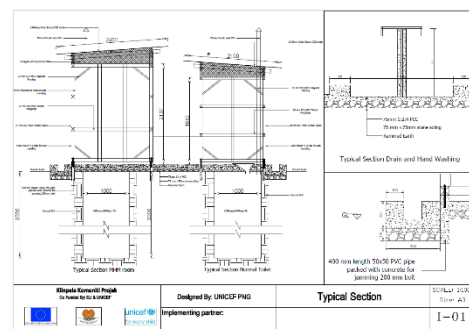
796 communities (99.5%) of the 800 mobilised communities that had self-declared ODF, verified and certified by the DDA (EU-UNICEF, 2022) against the target of 480 ODF communities. The project was on budget using EUR 22,279,090 (98%) of the total EUR 22,712,686 contributed (EU - UNICEF, 2021). This was a significant achievement given the difficulties associated with the remote locations, low capacities and the restrictions imposed by COVID.

The question around fidelity to the model design and plans is elaborated in section 4.3.1 below.

4.3.1 Standard designs

The standard design for the school toilet blocks prepared by UNICEF was characterized by brightly coloured corrugated iron wrapped around a termite resistant wooden superstructure. The standard drawings detailed a reinforced concrete slab with a toilet seat (for both wet and dry types) set above a 1 metre (diameter) by 3 metre (deep) unlined pit with 450 mm between the toilet walls.

The focus on the superstructure and lack of focus on the sub-structure had implications on the design, construction, operation and maintenance of these school toilets. For instance, it is disputed if multiple pits of 3 m by 1 m separated by only 650 mm¹⁷ can bear a concrete slab without collapsing in all soil types, and that a 1:2:4 plain cement concrete (PCC) slab could bear the weight of toilet users while bridging a 1 m (diameter) pit without any steel reinforcing.¹⁸



The failure to think through the implications of dry versus wet pit toilet design (on the operation and the emptying), to detail the sub-structure for dry versus wet pit toilet design in different hydrogeological soil conditions, and to test or trial different designs, resulted in multiple complications in the operation and maintenance of school toilets in the different districts.

4.3.1.1 Bougainville & Nawaeb

In Bougainville and Nawaeb, World Vision primarily installed water-based toilets (i.e. SaTo pan and water seal toilets). In the gravelly/sandy soil where the pits (for both direct and offset cesspits) were at risk of collapsing, World Vision were advised by UNICEF to line the walls of the pits with concrete. As a result, these toilets have backed-up prematurely, due to the clogging of the bottom of the pits with faecal sludge and the inability of the effluent to percolate through the side walls of the pits.

Where dry pit toilets were installed (primarily in the elementary schools), the contractors installed the Tasman Tuff toilet risers. As the size of the hole is very large, it was scary for the children and therefore none of these dry pit toilets appeared to have been used.

4.3.1.2 Mt. Hagen

In Mt Hagen, the initial design by Care International was the installation of SaTo pan toilets fitted with the SaTo 320 twin outlet V-trap connection system enabling toilets to be offset from dual alternating offset cesspits. The proposed design for:

- *Offset cesspits* addressed the risk of the collapsing of direct cesspits located too close together.

¹⁷ The standard diagram provided by UNICEF shows an unreinforced slab and unlined pits separated by 650 mm.

¹⁸ In the gravelly or sandy soil of Bougainville and Nawaeb the KKP partners lined the pits with concrete to stop them collapsing. This prevented the pits from leaching from the sides, resulting in the premature filling of the pits (with liquid) that could not be emptied. In the more dense soil of Goroka, each toilet in a toilet block was separated by several metres of earth joined by concrete pathways to reduce the risk of collapsing. In the clay soil of Mt. Hagen one pit was offset under two toilets to maximise the offset between the pits.

- *Alternating offset cesspits* allowed for pits to be taken 'off-line', enabling the contents to be safely dug-out when dry and turned into the soil.
- *Separate soak pit* receiving greywater from the handwashing station and the urinal reduces the risks of the overloading cesspits with effluent.

By setting up the toilet block for two toilets to discharge to a single pit at the same time, it only requires 5 pits (rather than 8 pits) to serve 4 toilets in a 'duty – standby' arrangement. The proposed construction of offset cesspits of a larger diameter (i.e. 1.5 m) and a shallower depth (i.e. 1.5 m) facilitates easy emptying, as compared to the soakpits of smaller diameter (i.e. 1.0 m) and deeper depth (3.0 m) that should never need to be emptied. This was an extremely clever design for water-based rural sanitation and hygiene facilities in rural settings and should have been adopted throughout KKP.

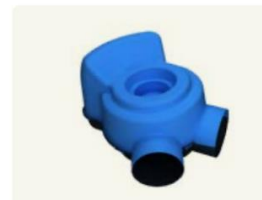
Unfortunately, due to the unavailability of the proprietary alternating pit switching system for the SaTo pan (due to COVID) and the tight timeframes for the delivery of the KKP, this proposed design was abandoned. The risk of the collapsing of the pits in Mt. Hagen was therefore addressed by designing two toilets to share a single pit of larger diameter (1.4 m) and deeper (3.5 m), enabling a minimum distance of 1 m between the outer walls of adjacent unlined pits, in the characteristic dense red soil around Mt. Hagen. The proposal to fit 100 mm vent pipes (with unglued joints) may have enable the pits to be emptied if septic tanker sludge trucks could gain access to these rural sites and if the pipe joints had not been glued.

Given the risks to sanitation and hygiene services posed by a water supply failure, Care International sought to double the storage capacity offered by rainwater tanks wherever possible. At the time, the SaTo pan was understood to be either a 'low-water use' or a 'no-water use' technology option. In retrospect, with the knowledge that the SaTo pan is only a 'low-water use' rather than a 'no-water use' option, the increasing of water storage was a wise decision. Again, in retrospect, greater focus on water supply demand management options (i.e. flow restrictors, hidden isolation valves) and water security (i.e. barbed wire, supplementary sources) would have also been beneficial.

4.3.1.3 Goroka

In Goroka, the KKP constructed dry pit toilets at a ratio of 25:1 for girls and 40:1 for boys in all 50 schools, although some were observed to already have dry pit toilets. The standard design deployed by AT Projects (a service provider in Goroka) for ventilated improved pit toilets in households and

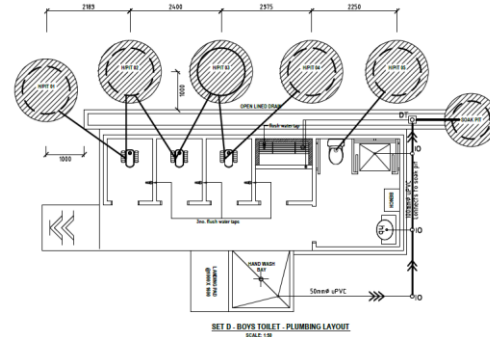
SATO 320 TWIN OUTLET V-TRAP CONNECTION SYSTEM



The perfect partner to connect all our toilet pans available in India to two offset pits

- The 320 twin outlet connection and sealing system helps to minimise odours by diverting waste to two offset pits using the SATO 400 series pans and the V-Trap system
- The V-Trap is designed to house the pan on top and two pipes to the side that directs waste to twin offset pits for waste collection
- Connection and sealing system for toilet pans with 90mm outer diameter outlet, including SATO 400, 410, and 450 toilet pans

Dimensions
• 351mm (L) 255mm (W) 211mm (H)



No.	Description	Dimension Level
1.	TOILET PIT 01	1000 mm x 1000 mm
2.	TOILET PIT 02	1000 mm x 1000 mm
3.	TOILET PIT 03	1000 mm x 1000 mm
4.	TOILET PIT 04	1000 mm x 1000 mm
5.	TOILET PIT 05	1000 mm x 1000 mm
6.	TOILET PIT 06	1000 mm x 1000 mm
7.	TOILET PIT 07	1000 mm x 1000 mm
8.	TOILET PIT 08	1000 mm x 1000 mm
9.	TOILET PIT 09	1000 mm x 1000 mm
10.	TOILET PIT 10	1000 mm x 1000 mm

NOTES

- TOILET 1, TOILET 2 & TOILET 3 ARE FOR SATO PAN TOILETS.
- TOILET 4 TOILET 5 TOILET 6 TOILET 7 TOILET 8 TOILET 9 TOILET 10 TOILET 11 TOILET 12 TOILET 13 TOILET 14 TOILET 15 TOILET 16 TOILET 17 TOILET 18 TOILET 19 TOILET 20 TOILET 21 TOILET 22 TOILET 23 TOILET 24 TOILET 25 TOILET 26 TOILET 27 TOILET 28 TOILET 29 TOILET 30 TOILET 31 TOILET 32 TOILET 33 TOILET 34 TOILET 35 TOILET 36 TOILET 37 TOILET 38 TOILET 39 TOILET 40 TOILET 41 TOILET 42 TOILET 43 TOILET 44 TOILET 45 TOILET 46 TOILET 47 TOILET 48 TOILET 49 TOILET 50 TOILET 51 TOILET 52 TOILET 53 TOILET 54 TOILET 55 TOILET 56 TOILET 57 TOILET 58 TOILET 59 TOILET 60 TOILET 61 TOILET 62 TOILET 63 TOILET 64 TOILET 65 TOILET 66 TOILET 67 TOILET 68 TOILET 69 TOILET 70 TOILET 71 TOILET 72 TOILET 73 TOILET 74 TOILET 75 TOILET 76 TOILET 77 TOILET 78 TOILET 79 TOILET 80 TOILET 81 TOILET 82 TOILET 83 TOILET 84 TOILET 85 TOILET 86 TOILET 87 TOILET 88 TOILET 89 TOILET 90 TOILET 91 TOILET 92 TOILET 93 TOILET 94 TOILET 95 TOILET 96 TOILET 97 TOILET 98 TOILET 99 TOILET 100 TOILET 101 TOILET 102 TOILET 103 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schools entails a round reinforced concrete slab that can be rolled to a new site when the pit is full and a moveable superstructure that can be set onto a new location. UNICEF in consultation with DDAs compared various options and proposed a design to accommodate all WASH needs in one place. Although AT Projects objected to the UNICEF standard design of a single toilet block, a variation of this was adopted for Goroka. Consequently, the dry pit toilets constructed in the 50 schools in Goroka have large solid concrete slabs that cannot be moved when the pit is full.¹⁹ Nevertheless, the superstructure will be used after pits are full and that platform can be used as a garden for planting flowers and trees.

School sanitation and hygiene facilities in Goroka was undertaken by 4 teams of 4 local carpenters trained, supervised, and resourced with materials by AT Projects, working with local community volunteers and landowners. Consequently, the dry pit toilet facilities in Goroka were more basic than those in the other districts but they carried lower risks of failure. Although they cannot be emptied, the simple dry pit school toilet blocks in Goroka had the highest usage amongst the 4 districts.

KEQ6. What were the strengths and gaps in capacity of the implementation team composition (UNICEF and partners together)? How did they contribute to the timeliness and cost of the project?

The modality of the KKP being efficient in the delivery of appropriate sanitation and hygiene facilities and behaviour change, is a basis of assessment of the efficiency of the KKP. The KKP management model's efficiency in deploying the respective capacities of UNICEF staff and NGO partners is further assessed in the following sections.

4.3.2 Modality

The BAT conducted by KKP reveals a failure to develop the systems necessary for the DDAs to build and transfer sanitation and hygiene assets to schools and HCFs. The District WASH plans developed through KKP have not been used, the District WASH Committees established by KKP are not functional, and the district health and education department staff have prioritised delivery of project outputs over outcomes.

Notwithstanding, the DDA is responsible for the build and transfer of WASH infrastructure, and not for its operation and management, which makes the risk of lack of accountability plausible, particularly as the KKP's focus was not on the enabling environment which would include strengthening the LLG and Provincial level to their part in operation and management.

On the basis, the evaluation finds the KKP did not fully draw on the capacities of the institutions responsible to demand and supply, to license compliance and regulate failure of sanitation and hygiene services.

4.3.3 Management

The KKP management model prioritised project output targets over tangible project outcomes for stakeholders and beneficiaries.

- The priority given to construction targets for school toilet blocks without sufficient listening, trialling, modifying, learning, sharing lessons has resulted in many toilets on many sites not being used.

The Costs of Prioritising Project Targets over Process

The six major consequences of the choice to prioritise project targets over due process (as detailed in the Field Visit Report) are summarised below.

1. KKP built WASH facilities in schools & HCFs BUT they cannot be sustainably used
 - KKP designed attractive superstructures BUT failed to get the substructure 'right'
2. KKP developed standard WASH facility designs BUT did not develop site designs
 - KKP installed models generally did NOT consider maintenance or resilience
3. KKP developed District WASH plans BUT they have never been used
 - KKP undertook baseline assessments BUT never used the data
4. KKP provided public infrastructure BUT bypassed mandated public institutions
 - KKP bypassed mandated national/provincial/LLG authorities BUT used District officials to meet targets
5. KKP was set-up as a pilot project BUT did not follow-up, monitor, evaluate or learn
 - KKP used the WASH PMU platforms (mWater/SDA) to deliver project targets
6. KKP weakened the bottom-up spirit of CLTS BY imposing project targets on beneficiaries
 - KKP claims of 100% ODF (w/100% toilet upgrades) EVEN where everyone already had toilets is fanciful

¹⁹ There are no lugs to manually lift and move the toilet facility in a single piece; some facilities are internally lined meaning that the holding-down bolts cannot be accessed without removing the internal cladding; male / female teacher toilet blocks are bound together by a common roof and so they cannot be moved without removing the roof.

- The centralised deployment of a standard design, without sufficient attention to the individual design for the site layout, soil type, rainfall, cultural preferences has resulted in sanitation systems that lack resilience and cannot be maintained.
- The target to generate district baseline data without plans for an endline fails to recognise the rationale for the baseline and it has retained data in the national MIS for the 4 KKP districts that is now clearly inaccurate.
- The target to deliver district WASH plans without an understanding of the relationship between the WASH plan, the KKP and any other funding mechanism, has resulted in District WASH plans that have not been used, including by KKP.
- The KKP focus on meeting District WASH targets resulted in the district officials supporting (not regulating) the project, rather than the project supporting (and being regulated by) the district. This also does not adequately leverage the legislative assignment of responsibilities to provincial and LLG officials.
- The pursuit of contract targets in the 4 districts undermined the focus on monitoring and learning that was supposed to occur for the nationwide replication from these 4 pilot districts. Without refocus on learning and its application to adjust project course, there is a strong risk of the mistakes in KKP being replicated in future districts.
- The focus on attaining one hundred percent of the targets for sanitation and behaviour change in communities has resulted in the generation of verified, certified, open defecation data that is not credible.

The net result of choices to pursue targets over the managing of processes, to prioritise the claims of success above that of monitoring progress or understanding challenges, to roll-out a standardized approach without sufficient piloting and testing may have compromised the intended outcomes of KKP and left behind flawed designs and processes that could negatively impact future progress in the PNG WASH sector. For example:

- The claims of success in the top-down standardized provision of sanitation and hygiene facilities in schools undermines the bottom-up low-cost 3 Star approach to WinS that prioritises a commitment to operation and maintenance over the creation of WASH assets in schools.
- The continued support for the preparation of District WASH Plans and the strengthening of District WASH Committees without reflection on the failures of these instruments under KKP (or any political economy analysis of the causes of this failure) runs the risk of strengthening political patronage in the future.

The promotion of the success of the CLTS approach without any analysis of its achievements and shortcomings or the nuances necessary for success in the PNG context fails to provide successor CLTS undertakings with the tools necessary for the successful application of this approach.

4.4 SUSTAINABILITY

KEQ 7: Are the toilets provided in schools / HCFs cleaned and looked after?

This evaluation question about the toilets in schools and HCFs being cleaned and looked after is approached from a technical/environmental and social/behavioural sub-criteria. In the former, the assessments asks if the toilets can be emptied when they fill-up, and are there provisions for the safe disposal of faecal sludge when this occurs. In the latter sub-criteria, the behaviours necessary to sustain sanitation and hygiene facilities are assessed, in view of water-wise management and routine cleaning practices.

4.4.1 Technical / Environmental

None of the direct wet pit toilets (water seal or SaTo pan) among the 21 schools visited provided access for a 3" vacuum hose. The intent in Mt. Hagen was to not glue the 100 mm vent pipe, so that this could be removed to insert a vacuum hose, however it had been glued in the sites visited in Mt. Hagen. Some of the offset septic tanks or pits in the HCFs (and a few in schools) had access for sludge removal, however these can only be emptied where a vacuum septic sludge truck is available and can gain access, which is not the case for most of the sites. While 3" diesel flexi shaft driven sludge pumps were provided for some remote locations in Mt. Hagen, it is likely that these

will rag-up as they are not designed to deal with the small non-biodegradable solids (i.e. condoms, wet wipes, tampons) that will likely be flushed down school / HCF toilets.

The concrete slabs and the heavy framed superstructure on the dry pit toilets cannot be moved to a new pit when the old pit is full. Where septic trucks can gain access, the contents of dry pits can be moistened into a slurry to attempt vacuum sludge removal, but this is often difficult given the large non-biodegradable solids (i.e. nappies, menstrual pads, bottles, corn cobs) that are dumped into dry pit toilets.

Overall review of designs and documents indicates that faecal sludge removal was not considered in the design of the toilets for remote rural settings. Based on this and the empirical evidence from the site visits noted previously, none of the remote rural toilets in the 200 schools and 36 HCFs targeted can be emptied when they fill-up.

4.4.2 Behavioural / Social

Behavioural sustainability for sanitation and hygiene requires strategies to reduce water supply wastage by users and operational strategies to maximise water storage, particularly in the schools in the three districts which rely on water-based toilet systems. Social sustainability for sanitation and hygiene requires strategies to prevent the vandalism of water infrastructure and the theft of water by surrounding communities. This aligns with the goal of ODF declaration because the communities cannot be ODF if the neighbouring school toilet facilities are non-functional due to a lack of water.

These behavioural and social sustainability conditions were problematic in all four districts. The failures of the toilet blocks in the visited sites in Mt. Hagen was based on a failure to safeguard water for flushing. In Bougainville's Dapera Primary School, all four flush toilets for students were not being used due to a lack of water for flushing, and in Deware High School a lack of rainwater due to the drought had resulted in the closure of the school for several weeks. In Mt. Hagen's Kontoma Primary School, the toilets had not been operational for four weeks due to a lack of water. In Goroka's Nupaha Primary School and Nupaha HCF, the flush toilets and handwashing basin were non-operational due to a lack of water. The WASH facilities of Situm Health Center in Nawaeb were not working due to the lack of rainwater. The safeguarding of water for sanitation and hygiene was a common cause of failure in usage and routine cleaning of WASH facilities in all districts, even in Goroka where dry pit toilets had been installed in the schools.

There were some good examples of the O&M of the sanitation and hygiene facilities in five of the twenty-two schools visited. These good practices linking behavioural management within the school, with social management in the community (most prevalent in Goroka and Mt. Hagen) successfully ensured regular usage of the sanitation and hygiene facilities by students, including routine access to materials for anal cleansing and education on the correct usage of the toilets, provision of the materials and labour for cleaning of the sanitation facilities, and implementation of strategies for prevention of vandalism and water wastage. The occasionally hit, and largely miss, nature of these good practices make it hard to attribute the behavioural and social changes to the KKP activities.

KEQ 8: Considering the emergency context and need for response under scenarios such as COVID-19, what are key programmatic adaptations needed to ensure handwashing practices, ODF status and the associated social norm sustain following certification?

The COVID-19 has taught us the importance of whole-of-government response and inter-agency cooperation. Recognizing that sub-national governments are often at the front line of the crisis, co-operation with local administrations is essential and complex, given the varying local realities that national governments must contend with (OECD, 2022). Viewed from this frame, at the national level, the KKP contribution to departments responsible for the planning and evaluation of the WASH sector could be strengthened. Some adaptations include:

- Using the update of the District WASH Plans, the consultations on the SDA, the WASH BAT and the data in the national WASH MIS in the four KKP districts to strengthen the capacity of the WASH PMU to undertake national planning and evaluation of the WASH sector on an ongoing basis.
- Involving the Department of Education in a rigorous monitoring, evaluation and learning process in the actioning of the national WinS policy and the construction guidelines based on the delivery of sanitation and hygiene assets in the four KKP districts, to strengthen their capacity to establish standards and regulate failures on an ongoing basis.
- Involving the Department of Health in a rigorous monitoring, evaluation and learning process in preparation and implementation of national CLTS training and the declaration, verification, and certification of communities as open defecation free (ODF) based on the experiences in the four KKP districts, to strengthen their capacity to establish sanitation and hygiene standards and regulate failures on an ongoing basis.
- Engaging with the Department of Provincial and Local-Level Government Affairs to strengthen sanitation and hygiene service provision through the identification and replication of the legal and social instruments by provincial and local level governments to ensure universal access to sanitation and hygiene services.

4.5 COHERENCE

KEQ 9: To what extent was the KKP delivery model appropriate to the PNG context?

4.5.1 Fit-for-purpose

A key reflection from the discussions with KKP partners was that the primary focus of the project was on the achievement of quantitative targets in the implementation of the project. The contractual nature of the partners relationship with UNICEF allocating standardized designs to specific sites from the top-down, was ‘at odds’ with their normal approach of a demand-responsive bottom-up engagement with the School Board of Management (BoM) and the head teachers to define ‘the WASH facilities that they needed’. Consequently, the same WASH facility designs that didn’t necessarily respond to BoM / teachers’ capacity to operate and maintain, were replicated throughout a particular district. With the added challenge of COVID, the tight timelines for the achievement of the physical targets worked against the building of the institutions of WASH service delivery. Knowing that the sustained delivery of sanitation and hygiene services in schools and HCFs are particularly difficult, this infrastructure-led approach has proven to be extremely problematic.

The WinS Infrastructure Design Manual produced by UNICEF for NDOE (EU-UNICEF, 2022) does not appear to reflect the lessons learned from project implementation that resulted in the production of standard designs for WinS. Namely that WASH facilities in schools often:

- cannot be constructed (because the pits will collapse if not lined),
- cannot be operated (because the pits fill up prematurely because they are lined), and
- cannot be maintained (because remote rural pits cannot be emptied when they fill-up).

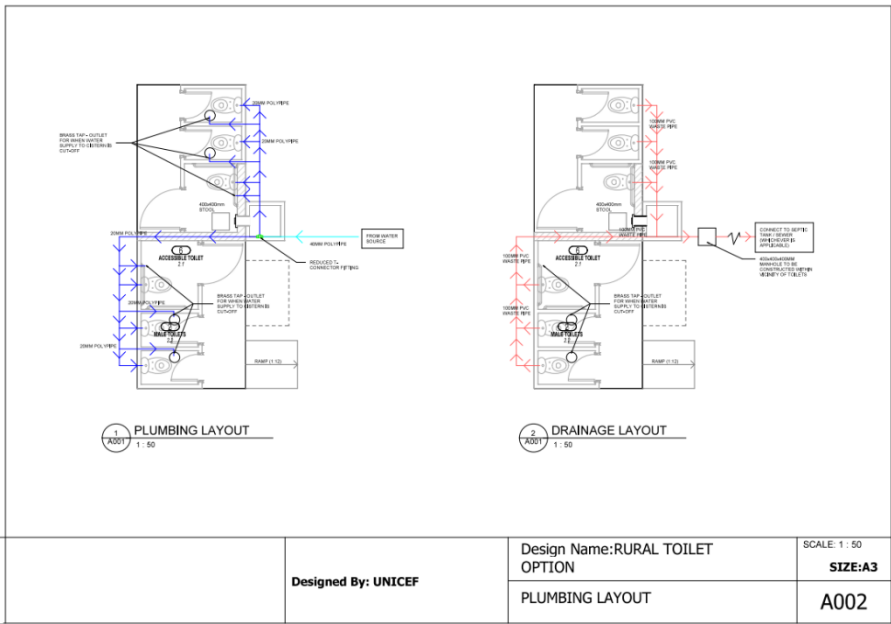
Failing to address these failures in the standard designs is detrimental to the understanding by the PNG WASH sector on the principles that should underpin the design of different sanitary systems.

4.5.1.1 *Standard Water-based Toilet Designs*

The proposed national standard design for water-based toilets in rural areas appears to have repeated the same mistakes made at the start of the KKP. This national standard design:

- discharges the blackwater from the toilets to a septic tank / sewer (whichever is applicable) even though this cannot be emptied in rural areas where there is no access for septic sludge tanker trucks.

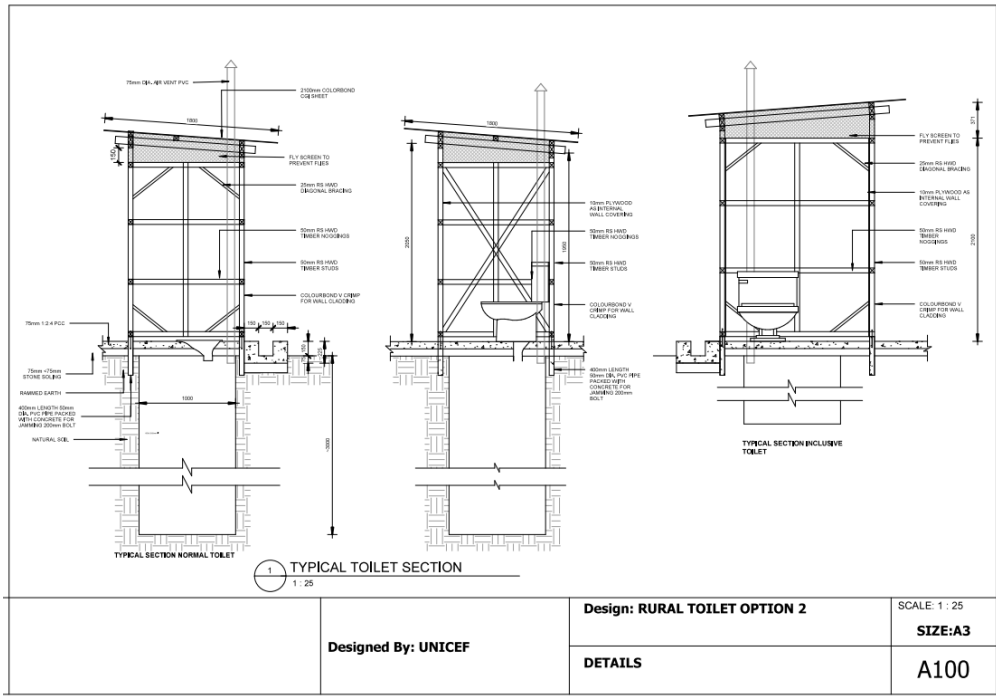
- fails to provide detail on the design / sizing of the septic tank and the soakaway for any water-based toilet systems
- discharges the greywater from the urinals to the septic tank / sewer even though this increases the risk that this will surcharge a septic tank / soakaway (particularly in public toilets where urinal usage is very high)
- fails to recognize or address the major operational failure of water-based toilet systems which is the 'running-out' of water caused by the lack of the demand management of the water supply system.



4.5.1.2 Standard Dry Pit Toilet Designs

The alternate option of the national standard design for direct pit toilets (either dry pit or SaTo pan toilets) in rural areas also appears to have repeated the same mistakes made at the start of the KKP. This national standard design:

- fails to address the risks of the collapsing of pits as the standard design for the toilet blocks places only 0.65 m separation between adjacent pits of 1 m diameter. There are no provisions for the perforated lining of the pits (i.e. with bricks in a honeycomb pattern) in the more sandy / gravelly soil. The incorrect specification of plain cement concrete (PCC) for a slab that is spanning 1 m diameter pits has also not been corrected.
- includes a large immovable concrete slab (for dry pit toilets) with a permanent superstructure that cannot be emptied, because it cannot be moved and therefore must be abandoned when full.
- fails to provide pump-out access for the few direct pit SaTo pan toilets in those urban areas where septic sludge tanker trucks may be available (i.e. capped Y junctions in 100 mm diameter external vent pipes)



may provide access for 3” sludge removal hoses).

KEQ 10. To what extent did the project align with implementation of the National WASH Policy 2015-2030? And how can it better target its contribution to the WASH SDGs?

The third goal of the KKP was “Strengthened institutional framework and enabling environment for WASH delivery service, leading to improved governance in the WASH sector.” In line with this goal area, two specific activities of the KKP were directly aligned with implementation of the National WASH Policy 2015-2030:

- Support the Programme Management Unit (WASH PMU) to implement the five-year national strategy and action plan of National WASH Policy.
- Support district partners to deliver services more efficiently, in accordance with the National Service Delivery Framework and the National WASH Policy 2015-2030.

The assessment of project alignment with National WASH Policy implementation is approached with the guiding question on the extent to which KKP outputs informed decision making by KKP and the government. This is viewed in terms of rational ordering of the project to align with a coherent policy implementation, and the extent to which the feedback loop from design to implementation to learning to redesign was followed as an indication of KKP learnings informing better decisions by the KKP and government.

4.5.2 Rational

4.5.2.1 Role of the District

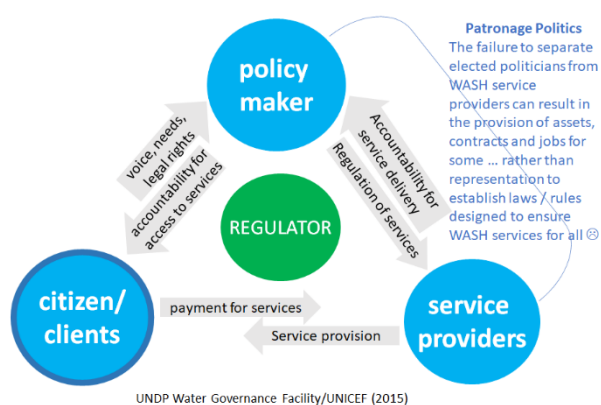
There is no clear national or provincial legislation that supports the establishment of District WASH Committees, neither is there any rationale for 5-year District WASH plans nor any instrument for their enforcement.²⁰ Consequently, there is no oversight of the District WASH Committees, and inconsistency or lack of clarity in their establishment, responsibilities, and disbandment. The lack of legislative framework and oversight, poses a risk to the strategy to strengthen the district to undertake coordination (i.e. District WASH Committees), monitoring (i.e. District WASH baselines), planning (i.e. District WASH plans), asset creation and transfer (i.e. District WASH budgets), human resources development (i.e. District WASH cadre). This compromises the quality, equitability, and sustainability of KKP capacity resources provision to the district level, and does not adequately leverage the provinces and LLGs’ legislative assignment of WASH responsibilities.

4.5.2.2 Timing

While most of the software and hardware outputs appear to have been delivered, the timing / phasing of those activities did not appear to build on any logic wherein one step informed the next step. For instance:

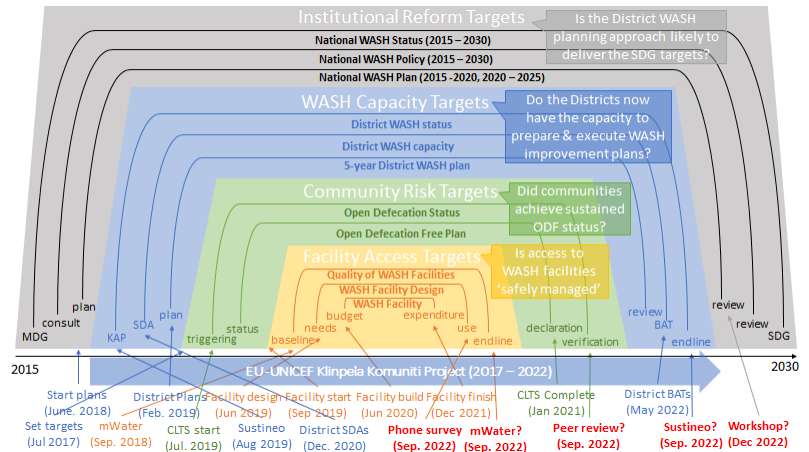
- The District KAP baseline assessment (by Sustineo) was conducted after the design of facilities had commenced, without any plans for an endline assessment. The KAP baseline data does not appear to have been used by any of the partners.

WASH Governance Principles



²⁰ Medium term development plans and budgets are normally deployed by legislative tiers of government to provide budget envelopes to multiple departments to enable O&M forecasting and multi-year planning. The purpose behind the deploying of 5 year plans for a single sub-sector (i.e. WASH) for a government tier where budgets are not legislated is not clear.

- The mWater baseline assessments conducted in preparation for the District WASH plans, do not appear to have informed the assignment of contractual targets to each KKP partner (i.e. 9 HCFs, 50 schools & 200 ODF communities), nor was there any plan for an mWater endline assessment.
- The establishment of common KKP WASH targets (i.e. 9 HCFs, 50 schools & 200 ODF communities) prior to the preparation of District WASH Plans undermines the local planning process.
- The district SDA was field tested in June 2020 during the construction phase rather than being undertaken prior to the planning phase.
- The short timeframes and contractual targets (i.e. cost per student for new WASH facilities) appear to have negated the proposal to undertake individual social / environmental / geological / technical site investigations to tailor the standardized WASH facility designs to each location.
- In the drive to meet the targets, the primary stakeholders from the Departments of Planning, Health, Education at the National and Provincial level appear to have been bypassed (in the planning, design, monitoring, learning) and the role assigned to LLGs in WASH service delivery appears to have been ignored.



Although the KKP end date had been extended through to January 2023, all the KKP implementing partner contracts concluded in 2021. While the local KKP partners were willing to facilitate visits, they no longer had the staff, nor the funding for any additional data collection as part of this end term evaluation.

4.5.2.3 Learning

The KKP was structured as a pilot in four districts in 4 regions to develop lessons for the scaling of the provision of WASH services nationally (EU-UNICEF, 2017). However, the KKP appears to have focused limited resources on learning through either evaluations or routine monitoring. For instance:

- In contradistinction to the project proposal there was no appointment of a 3rd party monitoring firm. There was no consolidated monitoring of inputs, outputs and outcomes against the baseline context. This was identified by the EU mid-term evaluation as a key shortcoming but the recommendation for appointment of a monitoring, evaluation and learning (MEAL) officer was never actioned.
- The WASH behaviours baseline KAP survey conducted by Sustineo in 2019 (Sustineo, 2019) was not accompanied by a plan for an endline study (to ascertain the changes in outcomes) nor was it accompanied by an analysis of the findings (informing changes in the project) nor referenced in any of the KKP annual progress reports or the mid-term evaluation. Similarly, the baseline assessment of WASH facilities conducted in the mWater survey in the 1st phase was not accompanied by a plan for an endline assessment to ascertain the changes in access nor an analysis of the findings to inform changes in the project.
- While there was evidence of some trials of facility designs in schools, there was little evidence of the continuous improvement of facility designs within each of the project districts (except for Mt. Hagen where the engagement of local artisans with community volunteers led to constant improvements in facility design and construction). There is also no evidence of the sharing of good practices between the KKP districts. For instance, although the fibreglass urinals developed by AT Projects in Goroka addressed the smelly concrete urinals problems in the other districts, there was no recognition of this good practice or any evidence of the sharing of this within KKP. Similarly, the adaption of the CLTS triggering approach within the Healthy Island model that was developed by TTU in Goroka was neither recognised nor shared with the other KKP partners.

- The KKP did not demonstrate evidence of attempting to address the gnarly problems of sanitation and hygiene in communities, schools and HCFs. Consequently, the KKP has not contributed to the PNG knowledge base on:
 - o The applicability of different approaches for the O&M of sanitation and hygiene facilities in schools.
 - o The different means for sustaining sanitation and hygiene behaviour change in ODF communities.
 - o The sanitation and hygiene service delivery model's replicability in other resource constrained districts.

5 CONCLUSIONS

Relevance: KKP targeted a significant sector in districts where it was needed even if did not target the most needy.

- The KKP's targeting of sanitation and hygiene in HCFs, schools and their communities is considered significant in (a) addressing a poorly performing sub-sector, (b) prioritizing the determinants of human capital development (i.e. physical and educational potential) and (c) targeting a bundle of services where tangible results are possible. The targeting sanitation and hygiene in HCFs and schools in these four districts is needed, however the targeting of the eradication of open defecation was only needed in Bougainville District.
- The decision to select districts with the greatest demand/capacity to implement the KKP was not needed given the lack of resources provided by KKP to the learning of lessons nationally for the application in other districts with less capacity. Similarly, KKP has not necessarily targeted the most in need HCFs, schools and surrounding communities (i.e. with the lowest levels of access to sanitation and hygiene facilities) in each District.

Effectiveness: Although KKP successfully delivered the intended outputs, it failed to secure the intended outcomes.

- According to KKP data all the project outputs have been delivered. This includes the target to reach 36 HCFs and 200 schools with sanitation and hygiene facilities, and 800 communities with sanitation and hygiene behaviour change messaging, in 4 districts with outputs to strengthen planning (i.e. 5 year WASH plans), institutional arrangements (i.e. SDA) and capacity (i.e. BAT), within a national framework with outputs to strengthen national capital investments (i.e. National WinS & WinHCF Construction Standards), SDG monitoring of access to WASH services (i.e. national MIS) and promotion of hygiene behaviour change (i.e. protocols for the triggering / verification of open defecation free status in communities).
- The KKP failed to deliver the intended project outcomes with little evidence of:
 - o the regular use of the 236 sanitation and hygiene facilities constructed in schools and HCFs.
 - o significant sanitation and hygiene behaviour change in the 800 communities declared ODF.
 - o an increase in the capacity of the districts or the national departments to execute their intended roles.

Efficiency: The efficiency of the KKP in the delivery of sanitation and hygiene outputs is high, while the efficiency of the delivery of outcomes and impact is low.

- The KKP delivered all the sanitation and hygiene facilities in schools and HCFs along with behaviour change including the surrounding communities on time and within budget. The KKP also delivered all the support for district implementation and national regulation for sanitation and hygiene service delivery on time and within budget.
- The KKP was not efficient in delivering the requisite changes in behaviours of communities, schools (i.e. the board of management, head teacher, student WASH clubs), HCFs (i.e. managers or staff or patients), or the institutions responsible for WASH service delivery (i.e. LLG elected representatives and managers, provincial health officers and provincial education advisors, district health managers and district education officers).

Sustainability: The sustainability of the KKP delivery is considered low due to:

- technical / environmental failures of KKP to construct sanitation facilities that can be emptied when full,
- social / behavioural failures of KKP to embed sound sanitation and water-wise management practices,
- institutional failures to drive accountability for O&M onto the owners of sanitation and hygiene assets.

Coherence: The coherence of the KKP in responding to local needs and institutional capacities and the logic of the decisions in response to the challenges in KKP districts for nation-wide replication is considered low.

- The KKP model was not fit-for-purpose in tailoring the provision of sanitation and hygiene infrastructure to the capacity of the schools and HCFs to manage the services from these facilities, or the responsibility and the capacity of the district to oversee the provision of services.
- The failure of the KKP model to apply robust learning processes within and amongst the project districts for the application in other districts was not rational in the context of the replication goals of the project.

6 LEARNINGS

Findings from KEQ 6, 8, 9 and 10 demonstrate that the most important lesson from KKP, which seeks to deliver services and institutional targets and build capacity within a weak enabling environment, is the necessity to embed a learning culture in the project. This requires the engagement of i) organisations with a commitment to systems that foster listening and learning, of ii) approaches that entail the testing, trialing, and gradual improvement over time, and of iii) personnel that value the local practitioners' and policy makers' practical experience.

There is a need for each detail of sanitation and hygiene facilities for schools and HCFs to be trialed, the bugs ironed out, the 'lessons learned' documented and the experiences shared amongst different challenging contexts, before developing a set of standard design options. This applies to the design of dry pit toilets and water-based toilets (SaTo pan or water-seal), urinals and handwashing facilities, menstrual products, and hospital waste incinerators, as well as appropriate water collection, storage, and transfer systems. For all this infrastructure, the O&M demands (and the means of supply) need to be studied and documented to ensure informed choice from the outset. This is consistent with the 3 Star approach to WinS but seems to be at odds with standardized approach rolled-out under KKP. The absence of demand management regimes for the water supply systems has potentially been the greatest root cause of the failure of sanitation and hygiene systems installed by KKP (see findings under KEQ 5 and 9).

In accordance with findings under KEQ 4 and 9, in contested political environments, it is important to prioritise a robust understanding of the legislative assignment of responsibilities for sanitation and hygiene, to reduce the risk of the project falling captive to incentives of political patronage.

In accordance with findings under KEQ 3 and 6, while the project proposal sought to balance the 'top-down' provision of sanitation and hygiene assets for schools, HCFs and mobilization in communities, with the 'bottom-up' operation and maintenance of services, in the end, the imperatives for supply overwhelmed the demand and the capacity for O&M. The CLTS approach is the hallmark of 'bottom-up' approaches to the sanitation and hygiene behaviour change in general and the elimination of open defecation in particular. However, the application of CLTS needs to be carefully tailored to individual settings, particularly where there is a low incidence of open defecation and where a culture of shock and shame has an adverse effect on the community spirit.

7 RECOMMENDATIONS

The following recommendations draw on insights shared by the key informants across all categories, as well as the insights of the Evaluation Team based on the validated findings. The recommendations were discussed and refined during a series of consultations involving the duty-bearer, UNICEF PNG, along with four rounds of written feedback on the recommendations. The WASH Section within UNICEF PNG is the relevant party responsible for the recommendations. All actions on the recommendations, which are prioritised in order of importance, should be completed as early as possible, and before December 2024.

7.1 Project Design

RECOMMENDATION #1: In accordance with findings under KEQ 4, 6 and 9, institutional incentives need to be established to prioritise beneficiary demand creation and capacity development, above the public provision of infrastructure and information products within the low-capacity environments (see 4.2.2.1, 4.5.1, 4.3.3). For instance:

- the 3 Star approach to WinS, incentivizes the management of the school to define their own O&M pathway to improve the quality of WASH services in their school. Within the 3 Star WinS approach, the provision of infrastructure is designed to incentivize (reward) schools for WASH service improvements.
- the CLTS approach of triggering communities to eradicate open defecation, has been effective in contexts where access to toilets is low and where the national and local political incentives have aligned to prioritise the prevention of open defecation over the incentives to build toilets.

7.2 Sanitation & Hygiene in Schools & HCFs

RECOMMENDATION #2: On-site sanitation systems in schools and HCFs must be capable of being emptied when full. In rural settings, where access by sludge tanker trucks is not possible or prohibitively expensive (see 4.4.1, 4.5.1.1, 4.5.1.2) this requires:

- dry pit toilets to be designed with light slabs and superstructures that can be moved when the pit is full (to be placed over another pit, with the old pit covered over or emptied and turned into the soil when dry).
- wet pit toilets to be designed to discharge to dual alternating offset pit systems (where one pit can be taken off-line when full, allowed to dry out before being dug out and turned into the soil).

The failure of the KKP supported National Construction Guidelines for Schools (and HCFs) to recognize this basic requirement for the maintenance of toilets, requires that this document be reviewed, and designs revised in line with the evaluation's findings and recommendations before final review and adoption by NDOE.

RECOMMENDATION #3: While additional water storage to supplement supplies will increase water security, this needs to be complemented with strategies to reduce the risks of water wastage (see 4.1.2.1, 4.2.2.1.2, 4.4.2). The demand management of water needs to be addressed on a case-by-case basis but could entail:

- the removal of cisterns for water-seal toilets to be replaced with a manual pour flush system
- the replacement of water-seal toilets with low-water use SaTo pan toilets
- the provision of waterless urinals that discharge to the greywater system
- the installation of gate valves for turning-off the water supply 'afterhours'
- the fencing-off of the water supply tanks and distribution system to prevent theft
- education on the importance of conserving limited water supply

7.3 Sanitation & Hygiene in Communities

RECOMMENDATION #4: While it is possible to 'tap into' the elements of CLTS that prioritise the 'public good' of sanitation and hygiene behaviour change and the essence of local innovation in the design of toilets and handwashing devices, this needs to be built on the dedicated and careful building of experiences in the application of CLTS in different settings in PNG. It appears that TTU have developed an approach of embedding CLTS within the context of the visioning of a Healthy Island model at the community level (see 4.2.2.2, 4.5.2.3). This has not yet been informed by an understanding of the chronic implications of faecal exposure on the cognitive and physical development of children. Rather than rolling-out national CLTS instruments and manuals based on international experience, there is a need to develop an appropriate approach and the appropriate set of incentives for the PNG context.

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ANNEXES

Annex 1: Evaluation Terms of Reference

Background and Purpose of Activity/Assignment:

While Papua New Guinea (PNG) has made progress in improving access to clean water and sanitation facilities, there is still much work to be done. PNG's estimated 8.5 million people are amongst those with the least access to safe water supply in the world. Approximately 81 percent of the population does not have access to basic sanitation, over 50 percent use unimproved or surface water, and 41 percent of households have no handwashing facility (JMP, 2020).

There is a clear inequity of access, with improved sanitation coverage at 58 percent in urban areas but only 18 percent in rural areas, where the majority of the population resides. Water-borne diseases, such as diarrhoea and acute respiratory infections, are among the principle causes of deaths in children under five years. PNG ranks currently at the bottom of all Pacific countries for all WASH related health statistics, with over 6,000 diarrhoeal deaths per year.

UNICEF has been working in the WASH sector in PNG since 1986 and has assisted with policy development, establishing technical design standards in schools and providing institutional capacity-building and service delivery, with the most recent initiative the WinS.

EU-UNICEF WASH Project

The EU-UNICEF water and sanitation project in Papua New Guinea was expected to benefit 160,000 people, including 40,000 children from 200 schools, 36 health centers and 800 neighboring communities by helping them achieve open defecation-free status and improving hygiene practices. The project is being implemented in four Papua New Guinea districts: Hagen Central in Western Highlands Province, Goroka in Eastern Highlands, Nawaeb in Morobe and Bougainville Central in the Autonomous Region of Bougainville.

The project intended to contribute to the achievement of Sustainable Development Goal 6 - Access to clean water and sanitation - will support the Papua New Guinea WaSH Policy 2015-2030 implementation, including contributing to the strengthening of the WaSH Institutional frameworks.

The project implementation began in late 2017. The first phase of the project involved district selection and preparation of costed five-year WASH plans for project districts. The second phase of the project, the implementation phase, started in April/May 2019 in three districts (Central Bougainville, Goroka and Nawaeb) and in September 2019 in Hagen Central. The project is being implemented through international Civil Society Organisations (CSOs). On specific tasks, such as Community Led Total Sanitation (CLTS), expert agencies are hired by UNICEF to build capacity of the implementing partners and with a view to ensure uniformity in the implementation approach. The design of WASH service delivery arrangements (SDA) is led by a specialist consultant, who is guiding the District Development Authorities in institutionalising the mechanisms. The project is scheduled for completion by June 2022.

In line with the project design, this evaluation is expected to occur at the end of the project, to both strengthen accountability of UNICEF to its donor and key stakeholders including beneficiaries, and as a learning experience to identify good practice and generate knowledge to inform the continued implementation. UNICEF PNG country office is therefore looking to engaging a consultant team to undertake the end-term evaluation of the project.

Purpose of Assignment:

By providing sound and credible evidence on what works, what does not work, how and why, this combined formative and summative evaluation aims to trigger UNICEF PNG country office and National Partners' learning, enhance accountability with respect to UNICEF's work with national and subnational institutions, provincial authorities, development partners, NGOs, civil society organizations, and other duty bearers on improving WASH for children (rights holders) and their families and to inform decision-making on national policies and budgets for WASH and for programme design for scale-up.

The primary audience of the evaluation are the WASH Section within UNICEF PNG and the EU donor. The secondary audience of the evaluation are relevant Government institutions and authorities in charge of WASH, future contracted project implementers and experts, and other UNICEF Offices.

Objectives

The following are the five main objectives for the evaluation:

1. To assess the major factors enabling or constraining the achievement of project results;
2. To identify key lessons learned, including success and failures, good practices and innovations from implementation of the project;
3. To validate and reconstruct the project's theory of change, including its underlying assumptions and risks;
4. To generate a set of clear, forward-looking, and actionable recommendations logically linked to the findings and conclusions;

Scope of Work:

The evaluation will provide answers to the following questions:

Relevance

- How do the stakeholders view the appropriateness of the project - and its planned results - to the local context, given the improving conditions in the country, and the remaining WASH challenges?
- To what extent did the project address the WASH needs of children, particularly those in the lowest wealth quintile, the remote populations and ones with the worst sanitation and hygiene conditions? to what extent did the implementation strategies of the project address gender, disability, and climate change issues?

Effectiveness

- To what extent did the project help households climb up the sanitation ladder and improve children's access to improved WASH, particularly for girls, and children living with disabilities and special needs?
- How did collaborations with counterparts and implementing partners contribute to achieving the project outputs and outcomes?

Efficiency

- How well was the project implemented in terms of fidelity to the model, design, and plans, and management of costs and timelines? How did external factors – technical, financial, institutional, environmental, social - modify the level of achievement of outputs and outcomes?
- What were the strengths and gaps in capacity of the implementation team composition (UNICEF and partners together)? How did they contribute to the timeliness and cost of the project?

Sustainability

- Considering the emergency context and need for response under scenarios such as COVID-19, what are key programmatic adaptations needed to ensure handwashing practices, ODF status and the associated social norm sustain following certification?

Coherence

- To what extent did the project align with implementation of the National WASH Policy 2015-2030? And how can it better target its contribution to the WASH SDGs?

In terms of time, the evaluation will cover from 2017 until the time of data collection. The geographical areas to be covered by the evaluation are Hagen Central in Western Highlands Province, Goroka in Eastern Highlands, Nawaeb in Morobe and Bougainville Central in the Autonomous Region of Bougainville. The project supports three key results areas:

- Implementation of WASH services in 200 schools and 36 health facilities
- Increase hygiene awareness in 800 communities

- System strengthening and capacity building at the district level

All activities of the project under these results areas are within the scope of the evaluation.

It is crucial that the evaluation embraces the views of all key stakeholders, including a fair representation of girls and boys, men and women, especially the most marginalized and disadvantaged.

Approach & Methodology

The evaluation will take a combined formative and summative view, with an emphasis on the latter, drawing lessons to inform the next country programme and potential adoption and scaling of the programme approaches, while also assessing the merit and worth of the programme interventions and their contribution to results (direct and indirect; intended and unintended). The evaluation will be non-experimental, although whenever possible, a comparative and external perspective will be sought to assess the evaluation criteria, and identify potential variations in perceptions. The evaluation will be utilization focused, providing continuous and rapid feedback to primary users in the course of the evaluation process. The evaluation is expected to be mixed method in nature, including relevant quantitative and qualitative data collection and analysis. The mixed methods will rely on primary and secondary data sources. The consultancy will also require the development or adaptation of necessary quantitative and qualitative data collection tools and protocols for the evaluation. The consultant team is expected to define a relevant design in consultation with UNICEF. The primary data collection is expected to take place in the four implementation districts, and at the central level in Port Moresby.

The evaluation will be conducted in three phases i.e., 1. the inception, 2. data collection, 3. data analysis, validation and report writing. These phases will be implemented in the stated numerical order as the completion of phase 1 is crucial for the preparation and conduct of phases 2 and 3. Once these phases are conducted the implementation of the evaluation is expected to be complete.

Phase 1: Inception

- **Desk Review:** A list of reference and documents will be agreed and shared with the consultant team. These may include but not limited to policy documents, theory of change and logical framework, current implementation and monitoring plans, reports and mechanisms. Existing quantitative data will also be considered and analyzed in the desk review. A desk review report is to be prepared.
- **Inception Report submission:** The inception report will include clear evaluation design, timeline and detailed methodology (including sampling method) for conducting the evaluation which should include an evaluation matrix i.e. a table showing how each evaluation question will be answered and how the information will be collected and analyzed. The data collection plan must include the categories of stakeholders to be interviewed and engaged with during the course of evaluation.
- **Data Collection Instruments:** Development/ testing/adaptation of evaluation instruments like in-depth interview guides, polls and surveys, focus group discussion formats, transect walk and observational checklists, and other required instruments.
- **Ethical Clearance:** Obtaining of ethical clearance, as needed, from an accredited Ethics Review Board for protection of human subjects before data collection commences.

Phase 2: Data collection

The data collection would focus on collecting key information which would enable the consultant team to analyze and assess the merit or worth of the WASH project as per the evaluation matrix. The data collection will draw on the following methods: key informant interviews (KII), focus group discussions (FGD), case studies, and quantitative surveys, transect walks, non-participant observation. KIIs, FGDs and case studies are expected to be accurately recorded to allow quotes from participants to be used in the evaluation report together with high-quality photos to illustrate the findings. Sampling of informants and selection of sub-district areas for the study should be done in consultation with UNICEF.

Phase 3: Data Analysis and writing of report

Analysis will systematically respond to the evaluation questions. An analytical framework will be articulated through the evaluation matrix to facilitate analysis, triangulation and support the report writing phase. An evaluation report with conclusions and recommendations based on evidence and the analytical framework highlighting the learnings will be drafted. Prior to finalization of the evaluation report, a consultation workshop will be organized to validate the findings, review conclusions and refine recommendations together with relevant stakeholders to ensure utilization of the evaluation. A Powerpoint presentation linked to the final report will be established for dissemination purposes. Following completion and dissemination of the evaluation report, UNICEF will organize a workshop to draw an action plan to respond to the recommendations.

An initial and more detailed methodology is to be submitted by the applicant as part of the technical proposal which will be used as a basis for proposal assessment by UNICEF.

The present COVID-19 pandemic poses a challenge for data collection and consultations utilizing traditional methods. During the span of the evaluation the situation will likely change. As such, in the inception phase, the consultant team will need to provide several scenarios regarding access - possibilities for travel to and within the districts, access to stakeholders, among other risk considerations - and propose innovative approaches to data collection including use of remote or blended methods to mitigate those risks. Bidders for this evaluation should insert a short section in their proposal on headline thoughts on how they would carry out the evaluation against access scenarios and constraints.

To ensure quality, the evaluation team is required to adhere to UNICEF Evaluation Policy; to UNICEF procedure for ethical standards in research, evaluation, data collection and analysis; to UNEG Ethical Guidelines; to UNEG Norms and Standards for Evaluation; and to UNICEF Evaluation Report Standards. All components of the evaluation work must be Geros compliant²¹.

Ethical Consideration

The evaluation approach, data collection and analysis methods must be human rights based, including child rights based and gender sensitive, and evaluation data to be disaggregated by sex, age, socio-economic status, and disability. At the core of the ethical principles to be followed during the evaluation is to ensure doing no harm to children, parents or other participants in the evaluation. The consultant team will be expected to apply for and obtain ethical clearance. The consultant team will need to outline any ethical considerations in their proposal and inception report.

To ensure that the key ethical principles for the conduct of evaluation involving human subjects are followed, each potential respondent will be given full information about the evaluation including the purpose and potential benefits of the evaluation, their rights, and how the information collected will be used. They will also be informed that all data will be kept confidential, being only accessible by members of the evaluation team. Verbal consent will be collected from all those who agree to participate. (The person receiving the consent and a witness will sign the consent form). All participants will be informed of their right to discontinue their participation at any point and approaches for ensuring confidentiality will be described.

Ethical evidence generation follows widely held guidelines about what is ethical, moral and responsible (e.g., not plagiarizing others' work, not submitting questionable data, avoiding doing harm, ensuring just distribution of the benefits and risks of the research etc). Ethical evidence generation is reflective and explicitly considers its impact on both participants and the broader community throughout the research cycle from planning through to dissemination and monitoring and evaluation. The complete document explaining UNICEF Procedure For Ethical Standard in Research, Evaluation, Data Collection and Analysis is provided here: <https://www.unicef.org/media/54796/file>. The consultant team is expected to familiarize themselves with the procedure and ensure the evaluation, data collection and analysis are as per procedures.

Consultant's Workplace, Travel and Logistics

²¹ <https://www.unicef.org/evaluation/global-evaluation-reports-oversight-system-geros>

This consultancy is open to individual and institutional contracts. In either case, it is expected that a team will be involved, including a team of data collectors in PNG. It is expected that the work will be split between PNG and home base, with some travel expected within PNG to the four project districts. The lump sum contract will include the cost of all trips on the most direct route and in economy class. All international and domestic travel cost should be budgeted for and included in the total contract value and described in the financial proposal. The selected team will be responsible for making their own travel arrangements. When relevant and necessary, UNICEF may facilitate the logistics arrangement for field visits, in coordination with the relevant government counterparts. The consultant team is expected to have their own laptops, cameras, mobile phones and other relevant communications and working equipment. If the consultancy will be taken up by an institution, it is expected that there will be a lead consultant who will represent and coordinate the research, and serve as the main representative for the evaluation that UNICEF will communicate with. If the consultancy is taken up by an individual, this person will play the same role, and be responsible for all sub-contracting as relevant.

Supervision:

The consultancy will operate under the supervision of the UNICEF Evaluation Specialist and UNICEF PME Specialist, who will be responsible for the day-to-day oversight and management of the evaluation, including management of the evaluation budget, assuring independence of the evaluation and its alignment with UNEG Norms and Standards and Ethical Guidelines, and providing quality assurance. All supervision will be done in consultation with Chief of WASH, UNICEF PNG, and the EU donor who will appoint a key lead and contact point and act on their behalf. In all steps, the evaluation management will be guided by- and follow the- UNICEF PNG Standard Operating Procedure for Evaluation. The final report will be accepted/approved by the UNICEF Regional Evaluation Adviser and the UNICEF PNG Country Representative.

With a view to maximizing the credibility and hence utility of the evaluation, UNICEF PNG will establish an evaluation reference group, bringing together the Chief of WASH, UNICEF PNG, representatives of Government institutions and authorities in charge of WASH, the EU donor, UNICEF EAPRO Regional WASH Adviser, and UNICEF Multi-Country Evaluation Specialist. The reference group will have the following role: contribute to the preparation and design of the evaluation, including providing feedback and comments on the inception report and on the technical quality of the work of the consultants; provide comments and substantive feedback to ensure the quality from a technical point of view of the draft and final evaluation reports, in particular that the conclusions are credible and the recommendations are actionable; assist in identifying internal and external stakeholders to be consulted during the evaluation process; participate in review meetings organized by the evaluation manager and with the evaluation team as required; play a key role in learning and knowledge sharing from the evaluation results, contributing to disseminating the findings of the evaluation and follow-up on the implementation of the management response.

Annex 2: Evaluation Matrix

Criteria/KEQ	Sub-criteria: sub-questions	Data source
Relevance		
1. How do the stakeholders view the appropriateness of the project - and its planned results - to the local context, given the improving conditions in the country, and the remaining WASH challenges?	Significant: Did the KKP target a priority sector within the PNG development context?	JMP Data
2. To what extent did the project address the WASH needs of children, particularly those in the lowest wealth quintile, the remote populations and ones with the worst sanitation and hygiene conditions? To what extent did the implementation strategies of the project address gender, disability, and climate change issues?	Needed: Was the KKP targeting within the target districts appropriate to the development challenge and the highest needs (most needy) in PNG?	KKP data
Effectiveness		
3. To what extent did the project help households climb up the sanitation ladder and improve children's access to improved WASH, particularly for girls, and children living with disabilities and special needs?	Outputs: Did the KKP meet the project targets (to provide sanitation & hygiene facilities in 200 schools & 36 HCFs, hygiene BCC in 800 communities, WASH Plans in 4 Districts & national WASH protocols)?	KKP data
4. How did collaborations with counterparts and implementing partners contribute to achieving the project outputs and outcomes?	Outcomes: Are the KKP provided services being used (i.e. school & HCF sanitation and hygiene facilities, community hygiene BCC, District WASH Plans and national protocols)?	Site observations & KII
Efficiency		
5. How well was the project implemented in terms of fidelity to the model, design, and plans, and management of costs and timelines? How did external factors – technical, financial, institutional, environmental, social - modify the level of achievement of outputs and outcomes?	Modality: Was the KKP modality efficient in the delivery of appropriate sanitation and hygiene facilities and behaviour change?	KII
6. What were the strengths and gaps in capacity of the implementation team composition (UNICEF and partners together)? How did they contribute to the timeliness and cost of the project?	Management: Was the KKP management model efficient in deploying the respective capacities of UNICEF staff and NGO partners?	KII
Sustainability		
7. Are the toilets provided in schools / HCFs cleaned and looked after?	Technical / Environmental: Can the toilets provided in schools / HCFs be emptied when they fill-up? Are there provisions for the safe disposal of faecal sludge when this occurs?	Site observations
8. Considering the emergency context and need for response under scenarios such as COVID-19, what are key programmatic adaptations needed to ensure handwashing practices, ODF status and the associated social norm sustain following certification?	Behavioural / Social: Are the behaviours necessary to sustain sanitation & hygiene facilities (i.e. water-wise management & routine cleaning) being practiced?	Site observations & KII
Coherence		
9. To what extent was the KKP delivery model appropriate to the PNG context?	Fit-for-purpose: To what extent was the KKP designed for the PNG context?	KII
10. To what extent did the project align with implementation of the National WASH Policy 2015-2030? And how can it better target its contribution to the WASH SDGs?	Rational: To what extent did KKP outputs inform decision making by KKP and the government?	KII

Annex 3: Planned and Completed Key Informant Interviews

The following preliminary interviews were conducted during the inception phase

Area	Agency	Focal Point	Done
Donor	EU		No
Project Management	UNICEF	Martin Worth	Yes
	UNICEF	Nirakar	Yes
	UNICEF	Carlos Vanquez	Yes
	UNICEF	Pravin More	Yes
WASH SDAs	Even flow consulting	Mark Wolfsbauer	No
Baseline	Sustenio	Penny Dutton	Yes
	Anglo Pacific Research		No
mWater	WaterAid	Tim Davis	Yes
CLTS	Feedback Foundation	Ajay Sinha	Yes
Hagen Central	Infratch Pacific		No
	Care International	Justine McMahon	Yes
Goroka	Oxfam	Philip Kupo	Yes
	AT Projects	Arthur Layton	Yes
Naweab	World Vision	Clement Chipokolo	Yes
Central Bounganville	Plan International	Cosmos Piri	No
	World Vision	Clement Chipokolo	Yes
Covid 19	ADRA	Darren Yorio	Yes
WASH BATs	Even flow consulting	Mark Wolfsbauer	Yes
WASH PMU	DNPM PMU	Takale Tuna	No
	DNPM MIS	Benzi Madt	Yes
	DNPM Planning	John Nokue	No
WinS	NDOE	Avea Avaroa	No
WASH in HCF	NDOH	Ray Kangu	No

Annex 4: KKP Logical Framework

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. reference year)	Sources and means of verification	Assumptions
Overall objective: Impact	Contribute to improve the quality of life of men, women and children through increased access to safe, adequate and sustainable water supply, sanitation and improved hygiene practices in line with the national WASH policy.	<p>1a. Proportion of population having access to a basic drinking water (disaggregated by Urban/Rural).</p> <p>1b. Proportion of population having access to a basic sanitation.</p> <p>2. Proportion of schools with basic WASH Services in focus districts.</p> <p>3. Proportion of health facilities with basic WASH services in focus provinces.</p>	<p>1a. Baseline (2017) will be confirmed during the inception phase.</p> <p>1b Baseline (2017) will be confirmed during the inception phase.</p> <p>2. Baseline (2017) will be confirmed during the inception phase.</p> <p>3. Baseline (2017) will be confirmed during the inception phase.</p>	<p>1a. (2021) Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.</p> <p>1b (2021) Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.</p> <p>2. (2021) Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.</p> <p>3. (2021) Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.</p>	<p>1a. Baseline reports, Annual Health Information Reports, NHCIS, EMIS and WASH MIS, Mid-term evaluation and Final evaluation reports, District Improvement Monitoring Systems (DIMS) from the National Statistics Office.</p> <p>1b. Baseline reports, Annual Health Information Reports, NHCIS, EMIS and WASH MIS, Mid-term evaluation and Final evaluation reports, Monitoring Systems (DIMS) from the National Statistics Office.</p> <p>2. Baseline reports, Annual Health Information Reports, NHCIS, EMIS, Mid-term evaluation and Final evaluation reports and WASH MIS (to be established).</p> <p>3. District Improvement Monitoring Systems (DIMS) from the National Statistics Office, reports from UNICEF WASH campaigns.</p>	
Specific Objective(s): Outcome(s)	Specific Objective 1: To enable a healthier and safer environment, particularly for women and children, reducing the impact of water borne diseases and hygiene related illnesses.	1.1 Incidence of waterborne and hygiene related diseases in target areas*.	1.1 Baseline (2017) will be confirmed during the inception phase.	1.1 (2021) Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.	1.1 Baseline reports, Annual Health Information Reports, NHCIS, EMIS and WASH MIS, Mid-term evaluation and Final evaluation reports.	Political stability remains. Government continues to see WASH as priority and it allocates sufficient resources towards the achievement of its policy objectives in 2016 and onwards. Government implements successfully the National Service Delivery Framework.
		1.2 Proportion of schools implementing Menstrual Hygiene Management Programme.	1.2 Baseline (2017) will be confirmed during the inception phase.	1.2 (2021) Realistic targets will be formulated after baseline studies during the inception.	1.2 Baseline reports, Annual Education Census, WASH MIS.	
	Specific Objective 2: To improve governance and quality of service delivery in the WASH sector.	2.1 National Monitoring systems reporting on equity of access to WASH Services available.	2.1 2016) No M&E system developed.	2.1 (2021) WASH National Monitoring systems reporting on equitable access by location, gender and wealth exist.	2.1 WASH Management Information System.	
		2.2 Existence of Water, Sanitation and Hygiene sector budgeting mechanism.	2.2 (2017) No data on WASH Budgets allocations available.	2.2 (2021) Adequate and disaggregated budget by programme area (water, sanitation and hygiene) is	2.2 WASH Management Information System; National Programme Report/ WASH PMU Annual Report.	

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. reference year)	Sources and means of verification	Assumptions
				timely submitted to Ministry of Finance; Budget and expenditure made public, and allocation to WASH was percentage of national expenditure above 0.5% and made public.		
		2.3 Existence of Water, Sanitation and Hygiene sector financing mechanism.	2.3 (2017) No data on domestic and external funds budgeted and spent available.	2.3 (2021) Sector financing plan exist, sector financial gap known, sector financial framework established and sector financing institution identified.	2.3 National Programme Report/ WASH PMU Annual Report.	
		2.4 Existence of water, sanitation and hygiene sector planning mechanism. (Disaggregated at national and sub-national level)	2.4 (2017) No annual review implemented.	2.4 (2021) Stakeholders endorsed government led national and sub national programme, strategic and risk informed plan, proof of concept for scaling up with financing and human resources needs in place and traditional and community leaders represented and engaged in planning process.	2.4 Annual review reports by WASH sector partner group.	
		2.5 National Standards for WASH in schools with a disability component available	2.5 (2017) Not available.	2.5 (2021) National standard addressing disability is contained in WASH in Schools standard with greater than 50% funding and implementation rate.	Design Standards Manuals and Guidelines, WASH MIS, EMIS, NHIS.	
Outputs	Result 1: Improved sanitation and hand-washing facilities in schools and health centres with particular focus on less favoured districts.	1.1 Number or proportion of schools supported with functioning basic WASH facilities (Disaggregated by Urban/Rural).	1.1 Baseline (2017) will be confirmed during the inception phase.	1.1 (2021) Adapted targets, aligned with WASH Policy and NEP, for rural schools/health centres will be formulated after baseline studies during inception phase.	1.1 Baseline reports, Annual Education Census National Health Information Reports, WASH Monitoring Information System (MIS).	Decision makers are interested to support the initiatives, including Provincial/District/Local government levels backed by District planning for WASH from DSIP funds, Dept. of Education planning for WASH from TFF and Dept. Health funded WASH planning. Project locations are easily accessible, stable, have assurance of law and security and are without tribal fight.
		1.2 Number or proportion of health centres (clinics, hospitals) that have WASH facilities	1.2 Baseline (2017) will be confirmed during the inception phase.	1.2. (2021) Adapted targets, aligned with WASH Policy and NEP, for urban schools/health centres will be formulated after baseline studies during inception phase.	1.2 Baseline reports, Annual Education Census National Health Information Reports, WASH MIS.	
		1.3 Number of schools that practice daily group handwashing.	1.3 Baseline (2017) will be confirmed during the inception phase.	1.3 (2021) Adapted targets, aligned with WASH Policy and NEP, for urban schools/health centres will be formulated after baseline studies during inception phase.	1.3 Baseline reports, Annual Health Information Reports, NHCIS, EMIS and WASH MIS, Mid-term evaluation and Final evaluation reports, Monitoring Systems (DIMS) from the National Statistics Office.	
	Result 2: Increased awareness among the population on the importance of hygiene and sanitation, and increased number of communities without open defecation.	2.1 Number of people (disaggregated by gender) reached with key hygiene and sanitation messages 2.2 Number of rural, urban and national WASH campaigns implemented	2.1 Baseline (2017) will be confirmed during the inception phase. 2.2 (2017) The three baselines will be zero	2.1 (2021) Adapted targets will be formulated during inception phase. 2.2 (2021) Realistic targets, aligned with WASH policy will	2.1 & 2.2 Baseline reports, KAP surveys, WASH MIS, Campaign/Communication materials, Exit surveys, Mid-Term evaluation and Final evaluation reports. WASH PMU and Development partners' progress reports.	Relevant authorities will generate reliable WASH, health and gender specific data. Decision makers are interested to support the initiatives, including Provincial/District/Local government

	Results chain	Indicators	Baselines (incl. reference year)	Targets (incl. reference year)	Sources and means of verification	Assumptions
		2.3 Number of Communities Certified free of Open Defecation	2.3 Baseline (2017) will be confirmed during the inception phase.	<p>be formulated after baseline studies during the inception phase.</p> <p>2.3 Realistic targets, aligned with WASH policy will be formulated after baseline studies during the inception phase.</p>		<p>levels backed by District planning for WASH from DSIP funds.</p> <p>Community leaders and politicians are interested and willing to support the intervention.</p> <p>Project locations are easily accessible, stable, have assurance of law and security and are without tribal fight.</p>
	Result 3: Strengthened institutional framework and enabling environment for WASH service delivery leading to improved governance in the WASH sector.	3.1 Existence of functioning coordination mechanism for water, sanitation and hygiene led by WASH PMU.	3.1 (2017) Functioning government led coordination mechanism exist at national and/or subnational level and but need advisory support for government to carry out sector coordination	3.1 (2021) Functioning WASH PMU led coordination mechanism for WASH exist at national and/or sub national level with no UNICEF or development partner support.	3.1 WASH PMU annual plans and Development partners' progress reports.	All activities are implemented in conjunction with other donors and implementing partners in support of government led changes and government funding.
		3.2 Existence of functioning service delivery arrangement for WASH. (Disaggregated by rural, urban, schools, health facilities)	3.2 (2017) Conducive policy context, regulatory framework, affordability standards and benchmarks, equity not addressed and limited private sector participation	3.2 (2021) Conducive policy context and regulatory framework exist, model considers equity, accountability and private sector participation and affordability standards and benchmarks in place.	3.2 Sector programme report and records	
		3.3. Existence of functioning WASH sector capacity development mechanism.	3.3 (2017) No government-led capacity development plan based on WASH sector needs and different institutional stakeholders/providers capacity development plan	3.3 (2021) Government led capacity development plan based on WASH sector needs funded and supported with different institutional stakeholders/providers capacity development plans; implementation/progress measured against all capacity development plans.	3.3 Departments of Education and Health capacity strengthening plans, annual plans and Development partners' progress reports.	

Annex 5: Documents, Databases, and Secondary Data

Below is the list of documents, databases, and secondary data requested, received, and reviewed for the evaluation, along with comments on quality and completeness of the documentary evidence provided.

Document, Database or Secondary Data Requested	Received
Annual KKP progress reports submitted by UNICEF to the EU (2017 – 2022)	Yes ²²
Mid-term evaluation report by KKP conducted by the EU (July 2020)	Yes
Final Reports from the KKP partners responsible for the preparation District WASH Plans	Yes ²³
WASH Service Delivery Arrangements (SDAs) by the WASH PMU for consultation by KKP (rural & urban)	Yes
Baseline assessment of knowledge attitudes, practices in the four project Districts	Yes
Monitoring formats for WASH in Schools and Health Care Facilities for the release of progress payments	Yes
Protocols for the monitoring of the ODF status of communities	Yes
NGOs to update mWater endline against the baseline for schools & health care facilities in the 4 Districts	Not possible
Standard designs for WinS & WinHCF. NGOs to provide basic data of infrastructure provided in all 200 schools and 36 Health Care Facilities (including contact names & mobile numbers)	Yes N/A
NGOs to provide spreadsheet with basic data of all 800 ODF communities (including contact names & mobile numbers).	N/A
Raw data from the baseline survey by Sustineo Or Community baseline data in mWater to be updated with mobile phone numbers	N/A
Longitudinal monitoring of stunting (i.e. child height-for-age) or wasting (i.e. child weight-for-height) in the project areas.	N/A

²² Reports for 2018, 2020, 2021 and 2022 received. The 2nd report for 2019 missing.

²³ Did not include the District WASH Plans.

Annex 6: Data Collection Instruments

Field site visits process

The process for the field site visits to schools, health care facilities and communities in the four project districts:

1. KKP partners to present the district achievements: This offers an opportunity for the KKP partner to set-the-scene on the achievements, challenges and the lessons learnt from their perspective in the implementation of the project.
2. KKP evaluation team to present the evaluation framework and questions: This enables the evaluation team to posit the key questions arising from the assessment of documentation available in the inception phase.
3. Visits to at least 2 schools, 2 HCFs and 2 community sites proposed by KKP partners²⁴
4. Meeting with the District WASH Committee: The hosting of a District WASH committee meeting presents an opportunity to assess the inclusion and sustainability of the district strengthening process.
5. Feedback on the site observations presented to KKP partners: The observations from the site visits were collated, presented, and discussed with the KKP partners to validate the findings.
6. Written feedback was invited on the field visit data during November 2022

Site Visit Guide

Following an introduction by the partner NGOs to the owners / managers of the sites;

- *For schools, this will be a school committee, or head teacher, or teacher responsible for WASH,*
 - *For HCFs, this will likely be the head health practitioner or the site caretaker,*
 - *For communities, this will probably be a village chief, or a motivator,*
- the individual(s) responsible will be given the opportunity to set the scene for the sanitation and hygiene situation prior to (and post) the implementation of the project.*

The site owner / manager will then be invited to lead a visit to observe the design and the quality of the sanitation and hygiene facilities, their functionality (O&M) and their usage. At each of the key observation points in the transect walk, the site / owner manager will be asked to elaborate on the pros and cons of different aspects of the sanitation and hygiene facilities. During the transect walk, the discussion will focus on the very practical aspects of the operation and maintenance of the sanitation and hygiene facilities.

Where practical, KIIs will be requested with the users of the sanitation and hygiene facilities. These will be gender segregated broad ranging discussions elaborating on the user experience and preferences. Verbal consent will be sought prior to commencing the discussion. These KIIs will seek to identify the key enabling and disabling factors for both males & females that critically affect the hygienic usage of these (and alternate) sanitation facilities.

A concluding KII with the site owner/manager will be sought, to seek to understand the means deployed to operate and maintain the sanitation and hygiene facilities. Verbal consent will be sought prior to initiating this discussion. This will cover the roles of the supervisory officials at the LLG & District level, the management committees, the staff and the users. This will seek to gain an insight into the potential sustainability (technical, financial, environmental) of the facilities and the preparedness (strategies) for the mitigation of potential risks.

Key informant interview with KKP partners

Following the site visits and the meetings with District officials, the purpose of the key informant interviews (KII) at the national government level will be to clarify the observations from the site visits to the four project districts. Verbal permissions will be sought for the KII with the responsible line departmental officers prior to commencing (some will be

²⁴ The risk of KKP partners proposing their 'best sites' for visits by the evaluation team was to be mitigated by the objective to identify the key unanswered questions for a mobile phone survey. As noted earlier though, the mobile phone survey did not materialize.

virtual). The KII will commence with an introduction to the assessment of the project and its intended purpose. The responsible officer will be invited to provide an outline of the role of their national department in the implementation of the project. Based on some initial feedback from the relevant site visits (i.e. the strengths and weaknesses of what has been observed in the field), the responsible officer will be asked to elaborate further. This will enable the responsible officer to define how certain strengths were achieved and why certain weaknesses occurred. Depending on the role of the national departments, this interview may focus on the institutional, or technical, or financial aspects of the delivery of sanitation and hygiene facilities, as well as the necessity of support for their operation and maintenance. The interview will seek insights from the national officers as to the replicability and scalability of the various aspects of the KKP service delivery model deployed in the four Districts.

Having interacted with UNICEF & KKP partner staff within the districts, KIIs will be sought with the WASH managers within UNICEF and the partner NGOs to provide some initial feedback on the achievements of the project and to clarify outstanding questions. Verbal permission will be sought prior to commencing the KIIs (some will be virtual). The interview will primarily seek to understand the challenges in the implementation of the project from the perspective of the partner NGOs and UNICEF and the viability of the KKP model for expanding access to sanitation and hygiene services. In addition, the KIIs with partner NGOs and UNICEF will seek to clarify the division of roles between the different government and non-government partners responsible for the implementation of the project.

Open-ended Key Informant Interview Guide

Hello, my name is Mark Ellery, I've been contracted to conduct an evaluation of the UNICEF PNG EU-UNICEF funded WASH Project.

The evaluation will gather evidence on what works, what does not work, how and why. The information you share will be kept confidential, and no one else will know your responses to the questions. Our conversation should take about 45 minutes. Your participation is entirely voluntary. It is your choice whether to participate or not. You have the right to stop this interview at any time, and you should not feel obligated to answer any/all questions. Do you have any questions?

- *Validating project progress*
 - *What data do you already collect?*
- *Access to WASH facility targets*
 - *How could we check on quality / satisfaction levels?*
 - *With travel & without travel?*
- *Measuring WASH quality of services*
 - *How could we measure the effectiveness of WASH facilities?*
 - *In ODF communities*
 - *In Schools*
 - *In Health Care Facilities*
- *Recommendations*
 - *What do you think are the most pertinent lessons?*