



WASH Field Note FN/60/2021

Building Capacity for Quality WASH in Schools Construction in Vanuatu

SUMMARY

On 7 April 2020, Tropical Cyclone (TC) Harold caused major infrastructure damage to 43% (128/298) of schools and 47% (164/349) of ECCE (early childhood care and education) centres in Vanuatu's Sanma, Malampa and Penama provinces¹. Pentecost, in Penama province, was among the hardest hit with all of the 23 schools in central and southern zones reported as majorly damaged. Along with efforts to rehabilitate school WASH infrastructure to ensure continuity of education service (as some schools with temporary WASH services may close down) Ministry of Education and Training (MoET) worked with Ministry of Health (MoH) and Department of Water Resources (DoWR) to run a week-long School WASH Construction Workshop, In total, 125 facilitators and participants attended the workshop, including school maintenance personnel and both provincial and national education, health and water officers. The workshop was a first for Vanuatu. With pre-cyclone data indicating an overall low standard of WinS infrastructure and practice in Vanuatu, the workshop targeted the knowledge, quality and compliance gap on WASH infrastructure among school communities, whilst also ensuring expeditious post-cyclone rehabilitation. It was predominantly hands-on and focused on learning and trialing construction of a variety of school WASH facilities as per recently developed national standards and guidelines. Four schools that were severely damaged by TC Harold hosted the workshop and received major WASH infrastructure upgrades throughout. The workshop proved a great success in knowledge sharing and capacity building in an emergency setting, while establishing and strengthening relationships among school, provincial and national-level WinS stakeholders. The approach could be replicated, adapted and applied to a variety of sectors and settings within and beyond Vanuatu to magnify change and capacity building results.

Background

Vanuatu, the most at-risk country in the world to extreme natural events², is a lower-middle income country located 2,500 kilometers east of Australia in the Pacific Ocean. The 280,000 residents, 590 schools (76,199 students) and 863 ECCE centres

(16,445 students³) are spread over 66 inhabited volcanic and raised coral islands. On many of these remote islands, building and maintaining water, sanitation and hygiene (WASH) infrastructure in communities, schools and healthcare facilities is a challenge. Shipping imported construction materials over rough seas

¹ School damage figures from: Ministry of Education and Training, 2020b

² World Risk Report, 2020

³ School and student figures from: Ministry of Education and Training, 2020a

to inland schools with limited road access requires significant advance planning. With no policies, departments or units that specifically address WASH in Schools (WinS), the responsibility for WinS lies mostly with each school committee or council. Rather than allocating limited financial resources to contracting external construction teams to perform WinS rehabilitation works, construction and maintenance of WinS facilities often lies with untrained school maintenance personnel and volunteers.

As a result of limited investment, WASH services in schools are quite poor. Exact figures are not known, but in 2014 it was estimated that depending on the province, between 21% and 43% of secondary schools had a piped water supply⁴. An assessment by UNICEF in 2017 in one province found that only 53% of kindergartens had a reliable water source⁵. While there is no school specific data on drinking water quality, throughout Vanuatu, water is frequently contaminated. The current government database shows that 64% (330/516) of collected samples tested positive for coliforms⁶.

As for sanitation, again the data is incomplete, but the 2017 UNICEF assessment in Penama province revealed 60% of kindergartens had childsized toilets, and only 19% had enough improved toilets to meet the population of the school⁷. An analysis of the Vanuatu education management information system (VEMIS) data showed that only 28% of toilets were in good condition. Most school toilets were made of traditional materials (52%), with 38% made of semi-permanent materials and just 9% made of permanent materials (the remaining were reported to be under construction). Most schools did not have enough toilets to meet government standards (at least one per 25 girls and one per 35 boys). Girls typically had to share their toilets with other

students and teachers more often than boys. Sadly, no school toilets (0%) were reported in VEMIS to be appropriate for people with disabilities⁸.

Figure 1: Typical non-compliant pit toilets ("bush toilet") in Penama schools





⁴ Vanuatu Education Management Information System (VEMIS), 2014

UNICEF Penama ECCE Baseline Study, 2017

⁶ Department of Water Resources - Vanuatu, 2020

⁷ In 2017 the minimum standard for ECCE centre toilets was 1 toilet per 15 girls and 1 toilet per 15 boys. This has since been

changed to align with the primary and secondary school minimum toilet quantity requirement of one per 25 girls and one per 35 boys.

⁸ Ward, Jake. MS Excel analysis of VEMIS data.



Source: Ward 2020

There is little data related to handwashing, but the UNICEF Penama baseline assessment found that only 13% of ECCE centers had soap and water for handwashing.

To improve WASH access in schools, MFAT and UNICEF are supporting MoET to improve WinS via a four-pronged approach: enabling environment; supply; demand; and quality and resilience. The WinS Construction Workshop focused on the supply and quality and resilience elements, whilst also incorporating demand and enabling environment content, to develop skills that would lead to comply to project- and school community-resourced WinS construction activities, therefore providing better services to complement WASH-related behaviour change interventions. The Vanuatu WinS Program aims to establish a framework to support scaling-up WinS nation-wide. Since 2017, this has involved the development of a relevant National WinS Strategy, WinS Improvement Planning (WIP) package, monitoring indicators adapted from the WinS three-star approach9, reporting requirements embedded within existing government mechanisms and a variety of WinS communications and advocacy materials and approaches. All 78 schools in Penama province

Given the poor state of WinS infrastructure and performance in Vanuatu, MoET is focusing on building local skills, confidence and competence in WinS construction, operation and maintenance to meet recently defined national standards and guidelines¹⁰. UNICEF continue to work with MoET to establish appropriate government funding and technical support mechanisms to sustain ongoing compliance with WinS infrastructure standards and broader three-star approach requirements.

Figure 2: Workshop team installing a compliant rainwater catchment with first flush



Source: Ward 2020

School WASH Construction Workshop

On 6 and 7 April 2020, Vanuatu experienced category 5 Severe Tropical Cyclone (TC) Harold.

infrastructure, and DoWR for water infrastructure), and since 2020 have been developed to a level suitable for application in a practical workshop setting.

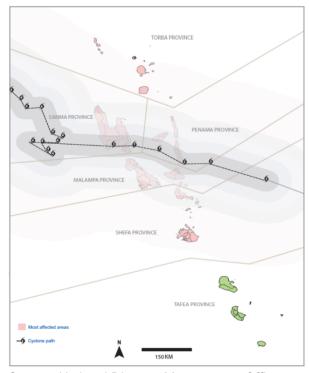
have been targeted for the MFAT-funded Van-WinS pilot program, with intent to scale-up nation-wide from 2021. In 2019, the average WinS three-star performance score for Penama schools was 0.9, and no school had reached an average of two-stars or greater. This is a significant shortfall from the National WinS Strategy target of 80% schools achieving and retaining a minimum two-star rating by 2029.

⁹ UNICEF and GIZ, 2013

¹⁰ Standards and guidelines applicable to WinS infrastructure have undergone several development and review iterations in recent years (led by MoH for sanitation and hygiene

TC Harold caused widespread destruction to the provinces of Sanma, Malampa and Penama provinces. Severe damage was recorded in 43% (128/298) of schools and 47% (164/349) of ECCE (early childhood care and education) centres in these three provinces. In Central and South Pentecost, 75% of ECCE centres (27 of 36) and 100% of schools (23 of 23) were majorly damaged.

Figure 3: TC Harold track map



Source: National Disaster Management Office – Vanuatu, 2020

To improve WASH in these schools, and at the same time build capacity throughout Penama province, in August 2020, Vanuatu's MoET, MoH, DoWR, UNICEF and NGOs partnered to deliver a first of its kind five-day School WASH Construction Workshop in four host schools in South Pentecost severely damaged by TC Harold. The workshop brought together 22 facilitators and 103 participants split into four teams. The facilitators met multiple times ahead of time to try and ensure knowledge management and skill sharing strategies were well formulated, clear and

consistent with WinS-related infrastructure standards. The workshop had the dual effect of building capacity and relationships among participants and facilitators, whilst also rehabilitating and upgrading school WASH infrastructure damaged by the cyclone in one of the hardest hit areas. It also generated community interest and support, with over 60 members from the four host school communities joining and contributing to workshop construction activities.

Of the 103 participants, the workshop comprised one maintenance representative from each of the 78 operational schools in Penama province, plus provincial education officers and host school representatives.

KEY POINTS

The workshop was unique and benefitted from:

- Including stakeholders from multiple ministries and different levels of governance: national, provincial, school and community
- Constructing permanent, climate resilient infrastructure intended for ongoing use (rather than temporary or demonstration infrastructure)
- Mixed learning methodology practical hands-on sessions interspersed with a variety of applicable theory sessions (rather than lectures in a classroom), made for an engaging, creative and holistic learning experience
- Thorough preparation with assessments and procurement of materials performed well in advance of the training (in this case, immediately after TC Harold)
- School community mobilization and prearranged civil works completed in advance
- A broad mix of technical specialist facilitators to diversify the construction process to the full spectrum of applicable WASH upgrades
- Conducting the workshop in cyclone affected schools that experienced major WASH infrastructure damage, giving the activity additional importance and urgency whilst providing participants with an increased sense of accomplishment
- Strategic selection of schools based on location, proximity to one another, variety and scale of WASH needs/infrastructure, and capacity to host the workshop

Participants and most facilitators were split into four teams with the intent to rotate teams among the four host schools (one day per school). The initial plan was to expose each participant to a variety of school situations, WASH infrastructure types and construction approaches. However, after the first day of construction activities, participants had taken such ownership and

accountability in the work they had started in their delegated host school that the teams unanimously decided to not rotate and see the tasks at hand through to completion.

Table 1: Workshop statistics

Location	South Pentecost, Penama
Date	17 – 21 August 2020
Participants	103 (91 male; 12 female) (12% female)
Facilitators	22 (18 male; 4 female) (18% female)
Additional community participants	Over 60 community members (~40% female)
# host schools	4
	Ministry of Education and Training
	Ministry of Health
Facilitating	Department of Water Resources
agencies	Engineers Without Borders
	IsraAID
	UNICEF
	Construction materials and tools: \$60,000
	WASH supplies (buckets, filters, etc.): \$15,000
	Workshop supplies (printing, stationery, etc.): \$2,000
04 [1 10]	Daily subsistence allowance: \$20,000
Cost [USD]	Transport during workshop: \$6,000
	Transport to/from workshop: \$15,000
	Accommodation: \$6,000
	Catering and venue hire: \$4,000
	Total cost: US\$128,000
	Total cost per participant: US\$1,243

Figure 4: Female provincial education officers offloading stones for pit lining



Source: Ward 2020

Table 2: Workshop agenda (actual)

	,	
Day	Activity	
1	 Opening and introductions Workshop scope and schedule overview Theory Why WinS? Sanitation & hygiene guidelines Zoonosis Water treatment Cement mix ratios Plumbing basics Water system design Safety Roles, responsibilities and team building 	
2	 WASH construction in host schools One team per school Pit lining and foundation setting Toilet and tank slabs Water source preparation Plumbing theory during breaks 	
3	 Continued construction host schools Teams chose not to rotate Spring box construction Tap-stand slabs and drains Water filter training in breaks Pipe laying and repairs Visit nearest host school to support other team activities 	

Day	Activity
4	 Continued construction host schools Toilet superstructures Water filter training continued Spring box completion Rainwater systems with first flush Visit nearest host school to support other team activities
5	 Final day activities (half day) WinS quiz Competency passport sign-off Water filter distributions Prizes and recognition World Café feedback session Close

Figure 5: Spring box construction #1



Source: Ward 2020

Workshop activities

What made this workshop unique and notably effective in building capacity and creating change was the mixed roles, backgrounds and skills of participants and facilitators, the cyclone-affected location and the composition and interactive delivery of strategic learning activities. Table 3 summarizes the key differences between the School WASH Construction Workshop and a normal workshop typically delivered by any of the participating implementing partners.

Table 3: What made the workshop different?

Typical Workshop	WinS Construction Workshop
Mostly lectures and theory	Mostly practical
Construction of temporary or demonstration infrastructure, if any	Construction of a variety of permanent school WASH infrastructure
Routine service delivery	Emergency recovery
One location	Multiple locations
Few facilitators (2 – 4)	Many facilitators (22)
Individual (specialist) preparation	Collaborative preparation with facilitators from multiple sectors
Delivered by one ministry/agency	Delivered by multiple government and CSO agencies
Materials: notebooks, pens and markers	Materials: notebooks, knowledge materials, instructions, tools, WASH infrastructure materials
Minimal/moderate organisation required	Significant organisation required
Minimal advance on- site preparation needed	Pre-assessments, procurement and lead-up civil works required
No community involvement	Community members encouraged to participate
1-way teaching/learning	Bi-directional learning: while participants were learning construction techniques, they were also providing feedback to facilitators on new WASH facility design standards ¹¹

Figure 6: Storage tank installation



Source: Ward 2020

have since been incorporated into the latest iteration of the National Sanitation and Hygiene Standards.

¹¹ For example, new approaches to reinforcing the lining of a ventilated improved pit (VIP) toilet and for foundation construction of a raised VIP were identified and applied and

Lessons learned

A World Café style feedback session was conducted on the final day of the workshop to collect both open and anonymous feedback on a variety of workshop components including facilitators, logistics, preparations, theory and practical content. Based on the positive experience of this workshop, UNICEF will work with MoET to actively seek additional funding and support for similar workshops and capacity building opportunities, starting with cyclone affected provinces Sanma and Malampa provinces. Future workshops will action the lessons learned, best practices and opportunities identified during the Penama workshop.

Figure 7: Spring box construction #2



Source: Ward 2020

Figure 8: Tapstand installation



Source: Ward 2020

BOX 1.

SONYA, THE FEMALE WINS CHAMPION

A notable lesson learned from the workshop was the lack of female participants at the workshop. While there were 8 female MoET provincial officers, only one of the 78 school maintenance representatives were female: Sonya, representing Vuingalato Primary School in West Ambae. Sonya contributed greatly to her designated team and was an inspiration and encouragement to the female community members who also participated in construction activities.

During a brief interview, Sonya expressed her gratefulness for the workshop and her intent to "go back and perform awareness on toilets and handwashing at Vuingalato school" after learning "the importance of handwashing, measurements and how to build a VIP toilet, because what we have built during the workshop is different to what is at the school, so it will be good to go back and upgrade so in the future we have a better school with better health and hygiene".

Figure 9: Membrane filter installation and maintenance training



Source: Ward 2020

Table 4: Workshop activities

Workshop activity	Description	
Why WinS?	Rich pictures and role play to better understand the WinS cycle of opportunity whereby improved WinS results in improved health, school attendance, school performance and economic growth	
Toilet upgrades	Construction of ventilated improved pit (VIP) and wet offset twin pit latrines, and upgrade of existing flush toilet ablution blocks	
Inclusive WinS	WinS infrastructure design considerations to cater for menstrual hygiene management (MHM) and access to smaller students and people with a disability	
Drainage upgrades	Installation of soak pits, new drainage lines and diversion ditches	
Water system upgrades	Installation and upgrade of direct gravity fed water supplies, reticulation networks, tap stands, storage tanks and rainwater catchments with 1st flush systems	
Plumbing theory	Basics of plumbing: fittings, measurements, materials, pressure and friction, repairs and maintenance, etc.	
Handwashing	Construction of local handwashing facilities and handwashing demonstrations and practice	
Sanitation and hygiene guidelines	Overview and application of the school-specific components of the new MoH National Sanitation and Hygiene Standards and Guidelines, including maintenance and compliance checklists and inclusive WinS considerations (including female and child-friendly infrastructure)	
WinS Competency Passport	Participants were each provided a small "passport" with eight key WinS competencies to master throughout the workshop (plumbing basics; water filters; gravity fed systems; rainwater systems; VIP construction; inclusive WinS; concrete mixes; handwashing). Focal point facilitators were selected to cross check and sign off on specific competencies.	
Scorecards	Teams had the opportunity to score their host school each day, and vice versa (host schools scoring the team working with them each day), to hold both teams and school communities accountable to perform throughout the workshop	
Zoonosis	Explanation and discussion on disease transmission from animals, and realistic mitigation measures for schools	
Water filters	Distribution of membrane water filters and buckets (quantity dependent on school size) accompanied by installation, operation and maintenance training	
Concrete mix ratios	Theory and practice on different concrete mix ratios and considerations for different applications	

Workshop activity	Description
Other activities	Social nights with WASH skits; final day WinS quiz; school-by-school review and update of MoET WinS three-star data; financial management, school-based management and facilities reporting sessions with provincial education officers; and planning of upcoming WinS infrastructure upgrades

Table 5: Workshop key lessons learned

Issue, lesson learned, or opportunity	Detail	Action to be taken for next workshop
Limited female participation	 Only one participant invited from each school Schools encouraged to send female representative, though to little avail Only one female participant of the 78 school maintenance personnel in attendance (1.3%) 	 Invite two participants per school, minimum one female participant Active targeting of female invitees prior to workshop to enable minimum 40% female representation
On-site MoET Finance Officer essential	 A national-level MoET Finance Officer joined the workshop and was imperative in administering expenses incurred throughout the workshop requiring immediate payment (accommodation, daily subsistence allowance, catering, transport, etc.) Without the officer on-site, the workshop could not have been performed at the scale it was done 	 Finance Officer to participate in all future workshops To minimize cash required on-site, collect vendor details in advance where possible to enable post-workshop bank transfers
Select schools closer together	 Four neighboring coastal schools hosted the workshop in South Pentecost, the distance between the most northern and southern schools (where half of each participants and facilitators slept) being about 1.5 hour's boat or truck ride, making logistics difficult for convening group sessions among all participants 	Select schools within close proximity to one another for ease of movement and logistics
Valuable inter-agency participation	 Strong representation from MoET, MoH and DoWR at national, provincial and local level resulted in strengthened/established inter-agency and intra-agency relationships and collaborative troubleshooting throughout the workshop 	Ensure a strong mix again from all key agencies and levels

Issue, lesson learned, or opportunity	Detail	Action to be taken for next workshop
More WASH technical specialists needed	 DoWR Water Officers (two) and contractors (two) and MoH Environmental Health Officers (two) were the key technical facilitators required to progress rehabilitation and upgrade activities Most infrastructure installations were incomplete by the end of the workshop, attributed to the lack of technical specialists who could disperse participants over a wider variety of disciplines, running them in parallel (note that some facilitators remained on-site for up to two weeks after the workshop to support school communities to complete all necessary construction work) 	Engage more technical specialists, particularly for water and sanitation installations
More civil works to be completed in advance	 School communities were responsible for digging pipe trenches and pits, and carting sand and aggregate to dedicated areas for cement mixing in advance of the workshop Only one plumbing contractor was deployed one week in advance of the workshop to support schools to commence civil works Installation of gravity fed spring boxes, (re-)digging and lining toilet pits, and setting foundation slabs took a lot of time Rather than increasing the duration of the workshop (many suggested extending to 2 weeks during the final day feedback session), more civil works could be completed in advance to enable participants to see the construction of the installations through to completion For example, if two VIP toilets are to be constructed, one can have the pit, foundation, slab and riser complete in advance (leaving only the superstructure to construct), and the other with only the pit dug to an appropriate size This would also leave time to show participants how to incorporate handwashing nudges into the final product 	Mobilize technical specialists/contractors to commence construction of specific facilities at least two-weeks in advance of the workshop
Teams not interested in rotating	 A world café approach was planned for the workshop, where teams would rotate each day among the host schools Participants became so attached and committed to the work they had commenced, that nobody wanted to move 	 Set aside time in the workshop agenda for each team to visit the other schools to see (and contribute to, if possible) what other teams had performed and share lessons learned and best practices

Conclusions

The WinS Construction Workshop proved a major success in combining knowledge sharing, capacity building, relationship strengthening and WinS emergency recovery and rehabilitation efforts into a single holistic learning experience. MoET, DoWR and MoH were able to ensure new WinS standards were effectively communicated and used in the climate-resilient reconstruction of school WASH facilities, all whilst expediting the progress toward 80%-plus two-star schools in Vanuatu by 2029, as per the National WinS Strategy.

Running the workshop in high priority cyclone affected schools increased the impact, ownership, commitment and value of the work performed such that participants felt they were contributing to an immediate need rather than a potential perception of "free labor" for host schools.

Figure 10: VIP pit construction



Source: Ward 2020

During the workshop, all participants were provided a WinS Competency Passport comprising eight WinS-related disciplines (see Table 6) for participants to achieve a certain level of competency in by the end of the workshop, as verified and signed-off by focal point facilitators. Upon successful completion of the passport, participants self-rated their

perceived confidence and competence in each of the disciplines. Results indicate overall high scores, though with additional focus potentially needed on plumbing, gravity-fed water supply system requirements, and inclusive WinS considerations (such as child-friendly, female-friendly and disability-friendly infrastructure).

Table 6: WinS Competency Passport self-evaluation results

Competency	Average score [%]
Water filters	100%
Handwashing	99%
Concrete mixes	98%
Rainwater harvesting	90%
VIP construction	90%
Inclusive WinS	86%
Gravity-fed piped water supply	85%
Plumbing basics	80%

The workshop approach could be replicated, adapted and applied to a variety of sectors and settings within and beyond Vanuatu to magnify change and capacity building results. For example, the information in the table above, along with other lessons learned and best practices from the workshop, will assist with the design and delivery of upcoming workshops in 2021 to support WinS infrastructure rehabilitation efforts in Sanma and Malampa in the wake of TC Harold. Provincial and school level WinS Champions, both participants and facilitators, were identified during the Penama workshop and have been engaged to support delivery of these upcoming workshops, along with other WinS capacity building activities.

Actual retention and application of acquired WinS skills and knowledge will be determined by monitoring the quality and compliance of WinS infrastructure and practice improvements performed by school communities under the broader national WinS program. Since 2019, Penama schools have been implementing their WinS Improvement Plans (WIP; both WASH infrastructure and practice) using local resources, and program-funded WinS infrastructure will be delivered by MoET and implemented by schools throughout 2021. Provincial, national and contracted WinS Construction Supervisors will provide additional technical support as needed for the installations, with overall performance improvements measured using the three-star indicators in VEMIS.

While participating ministries typically take a siloed approach to delivering their ministerial mandate (particularly at national level), the cross-sectoral and cross-cutting nature of WinS resulted in bringing stakeholders together from a variety of disciplines and sectors (predominantly education, health and water) and established and strengthened relationships that will be further reinforced and leveraged through scaling-up WinS in Vanuatu.

As can be seen in guides to planning this type of knowledge exchange¹², many factors led to the success of the workshop. The leaders took time to set clear objectives, assemble a diverse and skilled set of facilitators and selected appropriate activities. As with all workshops, some items could be improved. For example, more time could be spent selecting the participants to ensure greater gender diversity.

It is hoped that the wider best practices of carefully crafting a true knowledge exchange will be included in the future trainings, not just by MoET, but also DoWR, MoH and partners.

Figure 11: VIP superstructure construction



Figure 12: Rainwater tank installation led by team safety focal point and Provincial Mobile ECCE Officer (MoE), Marilyn Toa



Source: Ward 2020

¹² World Bank Group, 2015

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