WASH CLUSTER STANDARD OPERATING PROCEDURES (SOP)

DEPARTMENT OF WATER RESOURCES

GOVERNMENT OF VANUATU

Vanuatu WASH in Emergencies SOP – A practical guide for all those involved in water, sanitation and hygiene emergency response in Vanuatu

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Acronyms

WASH	Water, Sanitation and Hygiene
DoWR	Department of Water Resources
MoH	Ministry of Health
ICS	Incident Command System
SOP	Standard Operating Procedure
NDMO	National Disaster Management Office
PEOC	Provincial Emergency Operation Centre
EOC	Emergency Operation Centre
NWAC	National Water Advisory Committee
SITREP	Situation Report
CSOs	Civil Society Organizations
NDC	National Disaster Council
UNICEF	United Nation Children's Fund
NGO	Non- Government Organization
IMO	Information Management Officer
IFRC	International Federation of Red Cross
FAO	Food and Agriculture Organization
MoH	Ministry of Health
MoET	Ministry of Education and Training

OGCIO	Office of Government Chief Information
DWSSP	Drinking Water Security and Safety Plan
NSDP	National sustainable Development Plan

Common terms

Disaster	An actual or probable event which causes disruption to the functioning of a community causing widespread human, material, economic or environmental loss and which exceeds the affected community and its agencies' ability to cope using its own resources.
Hazard	An agent which has the potential to cause harm to a vulnerable target population and their environment. Hazards can be both natural or human induced
Emergency	A situation generated by the real or imminent occurrence of an event that requires an immediate and coordinated response and is within the resources of a community's local agencies to respond.
Lead Agency	An agency that has primary operational responsibility for the management of the disaster or emergency.
Co- Lead Agency	An agency that supports the Lead Agency in its role and responsibility. The Co-Lead Agency may carry out tasks for the Lead Agency, however the Lead Agency still holds the accountability for what needs to be done.
Incident Command System (ICS)	Is a standard, on-site scene, all- hazards incident management concept that can be used by the emergency responders
Emergency Operation Centre	Is a temporary or permanent facility to assist emergency and disaster managers with the tasks of communicating and coordinating the response of an event

Forward

Access to water, sanitation, and hygiene promotion (WASH) are crucial to human dignity and are vital elements of disease prevention and public health which can contribute significantly to saving lives, and reducing morbidity. Disruption to WASH services can be acute as a result of disasters and crises, the impact of which affects women, men, boys, and girls and can have more adverse negative effects on vulnerable groups across Vanuatu.

The physical location of Vanuatu in the Western Pacific, situated along the ring of fire that runs from north to south of the group, places the country at high risk of natural disasters. Vanuatu experiences almost on a yearly basis, an occurrence of a natural disaster that disrupts livelihood, infrastructure, food security, communication, water and sanitation facilities.

The Government of Vanuatu is committed to ensure adequate response strategies to disasters are in place to successfully manage the WASH needs of people whenever a disaster occurs.

This WASH Standard Operating Procedures (SOPs) was developed to replace an earlier version, providing guidance to the WASH Cluster and its partners to provide a well-coordinated, effective and timely WASH response to the affected population in communities, health care facilities and in schools.

The Department of Water Resources of the Ministry of Lands and Natural Resources holds the lead role for the WASH Cluster coordination and ensures that response is provided in a well- coordinated manner to avoid duplication of efforts, resources and time.

Roles and responsibilities of different Department of water supporting sections and other NGO partners are clearly demarcated at both the individual and agency levels and it is important for this document to be understood by all who are to be involved in emergency operations.

In the interest of building national WASH resilience to disasters, this document should be widely circulated to all who have a role in implementing WASH in Emergency operations.

All WASH agencies operating in Vanuatu are expected to produce supporting SOPs in accordance with their agency plans and these should be reviewed and approved by both the Department of Water Resources and the National Disaster Management Office.

1. OVERVIEW

1.1 Background

The term “disaster” implies a natural unforeseen calamity which would have a wider impact on human life, properties and assets created. Vanuatu is ranked the world’s most at-risk country for natural disasters, according to UN University World Risk Index[1]. Its natural geographical location in the South Western Pacific exposes the islands and communities to several natural disasters. Different hazards that frequently affect Vanuatu are:

1. Tropical cyclones
2. Volcanic eruptions, ash fall and acid rain
3. Drought
4. Flooding
5. Earthquakes
6. Tsunamis
7. Disease outbreaks
8. Fires
9. Storm surge

When they occur, they bring about damage to WASH infrastructure and exert pressure on immediate restoration and management responses. Proper management of drinking water supply and promotion of good sanitation and hygiene practices to the affected people on an “immediate basis” is an essential requirement to reduce / eliminate chances of disease prevalence / outbreak of epidemics.

1.2 Scope

The scope of this SOP will cover:

1. This standard operating procedure will include all functions pertaining to disaster prevention, institutional mechanism, disaster preparedness, response minimum standards, recovery and rehabilitation.
2. This standard operating procedure will apply to WASH Cluster and members of the WASH Cluster/sector dealing with water supply, sanitation and hygiene that will impact on Vanuatu from natural disasters.
3. It shall not be applicable to nuclear, biological and chemical disasters.

1.3 Purpose of the SOP

The purpose of the SOP is to provide a WASH minimum benchmark of acceptable WASH standards for all WASH officers involved in emergency response to follow as per their roles and responsibilities outlined in section 7 of this document.

[1] https://ehs.unu.edu/

1.4 Objectives

The objective of this SOP document is to minimize the loss of lives and social, private and community assets because of natural disasters:

1. To ensure timely, quick, and effective response during disasters to minimize casualties, disease outbreaks and enable quick recovery, restoration, and rehabilitation of WASH systems.
2. To provide efficient systems for cooperation and collaboration among all the departments/agencies of the Government at national, provincial, Area administration, NGOs, private sector partners, donors and UN agencies that have interest in WASH.
3. Building capacities of communities and line departments at national / province, area and village levels in effective disaster preparedness, response, and relief.

1.5 WASH SOP Development

The specifics outlined in this SOP are subject to annual review through thorough collaboration with partners. Factors that will influence the review of the SOP are practical lessons learnt from an event, use of new innovations and technologies adopted with the WASH cluster and, most importantly, national legal framework.

1.6 SOP Awareness and access

The Department of Water Resources (DoWR) staff and WASH Cluster partners will have access to the SOP from the Ministry of Lands website[2] and the WASH Sector Google group network. All relevant government partners, humanitarian partners, clusters, and donors are encouraged to access a copy on the links above. The WASH Cluster Lead will be responsible for version control and dissemination of the SOP where required.

1.7 Acknowledgement of NDMO, UNICEF, MoH, MFAT

The WASH sector acknowledges the support being provided by NDMO, UNICEF, MFAT, MoH and other humanitarian partner agencies to the WASH sector for effective WASH responses to communities, health care facilities and schools that were affected by disaster events, and also to ensure WASH recovery construction is resilient to stand future forces of disaster events.

1.8 Live Document

This document is a consolidated cluster effort to create a single harmonized roadmap document to ensure an improved and coordinated cluster response in case of a disaster. This SOP document will remain a live document, subject to revision and updates annually or when required. This therefore constitutes a first step towards strengthening the WASH Cluster's combined emergency response in case of an emergency. This long-term process may also serve to inform the internal contingency planning of the WASH Cluster members to ensure a fully coordinated effort and response in case of an emergency

[2] https://mol.gov.vu/index.php/en/monitoring-evaluation-unit-water

2. INSTITUTIONAL MECHANISM

2.1 National Disaster Office (NDMO)

The National Disaster Management Office (NDMO) is a government department under the Ministry of Climate Change and Adaptation. It is the government's agency responsible for coordination of responses to emergencies and disasters across Vanuatu.

NDMO's vision is to ensure that there are resilient communities throughout Vanuatu by integrating the coordination of Disaster Risk Management and Climate change Adaptation into sectoral plans, policies and budgeting. NDMO works to achieve its vision by being 'The National emergency and disaster coordination agency to improve its coordination mechanism and building strong capability through the establishment of solid partnership with other line emergency responders in-country to continue to save life and property of all citizens'.

NDMO works to achieve this vision through effective coordination of responses to emergencies and disaster; strengthening disaster and climate change network at National, Provincial and community level; mainstreaming DRR and CCA programs and activities into other sector plans, policy and budget; inform community and partners at all layers on hazards and risks for safer development planning program; improve effective and reliable communication networks and linkages amongst all partners at the national, provincial and at community level; and facilitate capacity building on DRM and CCA at all levels[3].

NDMO focuses its work into disaster preparedness and response. The department works closely with local and international NGOs helping communities to be disaster resilient in the development and strengthening of disaster risk reduction and disaster management plans, including mitigation, response, relief and recovery as a whole. NDMO works with the private sector as well, in terms of Telecommunications, transportation and hardware houses during emergencies.

2.2 Cluster system

The Vanuatu Government decided to have a standing National cluster system to enable humanitarian agencies and government to develop and implement disaster preparedness activities during peacetime, and to coordinate emergency response post disaster events. A Government Agency holds the lead role, and a humanitarian partner holds a co-lead role. Cluster members can include government, humanitarian agency, community groups, and private sector. The relationships and preparedness activities developed through the national cluster system has proven effective in enhancing communication and coordinated response during local lead disasters. The Inter-Custer is the coordinating mechanism for the 8 technical clusters. Table 1 shows the different clusters established by NDMO.

[3] https://ndmo.gov.vu

Table 1: National Clusters under NDMO

Cluster	Gov Lead Agency	Co-Lead agency
WASH	DoWR	UNICEF
Health	MoH	WHO
Education	MoET	Save the Children
Logistics	NDMO	Vanuatu Police Force
Shelter	Ministry of Infrastructure AND Public Utilities	IFRC
Gender Protection	Depart. of Women's Affairs	CARE and Save the Children
Food Security and Agriculture	Department of Agriculture	FAO
Emergency Telecommunication	OGCIO	DIGICEL

2.3 NDMO National Coordination Structure

NDMO plays a central role in coordinating responses to disasters. Through the Ministry of Climate Change, NDMO provides updates to the Government on the state of the disaster and the level of resources required to respond. The Government through the Council of Ministers takes the final decisions and advises the NDMO for action. NDMO works in collaboration with the humanitarian team comprising of different NGOs and other agencies in coordinating and supporting disaster responses.

2.3.1 Provincial Emergency Coordination Structure

At the Provincial level, the Provincial Government has the overall responsibility for disaster response. On activation of the cluster system by NDMO, the Provincial Emergency Operation Centre (PEOC) is at the same time activated by the Secretary General of the Provincial Government, depending on the severity of the impact on the province. When the PEOC is activated, the Secretary General assumes the overall responsibilities of coordination at the Provincial level. Figure 2 shows the organogram of PEOC.

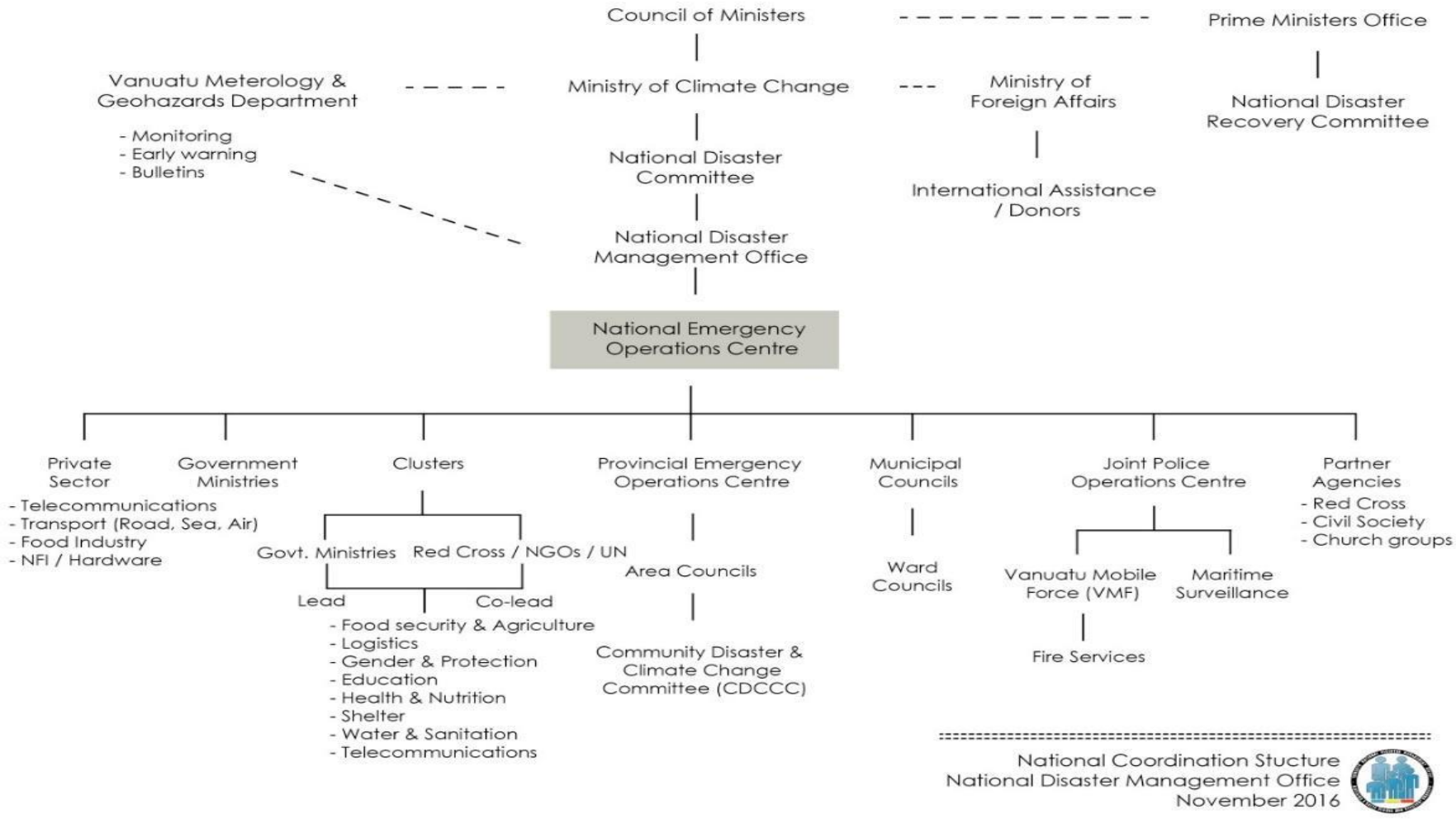
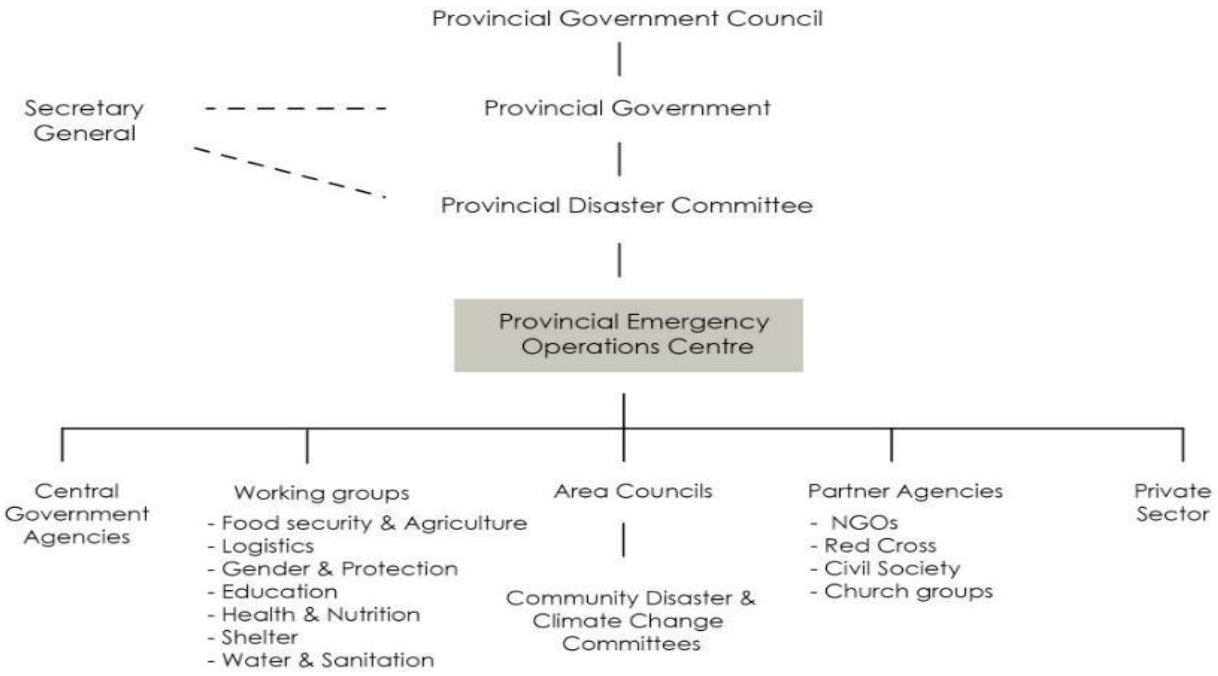


Figure 1: NDMO National Coordination Structure

Figure 2: Provincial Emergency Coordination (PEOC) structure



Provincial Coordination Stucture
National Disaster Management Office
November 2016

2.4 Department of Water Resources (DoWR)

2.4.1 Policies and Compliance

The Vanuatu government recognizes the impact of poor water and sanitation on its people. In an effort to address those problems, the Government of Vanuatu has, with the help of partners, developed various strategic plans and passed several important pieces of legislation that have created a policy framework to guide the efforts of governmental agencies and various stakeholders to improve water, sanitation and hygiene. The Vanuatu National Sustainable Plan[4] includes goals and objectives to address water safety and security issues. There are two direct water acts: The Water Resource Management Act and the Water Supply Act. A 2016 Amendment to the Water Supply Act ensures that, "Each Water supply system operated or maintained by a concessionaire must have a drinking water safety plan". Additionally, the Vanuatu National Water Policy strengthens water safety and security and extends the mandate for Drinking Water Safety and Security Planning (DWSSP) at community levels. Looking to the future, the Vanuatu National Water Policy 2017-2030 guides implementation of the Acts.

Similarly, there are two relevant acts to sanitation: The Public Health Act and the Health Committee Act. The Public Health Act established the responsibility of 1) provincial councils and 2) municipal councils to enforce proper and adequate sanitation for all. It also requires homeowners to have suitable sanitation[5]. In 2017, the CAP 234 Amendment Bill to the Public Health Act increased some of the requirements and added prohibiting discharge of sewage effluent into public drains. Meanwhile the Health Committee Act empowers village health committees to charge fees, oversee sanitation and if needed use those fees for community sanitation [6].

Delivery of WASH Emergency Response must be done in compliance of all laws and policies that are currently in place. The WASH Sector framework document clearly highlights the different laws and policies pertaining to WASH sector.

2.4.2 National Organization structure of DoWR

The Department of Water Resources (DoWR), a department under the Ministry of Land and Natural Resources, headed by a Director, is the Government Department responsible for the protection, management and use of water in Vanuatu[7], and is the lead for the water, sanitation and hygiene (WASH) cluster coordination in emergency. The Department's mission is to develop, manage and regulate the Nations water resources for the social and economic wellbeing of the people of Vanuatu. UNELCO, a private enterprise and utility concession holder manages the production and distribution of Port Vila water.

Six Provincial Water Resources Offices were established, one in each province, headed by the Provincial WASH IC who is responsible for WASH matters in the province.

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[4] http://www.nab.vu/document/national-sustainable-development-plan

[5] http://www.paclii.org/vu/legis/num_act/hca2003181.rtf

[6] Vanuatu National Sanitation & Hygiene Policy (2017 – 2030)

[7] Water Resources Management Act (2002); https://mol.gov.vu/index.php/en/policy-legislation-water

2.4.3 Water Advisory Committees.

Water advisory committees were established at the national and provincial levels. The National water Committee provides advise to the Director of DOWR while the Provincial Water Advisory committee provides advice to the provincial authorities. At community levels are water committees that were set up and trained by DoWR and WASH partners to oversee the management of the community water system.

Community water committees were also trained to provide first report of disaster impact on water systems to the Provincial WASH IC immediately after the disaster has occurred and before any assessment teams are deployed to the affected areas.

The DoWR structure has 4 main sections, each headed by a section manager, and is resourced with technical officers who perform the tasks and responsibilities required of their unit to support the Department working towards achieving WASH targets of the NSDP. Each section officer is accountable to the section manager. The four sections are:

1. Operations and Projects Section

   This section of the DoWR is responsible for all 6 provincial water units, and Projects. (Project planning and coordination, procurement, finances, and projects monitoring)

2. Technical Service Section

   This section has the technical teams that include the engineering unit, Community Water unit and the Drilling unit.

3. Monitoring and Evaluation Section

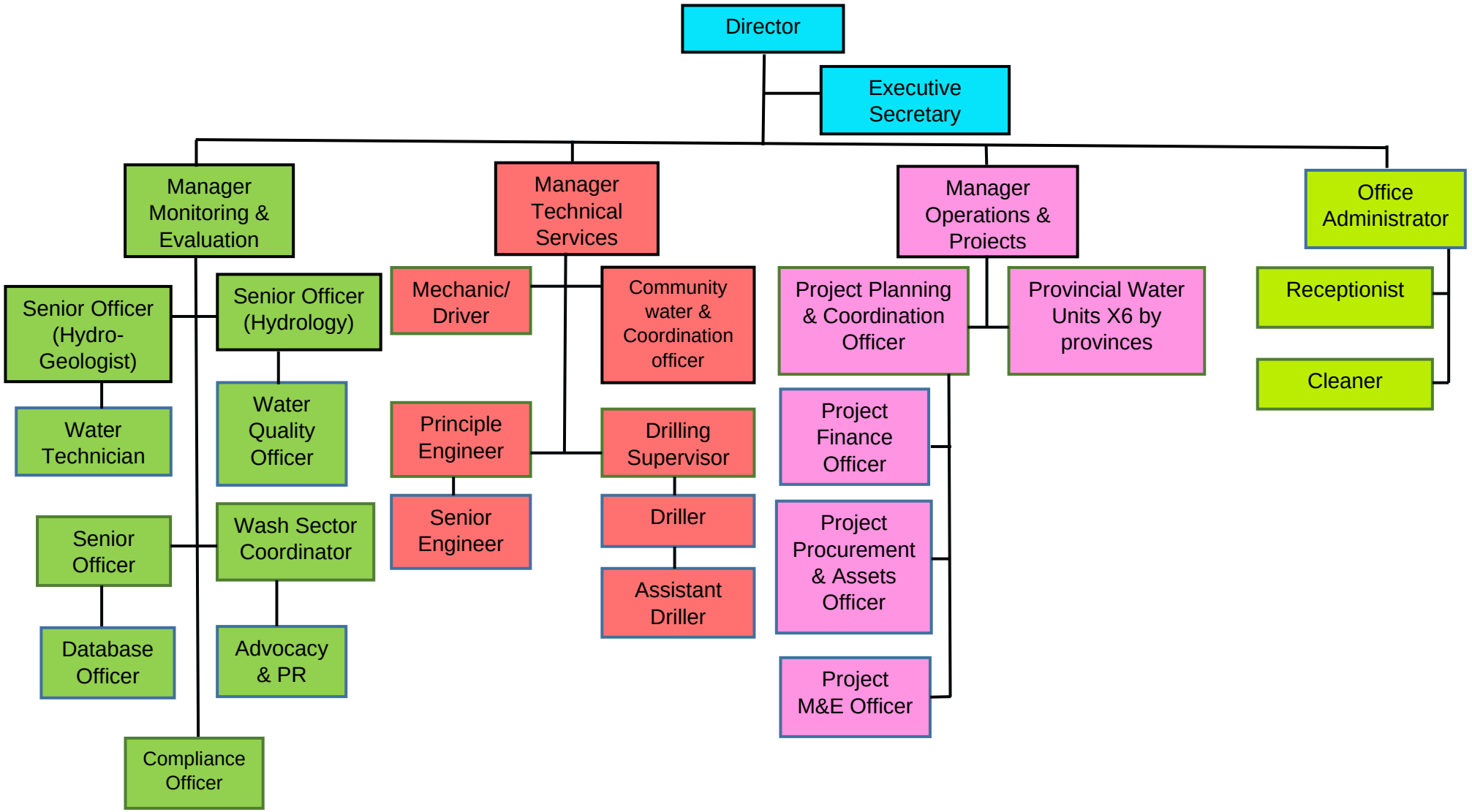
   The units functioning under this Section are:

   - Water Quality unit
   - Information Management unit
   - Monitoring, Compliance and Enforcement unit
   - WASH Sector/Cluster unit
   - Training

4. Administration

   This is the section that is responsible for the office administration and keeping of the office and supports all sections and the Director of the Department.

Figure 1 Organizational structure of the Department of Water Resources (DoWR)



2.5 Ministry of Health

The Ministry of Health (MoH) is a key partner to the WASH cluster. Sanitation, hygiene promotion and WASH in Health Care facilities components of the WASH cluster are under the auspices of the Ministry of Health. Environmental Health Officers, public health, sanitarian and health promotion officers under the MoH, are members of the WASH Cluster. An Environmental Health Officer normally takes the lead role in the promotion of safe hygiene, rehabilitation of toilets practices as well as for WASH in health care facilities. They are supported by the WASH technical team during emergency response and supervise the village sanitarians at area council level.

2.5.1 Village sanitarians

Village sanitarians are based in the area councils and are under the supervision and direction of the Environmental Health Officer, in coordination with the Area Council, DoWR Provincial IC and other WASH/Health cluster partners, sanitarians support the assessment, analysis and response to specific sanitation issues outlined in the Response Plan. In support of the WASH Cluster, sanitarians act as an interface between the WASH Cluster and the affected population to ensure the affected population have access to gender-appropriate, and inclusive sanitation infrastructure with dignity. Some of their specific responsibilities include:

In Peace Time

- Liaise with area council authorities and community leaders to communicate sanitation roll out plan and activities within respective area councils
- Mobilize communities to construct required number of toilets according to the new sanitation guidelines at the target sites within respective area councils
- Conduct hygiene promotion awareness and promote the importance of improved latrine amongst all communities within respective area council
- Conduct hygiene needs assessments of the affected population to ensure key hygiene practices and at-risk populations are identified to engage appropriate distribution and communications strategies to promote safe hygiene practices
- Identify needs for the distribution of non-food items (e.g. hygiene kits) related to public health and for effective handwashing and hygiene practices including menstrual hygiene management
- Manage the implementation of any regular, ongoing hygiene promotion activities such as promotion of safe hygiene practices, building of tippy taps next to the toilets, inspection of sanitation facilities etc
- Mobilize communities, households and volunteers where necessary and advised by the Provincial Environmental health officer to implement hygiene promotion activities
- Submit regular sanitation activity updates via phone, SMS, written note, or face-to- face meeting note to the Provincial Environmental Health officer to

assist in compiling daily and weekly WASH provincial activity updates (Who, What, When, Where)

In Emergency

- Provide first-hand information on damages to WASH infrastructure
- Participate in WASH assessment
- Advise affected communities that have toilets damaged to build temporary toilets while working with the WASH cluster and community to build long term improved toilets
- Support the hygiene promotion amongst affected population
- Advise on treatment of water with support from WASH Cluster
- Quickly restore water systems where appropriate until help from WASH Cluster arrives

2.6 Ministry of Education and Training

The Ministry of Education and Training (MoET) is responsible for the development of WASH in schools. Provision of safe and secure water, and appropriate quantity and quantity of toilets and hygiene facilities in schools is an essential element for social development.

In emergencies, WASH cluster liaises with the Education cluster specifically to ensure timely rehabilitation of water systems, hygiene facilities and gender-segregated toilets that are secure and safe for students and staff in schools.

3. NATIONAL WASH COORDINATION

WASH Coordination is a continuous process that occurs during both peace and emergency times. During peacetime it is referred to as the WASH Sector Coordination and during emergencies, it becomes a WASH Cluster Coordination.

WASH Cluster during emergencies is a group of agencies that gather to work together towards common objectives within the WASH sector in emergency response. DoWR is the WASH Cluster lead and UNICEF the Cluster co-lead

Cluster members are government agencies, private sector agencies, NGOs, Community groups, donors and UN agencies that have interest in WASH.

3.1. WASH CLUSTER COORDINATOR

A DoWR officer is the designated National WASH Cluster Sector Coordinator whose role becomes a WASH Cluster Incident Commander during emergencies. This is a full time WASH sector/Cluster Coordinator position under the DoWR.

The purpose of having a dedicated WASH Cluster Coordinator is to facilitate improved coordination and equal partnership between all actors involved in responding to WASH sector needs. Their main role is to facilitate the WASH coordination process and contribute to an effective and timely humanitarian response. This can be achieved through meaningful engagement of key WASH

sector actors working within the parameters of the WASH Cluster and providing operational support.

During emergency response, the National WASH Sector Coordinator that normally reports to the monitoring and evaluation manager in the DoWR structure, now resumes the Emergency Coordination role and becomes the Incident Commander (IC) position in the emergency organogram and reports directly to the Director of DoWR. Figure 4 shows the organogram used during emergencies. The IC is the designated officer for the operations and therefore all communications down and up the structure are through the IC. While officers of the DoWR are accountable to their line managers, during emergency response, they report to the IC through their line manager on all emergency response matters.

This WASH Coordination structure diagram (figure 4) shows the flow of task assignments, communication lines and resources requests between positions in the WASH EOC structure.

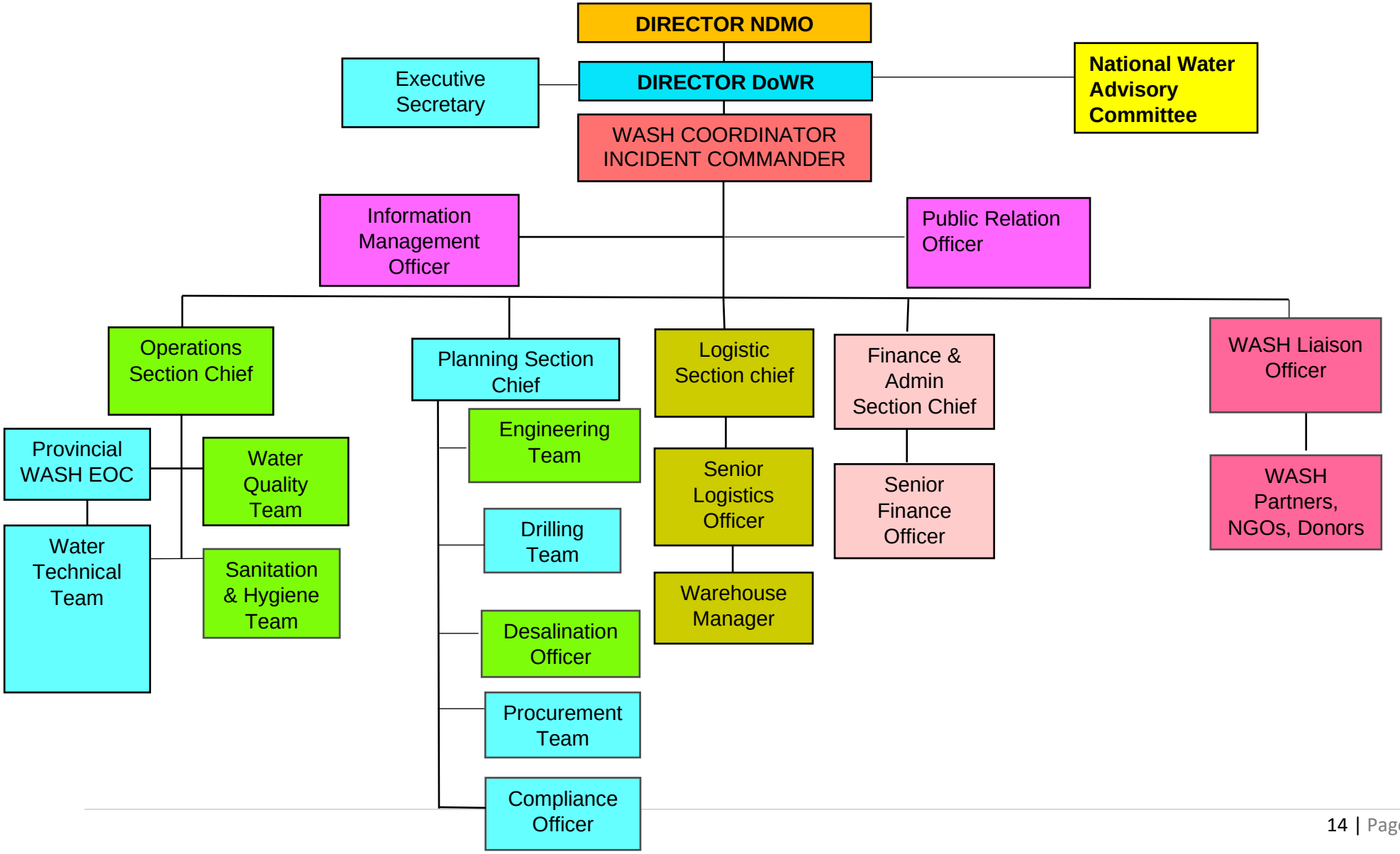
TO MAINTAIN UNITY OF COMMAND AND SAFETY OF RESPONDERS, THE CHAIN OF COMMAND MUST NOT BE BY PASSED AT ANY TIME DURING THE RESPONSE

The exact responsibilities of the WASH Cluster Coordinator will depend on the nature and scale of the emergency.

3.1.1 WASH in Emergency Communication structure

WASH Communication structure follows the coordination line (figure 4). The WASH incident Commander takes the full responsibility for the emergency operation so all communications pertaining to emergency operations are directed to him. Under each section are units, responsible for their specific tasks, as assigned to them in emergency response. The units report to their section chief and their section chief communicates emergency matters from their section to the IC. In emergency response, the chain of command must be followed at the WASH Emergency Operation Centre and at the incident site. Every individual has a designated supervisor to whom he or she reports to.

Figure 2: WASH Coordination Structure in Emergency



3.2 WASH Incident Commander Roles and Responsibilities

In Peace time

- Plans and coordinate Emergency preparedness activities
- Coordinates training and capacity building for emergency responses for WASH actors
- Ensure all key WASH humanitarian actors are included in the WASH Cluster
- Maintains a contact list of all WASH actors, all emergency responses and recovery team
- Maintains a up to date list of all pre-positioned WASH NFIs of all WASH actors

In Emergencies

- Leads Coordination of the WASH Cluster
- Coordinates with DoWR section managers and NGOs, private sector and other WASH actors, all emergency responses and recovery activities
- Leads WASH emergency response planning and strategy development
- Ensures WASH minimum standards in emergency are applied during responses
- Ensures cross-cutting issues, gender, people living with disabilities and children are considered during the response
- Maintains WASH cluster linkages with Health, Education, Protection and Shelter clusters
- Keeps the DoWR director, responsible officials and NDMO informed of all matters pertaining to the incident
- Keep linkages with the PEOCs and Provincial WASH Emergency Centers.
- Coordinates activities of all the staff in the WASH EOC and the emergency response activities
- Ensure all requests for resources are assessed by relevant sections prior to director's approval
- Regularly calls and chairs briefings and cluster coordination meetings.
- Seek Director's approval of response plans
- Oversee the compiling of WASH sitrep
- Request regular updates from all staff in the EOC and all provincial WASH EOCs
- Work with Finance Section Chief to finalize cost of response plan
- Seek the Director's approval for release of sitreps, press releases to the media
- Maintains communications and coordination with all WASH partners and teams
- Ensure WASH is well represented in Health, Education and Gender Cluster meetings
- Keeps close liaison with the support teams. (describe in Section 7)
- Keeps close liaison with the NDMO office

3.3 Roles of WASH Cluster Implementing Partners - What is expected of WASH Cluster partners

The WASH Cluster structure and its coordination mechanisms will need to accommodate the interests of all sector actors to influence and engage in WASH Cluster response plans and to share information. It is expected that WASH Cluster partners will:

- Endorse the overall aim and objectives of the WASH Cluster
- Be proactive in exchanging information and reporting, highlight needs, gaps, duplications, mobilize resources (NFIs, financial and human resources) and engage with local communities.
- Complete and submit 4Ws to WASH Cluster IMO at least on a weekly basis.
- Share responsibilities for WASH cluster activities, including assessing needs, developing plans, policies, and guidelines through working groups.
- Respect and adhere to agreed principles, priorities, policies, and standards.
- Work as a team

Valuable partner NGOs in WASH Cluster at all times are presented below and the number can increase in times of major disaster response as experienced in TC Pam. If this happens, new NGOs intending to respond to WASH related issues must follow the same coordination practices as outlined in the SOP document. NGOs with interest in WASH currently present in Vanuatu include:

- World Vision
- Red Cross
- ADRA
- OXFAM
- CARE
- Israel AID
- LDS Church• Save the Children

Private sector partners can also be valuable partners. They are welcome to volunteer their time, but a Terms of Reference should be agreed upon ahead of time by the incident commander. Note that marketing of materials during an emergency is not acceptable and will not be tolerated by the WASH cluster.

3.4 Inter Cluster Linkages with WASH

The value of multiple stakeholder involvement is in the diversity of partners and the potential complementarities between them. The WASH Incident Commander/Coordinator's role is to find the strengths within this diversity and maximize the complementarities that can be drawn from it.

Table 2: Inter Cluster linkages with WASH Cluster

Cluster	Link with the WASH Cluster
Health	● Shared surveillance and monitoring of public health indicators ● Identify water, sanitation and hygiene related health issues/hotspots and outbreaks ● Agree coordinated strategies for WASH in health care facilities ● Agree coordinated strategies for vector control and hygiene promotion outreach. ● Through the Environmental Health Department, lead WASH response in sanitation, hygiene, vector control and drainage management. ● Ensure effective WASH information collection and alerts from nutrition assessments and surveys.
Shelter Cluster	● Agree on strategies for the promotion of rainwater harvesting system installations incorporated with shelter installation. ● Ensure adequate WASH planning for new settlements (as in case of Ambae volcanic 2nd home sites on Maewo).
Protection	● Ensure protection awareness during emergencies. ● Ensure WASH infrastructure designs do not put the affected population at additional risk. ● Ensure gender and disability inclusion in infrastructure designs and installations.
Education	● Include WASH in schools and child friendly learning spaces. ● Ensure sufficient number of secured toilets and hand washing facilities are available to students and staff. ● Ensure protection principals are applied in schools.

Figure 5: WASH Sector Coordination Cycle

3. 5 WASH Coordination cycle.

Figure 5 shows the WASH sector coordination cycle, from preparedness in peace time to recovery phase post disaster.

4. PEACE TIME WASH SECTOR PREPAREDNESS

4.1 Preparedness

Section 22 of the national water resources Management Act N9 of 2002[8] provides a framework for a more robust coordination mechanism for all water related activities. It establishes the WASH cluster to lead the coordination and management of WASH emergency responses when the cluster is activated after a disaster event has occurred.

4.1.1 On going WASH Sector Coordination meetings

In “Peace time” the WASH Cluster operates continuously with ongoing accountability for emergency preparedness. It is important for the WASH sector coordination to continue to meet in peace times discussing various matters related to WASH sector, both at national and provincial level. These meetings will help members of the cluster get to understand WASH status and for members to get to know each other well in peace time. Knowing each other well will enhance effective coordination and collaboration when they are mobilized to respond to emergency.

[8] https://mol.gov.vu/index.php/en/policy-legislation-water

4.1.2 Development and testing of Assessment tools

It is critical that WASH assessment questionnaires and guides are developed and be ready to use when require. Four assessments have been agreed for WASH to undertake to collect appropriate sufficient data to inform effective response planning. The four assessments agreed by WASH to undertake after disasters are outline in Table 3

Table 3: Types of assessment WASH team will complete post disasters

Assessment type	Purpose of assessment	Responsibility	Outcome
1. Community based Assessment	This is the first assessment done in communities immediately after the passage of a disaster.	This is completed by CDCs and water committees based in affected communities. The form is in line with Water Resources Inventory questions so it is possible to compare system damage pre/post disaster and will include toilet sanitary surveys. NDMO will distribute these forms to community officers in peace time.	● This informs NDMO decision to commission aerial assessment. ● Informs development of damage map. ● Informs planning for IRA ● Calculation of effects and loses to inform PDNA ● Prioritizes damaged systems for detailed assessment.

2. Aerial assessment	This is the first assessment organized by NDMO. This is an immediate aerial assessment of the damaged area or islands. Extent of damage can be marked on a map to show where damages are.	NDMO gives a space to the WASH cluster on the aircraft and the WASH Public Relations Officer represents WASH to collect and provide this first information on the damage.	● Development/ update of damage maps. ● Informs planning for IRA
3. Initial Rapid Assessment (IRA)	To provide access to water by completing quick fixes and developing material lists for further works to improve water access.	This assessment is completed by WASH technical team (CDO, Water Technicians, plumbers and community plumbers).	● Water available in communities ● Material lists for minor repairs to water systems ● Informs Procurement for further quick fix procurement requirements ● Prioritizes damaged systems for detailed assessment.
4. Detail Assessment.	Detail assessment of systems prioritized by IRA and community-based assessment. Data will include flow rates, GPS points, and other details. Details are incorporated into the DWSSP process.	Engineers, Community Development Officers and experienced plumbers	● Informs design of systems for recovery phase of the response.

4.1.3 WASH in Emergency capacity building

In peace times, the WASH Cluster Coordinator will organize relevant training for WASH officers in different areas of WASH in emergencies to prepare them for emergency operations. Listed are some of the trainings that WASH officers will need to complete:

1. Assessment tools training. Training on how to complete the different questionnaires developed. This will include understanding the questions and knowing how to use tablets or android phones to input field data and how to submit data to the data platform.
2. GPS training. Training on taking GPS coordinates is a vital part of data collection and data collectors must know how to take this reading during assessments and at other times.
3. Emergency Standards training. Training on the standard of service required and emergency standard drawings.
4. Bill of Quantity training (BoQ). Developing BoQ requires skills and understanding of water system infrastructure. BoQ developed by a technical team during quick fix assessment must be accurate to support quick fixes on damaged infrastructure. Members of the technical team and sanitarians who will be assigned for this task must be trained in basic plumbing, DWSSP, community development and in 1, 2 and 3 above and 5 below.
5. Gender based training. Training in gender inclusion for the response and recovery phase of the emergency.
6. Basic training in first aid: For safety of officers during emergency response.
7. Any other trainings that the WASH Cluster Coordinator thinks appropriate for the WASH team.

4.1.4 Development of WASH Key messaging

It is important that communities are advised and kept informed to prepare them for disasters and how to minimize risks and impacts of all possible disaster events that may fall on their communities. Several WASH key messages have been developed.

The WASH Cluster has standardized specific WASH key messaging, ready to distribute following an onset of a specific disaster event through print materials, workshops, and through different media platforms. The specific disaster events that key messages are to be tailored to are:

- Cyclones
- Tsunamis
- Earthquakes
- Drought
- Flooding
- Volcanic eruption (ash fall, acid rain)
- Disease outbreaks

WASH Cluster will secure agreement with VBTC, Digicel and Vodafone telecommunication companies to support dissemination of the WASH key messages before, during and after disaster events.

4.1.5 NFIs

The DoWR has a warehouse in Port Vila. Red Cross and ADRA have set up their own warehouses in Port Vila, Santo, and other provinces where they keep emergency stocks. UNICEF also has a warehouse in Port Vila. WASH emergency stocks are kept by different agencies in different locations and the WASH Cluster, through the IMO must keep an up to date list of all WASH NFI supply stocks kept by different partners in country at any one time. Knowledge of the quantity of NFIs in country will help the WASH Cluster to estimate any gaps in NFIs during peacetime and during an emergency response.

Water Purification

Experiences during TC Pam, Ambae Manaro eruption and TC Harold showed, high refusal of water purification tablets by the affected population, that resulted in a large quantity left unused that had to be disposed of. There is an increasing acceptance of water filters introduced during Ambae volcano ash fall and during TC Harold.

Based on this experience, purification tablets are to be reserved for use for specific situations approved by the WASH cluster, but not for general distribution along with other NFI items.

Water filters require correct operation and maintenance so that they continue to effectively filter water. It is therefore mandatory for the WASH cluster to teach users and provide operation and maintenance instruction and printed IEC materials when they hand out the filters. To ensure effective use of filters, WASH Cluster must monitor the use of the filters in communities and in institutions following distribution.

The WASH Cluster will recommend a suitable household filter based on community preferences and promote this for private business enterprises to add to their stocks for sale to the public for household water treatment.

If there are not enough water filters for all affected households, filters may be given to healthcare facilities so distribution can be prioritized to individuals with waterborne disease.

WASH/Hygiene Kits

Access to and use of appropriate hygiene items are crucial to support hygiene, health, dignity and well-being of the affected people. WASH/Hygiene kits are some of the first NFIs to be distributed to disaster affected populations. It is important to prioritize essential items in the initial phase (such as soap, water containers, and menstruation and incontinence materials) over the “nice to have” items (such as hairbrush, shampoo, and etc.). Some people will need different or greater quantities of personal hygiene items because of their age, health status, disability, mobility or

incontinence. Persons with disabilities or those who face barriers to mobility may need additional items. This includes extra soap, incontinence items, water containers, bed pans, a commode chair or plastic covers for mattresses. Consult with them and their families or caregivers on the most appropriate support.

Further, it is important to prioritize the safety and security of the population when organizing any distribution. Set up a dedicated distribution team made up of gendered balance team. Inform people in advance of the timing, location, list of items and any eligibility criteria. Counter discrimination or stigmatization and, if necessary, distribute to households or through separate distribution lines.

Addressing menstrual hygiene management in crises helps people to live with dignity and engage in daily activities. In addition to providing access to hygiene items, it is important to consult with girls and women about disposal mechanisms at home as well as in communal facilities and institutions such as schools.

Experience shows that WASH/hygiene kits from different donors have different contents, and as a result, WASH/hygiene kits distributed to affected households have different contents based on where they are sourced and have created certain level of dissatisfaction amongst users who received hygiene kit with less items. This calls for the need to develop and endorse a national standard on the hygiene content by National WASH cluster as seen below.

*T**able 4: Minimum Contents of WASH Hygiene kit (Kit for 1 household of 6 members (3 male, 3 female- 3 adults, 3 children) for 1 month***

Item	Unit	Number	Unit Cost ($)	Total Cost ($)	Specification Description
Soap	Pack	1	1.50	1.50	Soap for personal hygiene. Wrapped bar. Non-perfumed, for normal skin. Hypoallergenic, 250 g or (2 x 125 g) per person
Laundry Detergent	Pack	1	2.50	2.50	1kg laundry detergent / person / month (200 g. is SPHERE standard, but not available)
Toothpaste	Tube	1	3.00	3.00	Tube. 450 ml, peppermint flavor (75ml per person per month)
Sanitary Pads	Pack	1	2.50	2.50	Sanitary towels, disposals, pack of 10. Ultra-Thin material: cotton shape, Winged Feature: Super Absorbent style: Size: Large or 350 mm
Adult Toothbrush	Piece	3	1.00	3.00	Adult size, medium hardness, individually wrapped
Child Toothbrush	Piece	3	0.50	1.50	Children size, soft, individually wrapped
Nail Cutter	1	1	1.00	1.00	Stainless steal
Buckets with Lid	Piece	1	2.00	2.00	20 lt HDPE bucket (High Density Polyethylene), UV resistant and safe for food and water storage. Tight fitting lid. For water storage /collection
Cloth Line	Piece	1	1.00	1.00	10m, polypropylene center, PVC covered
Trash Bags	Roll	1	2.00	2.00	Plastic trash /garbage 120 lt. bags Roll of 20 pc
Torch	Piece	1	5.00	5.00	9 LED UV TORCH with 240ml UV Potion
Total Estimated Cost for 1 kit				**25.00 USD**	

4.1.6 Pre stocking of Basic Common pipe fittings

Experience from TC Harold showed that assessment teams taking basic water pipe fittings when dispatched for assessment enabled immediate quick fixes and restoration to damaged water pipes allowing affected population to have access to water from these systems. The WASH sector encourages pre-stocking of fittings at provincial levels. While the DoWR has a warehouse in Port Vila, provinces are still without secure spaces for pre-stocking.

WASH enterprise

Basic WASH materials should be available at provincial levels for quick access by those who need them through business enterprises. The WASH sector will work with private business enterprises in the provinces for them to stock and sell basic WASH materials including common poly pipe fittings, pipes, guttering, toilet seat risers and water filters in their shops for communities and the WASH sector to access at any time.

4.1.7 Community profiling

It is necessary for WASH to have a basic knowledge of the WASH situation and the general demographic data of each community. Area councils may have community profiling information available that WASH can access. Provincial WASH officers will work with Provincial Government and area council secretaries to access this valuable information to the WASH team in preparation for response when disaster hits in these communities

4.1.8 Mapping of water systems in the province

Knowledge of water systems in each area council or province will assist response planning. Accessing completed DWSSP and Water Resources Inventory information during peacetime preparation would provide valuable information of the type of water systems in each area council.

4.1. 9 WASH in Evacuation Centers

Ensure that designated evacuation centers have appropriate WASH facilities, adequate water, sanitation, and hygiene promotion facilities. Provincial WASH IC to liaise with CDCs and Area Council/ Ward Council secretaries to locate designated evacuation centers in communities.

Once evacuation centers are identified, WASH teams work with community CDC, Church leaders, school committees, water committees and others to install gender and disability inclusive access to water sanitation/toilets and hand washing facilities at evacuation centers in peace time ready for use during disasters.

4.1.10 Local Community Structures

Existing local committees and community groups are great assets to the WASH Cluster but are not fully utilized for the WASH benefits during emergency response. The Provincial WASH IC and the provincial team have the responsibility to map these groups, educate and support them with the knowledge for what they need to do to support their communities become WASH resilient as well as providing support to emergency response. Note that the phone numbers of many village water committee chairs can be found on the internal VanGov website.

4.2 Stages of WASH Cluster Operations

The WASH Cluster disaster operation follows the NDMO stages of operations that falls into 4 stages. It is recognized that the 4 stages, presented below may not apply to all types of disaster. Earthquakes and tsunamis happen instantly and therefore the first and second stages may be skipped. The stages are presented below.

Table 5: Stages of WASH Operations

Stages	Details
1. Readiness	This will initiate preparation for the WASH Cluster after receiving information from the Department of Water Resources director in consultation with the NDMO Director of a possible disaster event that will impact on the Vanuatu population in the coming days. Led by the WASH Cluster Coordinator, the WASH team checks that the following tools are readily available to use once the Cluster is activated: Convene a WASH Cluster meeting to: ● Check assessment questionnaires are ready and available to use. There are 4 questionnaires that WASH will use in emergency. ● Check and confirm availability of tablets and android phones that can be used for the assessment ● Check and confirm availability of GPS devices and power banks to be used for the assessment ● Make sure all electronic devices are fully charged ● Check if questionnaires have been uploaded on to tablets and android. If not yet done, upload. ● Access existing demographic data of areas predicted to be impacted by the disaster ● Access existing water system data from DWSSPs and WRI of areas predicted to be impacted by the disaster ● Communicate with provincial WASH IC who are predicted to be impacted to get the provincial team ready and each officer to prepare their homes in the case of an approaching cyclone ● Disseminate key WASH messages specific for the approaching disaster and advice public to secure and protect water sources and store water, through media platforms already secured (Digicel, Vodafone and VBTC in the case of cyclones). ● Key messages for specific hazards be given out to the public prepare communities before the event happens. Advice public to disconnect roof gutters and store gutters safely before cyclone or ash fall happens. If water source is a stream source advice public to close valve at the stream box or remove the pipe from the stream if there is no formal box.

	● Nominate officers to support NDMO operate the national EOC when it is activated.
2. Standby	This is a stage when all preparedness is completed, a waiting period for the event to happen. During the waiting period: ● DoWR officers at all levels and other WASH Cluster members are advised by the WASH Cluster to secure their offices, homes, and other properties before the event hits in their areas. ● Check that all WASH assets at National and Provincial levels are secured and safe from the approaching disaster. ● All WASH vehicles are in good conditions and filled ready to operate after the disaster event occurred. ● Ensure all communications tools are available, phones fully charged with sufficient credit so staff can easily be contacted. ● Phone contacts of all officers and partners is available ● WASH team and their families keep safe during the disaster events.
3 Activation and response	● The WASH lead, who is the Director of DoWR issues the activation advice of the WASH cluster when NDMO activates the EOC and cluster system. ● Activation triggers the shift in DoWR nature of operation from peace time to the emergency operation coordination mode. ● Activation of the National WASH Cluster also activates the Provincial WASH Emergency Operations in the affected provinces. ● This is the stage when WASH Cluster becomes fully operational and responds guided by this SOP. ● The WASH lead to formally appoint DoWR officers to positions set out in Figure 4.
4. Stand down	● The Director of the DOWR will initiate termination of the WASH Cluster EOC and the recovery and rehabilitation activities can be implemented under normal procedures. This is when the DoWR operations returns to operation under the normal DoWR structure.

5. MINIMUM WASH STANDARDS IN EMERGENCY RESPONSE

Population affected by disaster events are significantly prong to disease outbreaks. To mitigate disease outbreaks, the WASH Cluster response focuses on the following:

1. Water Access
2. Hygiene promotion
3. Excreta Disposal
4. Vector Control
5. Waste Disposal
6. Drainage

The following sections describe the minimum standards that WASH Cluster will work towards achieving in the emergency response.

5.1. Water Supply

Water is essential for life, health, and human dignity. After a disaster event, there may not be sufficient water to meet basic needs and in these cases, supplying a survival level of safe drinking water is of critical importance. The main health problems are caused by poor hygiene due to insufficient water and by the consumption of contaminated water.

5.1.1 Water Access and water Quantity

a) **Water Sources:** Water sources available from which water can be accessed after a disaster are listed below. In most cases, the only water sources available to the affected population may have been damaged. Generally, gravity fed supplies from springs, and rainwater sources are preferable as they require less treatment and no pumping. In disasters, a combination of sources is often required in the initial phase.
   1. Piped water
   2. Surface water
   3. Spring water
   4. Shallow dug well
   5. Bore hole
   6. Rainwater
   7. Desalination
   8. Water Truck
   9. Bottled water

b) Water Needs: The quantity of water needed for domestic use by the affected population may vary according to the local context, the sanitation facilities used, people's habits, food they cook, and if they drink kava.

Table 6: Basic water survival needs[9]

Survival water needs: Water intake (drinking and food)	2.5-3 litres /person/day	Depends on climate and individual physiology
Basic hygiene practice	2-6 litres/ person/day	Depends on social and cultural norms
Basic cooking need	3-6 litres /person/day	Depends on food types and social and cultural norms
Total Basic Water Needs	7.5-15 litres/person/day	

c) Quantity /Coverage: In disasters and until minimum standards for both water quantity and quality are met, the priority is to provide equitable access to an adequate quantity of water even if it is of an intermediate quality. Disaster affected populations are significantly vulnerable to diseases, therefore water access and quantity minimum standards should be reached. Particular attention should be paid to ensure the need for extra water for people with specific gender and health conditions.

Water and sanitation need of both the host and affected population are equally addressed as in the case of Ambae volcano evacuees to Maewo island where water systems repairs served both groups of population.

d) Maximum number of people per water source. The number of people per source depends on the yield and availability of water at each source. The approximate guidelines are:

Table 7: Number to people per water source[9]

250 people per tap	Based on a flow of 7.5 litres/minute
500 people per hand pump	Based on a flow of 17 litres/minute
400 people per single user open well	Based on a flow of 12.5 litres/minute

Other important indicators to address are:

- Water is accessible for all, including women, pregnant women, people living with disabilities and children.
- The water collection point must not be more than 500 meters from dwellings
- Waiting time at water collection point must not exceed 30 minutes.

[9] The Sphere Project, Humanitarian Charter & minimum standards in Humanitarian Response

5.1.2 Water Quality

The WASH Cluster aims to provide water which is portable and of sufficient quality for drinking and cooking, personal and domestic hygiene without causing risks to health. The DoWR has a drinking water standard to work towards[10].

In disasters, it is assumed that all water sources are contaminated unless water quality tests conducted proves water is free from contamination. Following are actions to be taken to improve water quality to the affected population

a.) Sanitary assessment of water source

- In the initial phases of response, assess the sanitary condition of the water source and address so it is safe.
- DWSSP will be completed at a later phase of the response during the recovery phase to provide the full extent of the water safety and security.

b) Microbiological water quality

- Conduct water quality test on water being accessed. Support community household to treat all water at household level.
- Distribute water filters to households and clearly demonstrate how to operate and maintain the filter. Clear operational filter instruction brochure must accompany each filter.

c) Household level Water treatment

- The most appropriate household water treatment or “point of use water treatment” option for any given context depends on water and sanitation conditions, water quality, cultural acceptability, and the implementation feasibilities of any of the options. Treatment options encouraged include:
    - Household water Filters
    - Solar disinfection
    - Boiling

Whichever treatment option is recommended, it should include provision of adequate and easy to understand materials and products and appropriate training for the beneficiaries. Follow up monitoring of the filters is critical to ensure they operate correctly. Instructions for water filters operations can be accessed from the Ministry of Lands website, in the following link; https://mol.gov.vu/index.php/en/monitoring-evaluation-unit-water and in annex 2.

d) Water delivery and post-delivery of emergency water

Trucking of water using water trucks, water bladders, 1,100 litres water tanks or smaller containers is common after disasters. Possible contamination of water could occur during extraction of water, transportation and at delivery points and post-delivery points. Steps that can be taken to minimize such risks include:

[10] https://mol.gov.vu/index.php/en/monitoring-evaluation-unit-water

- Treat water with liquid chlorine or chlorine tablets prior to distribution to the public
- Water should be tested at the point of use and at the source to monitor the extent of any delivery contamination.
- Advise households to keep household water storage containers clean and keep closed when not in use.
- Advise affected population to collect water in clean containers so they do not become the source of contamination.
- Thoroughly clean tanks used for water tracking and keep in clean state at times when trucking water.

e) Water facilities

- Communal washing and bathing facilities

People require spaces where they can bath in privacy and with dignity. At central communal sites such as at evacuation centers, separate central facilities for men and women will be needed that can be accessed by all including old people and people living with disabilities. The number, location, design, safety, and appropriateness of facilities should be decided with consultation with users especially women and adolescent girls and people living with disabilities. The location of facilities in central, accessible, and well-lit areas with good visibility of surrounding areas can ensure safety of users.

- Water collection and storage

  People need containers to collect water, to store for cooking, drinking, washing, and bathing. The container should be clean and easy to carry. The 10-liter collapsible jerry cans distributed by WASH Cluster is ideal for carrying water while the bigger 20-liter container can be used at the household level for storage.

- Bottled Water
  Previous experience shows that empty 1.5-liter plastic water bottles distributed by the relief teams were indiscriminately disposed of contaminating the environment. The WASH Cluster will remove plastic bottled water from its distribution stock for future disasters.

5.2 Hygiene promotion

Hygiene promotion is a planned systematic approach to enable people to take action to prevent and or mitigate water, sanitation, and hygiene -related diseases. It involves ensuring that people make the best use of the water, sanitation, and hygiene enabling facilities and services provided and includes the effective operation and maintenance of these facilities. The technical oversight of this section of the response is led by the MoH portion of the WASH Cluster, supported by NGO partners.

5.2.1 Communication and educational messaging

Key WASH specific messages on hygiene -related risks and prevention actions using appropriate channels of mass communication will be systematically provided to the affected population, before, during and after a disaster strike. Disaster events including cyclones, drought, ash fall, and flooding can be forecasted before they strike. In these cases, the population at risk must be appropriately advised through different media channels to prepare before the event occurs.

In the early stages of the disaster, WASH Cluster will rely on mass media to ensure that as many people as possible receive important key information about reducing health risks. Different groups should be targeted straightaway with different information, education and communication materials that were developed in peace time preparedness. Media communication channels including radio stations, TV, Digicel and Vodafone mobile networks and social media that WASH Cluster secured agreements with during peace time will be used to disseminate information.

5.2.2 Interactive communication methods.

As the response commences and progresses, assigned WASH Cluster information and communications team will now focus on interactive communication methods to reinforce the mass media communications and to assist affected population to plan and implement their own hygiene improvements.

MoH and NGO partners will lead the interactive communication and education of the affected population parallel with the distribution of NFIs that these partner agencies are responsible to deliver. Where NGO partners use the services of community mobilizers and or volunteers in this exercise, they will be properly trained to effectively implement the task.

5.2.3 Monitoring

In partnership with affected communities, the MoH will facilitate regular monitoring of key hygiene practices and the use of facilities provided.

5.3 Excreta Disposal

Safe disposal of human excreta creates the first barrier to excreta -related disease, helping to reduce disease transmission through direct and indirect routes. Safe disposal of excreta is therefore a major priority and in most disaster situations, should be addressed with as much speed and effort as the provision of safe water supply.

Most toilet infrastructure in Vanuatu are constructed of local materials and therefore are highly prone to damage by disasters. It is critical that immediately after the disaster, affected households are assisted to build temporary toilet facilities to stop open defecation while supported by the WASH Cluster to develop a plan for construction of improved toilets to replace the temporary ones.

Ensure that the toilets constructed are appropriately designed, built, and located to meet the following requirements:

- They can safely be used by all sections of the population, including children, women, pregnant women, and people living with disability.
- They are sited in such a way to minimize security threats, especially to women and adolescent girls, throughout the day and night.
- They provide a degree of privacy for the user. Separate, internally lockable toilets for women and men are available for public toilets
- Toilets are sufficiently easy to use by all and easy to clean.
- Toilets are appropriately provided with adequate water for hand washing.
- Toilets are appropriately provided with adequate lighting facilities.
- They allow for the disposal of the women's menstrual hygiene materials and provide women with necessary privacy for washing and drying menstrual hygiene materials.
- In high water table or flood situations pits are raised or made watertight to avoid contamination of groundwater.
- Toilets are no more than 50 meters from dwellings
- Toilets are more than 30 meters from a water source
- Install footprint path to direct toilet users to hand washing facilities to wash their hands with water and soap after using the toilet.

Types of Excreta disposal methods

The table below provides options of excreta disposal methods commonly used in Vanuatu that can be considered in the emergency response phase.

Table 8: Methods of Excreta Disposal

Safe excreta disposal type	Application remarks
Simple pit latrine/ Portable toilets	Plan from the start to long term use
Ventilated pit latrine (VIP)	For middle to long term use
Raised toilets and Compost toilets	In response to high water table and flood situations, right from the beginning
Flush toilets; Septic tank & pour flush	Middle to long term

5.4 Vector Control

A vector is a disease carrying agent and vector borne diseases are a major cause of sickness and death in major disaster situations around the world. In Vanuatu, mosquitoes transmit malaria and dengue fever. Leptospirosis was also reported in Vanuatu. Flies play and important role in the transmission of diarrheal diseases.

Vector borne diseases can be controlled through a variety of initiatives, including appropriate site selection and provision of shelter, water supply, excreta disposal,

solid waste management and drainage, provision of health care services, use of chemical control, family, and individual protection (use of bed nets and clothing).

5.4.1 Individual Protection

- Raise the awareness of all affected populations who are at risk from vector-borne diseases about possible causes of vector borne related diseases, methods of transmission and possible prevention measures.
- Help the affected population to avoid exposure to mosquitoes during peak biting times by using repellents, wearing protective clothing and use of bed nets.
- Pay special attention to high risk groups including, feeding and pregnant women, infants and babies, sick people and the elderly.

5.4.2 Physical Environment and chemical protection measures

- Settle displaced populations in locations that minimize their exposures to vectors, especially mosquitoes.
- Conduct chemical spray to control dengue mosquitoes and flies in case of dengue and or diarrheal outbreaks in the area.

5.5 Solid waste management

Solid waste management is the process of handling and disposal of organic and hazardous solid waste which, if unattended appropriately, can pose public health risks to the affected population and can have negative impact on the environment.

5.5.1 Collection and disposal.

- Identify safe areas as disposal sites of waste and clearly mark.
- Organize with the affected population in resettlements and or at evacuation centers periodic collection and waste disposal of waste.
- Provide safety clothing and gear for waste collectors.
- Clear waste from drainage channels to avoid water collection.

5.6 Drainage

Surface water in settlement may come from household and water point wastewater, leaking septic tank, rainwater or raising flood water. The main health risks associated with surface water are contamination of water supplies and the general environment, damage to toilets and dwellings and vector breeding.

The following are actions to take in relation to addressing drainage:

- Construct appropriate drainage facilities so that dwellings and water distribution points are kept free from standing wastewater.
- Carefully dig storm water drainage to divert storm water away from dwellings and keep clear.
- Ensure that water standpipes and handwashing facilities have effective drainage to prevent muddy conditions

5.7. WASH in Health Care Facilities (WinHCF)

While health facilities are under the Ministry of Health, access to safe water, sanitation and good hygiene promotion are the responsibilities of the WASH Cluster. WASH Cluster will coordinate with the Health Cluster and the MoH facilities Unit to address WASH in Health Care facilities. Ministry of Health Public Health Officers will be assigned to WASH Cluster, from where they will lead the WASH response in health care facilities. As such, MoH will conduct assessments in their facilities. WASH cluster will assist to get water to the facilities and ensure temporary sanitation during the response, but MoH will pump water inside the facilities and construct permanent sanitation during the recovery stage.

Hygiene: Ensure that there are functional handwashing facilities with reliable water, soap, or alcohol- based hand rubs and safe wastewater disposal in every location where health-care is provided (wards, consulting rooms, delivery rooms, operating theatres, etc.) in addition to all service areas (kitchen, laundry, showers, toilets, sterilization, laboratory, waste zone and mortuary).

HCF Waste Management

WASH cluster will coordinate with the MOH Infection Prevention Control Unit to ensure the following standard precautions are put in place;

- Ensure safe segregation, collection, transport, treatment, and disposal of health-care waste.
- This can be as simple as providing sufficient numbers of durable and safe containers in all rooms where wastes are generated.
- Create a dedicated and fenced waste disposal zone, and ensuring staff have appropriate personal protective equipment and are trained in health-care waste management.
- Wastewater disposal. Ensure that wastewater from handwashing, bathing, cleaning, or laundering is disposed rapidly and safely without contaminating the health-care setting, water supplies or surrounding communities.

5.8 WASH in Schools (WinS)

In emergencies, it is children who are at the highest risk of disease, violence, abuse and even death.

Schools can provide children with a sense of normalcy and personal safety, helping them to recover psychologically. During times of emergency, as well as everyday life, children have the right to be involved in the decisions that affect them and participate in response and recovery activities.

The Education Cluster will conduct assessments in school facilities. During the response phase, WASH cluster will assist to get safe and sufficient water to accessible water points and ensure temporary sanitation at affected schools. During

the recovery phase, MoET will be responsible for rehabilitating and upgrading permanent water, sanitation and hygiene infrastructure within school boundaries.

Protection for both Schools and HCF

- Toilets must be internally lockable for males and females in health centers and schools.
- Toilets must be gender appropriate and segregated by sex
- Must ensure there is equal access for all water and sanitation facilities in health centers and schools
- Water and sanitation facilities must be sited in safe locations

WinS Supplies in emergency

The following are suggested items to be distributed to schools during emergencies.

- Clear HPDE plastic heavy-duty reusable water bottles (1/student)
- Soap (2/student-schools retain custody of all soap)
- Oral hygiene supplies: toothbrush and toothpaste set (1/student)
- Menstrual hygiene supplies: reusable sanitary sets (1/adolescent female student and female teacher)
- IEC materials (handwashing, water treatment and sikmun posters)
- Bucket with cap and tap (1/classroom) Handwashing facilities should be provided at latrines and dining/eating areas

6. WASH CLUSTER RESPONSE IN EMERGENCY

In its efforts to respond to the disaster affected population, the WASH cluster aims to minimize disease outbreaks by provide safe water and promotion of good sanitation and hygiene practices through the quick restoration and rehabilitation of damaged private, community and institution (schools and health care facilities) WASH assets.

Responses are to be developed based on specific types of disaster. The table below provides guides on each disaster type.

Table 11: Disaster response to specific Disaster types in Vanuatu

Disaster type	Immediately Before Disaster event	Immediately response post disaster event
Cyclone	● Train communities in cyclone preparedness ● Mass media messaging and warning. ● Advice population to: ○ Secure water tanks ○ Disconnect gutters ○ Store sufficient water ○ Secure toilets ○ Keep water containers safe. ○ If water source is a stream source, close stream box valve or remove pipe from stream if there is no formal box ○ Remove and store safely solar panels	● Assume available water is not safe ● Distribution of buckets, Jerry cans and water filters, one per family. ● Supply materials and install temporary latrines in communities and evacuation centers and affected immunities ● Advise households to install temporary latrines for household use ● Distribute hygiene kits, one per family. ● Print and distribute hygiene messages, prepare, and air hygiene messages on local Broadcasting stations, social media & mobile networks. Government and partner mobilization to disseminate messages. ● Conduct assessments ● Conduct WASH (water, sanitation, and hygiene facilities) quick fixes in communities and institutions ● Secure alternative water source where necessary. ● Water trucking ● Temporary repair of damaged pipeline and intake structures. ● Continue dissemination of information through government and NGO volunteers and radio. ● Assessment
	Your first approach should be to protect your water supplies by keeping volcanic ash, gas and acid rain out. This can be done by: • Making sure tanks and wells are covered. Concrete wells can be covered	Assume adequate quantity of water for drinking is available but not safe ● Treat all water to reduce or eliminate microbes, using one of the following methods: ● Boiling for 1 minute ● Filtering through a membrane filter, then adding a chlorine tablet and allowing the water to stand for an hour. If water is cloudy, first filter through a clean cloth then add the chlorine tablet and allow the water

Volcanic Eruption, Ash fall and acid rain	by sheets of roofing metal over timber, metal, or bamboo poles ● For additional protection, cover the metal sheets with a tarpaulin • Disconnecting downpipes if volcanic ash or acid rain is expected During dry season, disconnect all tanks or wells in the village, because water that looks cloudy or tastes bad because of acid rain or ash can still be used for other purposes such as bathing, handwashing, cleaning dishes and cooking (but not cooking rice because the rice absorbs a lot of water). If possible, you should avoid drinking this water and drink bottled water, coconut water or boiled bore or spring water. In each village, set up one or more tanks or wells that are disconnected to protect the water as drinking water. The other tanks/wells can remain connected so there is enough water for bathing, handwashing, cleaning dishes and cooking (but not rice) Ensure WASH facilities in evacuation centers are functional	to settle for 2 hours. Note also that chlorine may not kill all types of microbes. ● Advise affected population: to drink plenty of water to avoid becoming dehydrated. ● When you first take water from a tap in the morning, throw away the first cupful of water ● If affected population only have drinking water with volcanic gas, acid rain or ash in it, advice to: ensure babies and younger children drink only bottled water, coconut water or boiled bore or spring water ● If water is cloudy: try standing water in container such as plastic jerrycan to allow ash to settle to bottom, or filtering water through a clean cloth. ● If water tastes sour: try adding crushed shells or coral to a container of water (e.g. plastic jerrycan) to neutralize acid. ● Cautions: Volcanic gas, acid rain and ash can make drinking-water look cloudy, and taste bad (metallic, or sour like lemon juice). ● Volcanic ash can also add fluoride to the water. If you drink this water for a short time, even for heavy ashfalls (>20 cm) it is unlikely to be a health risk for adults and older children. For babies and younger children, drinking water heavily contaminated by ash should be avoided for any length of time, as it may cause problems for their teeth (fluorosis). For everyone, and particularly children, drinking water with high fluoride over a long time is not recommended because it can cause problems for the teeth and bones ● The acidity of water affected by volcanic ash, gas or acid rain can leach heavy metals from taps. Health risks can be minimized by throwing away the first cupful of water taken from the tank each day. ● Water trucking ● Desalination ● Temporary repair of damaged rainwater harvesting water gutters systems with first flush pipes

		● Repair damaged piped water systems ● Repair to damaged toilets ● Distribution of buckets, Jerry cans and water filters, one per family ● Continue dissemination of information through government and NGO volunteers and radio
Tsunami	1 Listen to advice from VMDG on tsunami.	● Water trucking ● Temporary repair of damaged water systems ● Distribution of WASH NFI (buckets, Jerry cans, hygiene kits and water filters, one per family) ● Continue dissemination of information through government and NGO volunteers and radio ● Repair damaged sanitation and hygiene facilities
Flooding	● Flood specific Radio messages and printed information dissemination ● Store water in safe areas ● If water source is a stream source, close stream box valve or remove pipe from stream if there is no formal box	● Water trucking ● Temporary repair of damaged water systems ● Distribution of buckets, Jerry cans, hygiene kits and water filters, one per family ● Repairs to damaged toilets ● Continue dissemination of information through government and NGO volunteers and radio
Drought	● Drought specific Radio messages and printed information dissemination continued. ● Repair roof gutters and connect tanks to roof gutters. ● Save water	● Water trucking ● Water desalination ● Distribution of WASH NFIs (buckets, Jerry cans and water filters, one per family) ● Continue dissemination of drought information through government and NGO volunteers and radio and mobile phone networks

6.1 Activation of the WASH Cluster

When NDMO activates the EOC and the cluster system following a disaster within Vanuatu, the WASH Cluster lead, who is the Director of the Department of Water Resources, then activates the National WASH Cluster. The Provincial WASH Cluster Coordination Centers in affected provinces are activated at the same time the National WASH Cluster is activated by the WASH Cluster lead.

The activation of the cluster triggers the emergency coordination structure depicted in *figure 4.* DoWR officers of the four DoWR sections and other WASH Cluster partners are informed and the WASH EOC shifts into operation.

6.2 Wash Cluster Operations

The WASH emergency response operation commences, and the WASH Coordinator assumes responsibilities as incident commander, detailed *in section 3.*

7. WASH CLUSTER OPERATIONS SUPPORT TEAMS

WASH operation is supported by different groups drawn from the DoWR sections and all other WASH partners. The WASH incident commander ensures that their input to the cluster operation is provided in a well-coordinated and timely manner. The support teams are key for the effective operations of the Cluster, and the WASH Incident Commander ensures that the different supporting teams are functioning to address the needs required for timely and effective response.

7.1 Director of DoWR

The Director of DOWR has overall responsibilities for the effective emergency response operation of the cluster. The WASH Incident commander reports directly to the Director in emergencies. His responsibilities include:

- Closely supports the National WASH Cluster Coordinator, who is responsible for the Cluster Coordination.
- Approves response plans that are developed by the planning team and submitted by the WASH Cluster Coordinator.
- Seeks funds to fund the Cluster immediate response, from Government, UN agencies and donor sources.
- Where donor funds are already held by DoWR for projects at the time of the disaster, the Director can request reprogramming of these towards emergency WASH response.
- Approves request for surge staff recruitment to boost emergency response team capacity based on availability of funds.
- Approves contracts that fall within his jurisdiction to support emergency response.
- Forward to Director General, and the central tender board contracts with funding level above his jurisdiction for approval.

- Approves procurement of supplies and contracts as advised by procurement and contract sections. Procurement requests submitted to the Director for approval will have been checked to comply with all procurement procedures.
- Advises the DG and Minister of Lands and Natural Recourses and NDMO of the progress of the WASH response
- Approves sitreps and press releases developed by the Public Relations Officer for public dissemination.
- Liaises with UN agencies and donors
- Attends WASH Cluster coordination meetings called by the Cluster Coordinator

7.2 Information Management

Information management during humanitarian emergencies involves the collection, processing, analysis, and dissemination of information. IMO is a key officer who provides the information to the IC for planning and coordination of the response. The responsibility of the IMO and IM team is to ensure that data collected through field assessments, 4Ws and other means are accurate and complete, and that the IM team process and analyses the data collected and share the findings to inform effective planning and resource mobilization for the response.

Tips for managing information

- Keep information demand to a minimum
- Data rapidly becomes outdated; only collect data you need, when you need it, and in a form that is useful e.g. disaggregated
- Make information useful for others, i.e. share it visually.
- Provide the date and source of all information to mitigate the risk of using outdated information.

7.2.1 IMO Roles and Responsibilities

- In addition to the IMO role in the preparedness phase, (section 4) he provides support to the assessment teams in all IM aspects in ensuring all team members know how to use the software and tools before deployment into the field for assessment.
- Support assessment teams to have correct assessment tools uploaded onto tablets before assessment team deployment.

7.2.2 WASH Dashboard Management

- IMO manages the WASH dashboard by checking that field data being collected is submitted to the dashboard.
- Checks if assessment data collected is complete. If not complete, inform assessment team leaders in the field.
- Checks that 4Ws are being submitted to the dashboard by partners.
- Receives WASH NFIs distribution data, emergency water trucking reports.
- Receives sitreps and other reports from the PEOC
- Updates WASH 4Ws Spreadsheets/Web form

- Disseminate cleared WASH information on WASH google group and through other means

7.2.3 Data analysis

- Produce maps showing areas of impacts and damages caused.
- Analyze field data uploaded on the dashboard and produce daily progress report.
- Compiling daily and weekly provincial activity updates (Who, What, When, Where) providing a clear mapping of activities in the field being conducted by different emergency groups.
- In collaboration with the Incident Commander, advice WASH partners whose work is not uploaded on the dashboard and urge them to submit their 4Ws information.
- Produce pictograph reports and share with partners
- Liaises with Logistics Unit to maintain WASH Inventory records.
- Keeps and maintain an updated contact information of all relevant WASH partners and stakeholders involved in the humanitarian response.
- Produce assessments and situation reports required to the IC in a timely manner.

7.2.4 Information Dissemination

- Feed information to IC and Planning section.
- Disseminate information to WASH Cluster Members.
- Upload on WASH Google group.
- Provide update briefing during WASH Cluster meetings.

7.3 Advocacy and Public Relations

The Public Relations Information Officer, a member of the Command Staff, is responsible for the formulation of key specific emergency key messaging to inform public for preparedness and support the IC to develop situation reports and taking minutes of WASH Cluster meeting minutes.

They are responsible for advocacy and release of information about the incident to the news media, local communities, incident personnel, other appropriate agencies and organizations, and for the management of all WASH related Public Information.

- Contact all WASH partners to coordinate public information activities.
- Obtain copies of current Incident Status Summaries
- Develop policy with Incident Commander and Operation Section Chief regarding information gathering and sharing.
- Develops and receive Incident Commander’s approval of a comprehensive, proactive communications strategy that reflects both immediate and long-term goals.
- Prepares initial information summary as soon as possible.
- Takes minutes of WASH Cluster meetings.

- Obtains approval for release of information from Incident Commander and or Director of DoWR.
- Attends meetings to update information releases.
- Arranges for meetings between media and incident personnel.
- Provides escort service to the media and very important persons such as the Minister or a UN representative.
- Responds to special requests for information.
- Keeps informed of incident developments and control progress through Planning Meetings and regular contacts with other incident staff, host unit, and cooperating agencies.
- Keeps the Incident Commander informed of any potential issues involving the public, news media, or other sources.

7.4 WASH Liaison Officer

The WASH liaison officer, a member of the Command Staff, is the point of contact for the agencies involved in the WASH operation. This includes Agency representatives from other line government agencies, UN agencies, Red Cross, NGOs and public sector. They are responsible for:

- Providing a point of contact for assisting and cooperating with Agency Representatives
- Identifying each Agency Representative, including communications link and location
- Maintaining a current list of cooperating and assisting agencies assigned.
- Responding to requests from incident personnel for inter-organizational contacts
- Monitoring incident operations to identify current or potential inter-organizational problems
- Remaining visible on the incident to incoming co-operators and assisting agencies.
- Responding to requests for information and resolving problems.
- Participating in Planning Meetings providing current resource status, limitations, and capability of other agency resources.
- Keeping assisting agencies informed of planning actions.

7.5 Planning Section

The Planning Section Chief, is a member of the General Staff, is responsible for providing planning services for the response. Under the direction of the Planning Section Chief, the Planning section collects situation and resource status information, evaluates, and processes the information for use in developing action plans.

Planning Section Chief responsibility:

- Collects incident-relevant data from IMO to support planning.
- Fills up the Vanuatu Incident Command system Operational Planning Form

- Provides input to the Incident Commander and Operations Section Chief for use in preparing the Incident Action Plan.
- Supervises preparation of the Incident Action Plan.
- Conducts and facilitate planning meetings.
- Creates a plan for distribution of NFIs.
- Reassigns personal already on site to the operation positions as appropriately needed.
- Establishes information requirements and reporting schedules for Planning Section Units.
- Determines the need for specialized resources to support the incident.
- Assembles and disassemble team not assigned to Operations.
- Establishes specialized systems and processes, as necessary.
- Assembles information on alternative strategies and contingency plans.

7.6 Logistics Section[11]

This section was developed by the logistics consultant as part of an overall DoWR logistics SOP. It provides an overview of the department of water resources transport and logistic services as well as coordination mechanisms established by the DoWR/WASH to support all cargo consigned within Vanuatu, in support of the humanitarian community response to an emergency.

The Objective of the logistics section is to provide – in an efficient coordinated manner – assets, facilities services and staff, to ensure an uninterrupted supply chain of life saving relief items to the affected population.

Before dispatching cargo to affected areas the following should be considered and adhered to:

- Cargo dispatch planning is based on the priorities set by WASH IC.
- Cargo Movements and Storage request will only be accepted through the use of a service request form or dispatch approval by the warehouse / logistic senior officer and with a clearly defined consignee which must be submitted 48 hours prior to the requested time of service.
- The maximum period of storage shall be 21 days.
- All cargos must be clearly mark and accompanied by a complete set of paperwork. i.e. waybill, packing list and copies of Service Request Form (SRF)/ Material Stock Request (MSR)
- A Release Order (RLO) signed by the authorize person (Warehouse manager/Logistics senior officer) is needed before cargo will be handed over by the Transit hub Staff to a transporter.

[11] This emergency Logistics section was developed by Logistics Consultant as part of overall DoWR logistics SOP.

NDMO generally provides the following logistic services:

- Truck to and from PEOC to key affected locations.
- Barge operations between Port Vila and affected islands.
- Boats within islands to key affected locations.
- Airlift to location inaccessible by road.

NDMO logistics services can be accessed by following the steps below:

1. Individual request for movement of Cargo and Storage are to be requested by filling in Request for Assistance form (RFA) and submitting to NDMO Vanuatu.

The point of contact for all enquiries related to Cargo and Storage (RFA) submission is NDMO.

Receipt of the RFA will be confirmed by email and or phone calls from NDMO.

After the details of the RFA have been checked by the NDMO Logistic Officer the WASH Logistics Section will then be informed by email and phone call that the RFA has been ‘accepted” for further processing and stamped by NDMO. WASH Logistics team will then add a tracking number based on the waybill assigned to the cargo.

Prioritization

- The WASH Logistic team aims to provide the greatest level of support by moving cargo with the highest priority.
- The Level of priority will be defined by the WASH IC with advice from the Planning Section and not by the logistic team.

Calling forward of cargo

- After an RFA is approved (WASH logistic team will advise the NDMO when to deliver the cargos to the requested staffing or loading area).
- The calling forward of logistic team will be based on the priorities set by the NDMO.
- The delivery lead times are indicative and are subject to change.

Notes

- For barge operations the WASH logistic team is responsible for loading at the warehouse /supplier the provincial WASH team is responsible for off- loading at the wharf /warehouse or destinations.
- The is no heavy lifting equipment at any discharge ports. Provincial WASH team or community development coordinator (CDC) will need to arrange for community members to assist with off-loading.
- WASH/DoWR are reminded that the cost if unloading barge and boat at destination is the responsibility of the NDMO.
- Summary of documents needed for the dispatch of commodities

Summary of documents needed for the dispatch of commodities.

- RFA form approved.
- Release Order form and Dispatch form (warehouse or WASH/ DoWR).

Cargo update and enquiries

All enquiries on the status of cargo call forward and cargo deliver should be made by wash logistic officer who is monitoring movement of ship or plan/ land transport.

7.6 Administrations and Finances

Finance and administration are the section that deals with funds management and processing of payments that have met all payment requirements. The following is the process to follow in processing of payments.

Confirm Funding Availability

- Finance officer liaises with Director/Finance Manager/Donor to confirm funding availability for disaster response.
- Obtain budget analysis from Department of Finance and Treasury.

Produce Financial Analysis

- Prepare and produce Financial Analysis report.
- Present report to WASH Cluster IC. This provides the funding status of the code against which procurement will be made.

LPO Commitment

Commitment of LPO payments will be done if the following have been completed.

- Approved and stamped request form/Assessment form.
- Approved Quotation.
- Allowance forms correctly filled out with supporting documents; Allowance Form, Itinerary and supporting letter of request attached.
- Impress Form correctly completed with supporting document; Impress Form, Budget Breakdown, Support Letter & itinerary attached.

When all above are in order, LPO can be committed.

- Commit LPO. (supplier takes 30 days and Allowances & Impress 14 Days)
- Seek Director's approved Director or authorized signatories in the absence of the Director, and ensure it bears the DoWR official stamp.
- Make duplicate copies of LPO for file.
- Record approved LPO on LPO Book.
- Deliver approved LPO at DoFT and or Suppliers.
- Regularly follow up with DoFT on payments to be made.
- For Allowances & Impress;
- Collect cheque at DoFT
- Complete LPO request form and have Director DoWR approved

- Drop off the Cash form at DoFT for other 2 signature and stamp
- Cash the cheques at Reserve Bank of Vanuatu
- Deposit cash into bank account if officers in province or hand deliver to officer responsible.

Note that payments will not be processed in the absence of appropriate supporting documents.

7.7 Procurement

Table 12: Levels of authority for procurement approval as of December 2020. Please see procurement guide.

Level of authority	Actions by Procurement
Cost estimated of up to Vt 100,000	● Obtain quotes from 2 suppliers ● Inspect goods ● Approve quotes ● Director of DoWR authorizes payment
Cost estimated at between Vt 100,000 and Vt 1,000,000	● Obtain 3 quotes ● Inspect supplies and select quote ● Evaluate and select quote ● Cost Centre signs off ● Director of DoWR authorizes Payment, ● Delivery
Cost estimated at between Vt1,000,000 up to Vt10,000,000	● Prepare and release Request for Quote (RFQ) ● Evaluate RFQs received ● Conduct financial verifications ● Cost Centre signs off ● DG signs contract ● Inspection and delivery ● DG Authorizes payment
Cost estimated at more than Vt10,000,000	● Prepare request for tender ● Submit to Government Central Tender Board to complete process

This section describes the process for procurement to go ahead.

- Receive certified request for procurement
- Verify request
- Liaise with Cost Centre Manager. Cost Center Manager evaluates and verifies, prioritizes, and approves expenditures
- Forward request to Planning Section. Planning Section goes through procurement process to confirm procurement.

7.8 Engineering team

The Engineering Team assists with detailed assessments, designs, construction monitoring and certification of works. Their roles and responsibilities include:

- Conducting detail assessments for recovery.
- Assisting with initial assessments for response stage.
- Design of new systems (Recovery stage).
- Produce report on damages and losses from assessments done to inform Post Disaster Needs Assessment (PDNA).
- Design rehabilitation/ Upgrades to damaged systems (Recovery stage).
- Approval of designs
- Verification of BoQ's (Recovery Stage)
- Verification of BoQ's submitted for Quick fixes.
- Monitors construction of systems for the response and recovery stage; and
- Reporting on assessments, designs, and construction monitoring

7.9 Water Technical Team (WTT)

The team consists of water technicians, plumbers, (Government, NGO and contracted officers) and all Provincial officers of the DoWR.

Key skills required include:

- Ability to use GPS
- Ability to use camera
- Ability to conduct water quality tests
- Basic plumbing skills e.g. joining pipes etc
- Ability to create an accurate material list to repair a system
- Ability to communicate key hygiene messages to communities
- Ability to accurately record information in 4Ws forms

The team is responsible to ensure WASH facilities are restored in a timely manner to the affected population by completing the following tasks to ensure the affected population have access to water, sanitation, and hygiene facilities. Their roles include:

- They are part of the assessment teams deployed to conduct assessments of damages caused by the disaster.
- Assess WASH damaged infrastructure (water, sanitation, hand washing facilities in communities, health care facilities and schools).
- Ensure damaged WASH facilities (water, excreta disposal facilities, hygiene facilities) in communities, health care facilities, schools and other public places are restored.
- Provide hygiene awareness to affected communities
- Distribute NFIs to affected communities
- Ensure water is available to the affected communities
- Ensure water is provided at all Evacuation centers

- Ensure temporary toilet facilities are constructed while planning for long term improved toilet facilities.
- Plan and coordinate water trucking
- Develop plan, resources and cost required to provide safe water to affected people
- Provide daily situation update to the Provincial WASH IC on the incident progress and input for use in preparing the Incident Action Plan.
- Conduct quick fixes on damaged water systems
- Record distribution of NFIs, water trucking actions and quick fixes in the 4Ws forms.

Process for Quick Fixes

- Quick fixes are repairs completed by a technical team deployed to the affected sites to quickly restore water systems to enable communities to have access to water.
- On deployment, the team brings along basic common pipe fittings that they could immediately use for quick fixes.
- Additional materials needed for quick fixes are listed in a BoQ and submitted to Port Vila for procurement. The team's tasks and responsibilities are:
- Produce a BoQ based on the system assessment.
- Provide BOQ's to Provincial WASH IC within the same day of assessment for verification.
- Provincial WASH IC to forward BoQ to WASH EngineeringTeam in Port Vila.
- Engineering team verifies BoQ and obtains approval from IC and Director before submitting to procurement section to action.
- Procurement, finance and logistics sections follow procedures to procure and ship materials to site.

7.10 Water Quality Team (WQT)

This Team will be led by Water Quality Manager and will comprise all staff of the Monitoring & Evaluation Unit. The Team is responsible to undertake the following roles and responsibilities:

- Ensure WASH Assessment Teams are equipped with field water testing kits.
- Conducts water quality tests on water systems where requested.
- Analyze data and formulate recommendation for planning purposes.
- Conduct water safety awareness in badly hit communities and in evacuation centers
- Inform communities on the status of their water and advise on household treatment of water (see section 5, on water quality)
- Provide daily situation update to the Operation Section Chief on the incident progress
- Provide input into the WASH recovery planning

7.11. Drilling team

The drilling team is a technical team of the DoWR that have drilling and plumbing skills. Their role in emergencies is to conduct drilling operations to provide alternative water sources on the advice of the engineering and planning teams. If drilling is not required, the drilling team will assist the Provincial Situation Units to provide additional support.

The responsibilities of the drilling team are as follows:

- Manage and take care of the drilling equipment
- Receive advice to execute drilling
- Works with logistics to move drilling machines to sites
- Performs drillings on sites
- Develop plan, resources and cost required to drill and develop new boreholes
- Provides drilling data to IM
- Provide report to Planning Section Chief.

7.12 Desalination Officer

The desalination officer is a water technician in the DoWR that carryout maintenance and operations on desalination plants through plumbing installation, maintenance and repairs for water supply system supplies through desalination. In emergencies, the role of the desalination officer is to conduct desalination operations to provide alternative water sources on the advice of the engineering and planning team.

The responsibilities of the desalination officer are as follows;

- Conduct assessment on the desalination plant and submit assessment report to the planning team
- Undertake plumbing tasks to maintain and extend water supply through water trucking to the affected communities
- Train community plumbers or volunteers to undertake cleaning and maintenance of Solar systems and the Reverse Osmosis systems
- Assist the engineering team and provincial water technicians if required
- Ensure that testing and treatment of water is regularly carried out

7.13 Procurement Team

The procurement team is composed of procurement officer, finance, and logistics officer. The primary role and responsibility of the procurement unit in emergency is to procure the required WASH supplies and materials and deliver to the intended beneficiary in a timely manner.

The responsibilities of the procurement team are as follows;

- Provide oversight to emergency procurement activities, including ensuring that preparedness measures are implemented
- Finance focal point ensures adequate cash flow for procurement needs and timely payment to vendors (to avoid disruptions in supply)

- Logistic focal point coordinate with the procurement unit on logistics requirements including transport needs, receipt and dispatch of goods
- Provide detailed specifications and any applicable donor restrictions/regulations on all materials to be procured
- Create Request for Quotations based on engineer and technicians' estimates
- Prepare bid analysis materials for procurement committee
- Assist procurement team to get quotes, purchase and ship materials
- Ensure quality, size and quantity of items sent to field
- Verify correct items are sent to the province related to each material list
- Prepare Goods Received Notes
- Monitor and File Goods Received Notes with Finance

7.14 Sanitation and Hygiene Promotion Team

Sanitation and hygiene promotion team is composed of MoH EH officers, sanitarians, hygiene promotion volunteers from different WASH partners leading dissemination WASH key messages and distributing hygiene items in affected communities.

The responsibilities of the Sanitation and Hygiene Promotion team are as follows:

- Coordinate with MOH surveillance unit to monitor the incidence of WASH-related diseases such as diarrheal disease, cholera, typhoid, trachoma, intestinal worms and schistosomiasis
- Identify factors that can motivate positive behaviors and preventive actions
- Develop a communications strategy using both mass media and community dialogue to share practical information
- Collate, print, and distribute WASH IEC posters in affected communities
- Organize and plan hygiene promotion activities
- Conduct orientation of hygiene promotion volunteers on key messages prior to mass community campaign
- Work with the community to mobilize community action and facilitate the roll out if WASH hygiene Promotion plan in affected communities
- Monitor activities and outcomes regularly to ensure that hygiene promotion and WASH programmes met WASH needs in the affected communities. Adapt activities and identify unmet needs
- Ensure all field teams fill up field activity reports, record numbers of beneficiaries reached through hygiene promotion activities
- Fill up online 4Ws on hygiene promotion activities implemented

8. PROVINCIAL WASH COORDINATION

8.1 Preparedness Stage at the Provincial Level

- This is an activity led by the Provincial WASH IC and is an ongoing process during peace time in preparation for emergency response.
- Convenes regular Provincial WASH Cluster meetings in peace time, involving all WASH partners (provincial Health, Provincial Water Department, Provincial Education, and NGOs). This enhances better WASH team cooperation during emergency responses.

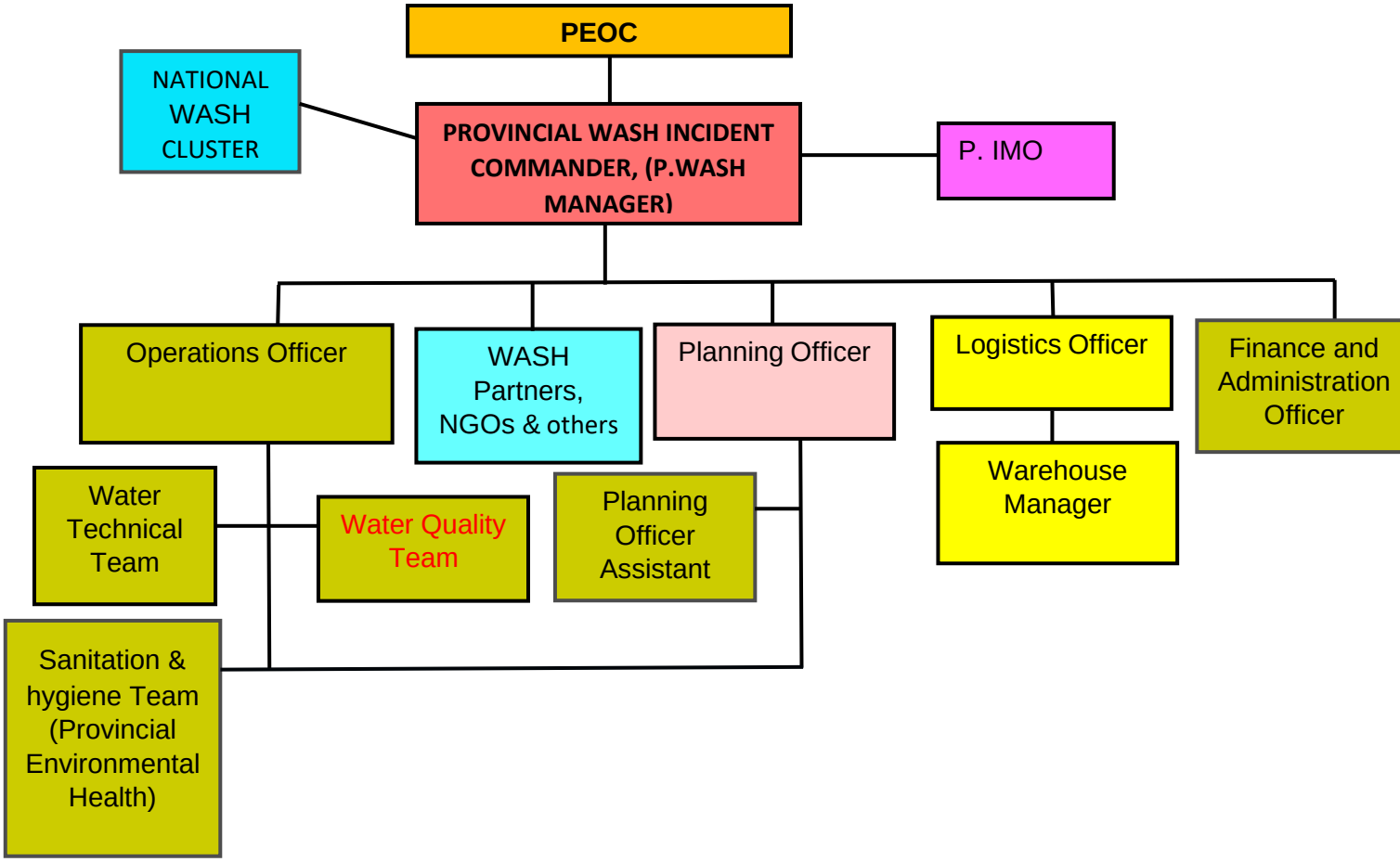
- Map out different water system/ sources in each province.
- Better understand geographical island settings.
- Set up Community Water Committees (CWC) or link the CWC roles into the existing Community Disaster Committees.
- Conduct trainings and awareness (Coordination, CDC, DRR, DWSSP) in communities.
- Ensure standby arrangements are in place with provincial governments and other line government agencies at the provincial level.
- Develop and maintain an up to date contact list of provincial WASH cluster members.

8.2 Provincial Emergency Response

The Provincial WASH Emergency Response coordination roles and responsibilities is taken up by the Provincial Water Supervisor when WASH Cluster is activated. They now become the Provincial WASH Cluster IC (PWIC).

The chart in figure 5 shows the line of communications and coordination for the provincial level.

Figure 3: Provincial WASH in Emergency Coordination Structure



The PWIC roles and responsibilities include:

- Receives WASH activation advice from IC and activates the Provincial WASH team for emergency response.
- Establishes the Provincial WASH Emergency Operation Centre and provides oversight of its operation.
- The PWIC represents WASH PWC at PEOC meetings and reports on WASH plans and activities.
- Leads development of provincial emergency response plans.
- Prioritizes WASH needs and attends to high priority needs first
- Allocates teams for response.
- Requests surge staff based on needs.
- Creates and manages provincial emergency budget.
- Requests impress from national finance section via approved channel of communications.
- Maintains a frequent communication with appropriate sections heads and National Incident Commander. This is critical that the PWIC keeps track of things requested or required from head office.
- Coordinates the deployment of the WASH assessment team on the ground
- Ensures a proper information management mechanism in place for data collection, analysis and reporting
- Ensures the 4Ws database is up to date
- Ensures regular WASH coordination meetings, with minutes documented and shared to all partners including the provincial government and the NDMO
- Provides input into the development of the Situation Report (SitRep)
- Conducts briefing of the WASH team on the ground
- Provides input into the WASH cluster recovery plan
- Approves BoQs and forwards them to the Engineering Team for verification

8.3 Provincial Administration

This team/officer will be assigned by the PWIC and should be the provincial administration officer of the Provincial Water Department. Their roles include the following with oversight by the PWIC.

- Organize local procurement.
- Checks and ensures all supporting documents (request form, assessment form, quotes, support letter for any sole source procurement, approval form from IC) for local procurement are in order, and follows procedures detailed under the procurement Section.
- Confirms funding from Head Office.
- Support PCCC to develop provincial response plan budget for PWIC to forward to head office for approval.
- Maintains frequent communication with Finance Section Chief.

8.4 Provincial Technical team

The Provincial technical team is a unit based in each province responsible to:

- Provide initial impact information to PWIC.
- Develop ground operation plan and submit to PWIC
- Provide contact details of responders to Information Management Officers.
- Assist in the mobilization of the WASH assessment team while on the ground.
- Carry out quick fixes on the damaged water systems
- Provide humanitarian assistance to affected population such as WASH NFIs, water trucking and technical support to all WASH partners involved.
- Immediately restore water service delivery at the Provincial Centre as a priority.
- Lead sanitation and hygiene responses in collaboration with Provincial Environmental Health team.
- Fill in 4Ws forms

8.5 Provincial Logistics Unit

The Provincial Logistic Unit/officer is a designated officer in each province responsible for logistics and his responsibilities include:

- Secure WASH warehouse/storage facilities at provincial level and on islands where required.
- Responsible to receive emergency supplies shipped from Port Vila and certify receipt of goods.
- Informs logistics in Port Vila of goods received.
- Responsible to safely storing goods before transport to site.
- Organizes transport of goods to site in collaboration with PEOC.
- Support PWIC and in collaboration with PEOC, organize and assign transport for response.
- Provides daily briefings of logistics to PWIC before PEOC briefings.
- Keeps a warehouse inventory of all emergency supplies

8.6 Provincial Recovery Stage:

- Provincial WASH IC coordinates WASH recovery interventions based on plans from national WASH cluster.
- Provincial WASH IC assigns technical team to support temporary interventions.
- Provincial WASH IC monitors effectiveness of NFI distribution in particular Water Filters

9. ANNEXES

Annex 1. Short Initial Rapid Assessment for Cyclone

SHORT INITIAL RAPID ASSESSMENT (IRA)
WASH FIELD ASSESSMENT FORM FOR CYCLONE

Section 1: Summary			
1.1 ASSESSOR (who is completing the assessment form)			
Name	Organization	Title/position	Contact Number

1.2 IRA SUMMARY	
Dates of Field Assessment: / / - / /	Province:
Key Contact(s) at this site:	Area Council:
Name:	Island:
Position in Community:	Site Name or Village Name:
Telephone:	
GPS Coordinates:	P-Code (if applicable):
Lat/ Easting: Long/ Southing:	
Elevation:	

Section 2: Population				
2.1 Size of disaster-affected population				
2.2.1 Total estimated current population of village:	#HH:		#People:	
2.2.2 Total number of people with disabilities	#HH:		#People:	

Section 3: Water, Sanitation, and Hygiene

3.1 Water Supply

a) What type of water system(s) used in the community? (Tick option that apply)

___ Piped water supply

___ Borehole

___ Protected well

___ Unprotected well

___ Protected spring

___ Unprotected spring

___ Protected rainwater tank

___ Unprotected rainwater tank

___ Surface water (River, lake, creek, stream etc)

b) What is the degree of damage on the water system components

i) Source? (Tick option that apply)

___ Completely damaged (no water, requires full repair or source relocation to have a functional system)

___ Medium damage (some damage, no water access, but can be resolved within 1 week)

___ Less damage (little damage, there's water access, and damage can be repaired immediately)

ii) Storage? (Tick option that apply)

___ Completely damaged (no water, requires full repair or new storage)

___ Medium damage (some damage, no water access, but can be resolved within 1 week)

___ Less damage (little damage, there's water access, and damage can be repaired immediately)

iii) Distribution? (Tick option that apply)

___ Completely damaged (no water, requires full repair or replacement of pipe & fittings, and tap stand)

___ Medium damage (some damage, no water access, but can be resolved within 1 week)

___ Less damage (little damage, there's water access, and damage can be resolved immediately)

c) Household water Treatment and Storage

i) Do you treat your water before drinking? Circle one (Yes/No)

ii) If yes, how do you treat your water?

___ Boiling

___ Use water filter

___ SODIS (Solar UV Treatment)

___ Others please specify: _____

iii) If no, Why?

___ Don't know how to treat water

___ Others please specify: _____

iv) How do you store clean water?

___ In clean containers with lid

___ In clean containers without lid

___ In buckets with lid

___ In buckets without lid

___ Other please specify: _____

d) Water Access

i) Is water available from the water system? Circle one (Yes/No)

ii) If no, why? (Tick options that apply)

___ Water system damaged as a result of the disaster

___ Water system not functioning before the disaster

___ Other please specify: _____

iii) Will the community be short of water in the next:

___3 days

___1-2 weeks

___3+ weeks

___will not be short of water

iv) If water is currently not available, what water source is the community currently using?

___Surface water (stream, river)

___Spring

___Rainwater

___Other, please specify _____

v) If water is currently not available, what distance are people walking to collect water?

___100-200m (2-5min walk)

___200-500m (5-10min walk)

___500-1000m (10-15min walk)

___more than 1000m (15min plus walk)

e) Water Quality/Safety. Ask the community and write down the observation.

i) Color: _____

ii) Odor (Smell): _____

iii) Taste: _____

iv) Clarity (Turbity): _____

v) Take picture of the water physical appearance

3.4 Sanitation	
a) Type of toilets (Tick options that apply) _____ VIP toilet _____ Septic Flush toilet _____ Pour Flush Toilet _____ Unimproved open pit toilet/ Bush Toilet _____ Others please specify: _____ b) Damages caused by disaster i) Total number of toilets before the disaster occurred _____ i) Total number of toilets destroyed/no longer in use? _____ c) Do people use the bush to defecate or open defecate? Circle one (Yes/No) d) On average how many people are sharing a toilet (Tick one option) ___ 1-25 ___ 25-50 ___ 50+	% Population
e) Are there separate toilets for males and females? (Yes/No) f) Is there specific toilet for people living with disabilities? (Yes/No) g) Is there a handwashing station next to the toilet including soap? Circle one (Yes/No) h) If no, why? ___ Don't know how to build handwashing stations ___ Lack of handwashing containers ___ Lack of soap for handwashing ___ Lack of water for handwashing ___ Others please specify: _____	

3.5 Hygiene

a) Do people regularly wash their hands with soap;

i) Before eating? (Yes/No)

ii) Before preparing food (Yes/No)

ii) After using toilet (Yes/No)

iii) After touching or playing with animals (Yes/No)

iv) After coughing, sneezing, and nose blowing (Yes/No)

v) After taking care of a sick patient (Yes/No)

vi) After changing baby nappy (Yes/No)

vii) After touching dirt, working in garden (Yes/No)

b) Menstruation Question (Gather girls and women into a group and ask the following questions in Focus Group Discussion Format)

i) What have women and girls been using to manage menstruation after the disaster?

___ Napkin/Calico rag

___ Disposable Stayfree

___ Piece of cloth

___ Tampon

___ Others please specify: _____

ii) Is this different from before the disaster? (Yes/No), if yes, please specify what was used before the disaster: _____

iii) Do you currently have access to shop to purchase Stayfree/Tampon? (Yes/No)

iv) How do you dispose/clean used sanitary items?

____ Burned

____ Throw into the toilet pit

____ Wash and dry in a secure and private space

____ Others please specify: _____

v) Is there enough water for bathing and washing of soiled linen (reusable pads), and handwashing during menstruation in your community? (Yes/No)

vi) If no, where do you collect water for bathing, handwashing, and washing during Menstruation?

_____ River, Stream, lake

_____ Creek

_____ Sea

_____ Rainwater

_____ Others please specify: _____

vii) Do you regularly wash your hands during Menstruation? (Tick yes/ No)

___ Before changing used sanitary item (Yes/No)

_____After changing used sanitary item (Yes/No)

___ After using toilet during menstruation (Yes/No)

___ Before food preparation (Yes/No)

_____ Before eating (yes/No)

viii) Is Menstruation considered taboo in your community? For example, when you are menstruating you cannot prepare food? (Yes/No)

c) **WASH related illness/sickness**

i) Are there more cases of the following WASH related illness/sickness since the disaster? Select (Yes/No) for each illness/sickness

Diarrhea	
Fever	
Red eye (conjunctivitis)	
Cough	
Flu	
Sore Throat	
Yaws (50vt sore)	
Skin Disease	

3.6 Expressed WASH Priorities
3.6.1 What are the priorities expressed by the population concerning water supply, sanitation and hygiene?
1.

2.

3.

APPENDIX: Additional information on broken parts of system
A1 Write a BoQ for all parts of the system that are broken (use BoQ template if easier)
VILLAGE NAME:

Draw a sketch of the system showing system components that need to be replaced

1.3 WASH SUMMARY OF THE SITUATION AT THIS SITE

Write or list out a summary of WASH situation according to the following factors:

- Overall judgment of the severity of needs identified: (Check Box)

Water	Sanitation	Hygiene
Severe	Severe	Severe
Medium	Medium	Medium
Low	Low	Low

- Short-term outlook (whether the crisis is worsening or becoming less serious):

  - Recommendations from officers conducting assessment

Annex 2: Arial survey form/guide (Insert when complete)
Annex 3. IRA assessment forms (Insert when complete)
Annex 4: Detail assessment (Insert when complete)
Annex 5: Planning request form

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:
3. Objective(s):	

4. Operational Period Command Emphasis:
General Situational Awareness
5. Site Safety Plan Required? Yes ☐ No ☐ **Approved Site Safety Plan(s) Located at:**

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____
☐ ICS 206		☐ _____

7. Prepared by: Name: _____ Position/Title: _____ Signature: _____

8. Approved by Incident Commander: Name: _____ Signature: _____

ICS 202	**IAP Page** _____	Date/Time: _____

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section Unit levels. All completed original forms must be given to the Administration Unit.

Annex 6: Partners contact lists

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:
3. Basic Local Communications Information:	

	Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)
4. Prepared by: Name: _____ Position/Title: _____ Signature: _			
ICS 205A	**IAP Page** _____	Date/Time: _____	

Annex 7: Incident Briefing

ICS 201 Incident Briefing
Incident Briefing

1. Incident Name:	**2. Incident Number:**	**3. Date/Time Initiated:** Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 1 Date/Time: _____

Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

The ICS 201 can serve as part of the initial Incident Action Plan (IAP).

If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing (**for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures	Self-explanatory.

	(remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	
6	**Prepared by** Name Position/Title Signature Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.
8	**Current and Planned Actions, Strategies, and Tactics** Time Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) Incident Commander(s) Liaison Officer Safety Officer Public Information Officer Planning Section Chief Operations Section Chief Finance/Administration Section Chief Logistics Section Chief	Enter on the organization chart the names of the individuals assigned to each position. Modify the chart as necessary and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. If Unified Command is being used, split the Incident Commander box. Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	Arrived	Enter an “X” or a checkmark upon arrival to the incident.
	Notes (location/ assignment/status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

Annex 8: Reference

Government of Vanuatu, National Disaster Management Act, 2006

Government of Vanuatu, Water Resources Management Act No32 of 2016

Government of Vanuatu, Water Supply Act No31 of 2016

Department of Water Resources, National Water Strategy 2018 – 2030, 2017

Department of Water Resources, National Water Policy 2017

Pacific Wash in Emergencies Coordination Handbook, UNICEF 2018

The Sphere Project, Humanitarian Charter and Minimum Standards in Humanitarian Response, 2011 edition

Water, Sanitation, and hygiene (WASH) Cluster Coordination Handbook, 2009

8. References

Government of Vanuatu, National Disaster Management Act, 2006

Government of Vanuatu, Water Resources Management Act No32 of 2016

Government of Vanuatu, Water Supply Act No31 of 2016

Department of Water Resources, National Water Strategy 2018 – 2030, 2017

Department of Water Resources, National Water Policy 2017

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